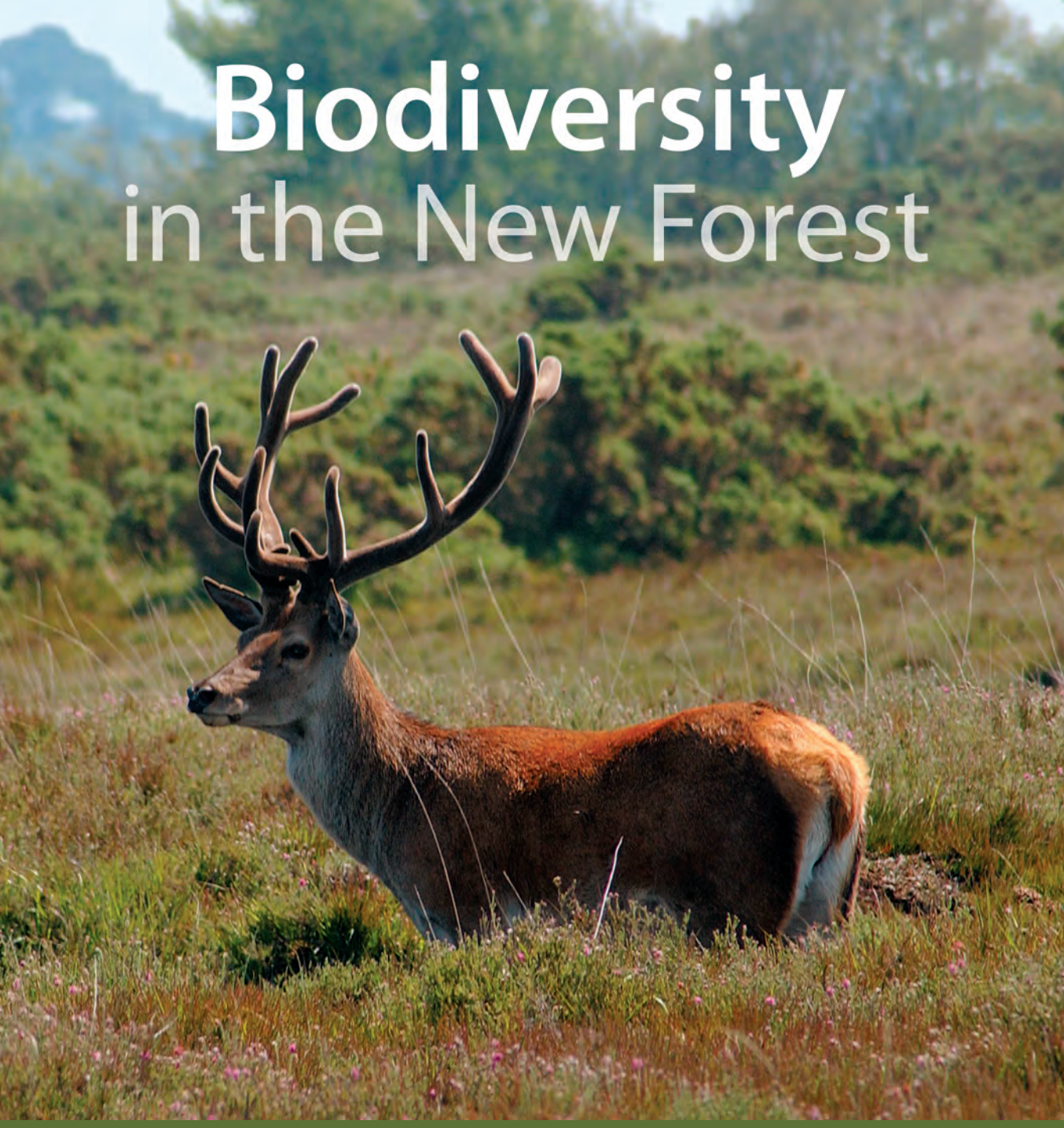
Biodiversity in the New Forest



Edited by Adrian C. Newton

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Adrian C. Newton

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Poole,
Dorset,
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Dedicated to the memory of
Muriel Eliza Newton (1929–2009),
who loved the New Forest,
especially the donkeys.

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Back cover: Wood Crates (Adrian Newton)

The maps in this book are for illustrative purposes only, and do not represent the legal definition of National Park boundaries or any other feature

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12 The condition of the New Forest habitats: an overview

Elena Cantarello, Rachel Green and Diana Westerhoff

Introduction

The area of the New Forest protected for the purposes of nature conservation covers over 29,000 hectares (ha). There are a number of different types of conservation designation applied to the New Forest, ranging from national-scale legislation (e.g. Site of Special Scientific Interest (SSSI), designated under the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000), through European designations (e.g. Special Protection Area (SPA) and Special Area of Conservation (SAC) designated under the Birds and Habitats Directives 79/409/EEC and 92/43/EEC), to global-scale designations (e.g. Ramsar Site under The Convention on Wetlands of International Importance, Ramsar, Iran, 1971) (Figure 53). This chapter provides an overview of the current condition of New Forest habitats, with a specific focus on those occurring within the New Forest SSSI.

