

## THE NEW FOREST INCLOSURES FOREST DESIGN PLAN HABITATS REGULATIONS ASSESSMENT STAGE 2 – Appropriate Assessment (Final)

### Summary Information

<b>Activity</b>	New Forest Inclosures Forest Plan 2017 (10-year plan)
<b>Location</b>	New Forest Inclosures - (refer to Map 1) - Centroid SU299079.
<b>Applicant</b>	Forestry England (South Forest District)
<b>FC Permission Type</b>	Planning & Ecology
<b>Assessment made by</b>	Jane Smith MA(Hons), MSc, MCIEEM, MCIWEM, C.WEM (Corylus Environmental Ltd) on behalf of Forestry England
<b>Date of Assessment</b>	April – September 2019
<b>European Sites within 15km of the plan area</b>	New Forest - SAC, SPA, RAMSAR River Avon SAC, SPA, RAMSAR Dorset Heath SAC, SPA Solent & Southampton Water SAC, SPA, RAMSAR
<b>Beat</b>	New Forest – North & South Beats
<b>Timing of Project</b>	2019 to 2029
<b>NE Advisor</b>	Jennifer Thomas – Lead New Forest Advisor Helen Spring – New Forest Advisor
<b>Type of permission</b>	Assent

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## 1. Introduction

### 1.1 Background

The Crown Lands of the New Forest have been managed by the Forestry Commission on behalf of the Secretary of State since 1924 and comprise a mosaic of over 26,774 hectares of heathland, mires, grassland, Ancient & Ornamental Woodland (pasture woodland), managed woodland (Inclosures) and agricultural land. The New Forest is one of the most important sites for wildlife in the UK, and is widely recognised as being of exceptional importance for nature conservation on a European and International level. The managed woodland is contained within the New Forest Inclosures which cover 8536 hectares spread over 117 named Inclosures within the Forest Plan (FP). The Inclosures were legalised under the New Forest Acts of 1698, 1808, 1877 and 1949 for timber production and the term "Inclosure" comes from the New Forest Acts. The Inclosures are defined by clearly demarcated areas of predominantly plantation woodland which may or may not be separated from the grazed Open Forest by stock fences.

The New Forest Inclosures Forest Plan sets out how Forestry England (formerly the Forestry Commission until 1<sup>st</sup> April 2019), which is responsible for the management of the nation's forests propose to manage the Inclosures and their habitats into the future. The long-term vision sets the direction of management and has no fixed timescale but is potentially 100 to 200 years or more into the future depending upon the rate of habitat response, transition and succession. To a large extent, the habitat response will depend upon the type, intensity and timescales of management interventions. With this in mind, the Plan sets out the current structure and management interventions planned to progress the vision over the next 10 years and predicts how the structure of the woodlands and habitats will have responded in 20 years' time.

The majority of the New Forest including the Inclosures is designated for its nature conservation interest as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar Site. The latter three designations are European designations.

Under Regulation 63 (1) of the "Conservation of Habitats & Species Regulations 2017" Forestry England has a statutory duty to carry out a Habitats Regulations Assessment (HRA) of projects or plans to consider whether the proposals are:

- a) likely to have a significant effect (either alone or in combination with other plans or projects) on a European Site designated for its conservation interest in view of that site's conservation objectives
- and/or
- b) are not directly connected with or necessary to the management of that site in view of that site's conservation objectives.

# HRA Stage 2

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The Stage 1 Habitats Regulations Assessment (HRA) screening process reviewed the 112 Inclosures that lie within the New Forest SAC/SPA/RAMSAR site. The results identified 56 Inclosures where there could be a likely significant effect over the next 10 years due to the management activities required to deliver the long-term vision being at odds with the conservation objectives/future habitat restoration potential.

This report details the findings of the Stage 2 HRA (Appropriate Assessment) and focuses upon the following Inclosures where the Stage 1 screening identified that there could be a likely significant effect due to the very high to medium levels of discrepancy (25% to >75%) with the conservation objectives based upon future habitat restoration proposals:

## **Very High**

Appleslade  
Broomy  
Burley Outer Rails  
Crab Hat  
Dibden  
Foldsgate  
Furzey Lawn  
Godshill Inclosures  
Hasley  
Little Linford  
Norley  
Pignalhill

## **High**

Aldrigehill  
Amberwood  
Busketts  
Fawley  
Ferny Knapp

Foxhunting  
Frame Heath  
Great Linford  
Holly Hatch  
Kings Hat  
Marchwood  
Perrywood Haseley  
Wilverley  
Woosens Hill

## **Medium**

Anderwood  
Bolderwood Grounds  
Broadley  
Brockishill  
Burley New  
Churchplace  
Clumber  
Coppice of Linwood  
Deerleap  
Denny

Dunces Arch  
Holidays Hill  
Holmhill  
Little Holmhill  
Little Wootton  
Lodgehill  
Kings Copse  
Milkham  
New Park  
Newlands Plantation  
North Oakley  
Parkhill  
Perrywood Ironshill  
Pitts Wood  
Puckpitts  
Roe  
Sloden  
South Oakley  
Vinney Ridge  
Poundhill

## 2. Methodology & Data

### 2.1 Methodology

The Conservation of Habitats & Species Regulations do not specifically set out how a habitats regulation assessment should be undertaken but this assessment follows the four-stage process approach outlined in official EC Guidance<sup>1</sup> and Forestry Commission's Guidance on Habitat Regulations and Appropriate Assessment<sup>2</sup>. The assessment also takes into account the two recent European Court of Justice Rulings<sup>3</sup> (ECJ) that proposed mitigation measures cannot be taken into account for the purposes of screening under the UK Habitats Regulations and the distinction between mitigatory and compensatory measures and when in the assessment process under the Habitats Directive each should be considered.

The four stages to the HRA process, comprise:

Stage 1 – HRA Screening to determine likely significant effect (LSE). As the Stage 1 assessment for the New Forest Inclosures Forest Plan identified there was scope for LSE, the assessment process progressed to Stage 2.

Stage 2 – Appropriate Assessment where the screening stage determines if there is likely to be significant effect

Stage 3 – Assessment of Alternatives

Stage 4 – Assessment of Imperative Reasons for Overriding Public Interest (IROPI)

This report forms Stage 2 of the HRA process to determine in more detail whether there are likely to be any significant effects of the New Forest Inclosures Forest Plan on the European sites. The report covers:

- Background and information about the plan or project
- Identification and characterisation of the New Forest SAC/SPA/SSSI including key features and conservation objectives for the site.
- Identification of other plans & project that in combination New Forest Inclosures Forest Plan could have significant impact
- Assessment of impacts relative to features and conservation objectives for the site
- Identification of mitigation measures to address any likely significant effects.

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<sup>1</sup> Assessment of plans and projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC 2001)

<sup>2</sup> Forestry Commission England, PPG56 Habitat Regulations and Appropriate Assessments, N Geddes, Jun 2018

<sup>3</sup> People Over Wind, Peter Sweetman v Coillte Teoranta (C-323/17), Grace v An Bord Pleanala (C-164/17)

In order to determine the success of mitigation measures, the following factors have been considered:

- what the measure is, and how it would avoid or reduce harmful effects on the site (considering the predicted duration of the effects)
- how it would be implemented, and by whom
- the degree of confidence in its likely success over time
- the timescale of when it would be implemented, maintained and managed
- how the measure(s) would be secured, monitored and enforced; and,
- if the measure(s) failed, how the failure would be rectified

The approach to the assessment of impacts is set out in Section 5.1.

## 2.2 Data

The following key sources of data have been used to inform the HRA Stage 2 Screening process:

- New Forest Inclosures Forest Plan – Submission Document for Approval, South Forest District, 2017 and subsequent amendments (2019) made to reflect stakeholder comments
- New Forest Inclosures Open Habitat Restoration Environmental Impact Assessment, 2018
- New Forest Inclosures Habitats: Habitat Fragmentation & Landscape History, NA Sanderson, 2007
- New Forest SAC Management Plan, Natural England, 2001
- European Site Conservation Objectives for The New Forest Special Area of Conservation Site Code: UK0012557, Natural England 2018 (version 3 – 27 November, 2018)
- European Site Conservation Objectives: Draft supplementary advice on conserving and restoring site features, The New Forest Special Area of Conservation (SAC) Site code: UK0012557, Natural England (version - 9 February 2019)
- European Site Conservation Objectives for New Forest Special Protection Area Site Code: UK9011031, Natural England (Version 3 – 21 February, 2019)
- European Site Conservation Objectives: Draft supplementary advice on conserving and restoring site features New Forest Special Protection Area (SPA) Site code: UK9011031, Natural England (Version – 8 February, 2019)

- Forestry Commission, Crown Lands Management Plan, 2007
- European Site Conservation Objectives: Supplementary advice on conserving and restoring site features; River Avon Special Area of Conservation (SAC) Site code: UK0013016, Natural England (Version 11 March, 2019)
- European Site Conservation Objectives for River Avon Special Area of Conservation Site Code: UK0013016, Natural England (Version 3 - 27 November, 2018)
- European Site Conservation Objectives: Supplementary advice on conserving and restoring site features - River Avon Special Area of Conservation (SAC) Site code: UK0013016, Natural England (11 March, 2019)
- Forestry Commission Technical Paper 33 - Applying the Ecological Site Classification in the Lowlands - A Case Study of the New Forest Inclosures
- New Forest SSSI Condition Assessments produced by Natural England
- The New Forest Inclosures Forest Plan Habitats Regulations Assessment – Stage 1 – Habitats Regulations Assessment
- Ancient Woodland Inventory for England (Natural England Open Data set)
- Drivers Map of 1814
- Inclosure Soils data

A full reference list is given in Section 9.

Any assumptions made and any uncertainties arising from the data are described further in Sections 5 & 7.

## 2.3 Consultation

Meetings have been held with Natural England (New Forest team) during all phases of the HRA to ascertain that the approach and methodology used to undertake the assessment meets the necessary requirements and standards, to discuss the data sources available and to identify any issues of potential concern.

# 3. Information about the Plan or Project

## 3.1 Background to the Project

The New Forest Inclosures (Figure 1) cover a total of 8536ha of which approximately 8,400ha lie directly within the New Forest Special Area of Conservation (SAC), New Forest Special Protection Area (SPA) and New Forest Ramsar site.

The New Forest Inclosures Forest Plan (FP) sets out how Forestry England propose to manage the Inclosures and their habitats into the future. The long-term vision sets the direction of management and has no fixed timescale but is potentially 100 to 200 years or more into the future depending upon the rate of habitat response, transition and succession. To a large extent, the habitat response will depend upon the type, intensity and timescales of management interventions. With this in mind, the Plan sets out the current structure and management interventions planned to progress the vision over next 10 years and predicts how the structure of the woodlands and habitats will have responded in 20 years' time. By its very nature, woodland management has to look many decades ahead due to the time frames associated with woodland management as the life cycle of a timber crops and trees can last hundreds of years.

However, the consenting and approval process does not fit with these long time frames which complicates the assessment process. Although the FP sets out the long-term direction for the management of the Inclosures the plan can only be approved and consented for 10 years under a thinning/felling licence granted by the Forestry Commission. After this time, the plan needs to undergo another full review. Technically the habitats regulations assessment approval also falls within this 10-year timeframe but given the context and timeframe of the plan it could be construed as misleading to only look at the first 10 years as the management direction in this period could negatively impact future habitat restoration potential or cause habitats to decline further.

The current FP has been developed with due regard to other key management plans, objectives and policies which help guide the direction of management with the New Forest Inclosures, notably:

- The New Forest National Park Objectives
- Ministers Mandate for the New Forest
- New Forest SAC Plan
- Crown Lands Management Plan
- UK Woodland Forestry Standard (UKFS)
- UK Woodland Assurance Standard (UKWAS)

The Management Framework for the Inclosures which has guided the development of the FP and its objectives is set out in more detail in Section 3.2.

The review of the FP began in 2014 and over the three-year period that it took to develop the plan, extensive consultation was held with Forestry England staff (national & district level), statutory and non-statutory organisations and the general public to refine and produce the plan that is the subject of this HRA. An EIA was also produced to cover the deforestation/open habitat elements of the plan.

## 3.2 Management Framework for the Inclosures

The management framework for the Inclosures has been key in setting in the direction and aims and objectives of the Forest Plan. The management framework is strongly influenced by the wider policies, objectives, standards and plans detailed below.

### 3.2.1 The New Forest National Park Objectives

The New Forest Inclosures lie entirely within the New Forest National Park which is a protected landscape recognised as being of the highest national importance for landscape, wildlife habitats and cultural heritage. The New Forest National Park is recognised as a cultural and working landscape which has been shaped over the centuries by communities and history. The New Forest National Park purposes are:

- to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park; and
- to promote opportunities for the understanding and enjoyment of the special qualities of the area by the public.

National Park Authorities also have a duty, in taking forward the Park purposes, to:

- seek to foster the economic and social well-being of local communities within the National Park.

### 3.2.2 The Minister's Mandate

The Minister's Mandate, last revised in 1999, sets out the priorities for management of the Crown Lands and sets out specific management obligations for the Inclosures:

- A significant proportion of woodlands in the Inclosures will be modified to restore pasture woodlands, heathlands, valley mires and Ancient and Semi-Natural native woodland where these are appropriate. A consequence of the modification will be that the present overall balance between broadleaves and conifers will be changed in favour of broadleaves. The pace of this modification will depend on markets, availability of resources and a desire to avoid unnecessary premature felling of existing growing trees, the removal of which will be necessary for restoration of habitats.