The New Forest SSSI embraces the largest area of semi-natural vegetation in lowland England, and includes the representation on a large scale of habitat formations formerly common but now fragmented and rare in lowland Western Europe. The major components are the extensive wet and dry heath with their rich valley mires and associated wet and dry grassland, the ancient pasture and enclosed woodlands, the network of clear rivers and streams and frequent permanent and temporary ponds. Outstanding examples of thirteen habitats of European interest (according to the Habitats Directive) are represented together with two priority habitat types, namely bog woodland and riverine woodland. Nowhere else do these habitats occur in combination and on such a large scale. The existence of this dynamic habitat mosaic is of fundamental importance in creating enormous niche separation for exploitation by a wide range of plants, invertebrates, reptiles and birds and animals of national and international conservation importance (Wright and Westerhoff 2001).

Nature conservation agencies devote a substantial proportion of their resources to the management and

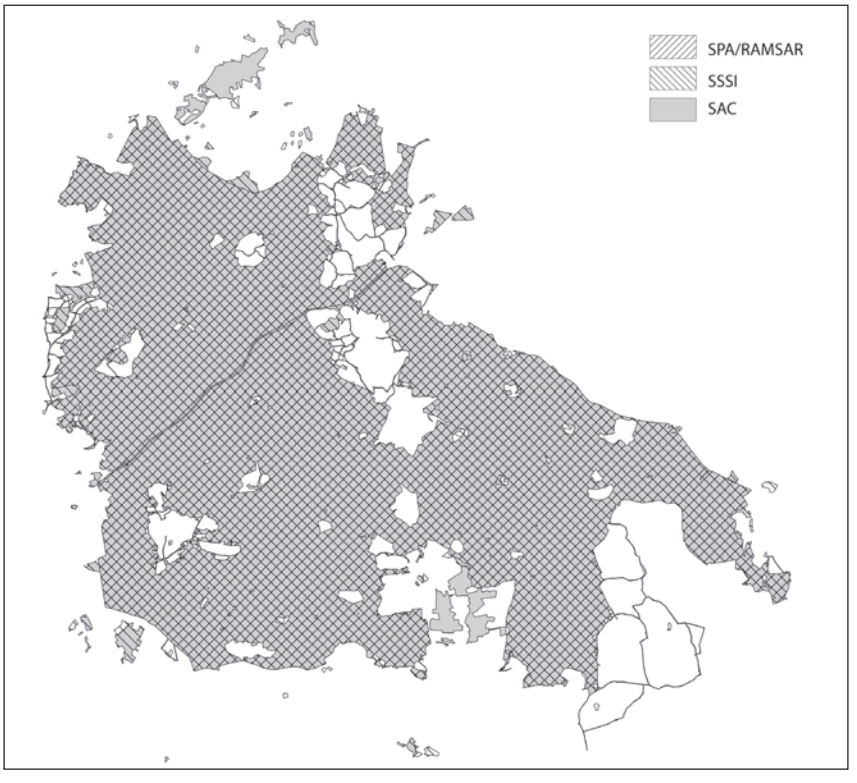

Figure 53
Areas in the New Forest designated for nature conservation (see text for details). SPA and Ramsar areas coincide. This map illustrates the SSSI area considered in this chapter in relation to other designated areas for nature conservation. For geographic context, see Figures 1 and 2.

protection of the designated sites (SSSI, SPA, SAC and Ramsar sites), and mechanisms are needed to assess how successful these activities have been in achieving nature conservation objectives. An assessment of these activities is also required to test the effectiveness of policy measures, such as the Habitats Directive, in contributing to biodiversity conservation on protected sites. Natural England, in parallel with the other statutory conservation agencies in the UK, assesses the condition of the SSSIs using standard methods that have been designed to implement the Joint Nature Conservation Committee (JNCC) Common Standard Monitoring system (CSM) (JNCC 2004).

The CSM programme was developed in 1998 by JNCC in agreement with the statutory country conservation agencies to provide common principles for monitoring all of the features of interest (e.g. habitats, species, or geology) for which the protected sites were designated. To assess the condition of each feature a number of attributes with targets were identified (e.g. extent, floristic composition for habitats; population size, distribution of species), which allow assessment of whether the feature is in a favourable or unfavourable condition. If all of the targets are met, the feature is considered to be in favourable condition.