- No broadleaved woodland will be regenerated with conifers.
- The regeneration of broadleaved areas will be managed with an emphasis on conservation of nature and amenity. For oaks, beech and sweet chestnut, stand rotations will be at least 200 years with cleared patches for regeneration thereafter not exceeding one acre.

### 3.2.3 The New Forest Special Area of Conservation (SAC) Plan

The New Forest SAC Plan was published in 2001 and outlines the principle aims of management for the Inclosure woodlands and provides a set of generic prescriptions and rationales detailing the form of management required. The SAC Plan's principle aims for management of the Inclosure Woodland is:

- To restore primary habitats (e.g. mire, wet heath, dry heath, riverine woodland, pre-inclosure broadleaf woodland and 18<sup>th</sup>/early 19<sup>th</sup> C broadleaf plantations to open forest type management.
- To restore primary habitats which will remain within Inclosures
- To restore secondary habitats (e.g. broadleaf plantations on ancient woodland sites) which will remain within Inclosures to a semi-natural character
- To maintain a mixed woodland cover of broadleaf and conifer within Inclosures
- To carry out commercial silviculture (largely coniferous)

### 3.2.4 The Crown Lands Management Plan

The Crown Lands Management Plan informs local Forestry England staff on the management direction and associated policies and actions that need to be implemented taking into account the requirements of the wider strategic management framework. The Crown Lands Management Plan forms Part IV of the SAC Plan which sets out how Forestry England intend to implement management measures to maintain and enhance the nature conservation interest of the New Forest SAC.

### 3.2.5 UK Forestry Standard

The UK Forestry Standard (UKFS) is the reference standard for sustainable forest management across the UK. The standard ensures that international agreements and conventions on areas such as sustainable forest management, climate change, biodiversity, historic environment, landscape, people and the protection of soil and water resources are applied to forest management. It also provides the basis for the UK Woodland Assurance Standard (UKWAS) which Forestry England is signed up to.

### 3.2.6 UK Woodland Assurance Standard (UKWAS)

The UKWAS certification standard is designed to reflect the requirements set out in the governmental UK Forestry Standard and thereby the General Guidelines adopted by European Forestry Ministers at Helsinki in 1993, the Pan-European Operational Level Guidelines (PEOLG) subsequently adopted at Lisbon in 1998 and other relevant international agreements. The certification standard is also designed to reflect the requirements of the two leading global forest certification schemes –the Forest Stewardship Council® (FSC®)<sup>4</sup> and Programme for the Endorsement of Forest Certification™ (PEFC™). Products certified through these schemes are in much demand in the UK and global timber market as they provide a widely recognised way to inform customers that timber products come from responsibly managed sources.

### 3.2.7 Other FC National Strategies

The Forest Plan also reflects other national FC strategies and policies such as 'Managing Ancient & Native Woodland in England' and 'A Strategy for Open Habitat Policy Delivery on the Public Forest Estate'.

## 3.3 Aims & Objectives of the New Forest Inclosures Forest Plan

A full copy of the New Forest Inclosures Forest Plan can be viewed by following the link below.

<https://www.forestryengland.uk/info/about-your-forest-32>

The New Forest Inclosures Forest Plan (FP) aims to:

Develop natural habitats of better quality and greater resilience, including planning for changes to the natural environment by:

- Maintaining or restoring the extent and distribution of designated habitats and species;
- Maintaining or restoring the structure and function of designated habitats and the habitats of designated species;

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<sup>4</sup> Forestry England - FSC licence code FSC-C12321, PEFC Certificate Registration Code: SA-PEFC-FM/COC-006972

- Maintaining or restoring the supporting processes on which designated habitats and the habitats of designated species rely;
- Maintaining or restoring the populations and distribution of designated species;
- Restoring native woodland and open habitats;
- Developing a network of habitat links to reduce the vulnerability of fragmented sites;
- Increasing the quality of edge habitat by ride edge and streamside enhancement and by developing a mosaic of woodland types and open space;
- Providing a proportion of successional temporary open space for key bird species;
- Maintaining other suitable habitats for Lepidoptera;
- Protecting veteran trees and retaining standing or fallen deadwood;
- Exploring site suitability of less prominent native species which can complement the special features of the landscape;
- Increasing the structural diversity of the Inclosure woodlands;
- Developing riverine habitats, wet woodlands and bog woodlands along watercourses within fenced Inclosures and grazed woodlands;
- Increasing the connectivity of the variety of woodland and open habitats within and through the Inclosures.

Develop woodlands that are sympathetic to the wider landscape and enhance the natural landscapes for public appreciation and enjoyment by:

- Where appropriate, implementing changes to the landscape over a long time period (e.g. 200 years);
- Maintain an accessible network of ride and tracks linked to high quality access points which are best placed to balance public enjoyment with protection of habitats and biodiversity;
- Informing and engaging people in the cultural, natural and economic value that the New Forest provides to local, national and international

communities;

- Ensure historic features are protected and enhanced for the enjoyment and use of future generations.

Improving economic viability of land management by:

- Growing quality timber that is fit for purpose so far as is consistent with the other FP objectives where the long-term management objectives will result in the sustained production of such timber;
- Exploring alternative avenues of income generation derived from activities fulfilling the other FP objectives.

Table 3-1 summarises the extent management of activities proposed for 2019-2029 while Table 3-2 shows the Long-term Management Vision (+100-200 years). The management types proposed to progress the plan over the next ten years are summarised in Table 3-3

**Table 3-1: Extent of management activities proposed for 2019-2029**

FP Management Activity	Area (Ha)	% of Inclosures
Areas managed under a suitable shelterwood system including thinning	6304	74
Clearfelling to Open Habitats	290	3
Management of permanent open habitats	876	10
Natural Reserve Woodland	1040	12
Coppice with Standards	3	<1
Other (car parks, buildings etc.)	23	<1
<b>Total</b>	<b>8536</b>	<b>100</b>

**Table 3-2: Long Term Management Vision (+100-200 years)**

<b>FP Long Term Vision</b>	<b>Area (Ha)</b>	<b>% of Inclosures</b>
Grazed native woodland	2217	26%
Natural Reserve Grazed Woodland	44	0.5%
Glade	1.0	<0.5%
Native Woodland	3428	40%
Pre-Inclosure/Natural Reserve Woodland	43	0.5%
Coppice with standards	3	<0.5%
Mixed Woodland	255	3%
Conifer Woodland	28	0.3%
Open Forest Wet Woodland	168	2%
Riverine Habitat	218	3%
Enclosed Open Forest Habitats	36	<0.5%
Open Forest Habitats	2050	24%
Scrub Mosaic	9	<0.5%
Open Water	0.5	<0.5%
Other (Car parks, Buildings, Agricultural, Arboretum)	35	<0.5%
<b>Total</b>	<b>8536</b>	<b>100%</b>

**Table 3-3: Management types proposed to progress the plan over the next 10 years**

<b>Management Type/ Description</b>	<b>Current Habitat Type where this management type may be applied</b>	<b>Long Term Habitat Vision that this management type aims to secure</b>
1A - Non-Intervention	Grazed Native Woodland	Grazed Native Woodland
1C - Consider Non-intervention. Intervention, including thinning, group felling and pollarding may be required to restructure even aged woodland. Realign fences at appropriate time to introduce grazing.	Managed Native Woodland	Grazed Native Woodland
1D - Remove most conifer and allow some natural regeneration to improve structural diversity before realigning fences and introducing grazing at appropriate time.	Mixed Woodland	Grazed Native Woodland
1E - Clearfell or phased removal by thinning of most conifer to allow site to develop naturally. Allow some natural regeneration before realigning fences and introducing grazing at appropriate time.	Conifer Woodland	Grazed Native Woodland
Non-Intervention (see 1A)	Pre-Inclosure/Natural Reserve Woodland	Grazed Native Woodland
2C - Old Growth Connection. Non-intervention unless intervention required to restructure even aged woodland. Not open to grazing animals.	Managed Native Woodland	Pre-Inclosure/Natural Reserve Woodland
2DE - Phased removal of most conifer by thinning or clearfell then non-intervention.	Mixed Woodland, Conifer Woodland	Pre-Inclosure/Natural Reserve Woodland
3C - To be managed by thinning or selective small group felling to promote natural regeneration of native broadleaves. Where other, non-woodland habitats develop within	Managed Native Woodland	Managed Native Woodland

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Management Type/ Description	Current Habitat Type where this management type may be applied	Long Term Habitat Vision that this management type aims to secure
these woodlands (such as open molinia and heathland areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews		
3DE - Undertake phased thinning of conifers including some small-scale group fellings to promote gradual colonisation of native broadleaved woodland. Where other, non-woodland habitats develop within these woodlands (such as open molinia and heathland areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews	Mixed Woodland, Conifer Woodland	Managed Native Woodland
4DE - Maintain existing canopy species balance. Manage by thinning including some small-scale group fellings to allow the site to regenerate predominantly through natural regeneration. Where other, non-woodland habitats develop within these woodlands (such as open molinia areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews	Mixed Woodland, Conifer Woodland	Mixed Woodland
5E - Maintain existing species balance. Manage by thinning including some small-scale group fellings to allow the site to regenerate predominantly through natural regeneration. Where other, non-woodland habitats develop within these woodlands (such as open molinia and heathland areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews	Conifer Woodland	Conifer Woodland
6G - Coppice with Standards. Thin the canopy to reduce cover to a maximum of 20%. Coppice understorey in an appropriate	Coppice Broadleaf Woodland	Coppice with Standards

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<b>Management Type/ Description</b>	<b>Current Habitat Type where this management type may be applied</b>	<b>Long Term Habitat Vision that this management type aims to secure</b>
rotation.		
7C - Retain broadleaves and encourage natural regeneration. Thin and group fell to create and maintain open space and a diverse streamside habitat. Where other, non-woodland habitats develop within these woodlands (such as open molinia areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews	Managed native woodland	Open Forest Wet Woodland/Riverine Habitat
7DE - Retain broadleaves and encourage natural regeneration. Thin and group fell to create and maintain open space and a diverse streamside habitat. Gradual removal of most conifers through phased thinning. Where other, non-woodland habitats develop within these woodlands (such as open molinia areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews	Mixed Woodland, Conifer Woodland	Open Forest Wet Woodland/Riverine Habitat
7H - Retain broadleaves and encourage natural regeneration. Thin and group fell to create and maintain open space and a diverse streamside habitat. Where other, non-woodland habitats develop within these woodlands (such as open molinia areas), these will be allowed to develop, may increase in size by a maximum of 20% of the discreet management area and may influence future Plan reviews. Some restoration of the physical features of watercourses, mires and wetlands may be necessary in some cases. Such details will be developed through the New Forest Freshwater and Wetland Restoration Strategy.	Riverine Habitat	Open Forest Wet Woodland/Riverine Habitat
8DE - Phased clear felling of conifers or mixed woodland designed to be sympathetic with landscape design principles followed by	Mixed Woodland, Conifer Woodland	Open Forest Habitats

## HRA Stage 2

<b>Management Type/ Description</b>	<b>Current Habitat Type where this management type may be applied</b>	<b>Long Term Habitat Vision that this management type aims to secure</b>
restoration to heathland.		
8F - To be managed by thinning or selective small group felling to promote the development of open habitat associated features. Slower removal of tree cover to allow for timely landscape change.	Conifer Woodland – old Scots Pine	Open Forest Habitats
8I - Manage in accordance with Open Forest management.	Open Forest Habitats (Heathland/Lawns/Mires within Inclosures which are thrown open to grazing)	Open Forest Habitats
9J - Rotational cutting of scrub and open habitats to maintain a balance for the benefit of invertebrate biodiversity	Scrub Mosaic	Scrub Mosaic
10K - Manage to maintain and restore open habitats through appropriate mechanical or other methods.	Enclosed Open Forest Habitats (Heathland/Lawns/Mires within Inclosures which are not thrown open to grazing)	Enclosed Open Forest Habitats
11 – Road & Ride Edge Enhancement - Rotational cutting of vegetation, increased scallops along the tracks with the tree line set back from the road edge to allow light onto the track sides.	All habitats where tracks run through Inclosures	All
12 Habitat Grazing Requirements – Stock Fencing	Heathland & Open Forest Habitats within Inclosures	Grazed open forest habitats Grazed native woodland

# 4. Identification & Characterisation of European Sites

Figure 2 shows the location of European Sites relative to the New Forest Inclosures Forest Plan area. The following European Sites are located within 15km of the New Forest Inclosures Plan area:

- New Forest SAC/SPA/RAMSAR
- River Avon SAC/SPA
- Solent & Southampton Water SAC/SPA/RAMSAR
- Dorset Heaths SAC/SPA

Stage 1 assessed the character and any potential risks to these sites and concluded that only the New Forest SAC/SPA/RAMSAR and River Avon SAC/SPA had potential for any likely significant effect (LSE) based upon:

Loss of habitat area – Size of area: Risk of reduction in the area of a particular habitat within the site or preventing part of the site from being used by its features

Fragmentation – Permanence and level of change: Risk of a change to the ecological coherence or robustness of the site (e.g. presenting a barrier between isolated fragments of the site or reducing the ability of the site to act a source of new colonisers)

Disturbance – Permanence and location: Risk of significant disturbance and displacement of a species or habitat for which the site is designated or classified

Population density – Permanence and Restoration: Risk of direct or indirect damage to the size, characteristics or reproductive ability of the populations on site or using supporting habitat outside the site; risk of change to the species composition of a habitat

Water Resources – Relative change: Risk of a change to the supply, flow or movement of water on which a site's features are dependent

Water Quality – Relative change: Risk of a change in key indicative chemicals and other elements

A summary of the Phase 1 assessment is given in Appendix A.

The Joint Nature Conservation Committee (JNCC) characterises the New Forest Natura 2000 sites as follows:

## 4.1 New Forest Special Area of Conservation

### **Annex I habitats that are a primary reason for selection of this site**

#### **3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)**

Hatchet Pond in the New Forest in the south of England is in fact three ponds, one of which is an example of an oligotrophic waterbody amidst wet and dry lowland heath developed over fluvial deposits. It contains shoreweed *Littorella uniflora* and isolated populations of northern species such as bog orchid *Hammarbya paludosa* and floating bur-reed *Sparganium angustifolium*, alongside rare southern species such as Hampshire-purslane *Ludwigia palustris*. Hatchet Pond is therefore important as a southern example of this lake type where northern species, more common in the uplands of the UK, co-exist with southern species.

#### **3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea**

In the New Forest **vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*** occurs on the edge of large temporary ponds, shallow ephemeral pools and poached damp hollows in grassland, which support a number of specialist species in a zone with toad rush *Juncus bufonius*. These include the two nationally scarce species coral-necklace *Illecebrum verticillatum* and yellow centaury *Cicendia filiformis*, often in association with allseed *Radiola linoides* and chaffweed *Anagallis minima*. Heavy grazing pressure is of prime importance in the maintenance of the outstanding flora of these temporary pond communities. Livestock maintain an open habitat, controlling scrub ingress, and trampling the surface. Commoners' animals also transport seed in their hooves widely from pond to pond where suitable habitat exists. Temporary ponds occur throughout the Forest in depressions capable of holding water for part of the year. Most ponds are small (between 5-10 m across) and, although great in number, amount to less than 10 ha in total area.

#### **4010 Northern Atlantic wet heaths with Erica tetralix**

The New Forest contains the most extensive stands of lowland **northern Atlantic wet heaths** in southern England, mainly of the M16 *Erica tetralix* – *Sphagnum compactum* type. M14 *Schoenus nigricans* – *Narthecium ossifragum* mire is also found on this site. The wet heaths are important for rare plants, such as marsh gentian *Gentiana pneumonanthe* and marsh clubmoss *Lycopodiella inundata*, and a number of dragonfly species, including the scarce blue-tailed damselfly *Ischnura pumilio* and small red damselfly *Ceriagrion tenellum*. There is a wide range of transitions between wet heath and other habitats, including dry heath, various woodland types, *Molinia* grasslands, fen, and acid grassland. Wet heaths enriched by bog myrtle *Myrica gale* are a prominent feature of many areas of the Forest. Unlike much lowland heath, the New Forest heaths continue to be extensively grazed by cattle and horses, favouring species with low competitive ability.

#### **4030 European dry heaths**

The New Forest represents **European dry heaths** in southern England and is the largest

area of lowland heathland in the UK. It is particularly important for the diversity of its habitats and the range of rare and scarce species which it supports. The New Forest is unusual because of its long history of grazing in a traditional fashion by ponies and cattle. The dry heaths of the New Forest are of the H2 *Calluna vulgaris* – *Ulex minor* heath type, and H3 *Ulex minor* – *Agrostis curtisii* heath is found on damper areas. There are a wide range of transitions between dry heath and wet heath, *Molinia* grassland, fen, acid grassland and various types of scrub and woodland. Both the New Forest and the two Dorset Heath SACs are in southern England. All three areas are selected because together they contain a high proportion of all the lowland **European dry heaths** in the UK. There are, however, significant differences in the ecology of the two areas, associated with more oceanic conditions in Dorset and the continuous history of grazing in the New Forest.

### **6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)**

The New Forest represents ***Molinia* meadows** in southern England. The site supports a large area of the heathy form of M24 *Molinia caerulea* – *Cirsium dissectum* fen-meadow. This vegetation occurs in situations of heavy grazing by ponies and cattle in areas known locally as 'lawns', often in a fine-scale mosaic with **4010 Northern Atlantic wet heaths** and other mire and grassland communities. These lawns occur on flushed soils on slopes and on level terrain on the floodplains of rivers and streams. The New Forest ***Molinia* meadows** are unusual in the UK in terms of their species composition, management and landscape position. The grasslands are species-rich, and a particular feature is the abundance of small sedges such as carnation sedge *Carex panicea*, common sedge *C. nigra* and yellow-sedge *C. viridula* ssp. *oedocarpa*, and the more frequent occurrence of mat-grass *Nardus stricta* and petty whin *Genista anglica* compared to stands elsewhere in the UK.

### **7150 Depressions on peat substrates of the Rhynchosporion**

The New Forest, one of three sites selected in southern England, is considered to hold the largest area in England of **Depressions on peat substrates of the Rhynchosporion**, in complex habitat mosaics associated primarily with the extensive valley bogs of this site. The habitat type is developed in three situations: in natural bog pools of patterned bog surfaces, in flushes on the margins of valley mires and in areas disturbed by peat-digging, footpaths, tracks, ditches etc. In places the habitat type is rich in brown mosses *Cratoneuron* spp. and *Scorpidium scorpioides*, suggesting flushing by mineral-rich waters. The mosaics in which this habitat type occurs are an important location for bog orchid *Hammarbya paludosa*.

### **9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)**

The New Forest is the largest area of mature, semi-natural beech *Fagus sylvatica* woodland in Britain and represents **Atlantic acidophilous beech forests** in the most southerly part of the habitat's UK range. The mosaic with other types of woodland and heath has allowed unique and varied assemblages of epiphytic lichens and saproxylic invertebrates to be sustained, particularly in situations where the woodland is open and the tree trunks receive plenty of light. The traditional common grazing in the

Forest by cattle and ponies provides opportunities to explore the impact of large herbivores on the woodland system.

### **9130 Asperulo-Fagetum beech forests**

The New Forest is the largest area of mature, semi-natural beech *Fagus sylvatica* woodland in Britain; much of it is a form of W14 *Fagus sylvatica* – *Rubus fruticosus* woodland that conforms to the Annex I type **Asperulo-Fagetum beech forests**. The mosaic with other types of woodland and heath has allowed unique and varied assemblages of epiphytic lichens and saproxylic invertebrates to be sustained, particularly in situations where the woodlands are open and the tree trunks receive plenty of light. The traditional common grazing in the Forest by cattle and ponies provides opportunities to explore the impact of large herbivores on the woodland system.

### **9190 Old acidophilous oak woods with Quercus robur on sandy plains**

The New Forest is representative of **old acidophilous oak woods** in the southern part of its UK range. It is the most extensive area of active wood-pasture with old oak *Quercus* spp. and beech *Fagus sylvatica* in north-west Europe and has outstanding invertebrate and lichen populations. This site was preferred over other sites that lack a succession of age-classes because, although scattered over a wide area, the oak stands are found within a predominantly semi-natural landscape with a more balanced age-structure of trees. The traditional common grazing in the Forest by cattle and ponies provides opportunities to explore the impact of large herbivores on the woodland system. The New Forest has been identified as of potential international importance for its saproxylic invertebrate fauna by the Council of Europe (Speight 1989).

### **91D0 Bog woodland** \* Priority feature

Within the New Forest, in southern England, birch – willow *Betula* – *Salix* stands occur over valley bog vegetation, with fringing alder *Alnus* – *Sphagnum* stands where there is some water movement. These stands appear to have persisted for long periods in stable association with the underlying *Sphagnum* bog-moss communities. The rich epiphytic lichen communities and pollen record provide evidence for the persistence of this association. The **Bog woodland** occurs in association with a range of other habitats for which the site has also been selected.

### **91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)** \* Priority feature

The New Forest contains many streams and some small rivers that are less affected by drainage and canalisation than those in any other comparable area in the lowlands of England. Associated with many of the streams, particularly those with alkaline and neutral groundwater, are strips of alder *Alnus glutinosa* woodland which, collectively, form an extensive resource with a rich flora. In places, there are examples of transitions from open water through reedswamp and fen to alder woodland. The small rivers show natural meanders and debris dams, features that are otherwise rare in the lowlands, with fragmentary ash *Fraxinus excelsior* stands as well as the alder strips. In other places, there are transitions to **9190 Old acidophilous oak woods** with *Quercus robur* on sandy plains and **9120 Atlantic acidophilous beech forests** with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*), for which this site has also been selected.

### **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**

#### **7140 Transition mires and quaking bogs**

The term 'transition mire' relates to vegetation that in floristic composition and general ecological characteristics is transitional between acid bog and **7230 Alkaline fens**, in which the surface conditions range from markedly acidic to slightly base-rich. The vegetation normally has intimate mixtures of species considered to be acidophile and others thought of as calciphile or basophile. In some cases the mire occupies a physically transitional location between bog and fen vegetation, as for example on the marginal lagg of raised bog or associated with certain valley and basin mires. In other cases these intermediate properties may reflect the actual process of succession, as peat accumulates in groundwater-fed fen or open water to produce rainwater-fed bog isolated from groundwater influence. Many of these systems are very unstable underfoot and can therefore also be described as 'quaking bogs'.

#### **7230 Alkaline fens**

Alkaline fens consist of a complex assemblage of vegetation types characteristic of sites where there is tufa and / or peat formation with a high water table and calcareous base-rich water supply. There is considerable variation between sites in the associated communities and the transitions that may occur. Such variation can be broadly classified by the geomorphological situation in which the fen occurs, namely: flood plain mire, valley mire, basin mire, hydroseral fen (i.e. as zones around open waterbodies) and spring fen.

### **Annex II species that are a primary reason for selection of this site**

#### **1044 Southern damselfly *Coenagrion mercuriale***

The New Forest in central southern England is an outstanding locality for **southern damselfly** *Coenagrion mercuriale*, with several population centres and strong populations estimated to be in the hundreds or thousands of individuals and with a long

history of records. With Preseli, Dorset Heaths and the River Itchen, it represents one of the four major population centres in the UK.

### **1083 Stag beetle *Lucanus cervus***

The New Forest represents **stag beetle *Lucanus cervus*** in its Hampshire/Sussex population centre, and is a major stronghold for the species in the UK. The forest is one of the most important sites in the UK for fauna associated with rotting wood, and was identified as of potential international importance for its saproxylic invertebrate fauna by the Council of Europe (Speight 1989).

### **Annex II species present as a qualifying feature, but not a primary reason for site selection**

### **1166 Great crested newt *Triturus cristatus***

The great crested newt is the largest native British newt, reaching up to around 17cms in length. Newts require aquatic habitats for breeding. Eggs are laid singly on pond vegetation in spring, and larvae develop over summer to emerge in August – October, normally taking 2–4 years to reach maturity. Juveniles spend most time on land, and all terrestrial phases may range a considerable distance from breeding sites.

## 4.2 New Forest Special Protection Area (SPA)

This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

### **During the breeding season;**

Dartford Warbler *Sylvia undata*, 538 pairs representing at least 33.6% of the breeding population in Great Britain

Honey Buzzard *Pernis apivorus*, 2 pairs representing at least 10.0% of the breeding population in Great Britain

Nightjar *Caprimulgus europaeus*, 300 pairs representing at least 8.8% of the breeding population in Great Britain

Woodlark *Lullula arborea*, 184 pairs representing at least 12.3% of the breeding population in Great Britain (Count as at 1997)

### **Qualifying individual species not listed in Annex I of the Wild Birds Directive**

During the breeding season the SPA regularly supports:

Hobby (*Falco Subbuteo*) – up to 25 pairs representing around 3% of the British breeding population at the time of SPA classification

Wood Warbler (*Phylloscopus trochilus*) – in excess of 350 pairs representing at least 3% of the British breeding population at the time of SPA classification.

### **Over winter;**

Hen Harrier *Circus cyaneus*, 15 individuals representing at least 2.0% of the wintering population in Great Britain

Table 4-3 shows the relationship between habitats in New Forest Inclosures and SPA birds.

## 4.3 New Forest Ramsar

### **Ramsar criterion 1**

Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their type in Britain.

### **Ramsar criterion 2**

The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate.

### **Ramsar criterion 3**

The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scarce wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.

The existing and potential SAC habitats exist in a complex mosaic of woodland, heath, grassland and mire within the Inclosures. Tables 4-1, 4-2 and 4-3 show how the Ancient Habitat complexes and Forest Plan structure relate to the SAC habitat features and conservation objectives. Any wetland habitat type (e.g. mire, wet heath) and associated species assemblages fall within the Ramsar criterion and are considered within the assessment of wetland SAC habitat types.

### 4.4 River Avon SAC

#### **Annex I habitats that are a primary reason for selection of this site**

##### **3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation**

The Avon in southern England is a large, lowland river system that includes sections running through chalk and clay, with transitions between the two. Five aquatic *Ranunculus* species occur in the river system, but stream water-crowfoot *Ranunculus penicillatus* ssp. *pseudofluitans* and river water-crowfoot *R. fluitans* are the main dominants. Some winterbourne reaches, where *R. peltatus* is the dominant water-crowfoot species, are included in the SAC.

#### **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**

Not applicable.

#### **Annex II species that are a primary reason for selection of this site**

##### **1016 Desmoulin's whorl snail *Vertigo moulinsiana***

There is an extensive population of **Desmoulin's whorl snail** *Vertigo moulinsiana* along about 20 km of the margins and associated wetlands of the Rivers Avon, Bourne and Wylye. This is one of two sites representing the species in the south-western part of its range, in chalk stream habitat. It occurs here in a separate catchment from the Kennet and Lambourn, within an environment more heavily dominated by arable agriculture.

##### **1095 Sea lamprey *Petromyzon marinus***

The Avon represents **sea lamprey** *Petromyzon marinus* in a high-quality river in the southern part of its range. There are excellent examples of the features that the species needs for survival, including extensive areas of sand and gravel in the middle to lower reaches of the river where sea lampreys are known to spawn.