All interest features on all designated sites are assessed at least once within a six year period, which corresponds to the six-year reporting cycle used for the Habitats Directive. The results of the first cycle are reported in Williams (2006). Given the considerable number of features to assess (with an estimate of 22,000–23,000 nationwide), the CSM approach was not intended to give statistically significant results, but to facilitate rapid and simple judgements of the interesting features by local conservation officers and to provide consistent and comparable results on the condition of designated sites by habitat or site and at a UK level.

In England the condition assessment of SSSIs is undertaken by Natural England advisors. Each SSSI is divided into units and each one is assessed against a set of targets that have to be met for the unit to be judged as in favourable condition. In particular, the CSM defines six standard terms for assessing the condition of interest features: favourable, unfavourable-recovering, unfavourable-no change, unfavourable-declining, partially destroyed and destroyed (JNCC 2004).

Methodology

In the New Forest SSSI there are 582 units to assess. The boundaries of these units were defined considering habitat type, land management and land ownership (Figure 54). Standard field recording forms were developed for each habitat type based on the conservation objectives of the interest features. These include eleven habitat types, i.e. dry heath, wet heath, dry grassland, wet grassland, pasture woodland, riverine woodland, bog woodland, enclosed woodland, temporary ponds, permanent ponds, and valley mires; and species including amphibians (e.g. great crested newts, *Triturus cristatus*), invertebrates (e.g. southern damselfly *Coenagrion mercuriale*, stag beetle *Lucanus cervus*), birds (e.g. Dartford warbler *Sylvia undata*, nightjar *Caprimulgus europaeus*, woodlark *Lullula arborea*, honey buzzard *Pernis apivorus*, wintering hen harrier *Circus cyaneus*) and reptiles (e.g. sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*), together with various species of wading birds, lichens and vascular plants. Each field form reports attributes and targets compiled in a questionnaire, which is completed during structured walks, and used to assess the condition of each unit. In the following sections the habitats assessed and the field forms developed are summarised; a detailed description of the habitats can be found in Wright and Westerhoff (2001).

Dry heath and dry grassland

The New Forest dry heaths comprise a suite of vegetation communities defined largely along a soil moisture gradient (Table 27). The dry heath occurs in close association with dry grassland. Together the dry heathland and dry grassland units cover 9,343 ha (Natural England 2008).

According to the dry heath standard field form, dry heaths are in favourable condition when: their area is maintained; there is between 1% and 10% bare ground forming an intimate mosaic with the vegetation, but not in an extensive form as a result of intensive stock feeding or human disturbance; there is a structural mosaic of ericaceous vegetation with at least 10% young and between 20% and 50% old heather *Calluna vulgaris* and cover of *C. vulgaris* lies between 25% and 90%; the cover of invasive species such as *Rhododendron ponticum* is less than 1%, and pine trees or seedlings less than 5%; not more than 10% of gorse *Ulex europaeus* is in a degenerate condition; and bracken *Pteridium aquilinum* cover does not exceed 25% cover in any unit (Alonso *et al.* 2003).

The New Forest dry grasslands, outside those mentioned above, occur in some of the enclosed, unimproved meadows throughout the Forest. These isolated areas cover 370 ha (Natural England 2008) and comprise a suite of vegetation communities subjected to a high and relatively uniform grazing pressure (Table 27). Soil fertility and soil moisture retention are the main factors determining their distribution.

According to the dry grassland standard field forms, dry grasslands are in favourable condition when: their area is maintained; there is up to 10% bare soil in an intimate mosaic with the vegetation; the sward height is 5 cm or less or between 3–10 cm for U20; the plant litter is less than 25% cover or between 5–50 % for U20; the scrub cover does not exceed 30% for *Ulex europeaus*, 1% for *Rhododendron* and 5% for other scrub; the bracken cover is less than 10% for U1b, U1d, U1f and CG7, less than 20% for U1e, U3 and U4 and between 50–90% for U20; unfavourable

species such as rosebay willowherb *Chamerion angustifolium*, creeping thistle *Cirsium arvense* and spear thistle *C. vulgare*, greater plantain *Plantago major*, common nettle *Urtica dioica* and cover of coarse grasses (e.g. Yorkshire-fog *Holcus lanatus* and cock's-foot *Dactylis glomerata*) do not exceed 10% (Robertson and Jefferson 2000). Note that the codes used here (such as U1, U3 etc.) refer to communities defined in the National Vegetation Classification (NVC) (see Table 27).

Wet heath, wet grassland and mire

The New Forest wet heaths comprise a suite of vegetation communities defined by soil moisture, nutrient and base status, and are profoundly influenced by burning and grazing (Table 27). The wet heath is usually found in an intimate mosaic with mire habitats and occasionally wet grassland. These wet habitats together total 6,035 ha (Natural England 2008) of which approximately 2,100 ha is wet heath (Wright and Westerhoff 2001).