##### **1096 Brook lamprey *Lampetra planeri***

The Avon is a high-quality river that represents the southern part of the range of **brook lamprey** *Lampetra planeri*. A healthy, stable population occurs in the main river and in a number of tributaries. The main river, and in particular its tributaries, provides clean beds of gravel for spawning and extensive areas of fine silt for juveniles to burrow into.

##### **1106 Atlantic salmon *Salmo salar***

The Avon in southern England represents a south coast chalk river supporting **Atlantic salmon** *Salmo salar*. The salmon populations here are typical of a high-quality chalk stream, unaffected by the introduction of genetic stock of non-native origin. The Avon has an excellent mosaic of aquatic habitats, which include extensive areas of gravels essential for spawning and growth of juvenile fry. There has been limited modification of the river course by comparison with many other southern lowland rivers in England.

### **1163 Bullhead *Cottus gobio***

The Avon represents **bullhead *Cottus gobio*** in a calcareous, relatively unmodified river in the southern part of its range in England. The River Avon has a mosaic of aquatic habitats that support a diverse fish community. The bullhead is an important component of this community, particularly in the tributaries.

### **Annex II species present as a qualifying feature, but not a primary reason for site selection**

Not applicable.

## 4.5 River Avon SPA

This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

### **Over winter;**

Bewick's Swan *Cygnus columbianus bewickii*, 135 individuals representing at least 1.9% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6)

This site also qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

### **Over winter;**

Gadwall *Anas strepera*, 667 individuals representing at least 2.2% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)

## 4.6 River Avon RAMSAR

### **Ramsar criterion 1**

The site shows a greater range of habitats than any other chalk river in Britain, including fen, mire, lowland wet grassland and small areas of woodland.

### **Ramsar criterion 2**

The site supports a diverse assemblage of wetland flora and fauna including several nationally-rare species.

### **Ramsar criterion 6 – species/populations occurring at levels of international importance.**

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

Gadwall, *Anas strepera strepera*, NW Europe 537 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9- 2002/3)

Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe

Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter:

Northern pintail, *Anas acuta*, NW Europe 715 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9- 2002/3)

1142 individuals, representing an average of 3.2% of the population (5 year peak mean 1998/9-2002/3)

## 4.7 European Sites Conservation objectives (including supplementary advice) for the New Forest

Natural England provides advice about the Conservation Objectives for European Sites in England in its role as the statutory nature conservation body for England and has published the following guidance in relation to the New Forest:

- European Site Conservation Objectives for The New Forest Special Area of Conservation, Site Code UK0012557
- European Site Conservation Objectives: Draft supplementary advice on conserving and restoring site features for The New Forest Special Area of Conservation (SAC) Site code: UK0012557
- European Site Conservation Objectives for The New Forest Special Protection Area, Site Code UK9011031
- European Site Conservation Objectives New Forest SPA Conservation Objectives draft supplementary advice

The overarching conservation objectives for the New Forest SAC/SPA are to ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring the;

- extent and distribution of qualifying natural habitats and habitats of qualifying species
- structure and function (including typical species) of qualifying natural habitats
- structure and function of the habitats of qualifying species

- supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- populations of qualifying species
- distribution of qualifying species within the site.

Table 4-2 shows how the FP helps to meet the conservation objectives. The Stage 1 review revealed that the FP meets the majority of conservation targets for the New Forest SAC/SPA with targets being exceeded for potential:

- H9120 Atlantic acidophilous beech – c2000ha
- H9130 *Asperulo-fagetum* beech woods – c400ha
- H9190 Old acidophilous oak – 120ha

However, the FP does fall short of the conservation targets for heathland restoration where much of the potential lies under the 20<sup>th</sup> century conifer stands:

- 4010/4030 More than 3000 ha of former wet & dry heathland is estimated to be located within the Inclosures. Former heathland habitat planted with conifers should be restored.

## 4.8 European Sites Conservation objectives (including supplementary advice) for the River Avon SAC/SPA

Natural England provides advice about the Conservation Objectives for European Sites in England in its role as the statutory nature conservation body for England and has published the following guidance in relation to the River Avon SAC/SPA:

- European Site Conservation Objectives: Supplementary advice on conserving and restoring site features - River Avon Special Area of Conservation (SAC) Site code: UK0013016
- European Site Conservation Objectives for River Avon Special Area of Conservation Site Code: UK0013016
- European Site Conservation Objectives: Supplementary advice on conserving and restoring site features - Avon Valley Special Protection Area (SPA) Site Code: UK9011091

The overarching conservation objectives for the River Avon SAC/SPA are to ensure that

## HRA Stage 2

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the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring the;

- extent and distribution of qualifying natural habitats and habitats of qualifying species
- structure and function (including typical species) of qualifying natural habitats
- structure and function of the habitats of qualifying species
- supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- populations of qualifying species
- distribution of qualifying species within the site.

The Dockens Water, which is tributary of the River Avon, runs through Newlands Plantation and flows adjacent to the northern boundaries of Broomy, Holly Hatch and South Bentley Inclosures whose drains and tributaries flow directly into the Dockens Water.

In terms of SPA birds, Bewick Swan and Gadwall are rarely found on the Dockens Water and would not be affected by any of the New Forest Inclosures Forest Plan proposals or their implementation.

With regard to SAC features both 1096 Brook lamprey *Lampetra planeri* and 1163 Bullhead *Cottus* occur in the Dockens Water. The Dockens Water provides clean beds of gravel for spawning and extensive areas of fine silt for juveniles of Brook lamprey to burrow into. The bullhead is a small bottom-living fish that inhabits a variety of rivers, streams and stony lakes. It appears to favour fast-flowing, clear shallow water with a hard substrate (gravel/cobble/pebble) and is frequently found in the headwaters of upland streams. However, it also occurs in lowland situations on softer substrates so long as the water is well-oxygenated and there is sufficient cover. It is not found in badly polluted rivers.

The Avon represents bullhead *Cottus gobio* in a calcareous, relatively unmodified river in the southern part of its range in England. The River Avon has a mosaic of aquatic habitats that support a diverse fish community. The bullhead is an important component of this community, particularly in the tributaries like the Dockens Water.

Any potential impacts on these SAC features would relate to any temporary deterioration in water quality from run-off/pollution during operations adjacent to feeder tributaries or drains. Therefore, relevant conservation objectives relating to the sediment, flow regime and water quality are summarised in Table 4-4

**It should be noted that the HRA review only considers conservation issues and impacts although it needs to be recognised that the New Forest Inclosures Forest Plan has attempted to balance a whole range of issues including economic and social factors as well as stakeholder views. This HRA review has**

**attempted to identify where conflicts exist with the SAC/SPA conservation objectives but it must be recognised that the New Forest is a complex and at times emotive landscape where multiple issues and objectives need to be balanced and compromise is often required to make progress and find a way forward. However, where compromise has been made, Forestry England need to ascertain whether an adverse effect of the Forest Plan proposals on site integrity can be clearly be ruled out as a required by the Conservation of Habitats and Species Regulations 2017. Under the regulations, a plan or project cannot be authorised if no adverse effect on site integrity cannot be ascertained unless, there being no alternative solutions, there are imperative reasons of over-riding public interest and the necessary compensatory measures have been secured**

**Table 4-1: Relationship of New Forest SAC Habitats to Inclosure Ancient Habitat Complexes**

New Forest Inclosure Habitat Complexes	SAC - Annex 1 habitats that are a primary reason for selection of the site - New Forest										SAC - Secondary habitats		SAC Annex 2 species - qualifying	
	7150 Depressions on peat substrates of the Rhynchosporion	3110 Oligotrophic Waters containing very few mineral sandy plains (Littorelletea a uniflorae)	3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Nanojuncetea	4010 Northern Atlantic wet heaths with Erica tetralix	4030 European dry heaths	6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinia caeruleae)	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	9130 Asperulo-beech forests	9190 Old acidophilous oak woods with Quercus robur on sandy plains	91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	7140 Transition mires & quaking bogs	7230 Alkaline Fens	1044 Southern damselfly	1083 Stag beetle
Pasture Woodland														
Small, isolated Pasture Woodland														
Riverine Woodland														
Enclosed Woodland														
Plateau Heath														
Mixed Heathland on slopes & bottoms														
Mire Complex														
Lawns														

**Table 4-2: Relationship of FP Structure to New Forest SAC Habitats/Features & Conservation Targets**

FP Structure	Equivalent SAC Habitat/Feature	SAC Conservation Target/Objective
<p>Enclosed Open Forest Habitats</p> <p>Open Forest Habitats</p> <p>Scrub Mosaic</p> <p>Open Water</p>	<p>7150 Depressions on peat substrates of the Rhynchosporion</p> <p>3110 Oligotrophic Waters containing very few mineral of sandy plains (Littorelletea uniflorae)</p> <p>3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Iseoto-Nanojuncetea</p> <p>4010 Northern Atlantic wet heaths with Erica tetralix</p> <p>4030 European dry heaths</p> <p>6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)</p> <p>7140 Transition mires &amp; quaking bogs</p> <p>7230 Alkaline Fens</p>	<p>4010 Maintain total extent of wet heath across New Forest SAC at circa 2100 ha</p> <p>4030 Maintain total extent of dry heath across New Forest SAC at circa 7600 ha</p> <p>4010/4030 More than 3000 ha of former wet &amp; dry heathland is estimated to be located within the Inclosures. Former heathland habitat planted with conifers should be restored.</p> <p>6410 Approximately 200ha of former wet grassland (Molinia meadows) is estimated to be located within the plantation inclosures and many have been drained and planted with trees, but still have restoration potential.</p> <p>7140 Restore the total extent of transition mires &amp; quaking bogs to circa 9ha hectares. (across the Forest)</p> <p>Large valley mire complexes are also located within the woodland inclosures. Many of these mires have been drained and planted with conifers but where they are partially intact, there is the potential for restoration. Restoration may lead to the development of M9 plant communities in situations where there is seepage of base-rich water, usually from Headon Beds.</p> <p>H7230 - Restore the total extent of the Alkaline fens.</p>

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FP Structure	Equivalent SAC Habitat/Feature	SAC Conservation Target/Objective
Open Forest Wet Woodland	91D0 Bog woodland	Maintain the total extent of the H91D0 feature at c.33 hectares across the New Forest SAC. There should be no measurable reduction (excluding any trivial loss) in the extent of this feature
Riverine Habitat	91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) 1083 Stag Beetle <i>Lucanus Servus</i>	Maintain the total extent of the H91E0 feature at c212ha  Stands of alluvial woodland are also located within the plantation inclosures. Many of these habitats have been degraded by forestry operations such as drainage and planting of trees but where they are partially intact, there is the potential for restoration.
Grazed Native woodland Natural Reserve Grazed Native woodland Glade	3110 Oligotrophic Waters containing very few mineral of sandy plains (Littorelletea uniflorae) 3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Iseoto-Nanojuncetea 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 9120 Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer ( <i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i> ) 9130 <i>Asperulo-Fagetum</i> beech forests 9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 91D0 Bog woodland 7140 Transition mires & quaking bogs 7230 Alkaline Fens	Restore the total extent of the features to c2520 hectares across the New Forest SAC comprising:  H9120 Atlantic acidophilous beech – c2000ha  H9130 <i>Asperulo-fagetum</i> beech woods – c400ha  H9190 Old acidophilous oak – 120ha  Approximately <b>400 ha</b> of pasture woodland is enclosed within forestry plantation with the consequent loss of traditional grazing management. Much of it still retains the characteristics of pasture woodland and could be restored.

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FP Structure	Equivalent SAC Habitat/Feature	SAC Conservation Target/Objective
	1083 Stag Beetle <i>Lucanus Servus</i>	
Pre-Inclosure/Natural Reserve Woodland Native woodland Coppice with Standards	9120 Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer ( <i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i> ) 9130 <i>Asperulo-Fagetum</i> beech forests 9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains <i>(6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) also occurs with Pre-Inclosure Woodland – for simplicity FP restoration area has been allocated to Heathland habitats)</i> 1083 Stag Beetle <i>Lucanus Servus</i>	Restore the total extent of the features to c2520 hectares comprising:  H9120 Atlantic acidophilous beech – c2000ha H9130 <i>Asperulo-fagetum</i> beech woods – c400ha  H9190 Old acidophilous oak – 120ha
Mixed woodland	No equivalent SAC feature but potential for mixed woodland habitat to contain remnants of: 9120 Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer ( <i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i> ) 9130 <i>Asperulo-Fagetum</i> beech forests 9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 European dry heaths 6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> ) 1083 Stag Beetle <i>Lucanus Servus</i>	No specific conservation target set for mixed woodland in terms of area although mixed woodland has the potential to support/restore a range of SAC habitats as shown in the previous column – therefore the conservation objective is to restore site features within the mixed woodland habitat.
Conifer woodland	No equivalent SAC habitat but potential for mixed woodland habitat to contain remnants of: 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 European dry heaths 6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> )	No specific conservation target set for conifer woodland in terms of area but the conservation objective is to restore conifer plantations to heathland. Conifer plantation has the potential to support/restore a range of SAC habitats as shown in the previous column.

**Table 4-3: Relationship of FP Structure to New Forest SPA Birds & Conservation Targets**

SPA Feature	Supporting Habitat	Seasonality	Conservation Target/Objective
Dartford Warbler	Mature Lowland heathland, generally with abundant stands of mature gorse, clear-felled coniferous plantation woodland being restored to heathland	Breeding Apr-Jun	<p>Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with the feature and its supporting habitats.</p> <p>Restore the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding):</p> <p>Maintain an optimal mix of vegetation suitable as nesting habitat (areas &gt;50% heather, &lt;25 trees/ha and [5-25%] scrub of 0.5-3 m overall) throughout the nesting area.</p> <p>Maintain the connectivity of open, structurally-diverse heath and patches of dense gorse across the SPA</p>
Honey Buzzard	Woodland	Breeding Apr-Sep	<p>Maintain a mixture of open areas, such as glades and wide rides, and stands of mature trees within woodlands in known nesting areas.</p> <p>Maintain areas of mature woodland within the SPA and the wider local landscape.</p> <p>Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with the feature and its supporting habitats.</p>

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SPA Feature	Supporting Habitat	Seasonality	Conservation Target/Objective
Hobby	Lowland heathland / Woodland	Breeding May-Aug	Maintain a high proportion of open and un-obstructed terrain whilst retaining mature trees in woodland, small clumps and as isolated individuals.
Hen Harrier	Lowland heathland (roosts are generally on the open forest and not within Inclosures)	Non-breeding Oct-Mar	Maintain an optimal mix of vegetation (flat or gently sloping areas with wet rush, heather, cotton-grass or other wetland vegetation) in areas used for roosting by Hen harriers.
Woodlark	Lowland heathland, clear-felled coniferous plantation woodland being restored to heathland, grassland and lichen heath	Breeding Feb-Jun	<p>Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.</p> <p>Maintain the extent, distribution and availability of suitable breeding habitat which supports Woodlark for all necessary stages of its breeding cycles (courtship, nesting, feeding)</p> <p>Restore the mix of trees, ground vegetation and bare ground (including frequency of bare patches of &lt;0.5 ha within mosaic of short (&lt;5 cm) to medium (10-20 cm) ground vegetation, and small clumps of shrubs or trees scattered throughout nesting and feeding areas.</p> <p>Maintain open and un-obstructed terrain, typically within at least 0.2 km of nesting areas, with no increase in tall (&gt;0.2 m) vegetation cover to &gt;50% of the site overall.</p>
Wood Warbler	Broad-leaved woodland	Breeding Apr-Aug	Maintain the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle

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SPA Feature	Supporting Habitat	Seasonality	Conservation Target/Objective
			<p>(courtship, nesting, feeding)</p> <p>Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with the feature and its supporting habitats.</p> <p>Maintain a woodland structure which typically comprises &gt;60% high (&gt;10 m) canopy cover, patches of ground vegetation of &lt;20 cm locally frequent and &lt;25% ground cover overall.</p>
Night jar	Lowland heathland, woodland edge, coppiced woodland and clear-felled coniferous plantation woodland being restored to heathland	Breeding May-Sep	<p>Maintain the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding)</p> <p>Maintain vegetation structure suitable for nesting Nightjars (20-60 cm tall with frequent bare patches of &gt;2 m<sup>2</sup>, 10-20% bare ground and &lt;50% tree/scrub cover overall; trees &lt;2 m in height) throughout the nesting area.</p> <p>Maintain the amount of open and unobstructed patches within nesting and foraging areas, including areas of clear-fell, windfall, wide tracks, open forest and heath.</p>

**Table 4-4: Relationship of FP to River Avon SAC Habitats/Features & Conservation Targets**

SAC Feature	Conservation Attribute	Conservation Target/Objective	Notes
H3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation;  S1096 Brook lamprey <i>Lampetra planeri</i> ;  S1163 Bullhead; <i>Cottus gobio</i>	Extent and distribution of the feature.	Restore the total extent of the H3260 feature (subject to natural changes).  A set target length/area extent is not appropriate; however, there should be no reduction in the extent and area of this feature present at notification	The headwaters and the tributaries such as the New Forest streams, that have not been included within the boundary of the SAC (or underpinning SSSI) are integral to the natural functioning of the whole river system and also support the habitats and species for which the site was notified. These headwaters and tributaries therefore have a strong relationship with the integrity of the river SAC as a whole.
	Sediment regime	Restore a natural load and supply of coarse and fine sediment to the river	Excessive fine sediment supply can lead to the smothering of coarse substrates and the loss of flora and fauna dependent on them. Coarse and fine sediment supply should reflect natural supply levels. Fine sediment delivery should not be enhanced by catchment or riparian management practices in ways that lead to siltation problems in the channel or unnaturally high levels of turbidity.
	Thermal regime	Maintain a natural thermal regime to the river (subject to a changing climate), ensuring that river water temperature should not be significantly and artificially elevated	Climate change is driving increases in river temperatures which will create stress for a range of characteristic riverine species, particularly those on the southern limit of their range. This must not be exacerbated by catchment activities that are likely to raise water temperatures further. Restoration of riparian tree cover to suitable levels will be needed in many cases, particularly in headwater streams, systems affected by alder phytophthora and river reaches lacking any riparian

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SAC Feature	Conservation Attribute	Conservation Target/Objective	Notes
			trees.
	Water quality - nutrients	Restore the natural nutrient regime of the river, with any anthropogenic enrichment above natural/background concentrations limited to levels at which adverse effects on the features are unlikely.	Nutrient enrichment can lead to loss of substrate condition for bullhead and lamprey spawning, egg development and lamprey ammocoete growth, due to benthic algal growth and associated enhanced siltation and sediment anoxia. Lamprey species and Bullhead may be affected by both episodic and chronic organic pollution. Episodic pollution causes direct mortalities whilst chronic pollution affects substrate condition through the build-up of excessive microbial populations.
	Water quality - organic pollution	Maintain organic pollution levels at no more than; Dissolved Oxygen = 85% saturation  Mean Biological Oxygen Demand = 1.5 mg L-1 Total ammonia = 0.25 mg L-1 NH3-N  Un-ionised ammonia = 0.021 mg L-1 NH3-N	Lamprey species may be affected by both episodic and chronic organic pollution. Episodic pollution causes direct mortalities whilst chronic pollution affects substrate condition through the build-up of excessive microbial populations.
	Water quality - acidification	At Dockens Water, maintain levels of acidity at those which reflect un- impacted conditions.	Brook lamprey and bullhead may be affected by acidification in low alkalinity headwaters.
	Integrity of off- site habitats	Maintain habitats beyond the site boundary upon which characteristic biological communities of the SAC may depend.	The lamprey populations of the site may be dependent on the integrity of sections of river channel, riparian areas and transitional and marine waters that lie outside of the SAC boundary. Headwater areas and tributaries may not fall within the site boundary, yet lamprey (particularly brook lamprey) may use these areas for spawning and juvenile development and be critical for

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SAC Feature	Conservation Attribute	Conservation Target/Objective	Notes
			<p>sustaining the populations within the SAC. River and sea lamprey require safe passage through coastal waters and estuaries.</p> <p>Bullhead populations within the SAC may also be dependent on the integrity of sections of river channel and riparian areas that lie outside of the site boundary. Headwater areas and tributaries may not fall within the site boundary, yet bullhead may use these areas for spawning and juvenile development and be critical for sustaining populations within the site.</p>

## 5. Impacts

### 5.1 Approach to the Assessment of Impacts

Based upon the risks and potential impacts identified during Stage 1, the assessment of potential likely significant effects has focused upon the New Forest SAC/SPA/RAMSAR and Avon Valley SAC/SPA (Dockens Water). During stage 1 a total of 117 Inclosures were analysed of which 112 lie within the New Forest SAC/SPA/RAMSAR and 4 close to the Avon Valley SAC/SPA.

Key issues and points of note that were identified in Stage 1 of HRA Screening Assessment and which were further evaluated during the Stage 2 Appropriate Assessment can be summarised as follows:

1. The long-term vision outlined in the New Forest Inclosures Forest Plan influences the management activities that will take place over the next ten years. Due to the location and activities specified in the New Forest Inclosures Forest Plan that are required over the next ten years to move the habitats towards the long-term vision it was considered there could be potential risk to site features and/or future restoration potential within the New Forest SAC/SPA/RAMSAR. In particular, the FP long-term habitat proposals for parts of 56 of the Inclosures are potentially at odds with the New Forest SAC conservation objectives.
2. The Dockens Water, which forms part of the River Avon SAC/SPA flows close to Newlands, Broomy, Holly Hatch and South Bentley Inclosures and receives water from the tributaries and drains which flow from these Inclosures. Therefore, it was considered that there could be a potential risk to interest features in the Dockens Water. No other European Sites lying within 15km of the nearest Inclosure boundary would incur Likely Significant Effects (LSE) on site integrity.
3. The proposals in the New Forest Inclosures Forest Plan were assessed against the Conservation objectives set out for the New Forest SAC/SPA which use the New Forest Ancient Habitat complex map as the basis for habitat restoration targets. The latest review of the Forest Plan **significantly moves forward** SAC habitat restoration opportunities in terms of:
  - Expanding and reducing fragmentation of old growth woodland
  - Restoring open habitat
  - Increasing the structural diversity of woodland with a move away from pure conifer stands to mixed or broadleaf woodland

- Opportunities to restore and improve the condition of mires within Inclosures
- Riverine woodland restoration including the potential to restore lost lawns alongside Inclosure streams
- Ride management to restore habitats and improve connectivity and habitat niches
- Increasing deadwood within broadleaf woodland which will benefit Stag beetle and invertebrates in general
- Improving habitat structural diversity which will be of benefit to SPA birds.
- Expanding grazing through implementation of the fencing strategy.

However, for certain Inclosures, conflicts between the conservation objectives and the long-term management vision (100 to 200 years hence) still remain in terms of the extent and type of habitat restoration. In particular, there are differences where the SAC conservation objectives seek the restoration of heathland habitats and the Forest Plan sets the long-term vision as broadleaf or mixed woodland. The FP falls short of the conservation targets for heathland restoration by around 900 hectares (10%). Much of this restoration potential lies under the 20<sup>th</sup> century conifer stands. This is important to consider as the management activities that take place to achieve the long-term vision over the next 10 years could influence the future restoration potential.

4. The role of the New Forest Inclosures Forest Plan in helping to recreate/restore SAC habitats and diversifying habitats is recognised by the New Forest SAC Management Plan.
5. The majority of operational activities are required for the management of the site in order to maintain or improve the condition of the habitats except where there are discrepancies with conservation objectives and future habitat types. Forestry England, are confident that operational methodologies will fully address issues and impacts relating to SAC/SPA features and habitats including disturbance and hydrological function. In order to ensure this is the case, an Operational Site Assessment is prepared each time an Inclosure is worked which considers the site characteristics and sensitivities and specifies any special operational measures and techniques, access routes, seasonal timings, monitoring etc. that are required to minimise any impacts. As a minimum, all forest operations are required to comply with the UK Forestry Standard (UKFS) which is the industry standard for sustainable forest management across the UK. The standard ensures that international agreements and conventions on areas such as sustainable forest management, climate change, biodiversity, historic environment, landscape, people and the protection of soil and water resources are applied to forest management. It also provides the basis for the UK Woodland Assurance Standard (UKWAS) which Forestry England is signed up to.
6. The current version of the New Forest Inclosures Forest Plan can only be approved for a 10-year period and in all of the Inclosures, the proposals move the habitat forward or increase niche habitats to varying extents within this timeframe through application of the FP management types (Table 3-3)/SAC prescriptions (SAC Plan).

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7. For those sites where the long-term vision conflicts with the conservation objectives it is unlikely that the habitats will be significantly compromised over the next ten-year period and with careful management, opportunities exist to improve the condition of the habitats and encourage the development of niche habitats within this time-frame.
8. There are no other current plans or projects that have reached the stage where it is possible to assess the in-combination effect with the New Forest Inclosures Forest Plan.

Where the long-term vision differs from the SAC conservation objectives there is a risk that habitats could decline or management prescriptions move the habitat in the wrong direction thus compromising future restoration potential. For this reason, the Habitats Regulations Assessment progressed to Stage 2 – Appropriate Assessment to evaluate the risk in more detail for Inclosures that showed a very high or high degree of discrepancy with the SAC Objectives (based upon the Ancient Habitat Complex (AHC) map – Sanderson 2007), notably:

- Aldridgehill
- Amberwood
- Appleslade
- Broomy
- Burley Outer Rails
- Busketts
- Crab Hat
- Fawley
- Ferny Knap
- Foldsgate
- Furzey Lawn
- Godshill
- Great Linford
- Hasley
- Holidays Hill
- Holly Hatch
- Little Linford
- Kings Hat
- Marchwood
- Norley
- Perrywood Haseley
- Pignalhill
- Wilverley
- Wooson's Hill

Within these Inclosures 50% or more of the future habitat intention differed from the AHC map.

Following discussions with Natural England during the Phase 2 HRA process, inclosures where 25% to 50% of the future habitat intention differed from the AHC were also evaluated to identify the requirements for any mitigation measures and to ensure that there would be no likely significant effect within the next 10 years, notably in:

- Anderwood
- Bolderwood Grounds
- Broadley
- Brockishill
- Burley New
- Churchplace
- Clumber
- Coppice of Linwood
- Deerleap
- Denny
- Dunces Arch
- Holidays Hill
- Holmhill
- Little Holmhill
- Little Wootton
- Lodgehill
- Kings Copse
- Milkham
- New Park
- Newlands Plantation
- North Oakley
- Parkhill
- Perrywood Ironshill
- Pitts Wood
- Puckpitts
- Roe
- Sloden
- South Oakley
- Vinney Ridge
- Poundhill

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For Inclosures where less than 25% of the future habitat intention differed from the AHC map analysis revealed that most anomalies could be attributed to minor discrepancies in Forestry England's subcompartment database and/or restocking intentions. These discrepancies were re-evaluated by Forestry England following the HRA Stage 1 review and have subsequently been amended.