According to the wet heath standard field form, wet heaths are in favourable condition when: their area is maintained; there is up to 5% bare peaty soil in an intimate mosaic with the vegetation; soils are seasonally waterlogged, but may be dry at surface in summer; at least 25% cover is provided by ericoid shrubs (heather *Calluna vulgaris* and cross-leaved heath *Erica tetralix*) and a further minimum of 20% cover by *Sphagnum*; purple moor-grass *Molinia caerulea* does not exceed 50% in scattered tussocks; *Rhododendron* cover is below 1%, tree seedlings or tree cover are below 5% and bog myrtle *Myrica gale* and gorse *Ulex europaeus* cover are below 30% and 20%, respectively (Alonso *et al.* 2003).

The New Forest wet grasslands, outside those covered above, also occur in isolated, enclosed meadows throughout the Forest and they total c.600 ha in area (Natural England 2008). They comprise a suite of generally tightly grazed plant communities affected by high ground water levels, which are waterlogged in the winter but which dry out to some extent in the summer (Table 27). According to the wet grassland standard field form, wet grasslands are in favourable condition

Table 27
Relationship between the New Forest SAC management plan habitat classification, the NVC and the Habitats Directive classifications. Sources of the vegetation classification: (1) Wright and Westerhoff (2001); (2) Rodwell (1991a, b, 1992, 1995).

SAC management plan[1]	National Vegetation Classification (NVC)[2]	Habitats Directive
Dry Heath	H2a, H3c H2a, H3c and unclassified *Calluna-Molinia-Erica tetralix-Leucobryum glaucum* heath	European Dry Heath
Wet Heath	M16a, M16b and more base-rich extreme form of M16b M16c	North Atlantic Wet Heaths with *Erica tetralix* Depressions on peat substrates (*Rhynchosporion*)
Dry grassland	U1b, U1d/f, U1f, H2/U1d, U1e, CG7 ('Parched acid grasslands') U3 ('Heathy acid grasslands') U4 ('Moist acid grassland') MG6b ('Neutral greens') U20 ('Herb-rich Bracken grassland')	No equivalent No equivalent No equivalent No equivalent No equivalent
Wet grassland	M23a, M24c, M25b, M16b	*Eu-Molinion* grassland
Pasture woodland and Inclosure woodland	W15, W14 W16, W10a/W11 W14, W8b W10b/W11	*Atlantic acidophilous* beech forests with *Ilex* and sometimes *Taxus* in the shrub layer Old *acidophilous* oak woods with *Quercus robur* on sandy plains *Asperulo-fagetum* beech forests No equivalent
Riverine woodland	W7, W8	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
Bog woodland	W4b W5b	Bog Woodland No equivalent
Mire	M16c M29, M9 M10 W5 M21, M6, M1, M14	Depressions on peat substrates of the *Rhynchosporion* Transition mires Alkaline fens Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* No equivalent
Temporary ponds	M30, OV35, M29 S22 OV31, OV30	Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflorae* No equivalent No equivalent
Permanent ponds	No equivalent	Oligotrophic waters in medio-European and perialpine area with amphibious vegetation: *Littorella* or *Isoetes* or annual vegetation on exposed banks

when: their area is maintained; there is up to 10% bare soil in an intimate mosaic with the vegetation; the sward height is less than 2 cm for M23 or between 2 and 15 cm for M24c; the plant litter is less than 25% cover; the scrub cover does not exceed 10% for bog myrtle and 5% for other scrub; unfavourable species such as marsh thistle *Cirsium palustre*, tufted hair-grass *Deschampsia cespitosa* and *Juncus* spp. cover are less than 20%, 10% and 80%, respectively and curled dock *Rumex crispus*, broad-leaved dock *R. obtusifolious*, common nettle, creeping thistle, spear thistle and marsh ragwort *Senecio aquaticus* are occasional (Robertson and Jefferson 2000).

The New Forest mires comprise a suite of communities with elements that are typical of both bogs and fens (Table 27). Bogs are typically rain-fed, mineral and nutrient poor and acidic; fens are groundwater fed, have a higher nutrient status and are generally neutral or alkaline. Together with the other closely associated habitats they cover c.5,169 ha (Natural England 2008), of which c.2,000 ha is mire (Wright and Westerhoff 2001).

According to the mire standard field form, mires are in favourable condition when: their area is maintained; there is between 1% and 10% bare peaty soil; presence of high water level all year and open bog pools with standing water in mires larger than 5 ha; unfavourable species such as *Rhododendron*, bramble *Rubus fruticosus*, gorse are rare or absent; *Sphagnum* cover is at least 10% and there is no species dominant to the exclusion of all others; purple moor-grass cover is less than 75%, bog myrtle cover is less than 50% and alder *Alnus glutinosa* and *Salix* spp. cover are less than 90%.

Pasture, riverine and bog woodland

The New Forest pasture woodland covers c. 4,400 ha (Natural England 2008) and includes all of those woodland stands that depend upon grazing by livestock to maintain the special interest features (Table 27). They have a great structural diversity with a complete range of tree age classes and a wide range of tree density; they are also characterised by an exceptionally rich lichen, bryophyte and fungal flora, and invertebrate and bird fauna.

According to the pasture woodland standard field form, pasture woodlands are in favourable condition when: the area of ancient woodland is maintained; there is at least one native sapling, oak or beech contributing 10% of the saplings seen within 30 minutes walking and fallen branches allowing scrub and sapling development; there is less than 1% non-native species in the canopy; there is no evidence of felling of native trees, less than 1% local ground disturbance, no ditch maintenance or other safety work; the canopy cover is between 30 and 90% and the holly thickets cover less than 50%; less than 55% of big trees show severe stress; deadwood is classed as average to good; there is less than 10% of the soil surface poached; less than 10% of the vegetation is heavily modified, improved or exhibiting disturbed communities attributable to recreational activities; and less than 50% of the vegetation reaches 10 cm in height (Table 28) (Kirby *et al.* 2002).

The New Forest riverine woodland comprises those woodland stands with occasional to abundant alder and frequent ash *Fraxinus excelsior* on wet mineral or peaty soils along water courses (Table 27). Riverine woodlands are often in close association with scrub and other broadleaved woodland. The total units cover 492 ha (Natural England 2008), of which c. 212 ha is riverine woodland (Wright and Westerhoff 2001).

According to the riverine woodland standard field form, riverine woodlands are in favourable condition when: the area of ancient woodland is maintained; in open forest occasional saplings are present and in restoration areas 10% of the area show saplings of native species; there is less than 1% non-native species; there is no evidence of native trees being felled, local ground disturbance, planting, ditch maintenance, safety work; the canopy cover is between 30 and 90% and thorn, bramble and rose thickets protect the regeneration; the stream dynamics and the deadwood are classed as average to good; less than 5% of dead trees is attributable to alder die-back; and there is less than 10% of the soil surface poached and less than 10% of the vegetation heavily modified, improved or exhibiting disturbed communities attributable to recreational activities (Kirby *et al.* 2002).

The New Forest bog woodlands cover c.33 ha (Wright and Westerhoff 2001) and comprises woodland communities on peat with a significant component of bog species in the ground flora (Table 27). According to the bog woodland standard field form, bog woodlands are in favourable condition when: the area of ancient woodland is maintained; sallow and alder are dominant in the canopy, there is less than 1% cover of non-native species and less than 5% of birch; there is no expanse of woodland at expense of mire; no evidence of felling of native trees, planting, ditch maintenance or safety work; less than 1% ground disturbance; high water level all year; *Sphagnum* more than 10% cover, *Molinia* less than 75% and *Myrica gale* less than 50% (Kirby *et al.* 2002).

Inclosure woodland

The New Forest Inclosure woodland comprises woodland communities that are not subject to livestock grazing until most trees are past browsing height (Table 27). On the Crown lands they are relatively recent plantations on former heathland or ancient woodland stands (AWS), fenced off from the commoners' animals, but accessible by deer. Off the Crown lands they are remote from commoners' animals. Together with the ancient semi-natural woodland, they cover c.8,186 ha (Natural England 2008).

According to the Inclosure woodland standard field form, Inclosure woodlands are in favourable condition when (i) in the 19th century stands (or older): their area is maintained; there is a successful establishment of saplings; there is less than 1% non-native species in the canopy; (ii) in non-intervention sites: there is no

Table 28
Example of standard field monitoring form the New Forest (see text for details).

Site name: **New Forest**	Site unit name and number:	Date visited:
Assessed by:		
Level 1 Habitat Type: **Pasture Woodland** (Habitats Directive: Beech forests with *Ilex* and *Taxus*, rich in epiphytes (*Ilici-Fagion*), Old acidophilous oak woods with *Quercus robur* on sandy plains, *Asperulo-fagetum* beech forests. NVC: W15, W16, W14, W10a/W11, W10b/W11, W8b)		
Condition assessment:		
Favourable	Unfavourable – maintained	Partially destroyed
Unfavourable – recovering	Unfavourable – declining	Destroyed
Recommended visiting period: Anytime		
Recommended frequency of visits : All Pasture Woodland units to be visited within 3 years		