By its very nature, the Forest Plan looks hundreds of years into the future but the consent/assent for the Plan is only valid for 10 years and covers a small snapshot in time in terms of the ecological processes associated with woodland management and habitat restoration. Due to the size, ecological complexity and timescales of the plan it is important that the assessment of impacts tries to place any likely significant effects in context. Simply considering the standard question of whether the activity is necessary for the management of the site or whether a particular operational detail has an impact does not reflect the complexity of the FP or the restoration of New Forest SAC habitats. A basic assessment would conclude at the screening stage that the majority of operations were necessary for the management of the site or that there were no impacts given that the whole basis of the plan revolves around the management of SAC habitats and that a strict management framework guides the implementation of operations associated with the plan. Therefore, in consultation with Natural England, the Stage 2 HRA process has tried to assess the context of the plan and the impact of the management activities by asking the following key questions for each individual Inclosure:

- How will the strategic direction and long-term vision of the plan meet the SAC/SPA conservation targets?
- How will the strategic direction of the plan over the next 10 years help to progress the habitats towards the conservation targets for the site?
- Are the forest operations/activities proposed to manage/progress the FP structure necessary for the management of the site?
- If not, will the management activity cause any likely significant effect to the habitats or harm their future restoration potential within the next 10 years?

In order to answer these key questions, the Forest Plan maps were visually compared against the Ancient Habitat Complex (AHC) map (Appendix E) produced as part of the New Forest Inclosure Habitats: Habitat Fragmentation & Landscape History Botanical Survey & Assessment (Neil Sanderson 2007) and the type and spatial location of the discrepancies mapped. The AHC map records the habitat restoration potential based upon an analysis of existing habitats, Ancient Woodland Inventory and the Inclosure Soils data. It is the most reliable and comprehensive source of data that exists for the New Forest habitats and has been used to help set Natural England's Conservation Targets.

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It should be noted that many of the key data sets for the New Forest have been produced using primarily desk based analysis and it is recognised that there are small scale anomalies based on observations on the ground against the desk produced data. For example, this applies to the Ancient Woodland Inventory for the forest which uses the Drivers Map of 1789 as its starting point. Nevertheless, given the scale of the New Forest, the data sets used as the basis for this assessment are the best available.

Figure 3 illustrates the potential habitat restoration anomalies that were identified across all the New Forest Inclosures lying within the SAC while the more detailed mapping results for individual inclosures which showed Very High to Medium HRA sensitivity anomalies are included in Appendix B.

For each Inclosure the assessment considered:

- SAC Habitat Potential
- How consistent FP proposals were with the future habitat potential identified on the AHC map.
- The current fencing status - the role of grazing is important in determining the quality and condition of certain habitats e.g. pasture woodland (grazed native woodland), heathland, mire and lawn habitats. Establishing the current fencing status help to identify which Inclosures need to be thrown open at some point in the future.
- The context of the Inclosure in terms of when it was enclosed which can influence the structure and age of the trees and determine the changes to soil nutrient status that may have occurred post enclosure. The context of the Inclosure also considered whether the Inclosure was planted with broadleaf or conifer species which can influence the habitat restoration potential. It also identified any other features or issues of note associated with the Inclosure
- The Natural England condition assessment for the Unit
- How the FP proposal/prescriptions would move the habitats forward over the next 10 years
- Mitigation measures to reduce the potential FP long-term habitat restoration conflicts

Appendix C summarises the review of individual Inclosures which showed a very high or high degree of discrepancy with the SAC Objectives based upon the Ancient Habitat Complex (AHC) map.

Appendix K summarises the review of individual Inclosures which showed medium degree of discrepancy with the SAC Objectives based upon the Ancient Habitat Complex (AHC) map.

### 5.2 SAC Habitat Potential

The current SAC habitats within the Inclosures have never been mapped in detail although priority habitats are mapped at a general level as broadleaved woodland or open habitat

based on current habitat types. However, the desk-based study “New Forest Inclosure Habitats: Habitat Fragmentation & Landscape History, NA Sanderson 2007” provides the best source of information available on ancient habitats within New Forest Inclosures and provides an objective and scientific examination of future habitat potential. This study has been used by Natural England to set the Conservation Objectives for the New Forest SAC. The study mapped the vegetation communities that were likely to be present at the time of enclosure based on 11 habitat complexes. Forestry Commission Technical Paper 33 - Applying the Ecological Site Classification in the Lowlands - A Case Study of the New Forest Inclosures also maps Inclosure vegetation communities along with soil types, moisture and nutrient status giving further evidence on pre-Inclosure vegetation communities.

The New Forest habitats have been dynamic over time and exist in a complex mosaic of woodland, heath, grassland and mire that has been shaped by human activity over many centuries. The Inclosures were established under the New Forest Acts of 1698, 1808, 1851, 1949 where areas of open forest were fenced, cultivated and planted for silviculture. The earliest Inclosures from c.1700 through to the beginning of the 19<sup>th</sup> century were generally established from woods of the open forest and enclosed to improve their silvicultural management as oak and beech high forest. Later Inclosures occupied more open ground and used a wider range of tree species such as Scots pine and larch alongside oak and beech. Restocking of the established 18<sup>th</sup> & 19<sup>th</sup> century stands introduced a wider range of conifer species such as Douglas fir, Corsican pine and other minor species such as western hemlock, Lawson cypress and Norway spruce. Following the Second World War large areas were restocked by natural regeneration leading to extensive stands of generally poor form oak and beech in a patchy mosaic with birch and Scots pine. The youngest Inclosures (often referred to as the Verderers’ Inclosures) were created in the 1960’s from heathland and were planted almost solely with conifer species. The plant communities within the Inclosures often give a clue to pre-Inclosure habitat types as shown in Table 5-1.

**Table 5-1: Evidence of past habitat types**

Pre-Inclosure habitat type	Evidence in current day Inclosure
Dry heath	Heather dominated vegetation can often be clearly seen where sufficient light levels reach the forest floor.
Humid heath	Strong growth of purple-moor grass (molinia) dominant in absence of grazing or burning. Cross-leaved heath and other characteristic plants almost entirely disappear. Bracken may increase in frequency according to light levels.
Mire	Former mire may retain clear evidence of past mire communities where conditions are wet and planting has failed although there may be an increase in the abundance of bog myrtle and purple moor-grass in the less waterlogged areas that are associated with failed or partial drainage.
Grasslands & Lawns	A wide range of woodland herbs and grasses persist with scrub and bracken brakes on brown earth soils of the open forest and where these have been converted to woodland they have reassembled the woodland plant communities typical of ancient woodland elsewhere in

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	southern England. Therefore bluebells, violets, wood spurge, wood anemone, greater stitchwort and a variety of woodland grasses are characteristic of woodland on former lawn.
Acid grassland	Inclosure woodland on former acid grassland tend to lack species described for grassland/lawns above and may be hard to distinguish from areas derived from former bracken brakes or grass heath. Sometimes clear variants of NVC W10 can be seen and tufted hair-grass sub-community of the W8 ash-rich woodland
Pasture Woodland	Oak plantation derived from former ancient pasture woodland may have the characteristics of the drier heath communities (equivalent to NVC W15 or W16) where the soils are poor in bases or markedly infertile or may be akin to clay woodland types. An abundance of butcher's broom is often considered an indication of continuity of woodland cover.

Source: Forestry Commission Technical Paper 33

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### 5.3 Identification of anomalies relating to future habitat restoration potential

The Ancient Habitat complex map (AHC map) (Sanderson, 2007) has been used as the basis to establish potential habitat conflicts as this data provides an objective and scientific examination of the likely effects on the qualifying features of the European Site and is one of the best sources of available evidence. However, some caution should be applied and the results are not necessarily black & white and as the study itself cautions, if the land had never been enclosed then natural change would have occurred due to the natural expansion and contraction of habitats within a dynamic landscape. For example, extensive pasture woodland would have expanded at the expense of mixed heathland and riverine woodland at the expense of wet lawns. Some areas of pre-inclosure habitat survived within the Inclosures (marked as pre-inclosure woodland on the FP) and significant reversion back to open Forest has occurred since enclosure with some 18<sup>th</sup> century Inclosures abandoned back to the Open Forest by the late 18<sup>th</sup> C.

Comparison of the FP long-term vision maps against the AHC map, revealed various anomalies, notably:

- Broadleaf on potential heathland habitat
- Conifer on potential heathland habitat
- Conifer/broadleaf on acid grassland
- Conifer/broadleaf on lawn
- Conifer/broadleaf on mire complex

The Stage 2 analysis has made a distinction between conifer and broadleaf on heathland habitat because there are issues relating to both restoration potential of quality habitat and potential to reduce fragmentation of old growth woodlands. Habitat conflicts were mapped for all Inclosures with Very High to Medium level anomalies identified in Stage 1 - (Refer to Figure 3 & Appendix B)

### 5.4 Fencing Status

The FP does not attempt to set out a definitive fencing plan for the Inclosures but the HRA has given fencing some consideration because grazing can be critical to the restoration, condition and maintenance of habitats. Equally from a forestry perspective grazing can limit natural regeneration so it can be a fine balance when/where/if grazing should be re-established as well as taking into account practical considerations around animal husbandry. Forestry England are planning to work up a fencing strategy to accompany the FP in consultation with key stakeholders and data from the HRA process may help in discussions and setting priorities. In due course, a fencing plan will be submitted to Natural England for assent and will require a separate HRA. Appendix D summarises the fencing analysis.

### 5.5 Context

The date when an Inclosure was created often gives an indication of the types of pre-inclosure habitat types that would be expected to be found within the Inclosure. As noted under habitat potential, older Inclosures are often associated with more pasture woodland habitats while younger Inclosures planted with conifer are often associated with former heathland. The structure and age of the trees can determine the changes to soil nutrient status that may have occurred post enclosure. The context of the Inclosure also considered whether the Inclosure was planted with broadleaf or conifer species which can influence the quality of habitat restoration potential. Other features or issues associated with the Inclosure were also noted where they could have a significant bearing on restoration options.

### 5.6 Condition Assessment

Account was taken of the most recent condition assessment notes for Inclosure SSSI units published on-line by Natural England. These notes are helpful in describing the latest condition of the habitats on the ground, identifying features of note and steering priorities for action to move the habitats forward.

### 5.7 Evaluation of impacts on the Dockens Water

The Dockens Water forms part of the River Avon SAC/SPA and flows through Newlands Plantation and within 500m of the northern boundary of Broomy, Holly Hatch and South Bentley Inclosures. The Dockens Water receives flow from these Inclosure tributaries and forest drains and therefore there is the potential risk of the Dockens Water receiving fine sediment or pollutants resulting from forest operations. After consideration of the risks it can be concluded that there will be no adverse effects on the integrity of site features associated with Dockens Water and River Avon SAC/SPA because:

- These Inclosures are only worked for a few weeks once every 5 years or longer
- All forest operations must comply with UKFS including best practice relating to the protection of soil and water. This includes extensive measures to protect against pollution and soil erosion during harvesting and ground preparation including use of buffer strips, choice of access routes, choice of machinery, minimising runoff into drains & culverts, chemical control, storage of material etc. The methods applied can be viewed in the publication "Managing forest operations to protect the water environment", which can be viewed using the following link:

<https://www.forestresearch.gov.uk/research/managing-forest-operations-protect-water-environment/>

- If sediment was generated by soil erosion from machinery tracking along access routes or working in the body of the forest, ground conditions within Inclosures and in

particular the vegetation structure is such that the fine sediment would be trapped before it reached any water course or drain.

- Operational sites are regularly monitored. Where adverse weather conditions start to threaten ground conditions to the extent that soil erosion posed a significant threat to features, operations will be suspended until conditions improved.

# 6. Other Plans & Projects

## 6.1 Other Plans or projects that could have in-combination effects

There are no current plans or projects that have reached the stage where it is possible to assess that in combination with the New Forest Inclosures Forest Plan are likely to result in significant effect. However, there are two projects in various stages of development that could be influenced by the New Forest Inclosures Forest Plan:

**National Grid 400kV Visual Impact Provision Project**– which involves the undergrounding of 400kV powerlines across the north of the Forest. The proposed route options currently skirt the northern part of Millersford Plantation. This Inclosure is largely already restored to heathland. An independent stakeholder advisory group advised the National Grid in March 2019 that the project should be paused so the future of this project is currently uncertain.

**The New Forest Recreation Management Strategy** – Consultation took place in the summer of 2018 to look at updating the New Forest Recreation Strategy 2010 -2030 to decide how best to manage outdoor recreation across the whole of the New Forest and surrounding areas. The strategy is likely to address recreational provision and infrastructure within the New Forest Inclosures and across the wider area.

## 6.2 Proposed operations of the project or plan already covered by a plan agreed with Natural England

The New Forest SAC Management Plan sets out the management objectives for the SAC habitats and sets out generic prescriptions that should be followed to maintain and protect the habitats. The SAC Management Plan (Section 2.8) sets out a number of priorities for managing New Forest habitats and species and the New Forest Inclosure Forest Plan is identified as a key mechanism for improving or re-creating SAC habitats within the New Forest Inclosures as well as diversifying plantations over time to a more semi-natural character.

The SAC plan does not specify in detail where these habitats should be restored as it was assumed that the Forest Plan would be the mechanism to specify where this should be carried out. However, where SAC habitats are re-created/restored within Inclosures the management prescriptions set out in the SAC Plan will be applied to their future management.