Level 1 Attribute	**Target**	**Yes**	**No**	**Samples**									
Area of A&O Woodland	Maintain existing area of ancient woodland on existing sites												
Regeneration (native species only)	At least 1 native sapling (>1.5 m, <15 cm dbh) (excluding birch), or leader out of reach of grazing animals within 30 minutes walking.												
	Oak and Beech contributing at least 10% of the saplings seen												
	Fallen branch wood present allowing scrub and sapling development												
Composition	<1% non-native species in canopy or shrub layer												
Natural processes and structural development	No evidence of recent (within last 5 yrs) felling of native trees												
	<1% (local) ground disturbance												
	No evidence of recent (within last 5 yrs) planting												
	No evidence of recent (within last 5 yrs) drainage/ditch maintenance												
	No evidence of essential safety work, e.g. felling, drainage etc.												
	Canopy cover present over 30–90% of unit area												
Characteristic features of Pasture Woodland	<55% trees >80 cm dbh 2.5 m girth showing severe stress or death attributable to disease or pollution												
	Deadwood : *Good*: 1 or 2 large fallen trees or trunks (>50cm dia) visible, plenty 5–50 cm pieces in view												
	Average: 1 or 2 large pieces, little smaller material; or only smaller material (5–50 cm) in view.												
	Poor: Even small material (5–50 cm) scarce												
	Absent: Nothing >15 cm diameter												
	Fallen dead wood classed as average to good over most of unit												
	Holly thickets occasional or frequent NOT dominant over most of unit (<50% ground cover)												
	Ground vegetation: <10% soil surface poached or trampled												
	<50% of vegetation more than 10 cm high (except bracken)												
	<10% vegetation heavily modified, improved or exhibiting disturbed communities attributable to recreational activities												

evidence of felling of native trees, local ground disturbance, planting, or ditch maintenance; and (iii) in the managed compartments: there is between 5–20% permanent open space, at least 5 native trees per hectare and ditch maintenance restricted to roadsides for the AWS; deadwood is classed as average to good; there is less than 10% of the soil surface poached and the vegetation heavily modified; less than 50% of the vegetation reaches 10 cm height, there is at least 30% of oak as final crop and less than 5% in rotational stage other than high forest for the AWS (Kirby *et al.* 2002).

Temporary and permanent ponds

The New Forest temporary and permanent ponds are numerous and scattered across the Forest. The temporary ponds, in particular, are often so small that their area has not been measured. A few larger ponds forming individual units total 5.7 ha (Natural England 2008). Temporary ponds support a range of distinctive vegetation communities restricted to water-filled shallow depressions on poorly drained soils that dry out temporarily during the summer months; permanent ponds maintain a water level throughout the year (Table 27).

According to the temporary pond standard field form, temporary ponds are in favourable condition when: their area is maintained; there is between 25 and 75% bare ground present at the end of each summer; the water chemistry is maintained; *Juncus bulbosus* var. *fluitans* growth is less than 50%; unfavourable species such as New Zealand pigmyweed *Crassula helmsii* and parrot's-feather *Myriophyllum aquaticum* are absent. Permanent ponds are in favourable condition when: the water level, the water quality and the sediment quality are maintained throughout the year; unfavourable species such as *Crassula helmsii* and *Myriophyllum aquaticum* are absent.

Temporary and permanent ponds (5 units), and rivers and streams (1 unit) were not considered in the present study as their condition assessment has only recently started and their actual condition needs further study to be carefully determined. A total of 576 out of 582 units were therefore assessed in this study.

Results

Data analyses

Data analyses were performed by using SPSS 16.0 for Windows (© 2008 SPSS Inc., USA) and ArcGIS 9.2 (© 1999–2006 ESRI Inc., USA).

Overall situation

Of the 576 units assessed using the standard field monitoring forms from September 1998 to August 2008 (see the previous section on Methodology), 32% of their area is assessed as being in favourable condition, and 68% in unfavourable condition; a very small percentage of their area is considered partially or totally destroyed (Figure 54). Of the 68% unfavourable units, 62.5% are in unfavourable–recovering category

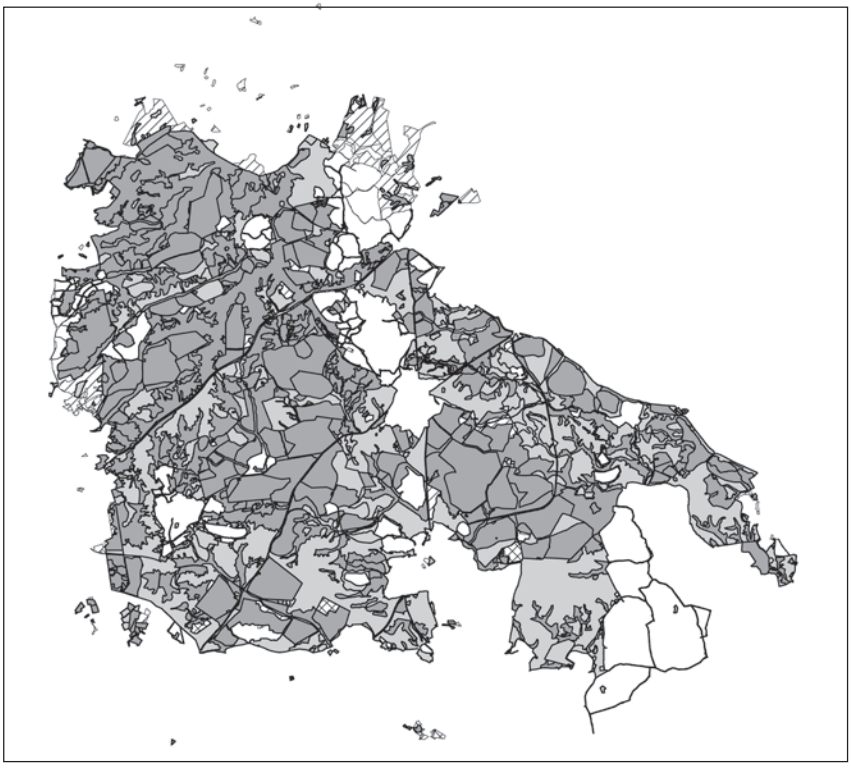

Figure 54
The New Forest SSSI condition (data compiled from 8 September 1998 to 4 August 2008). Pale grey, favourable (31.9%); dark grey, unfavourable recovering (62.46%;) hatched, unfavourable declining (4.62%); cross-hatched, unfavourable no change (0.85%); black, part destroyed / destroyed (0.01%).

and 4.6% in the unfavourable–declining category; thus, 94.4% of the units' area is in favourable condition or is recovering towards favourable condition. Drainage, forestry and woodland management are most often mentioned as adverse activities affecting the condition of the habitats.

Dry heathland and dry grassland

Dry heathland and dry grassland fare relatively well with 88% of their coverage assessed in favourable or unfavourable recovering condition (8,520 ha, of which 5,770 ha is in favourable condition and 2,750 ha in unfavourable recovering) (Figure 55). 1,191 ha are in unfavourable no change or declining condition. The main factors affecting the unfavourable condition are: overgrazing, spread of bracken *Pteridium aquilinum*, Scots pine *Pinus sylvestris* and birch *Betula pendula* for the dry heath; undergrazing off the Crown land and spread of bracken for the dry grassland.

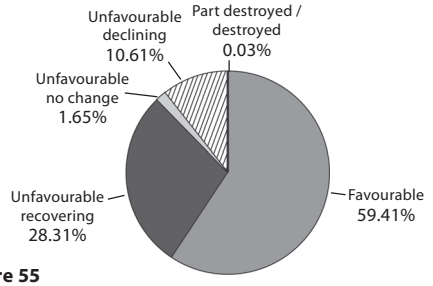

Figure 55
Condition of dry heath and dry grassland. Percentages represent the proportion of the area falling into each of the assessment categories on the 4 August 2008 over a span of 10 years (for details see text and Figure 54 caption).

Wet heath, wet grassland and mire

Wet heath, wet grassland and valley mire achieve good results with 97% of their area in favourable or unfavourable recovering condition (5,881 ha, of which 977 ha in favourable condition and 4,904 in unfavourable recovering condition) (Figure 56). A relatively small area totalling 168 ha is in unfavourable no change or declining condition. The main factors responsible for the unfavourable condition are: inappropriate scrub control, past drainage, and establishment of Scots pine for the wet heath; excess scrub and past drainage for the wet grassland and valley mire.

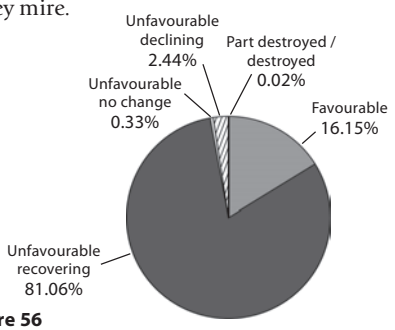

Figure 56
Condition of wet heath, wet grassland and mire habitats. For details see caption to Figure 55.

Pasture, riverine and bog woodland

Pasture, riverine and bog woodland achieve the best results with 99% of their area in favourable or unfavourable recovering condition (4,914 ha, of which 2,049 in favourable condition and 2,865 in unfavourable recovering condition) (Figure 57). Only 50 ha are in unfavourable no change or declining condition. The main factors affecting the unfavourable condition are: low dead wood volume, insufficient canopy and trees collapsing for pasture woodland; and past drainage, channel morphology changes and non-native species for riverine and bog woodland.