# 7. Mitigation Measures

## 7.1 Approach to mitigation measures

Forest planning is a dynamic process with each iteration of the forest plan being reviewed and updated every 10 years based upon the consenting timescale. At each review the policies of the day, local issues, current regulation and the status of habitats are taken into account and the plan amended as required. Operational techniques are also subject to change as new technology is developed and findings of research published. Furthermore, habitat restoration is a long-term process that can take from less than a decade to many hundreds of years to achieve depending upon the habitat response. In order to be realistic, the mitigation measures identified as part of this HRA seek to avoid adverse effects on site integrity over the in lifetime the Forest Plan (10 years) and therefore consider:

- Operational requirements
- Measures to move habitats forward over the next 10 years
- Mitigation Measures to address Long Term Vision habitat anomalies identified from the AHC map and protect future habitat restoration potential.

Mitigation measures must be able to be relied upon to avoid adverse effects on site integrity over the full lifetime of the plan or project. Mitigation measures need to be effective, reliable, timely, guaranteed and of sufficient duration be able to be relied upon to avoid adverse effects on site integrity over the full lifetime of the plan or project.

The mitigation measures should show:

- what the measure is, and how it would avoid or reduce harmful effects on the site (considering the predicted duration of the effects)
- how it would be implemented, and by whom
- the degree of confidence in its likely success over time
- the timescale of when it would be implemented, maintained and managed
- how the measure(s) would be secured, monitored and enforced; and,
- if the measure(s) failed, how the failure would be rectified

Appendix H analyses the likely success of the various mitigation measures that will be implemented against the above criteria.

## 7.2 Operational Requirements – next 10 years and beyond

Incllosures are worked at a maximum of once every 5 years to minimise disturbance and fit in with the forestry cycle. Conifer tends to be thinned on 5 year cycles unless the coupe is due for clear felling and broadleaf is generally worked on 10 year cycles or more depending on its age. For example, older 120 year plus oak/beech is often only selectively thinned on cycles of 20 years or more. Other habitat management activities are usually planned to coincide with

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harvesting operations to minimise frequency of disturbance unless there is an imperative reason to carry out management activities sooner to protect a site feature. The operational risks to existing site feature and future habitat potential will be minimised by ensuring that all operational planning and implementation complies with the United Kingdom Forestry Standard (UKFS) which is the reference standard for sustainable forest management in the UK.

The UKFS outlines the context for forestry, sets out the approach of the UK government to sustainable forest management, defines standards and requirements, and provides a basis for regulation and monitoring – including national and international reporting. The standards for the planning, design and sustainable management of forests and woodlands in the UK use an approach based on internationally recognised science and best practice. The UKFS requirements are divided into legal requirements (including those related to habitats and species) and good forestry practice requirements and are categorised into different elements of sustainable forest management, each supported by guidelines for managers. The elements are:

- General forestry practice
- Biodiversity
- Climate Change
- Historic Environment
- Landscape
- People
- Soil
- Water

The UKFS is the basis of forestry practice for the independent UK Woodland assurance standard (UKWAS), which is used for voluntary independent certification. To ensure that actions are being carried out in accordance with the UKFS and as part of upholding Forestry England's accreditation under UKFAS, Forestry England is regularly audited by an external third party and is required to demonstrate that both management documentation and operations in the field fully comply with the UKFS.

Further detail on the UKFS can be found at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/687147/The\\_UK\\_Forestry\\_Standard.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf)

All forest operations are carefully planned through the Operational Site Assessment (OSA) process which ensures UKFS and any local requirements are met to minimise environmental impact. At the same time the operations are planned to implement the FP and carry out any measures required to help SSSI condition and meet SAC Plan prescriptions. An example of an Operational Site Assessment form is given in Appendix I but in summary, the key areas that the OSA is required to be address are:

- Objectives of the operation, success of previous operations and whether any experiences/lesson learned from past operations need to be incorporated in the proposed operation

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- Confirmation of any regulatory consents required before the operation can proceed including EIA or HRA requirements, SSSI assent or completion of a SSSI Supplementary Notice of Operations, SSSI Condition Improvement Opportunities or any additional consents required as part of the Forestry Act (e.g. compliance with timings and felling/restocking boundaries as per the approved Forest Plan).
- Description of how the proposed operations will deliver Forest Plan objectives
- Identification of the presence of statutory protected species and habitats, conservation sites, ancient and native woodland features, water features and any other environmental features of interest and what opportunities will be taken to deliver enhancement opportunities including whether natural regeneration is desirable or not depending on the habitat type.
- Resilience of the habitats and whether proposals reduce the susceptibility to the threat of diseases and pests and whether any specific biosecurity measures are required.
- Recreational interests including CROW issues and any impact on recreational infrastructure
- Need for Community engagement, how and with whom
- Protection of historic and cultural features
- Access & route requirements
- Estate issues such as any impact on leases, third party access, research plots
- Any other miscellaneous issues/requirements

The OSA process also identifies, records and implements any special measures that are required to safeguard interest features. For example, where the OSA has identified the possible presence of ground nesting or breeding birds a field check will be carried out for the presence of any nest or activity and either the timing of the operation planned to avoid the breeding season or an exclusion zone set up to avoid disturbance. Sensitive features may also be marked on the ground. Any sensitivities will also be flagged up during the pre-commencement meeting so that contractors or field staff are aware of the location of sensitive features and are fully briefed on any safeguarding measures required. Once underway, operations are carefully monitored by site supervisors.

Forest Research and Forestry England provide a wide range of supplementary guidance that supports the UKFS in the form of Practice Guides and Notes which, Forestry England uses in the practical planning and implementation of all aspect of forest management in the New Forest. A full range of the guidance available can be viewed at:

<https://www.forestresearch.gov.uk/research/?search=&page-type=publications>

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Details of the guidance commonly applied as standard is listed in Appendix G and the guidance most relevant to operational activities along with the associated mitigation measures to protect SAC/SPA/Ramsar site features and how it will be applied is set out in Table 7.1. It should be noted that these measures are also designed to protect any SSSI features and other species of note including all UK European Protected Species (e.g. Bats, Dormice, Otter, Great Crested Newt, Sand lizard & Smooth Snake), Night jar, Woodlark, vascular plant assemblages, lichens, fungi and invertebrates (including Southern damselfly, Silver-washed fritillary & other butterfly assemblages).

**Table 7.1: Identification of operational risks and application of mitigation**

<b>Potential Effect: Habitat damage from Operation</b>	<b>Qualifying Features Likely to be affected</b>	<b>Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features</b>	<b>How Guidance Will be Applied</b>	<b>Likely Significant Effect (LSE) on qualifying features post mitigation</b>
Clear Felling	4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)  Hobby Woodlark Nightjar Honey Buzzard	UK Forestry Standard (UKFS) – Section 5 & 6  Managing forest operations to protect the water environment”  Managing & Protecting Woodland wildlife (including European Protected Species)  Forestry Commission England Operations Note No 5 – Forest Activities & Breeding Birds  Managing deadwood in forests and woodlands  Managing Brash on Conifer Clearfell Sites  Forest operations and badger setts	Guidance & methods will be integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	No LSE

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
Thinning - Conifer	4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)  Hobby Woodlark Nightjar Honey Buzzard	UK Forestry Standard (UKFS) – Section 5&6  Choosing stand management methods for restoring planted ancient woodland sites  Managing forest operations to protect the water environment”  Managing & Protecting Woodland wildlife (including European Protected Species)  Forestry Commission England Operations Note No 5 – Forest Activities & Breeding Birds  Managing deadwood in forests and woodlands  Restoration of native woodland on ancient woodland sites  Forest operations and badger setts  Thinning control	Guidance & methods will be integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	No LSE

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
		Managing Continuous Cover Forests		
Thinning - Broadleaf	<p>9120 Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>)</p> <p>9130 <i>Asperulo-Fagetum</i> beech forests</p> <p>9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains</p> <p>4010 Northern Atlantic wet heaths with <i>Erica tetralix</i></p> <p>4030 European dry heaths</p> <p>6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)</p> <p>1083 Stag Beetle <i>Lucanus</i></p>	<p>UK Forestry Standard (UKFS) – Sections 5 &amp; 6</p> <p>Choosing stand management methods for restoring planted ancient woodland sites</p> <p>Managing forest operations to protect the water environment”</p> <p>Managing &amp; Protecting Woodland wildlife (including European Protected Species)</p> <p>Forestry Commission England Operations Note No 5 – Forest Activities &amp; Breeding Birds</p> <p>Managing deadwood in forests and woodlands</p> <p>Restoration of native woodland on ancient</p>	<p>Guidance &amp; methods will be integrated into OSA Planning Process including:</p> <p>Site evaluation &amp; survey</p> <p>Preparation of OSA plan</p> <p>Constraints mapping &amp; marking of sensitive features</p> <p>Contract tenders &amp; evaluations</p> <p>Pre-commencement meetings &amp; site checks, Daily site monitoring checks by work supervisors/beat managers</p> <p>Post operation evaluation</p>	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	<p>Servus</p> <p>Woodwarbler Honey Buzzard Hobby</p>	<p>woodland sites</p> <p>Forest operations and badger setts</p> <p>Thinning control</p> <p>Managing ancient and native woodland in England</p> <p>Managing Native Broadleaved Woodland</p> <p>The management of semi-natural woodlands: 1. Lowland acid beech and oak woods</p> <p>The management of semi-natural woodlands: 8. Wet woodlands</p> <p>The prevention of mammal damage to trees in woodland</p>		

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
Restocking broadleaf (managed broadleaf woodland or supplementary planting to boost regeneration in PAWS)	<p>9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)</p> <p>9130 Asperulo-Fagetum beech forests</p> <p>9190 Old acidophilous oak woods with Quercus robur on sandy plains</p>	<p>UK Forestry Standard (UKFS) – Sections 5 &amp; 6</p> <p>The prevention of mammal damage to trees in woodland</p> <p>Climate change: impacts and adaptation in England’s woodlands</p> <p>Forestry Research - Ecological Site Classification Decision Support model</p>	<p>Guidance &amp; methods will be integrated into OSA Planning Process including:</p> <p>Site evaluation &amp; survey</p> <p>Preparation of OSA plan</p> <p>Constraints mapping &amp; marking of sensitive features</p> <p>Contract tenders &amp; evaluations</p> <p>Pre-commencement meetings &amp; site checks, Daily site monitoring checks by work supervisors/beat managers</p> <p>Post operation evaluation</p>	No LSE
Ground preparation	<p>9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)</p> <p>9130 Asperulo-Fagetum beech forests</p> <p>9190 Old acidophilous oak woods with Quercus robur</p>	<p>UK Forestry Standard (UKFS) – Sections 5 &amp; 6</p> <p>Managing forest operations to protect the water environment”</p> <p>Managing &amp; Protecting Woodland wildlife (including European Protected Species)</p> <p>Forestry Commission England Operations</p>	<p>Guidance &amp; methods will be Integrated into OSA Planning Process including:</p> <p>Site evaluation &amp; survey</p> <p>Preparation of OSA plan</p> <p>Constraints mapping &amp; marking of sensitive features</p> <p>Contract tenders &amp; evaluations</p> <p>Pre-commencement meetings &amp; site checks, Daily site monitoring</p>	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	on sandy plains 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 1083 Stag Beetle Lucanus Servus  Hobby Woodlark Nightjar	Note No 5 – Forest Activities & Breeding Birds (Appendix L)  Managing & Protecting Woodland wildlife (including European Protected Species)	checks by work supervisors/beat managers Post operation evaluation	
Chemical weeding	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)  9130 Asperulo-Fagetum beech forests	UK Forestry Standard (Section 6.7)  Managing & Protecting Woodland wildlife (including European Protected Species)  Managing forest operations to protect the water environment	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings &	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	9190 Old acidophilous oak woods with Quercus robur on sandy plains 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 1083 Stag Beetle Lucanus Servus  Woodlark Nightjar Dartford Warbler		site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	
Ride management & reinstatement	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion) 9130 Asperulo-Fagetum	UK Forestry Standard (UKFS) Sections 5 & 6  Managing forest operations to protect the water environment  Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	beech forests 9190 Old acidophilous oak woods with Quercus robur on sandy plains 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 1083 Stag Beetle Lucanus Servus		Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	
Bracken control	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion) 9130 Asperulo-Fagetum beech forests 9190 Old acidophilous oak	UK Forestry Standard (UKFS) – Sections 5 & 6.7  Managing forest operations to protect the water environment  Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings &	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	<p>woods with Quercus robur on sandy plains</p> <p>4010 Northern Atlantic wet heaths with Erica tetralix</p> <p>4030 European dry heaths</p> <p>1083 Stag Beetle Lucanus Servus</p> <p>Nightjar</p>		<p>site checks, Daily site monitoring checks by work supervisors/beat managers</p> <p>Post operation evaluation</p>	
Non-native invasives control	<p>9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)</p> <p>9130 Asperulo-Fagetum beech forests</p> <p>9190 Old acidophilous oak woods with Quercus robur on sandy plains</p> <p>4010 Northern Atlantic wet heaths with Erica tetralix</p>	<p>UK Forestry Standard (UKFS) – Sections 5 &amp; 6.7</p> <p>Managing forest operations to protect the water environment</p> <p>Managing &amp; Protecting Woodland wildlife (including European Protected Species)</p>	<p>Guidance &amp; methods will be Integrated into OSA Planning Process including:</p> <p>Site evaluation &amp; survey</p> <p>Preparation of OSA plan</p> <p>Constraints mapping &amp; marking of sensitive features</p> <p>Contract tenders &amp; evaluations</p> <p>Pre-commencement meetings &amp; site checks, Daily site monitoring checks by work supervisors/beat managers</p> <p>Post operation evaluation</p>	No LSE