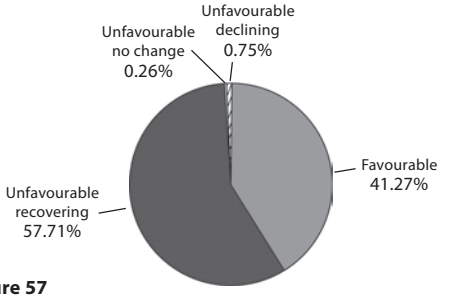

Figure 57
Condition of pasture, riverine and bog woodland. For details see caption to Figure 55.

Inclosure woodland

In the case of Inclosure woodland, 98% of its coverage assessed is in favourable or unfavourable recovering condition (8,002 ha, of which 459 ha in favourable condition and 7,543 ha in unfavourable recovering condition) (Figure 58). 184 ha are in unfavourable no change or declining condition. The main factors affecting the unfavourable condition are: forestry, woodland management and past drainage.

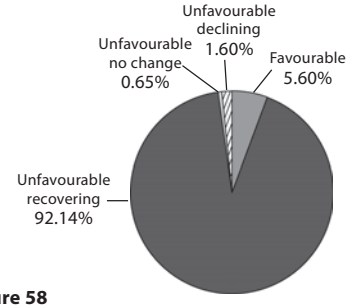

Figure 58
Condition of Inclosure woodland. For details see caption to Figure 55.

Discussion

There are a number of ways in which the condition assessment results are used, from the site level to the European scale. At the site level, the assessments provide information on which adverse activities are affecting the habitats, which issues are needed to be addressed and which management measures need to be undertaken to restore the favourable condition. With regards to the Inclosure woodland, for example,

where 94% their area is in unfavourable condition (Figure 58), much effort is currently being focused on addressing the following issues: management of broadleaf woodland, non-native trees and scrub management, drainage and soil disturbance, felling and planting, timber extraction, damage by machinery and ride management. The management actions that are currently under way include: to remove non-native species; to set different grazing options; to restore appropriate hydrological regimes and to remove drainage channels; to assist the natural regeneration; to retain fallen and standing deadwood, and to retain existing veteran trees and identify future ones; to manage scrub and bracken where required, to support other species; to minimise ground disturbance; and to keep rides open and to widen them as required.

European projects funded by LIFE-Nature programme (i.e. LIFE II Project 'Securing Natura Objectives in the New Forest' and LIFE III Project 'Sustainable Wetland restoration in the New Forest; see Chapter 17), Government projects (e.g. the 'Rural Pathfinder Project', set up by the Hampshire County Council in partnership with Natural England) and other projects funded by the Department for Environment, Food and Rural Affairs (DEFRA), are essential to support the management actions needed to achieve the favourable condition and their emphasis is likely to increase in the future.

Natural England has a Public Service Agreement (PSA) with DEFRA. The PSA target is for 95% of SSSIs, by area, to be in favourable condition by 2010. In the New Forest much has been achieved in recent years to restore those areas of unfavourable habitat condition, which totalled some 11,000 ha. Many of the areas within the enclosed woodlands have been restored to unfavourable recovering condition under the Pathfinder Project. In 2008 a Memorandum of Agreement was signed between the Forestry Commission, the New Forest National Park Authority and Natural England to restore most of the remaining area of approximately 4,000 ha. Most of the area involved includes wetlands damaged by past drainage and the agreement is a commitment to restore these areas following consultation with other interested parties such as the New Forest Verderers and the Commoners' Defence Association. On the strength of this agreement those units have been changed to unfavourable recovering condition.

At the national scale, the condition assessment results are used to help prioritise conservation funding by focusing on particular habitats or species of particular interest, or on addressing broad-scale adverse conditions. The results are also used to help conservation agencies meet national and international reporting obligations, and to evaluate the implementation of international convention and directives. It is pertinent here to consider whether the condition assessment results could be used to assess the Favourable Conservation Status (FCS) as defined in Article 1(e) and 1(i) of the Habitats Directive. However it should be noted that whilst the UK nature conservation agencies agree that the FCS can be applied at a variety of levels, there is an ongoing debate as to the degree to which the concept can be applied directly at the site level. However, key elements that contribute to the determination of FCS can be applied to sites. For example, Cantarello and Newton (2008) presented a detailed evaluation of three monitoring methods, including the CSM, which could potentially be used to assess the FCS of forested habitats at the individual site scale.

Further and updated information on the condition assessment results can be found at:

- *http://www.english-nature.org.uk/Special/sssi*
- *http://www.naturalengland.org.uk/*

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