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 1083 Stag Beetle <i>Lucanus Servus</i>			
Deer control	9120 Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer ( <i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i> ) 9130 <i>Asperulo-Fagetum</i> beech forests 9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 European dry heaths	UK Forestry Standard (UKFS) South District Deer Management Plan The prevention of mammal damage to trees in woodland	Annual deer cull following deer monitoring survey.	No LSE

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 1083 Stag Beetle <i>Lucanus Servus</i>			
Controlled burning	4030 European dry heaths Woodlark Nightjar Dartford Warbler	New Forest SAC Plan prescriptions  Managing & Protecting Woodland wildlife (including European Protected Species)	Site evaluation & survey Review of sites by Open Forestry Advisory Committee (OFAC) Preparation of OSA plan Constraints mapping & marking of sensitive features & cutting of traces to contain burn  Pre-commencement site checks supervisors/beat managers/Open Forest Manager Post operation evaluation	No LSE
Scrub control	4030 European dry heaths 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i> 6410 Molinia meadows on calcareous, peaty or	UK Forestry Standard (UKFS) Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan	No LSE

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Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	clayey-silt-laden soils (Molinion caeruleae)  Dartford warbler		Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	
Lawn maintenance	6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)  4010 Northern Atlantic wet heaths with Erica tetralix	UK SAC Plan prescriptions  Managing forest operations to protect the water environment  Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
Mire maintenance	6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	UK SAC Plan prescriptions  Managing forest operations to protect the water environment  Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	No LSE
Lawn restoration	4010 Northern Atlantic wet heaths with Erica tetralix  6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	UK Forestry Standard (UKFS) – Section 6 UK SAC Plan prescriptions Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
			checks by work supervisors/beat managers Post operation evaluation	
Mire restoration	6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	UK Forestry Standard (UKFS) - Section 6 UK SAC Plan prescriptions Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	No LSE
Fencing	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion) 9130 Asperulo-Fagetum	UK Forestry Standard (UKFS) - Section 6  Managing & Protecting Woodland wildlife (including European Protected Species)	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features	No LSE

## HRA Stage 2

Potential Effect: Habitat damage from Operation	Qualifying Features Likely to be affected	Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features	How Guidance Will be Applied	Likely Significant Effect (LSE) on qualifying features post mitigation
	beech forests 9190 Old acidophilous oak woods with Quercus robur on sandy plains 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)		Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring checks by work supervisors/beat managers Post operation evaluation	
De-stumping	4030 European dry heaths  Woodlark Nightjar	UK Forestry Standard (UKFS) – Section 6  Stump harvesting – interim guidance on site selection and good practice Managing & Protecting Woodland wildlife (including European Protected Species)  Rationale, Principles and Decision Matrix for Heathland Restoration in the New Forest 2019	Guidance & methods will be Integrated into OSA Planning Process including: Site evaluation & survey Preparation of OSA plan Constraints mapping & marking of sensitive features Contract tenders & evaluations Pre-commencement meetings & site checks, Daily site monitoring	No LSE

## HRA Stage 2

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<b>Potential Effect: Habitat damage from Operation</b>	<b>Qualifying Features Likely to be affected</b>	<b>Guidance/Mitigation that will be applied to prevent loss or damage to European Site Features</b>	<b>How Guidance Will be Applied</b>	<b>Likely Significant Effect (LSE) on qualifying features post mitigation</b>
			checks by work supervisors/beat managers Post operation evaluation	

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Due to the OSA process and the operational guidance integrated into operational delivery, Forestry England are confident that forest operations will not cause any adverse effect or damage the integrity of the European site features. A separate assent will be sought for any operation that is not required for the conservation management of the site and falls within the list of Operations likely to damage the special interest (refer to Appendix J).

## 7.3 Scope to move habitats forward over the next 10 years

Any assent/consent which this HRA informs is only valid for 10 years as the Forest Plan is only approved by the Forestry Commission (the regulatory arm of the Forestry Commission which acts separately from Forestry England) for a 10-year period. Therefore, it is important to consider whether the FP management proposals have scope to move the SAC habitats forward in this time or if not whether any harm could be caused in the interim. Analysis of the FP relative to the SSSI Condition Assessments showed that there was scope, with greater and lesser degrees, to move habitats forward in all of the Inclosures. Even where there was high level of potential conflict with conifer or broadleaf on heathland, measures are still possible to start to promote emergence of heathland communities with careful application of FP Management Types, for example, 3C, 3DE, 4DE, 5E, 7C, 7DE, 7H (refer to Table 3-3). Although measures may not produce the large scale, open landscape often associated with heathland habitats, from a purely ecological point of view it does allow heathland communities to start to emerge and expand. Their future quality and extent would ultimately depend upon management measures taken beyond the next 10 years and future funding availability.

As described in section 7.2, Inclosures are worked at a maximum of once every 5 years to minimise disturbance and fit in with the forestry cycle. Conifer tends to be thinned on 5 year cycles unless it is due for clearfelling and broadleaf is generally worked on 10 year cycles or more depending on its age. For example, older 120 year plus oak/beechn is often only selectively thinned on cycles of 20 years or more. All interventions are carefully planned through the Operational Site Assessment (OSA) process which ensures UK Forestry Standards and any local requirements are met to minimise environmental impact. At the same time the operations are planned to implement the FP and carry out any measures required to help SSSI condition and meet SAC Plan prescriptions.

The Inclosure reviews (Appendix C) set out priority mitigation measures to move habitats forward within individual Inclosures. Table 7-2 summarises the general measures according to habitat potential which are also applicable to all Inclosures where this habitat potential exists. The measures are embedded in the management types proposed to progress the FP (Table 3-3). Appendix H provides further analysis on the implementation and likely success of these actions in providing mitigation to avoid any adverse effect on the integrity of SAC/SPA/RAMSAR interest features.

**Table 7-2: Summary of Actions to promote habitat restoration**

Potential habitat	Actions to promote habitat restoration/improve habitat condition over the next 10 years
Mixed & Plateau Heathland	<p>Thinning of older conifer stands (+35 years) to open up light levels and start to promote the emergence of heathland communities</p> <p>Clearfell of conifer stands identified in FP</p> <p>Applying 20% rule (thinning to allow 20% open space to develop within the woodland canopy) in targeted areas where there are already signs of heathland communities emerging to allow their expansion. Target areas will primarily be those areas shown as potential heathland habitat on the AHC map and the emergence of heathland communities/habitat restoration potential will be ascertained during the OSA planning process and from SSSI condition assessment reports provided by Natural England.</p> <p>Managing ride edges to promote emergence, expansion and linkage of heathland communities through Inclosures where the AHC map shows heathland complexes.</p> <p>Control of bracken and conifer regeneration</p> <p>Applying open forest management techniques where more expansive areas of heathland habitat complexes exist within Inclosures (burning, cutting, clearance of exotics/non-natives, bracken spraying &amp; swiping, lawn/mire maintenance &amp; restoration, pine clearance, birch &amp; scrub clearance)</p> <p>De-stumping and/or removal of ridge/furrow in selective areas (with consideration of the impact on carbon sequestration and the integrity of the soil profile)</p>
Pasture woodland	<p>Selective thinning to favour native broadleaves over conifer</p> <p>Opening up light levels through thinning and scrub control to promote natural regeneration of broadleaves and re-establishment of woodland flora</p> <p>Maintaining thrown open status of Inclosures or opening up to grazing in accordance with approved fencing plan if broadleaved tree cover is adequately established.</p> <p>Controlling conifer regeneration</p> <p>Building up deadwood resource</p> <p>Bracken/bramble control will also be necessary</p> <p>Control of non-natives such as Rhododendron.</p> <p>Maintaining grazing or restoring where possible</p>

Potential habitat	Actions to promote habitat restoration/improve habitat condition over the next 10 years
Lawn habitat	<p>Applying 20% rule (thinning to allow 20% open space to develop within the woodland canopy) in targeted areas where there are signs of grassland/lawn habitat communities</p> <p>Removing or allowing drains to fill in naturally to restore natural hydrology</p> <p>Scrub/bracken/bramble control may be necessary in places</p> <p>Maintaining grazing or restoring where possible</p>
Acid grassland	<p>Applying 20% rule (thinning to allow 20% open space to develop within the woodland canopy) in targeted areas where there are signs of grassland/lawn habitat communities</p> <p>Bracken/bramble control may be necessary in places</p> <p>Maintain grazing or restore grazing where possible</p>
Riverine woodland	<p>Thin out conifers from riverine corridors</p> <p>Restore natural hydrology through removal or ceasing the maintenance of artificial drains</p> <p>Carry out river restoration where appropriate.</p> <p>Maintain grazing or restore grazing where possible</p>
Mire habitat	<p>Remove trees and scrub from mires</p> <p>Restore natural hydrology where mires have been eroded and over deepened</p> <p>Maintain grazing or restore grazing where possible</p>

## 7.4 Mitigation measures to address discrepancies with the Long-Term Vision

The HRA process has identified that the main risk which could give rise to adverse effects on the future site integrity is primarily associated with discrepancies between the Long-term vision (+200 years) and the habitat restoration potential as defined by the AHC map. The AHC map has informed the Conservation Objectives for 4010 Northern Atlantic wet heaths with 4030 *Erica tetralix* and European dry heaths where more than 3000 ha of former wet & dry heathland is estimated to be located within the Inclosures. The conservation objective is for former heathland habitat planted with conifers to be restored. The FP proposal falls short of the conservation targets for heathland restoration by around 900 hectares (11% of FP area) where much of the potential lies under the 20<sup>th</sup> century conifer stands.

Therefore, this section identifies what mitigation can be put in place over the next 10 years to ensure that habitat restoration potential is not compromised and to safeguard the longer-term habitat restoration potential. The general mitigation measures will be applied to all

Inclosures where anomalies arise but are particularly focused on those Inclosures that were assessed as having a Very High, High or Medium level of differences with the AHC map (Appendix F).

In outlining mitigation measures it should be noted that the New Forest Inclosure Plan is required to balance a whole range of issues including economic and social issues. This HRA review has attempted to identify where conflicts exist with the SAC Conservation objectives but it must be recognised that the New Forest is a complex and at times emotive landscape where multiple issues and objectives need to be balanced and compromise is often required to make progress and find a way forward. However, where compromise has been made, Forestry England need to ascertain whether an adverse effect of the Forest Plan proposals on site integrity can be clearly be ruled out as a required by the Conservation of Habitats and Species Regulations 2017. Under the regulations, conservation requirements take precedent unless a case can be made to the Secretary of State that a different approach is required for reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or any other reasons which the competent authority, having due regard to the opinion of the European Commission, considers to be imperative reasons of overriding public interest.

Consideration also needs to be given to the fact that restoring and maintaining open habitats requires considerable financial and staff resources which are not currently available to the Forestry England and more harm than good could be done to habitats if restoration carried out in the short-term could not be maintained into the long-term. Considerable amounts of restoration of both Inclosure and Open Forest habitats have already taken place in the last 20 years which there is an obligation to maintain as a first priority.

Therefore, the mitigation measures put forward seek to be pragmatic and realistic while at the same time protecting the integrity of the conservation features. This has included the identification of certain Inclosures that would benefit from a change of direction in future years in order to meet the long-term conservation objectives. It should be noted that the management of these Inclosures over the next 10 years will not affect the overall site integrity as existing habitats will be maintained and indeed management interventions during this period offer further opportunity to improve the condition of existing habitats.

### 7.4.1 Mitigating conflicts of broadleaf on heathland habitat restoration potential

The vast majority of broadleaf conflict with potential heathland habitat relates to the remaining 18<sup>th</sup>/early 19<sup>th</sup> century oak stands that were planted when the Inclosures were first established. Scope exists to retain these stands to evolve into old growth woodlands in their own right over the next few centuries and reduce fragmentation of the existing old growth woodlands. Old growth woodlands are woods which are allowed to live through the natural woodland lifecycle and will have frequent veteran/ancient trees and may still be lightly managed. Old growth characteristics start to emerge around 200 years although a fully developed old growth woodland is more likely to be 400 years or more.

The New Forest Inclosure Habitats: Habitat Fragmentation and Landscape History, Sanderson (2007) study considered the fragmentation of old growth woodlands in depth as well as identifying the Ancient Habitat Complexes. The study characterised the value of the 18<sup>th</sup>/early 19<sup>th</sup> century oak stands for reversing fragmentation. Table 7-3 shows how the Sanderson (2007) classification compares with the areas of broadleaf on potential heathland habitat for those Inclosures with a high level of conflict.

Even though many of these areas are not regarded as critical to reversing past fragmentation many lie close or adjacent to areas of old growth woodland and areas categorised as ancient woodland on the Ancient Woodland Inventory (AWI). It is likely that the soils will have become more nutrient rich from leaf fall and accumulation of organic matter over the last 150-200 years which will make it difficult to restore high quality heathland. A further complication is that the Minister's Mandate precludes the loss of these stands by stating that:

*"The regeneration of broadleaved areas will be managed with an emphasis on conservation of nature and amenity. For oaks, beech and Sweet chestnut, stand rotations will be at least 200 years with cleared patches for regeneration thereafter not exceeding one acre."*

Furthermore, the SAC Plan conservation objectives recognise the value of existing early 19<sup>th</sup> century broadleaf and the importance of keeping these stands in favourable condition. Given the character of many of these areas and their potential value for SPA woodland bird species any loss of old oak/beech plantations would be emotive within the New Forest.

Given their high ecological value as SAC habitats in their own right and the fact that woodland cover has been dynamic across the New Forest over the centuries (which is recognised by Sanderson 2007) the retention of these stands as native or grazed native woodland as suggested in the FP and their ultimate development into old growth woodland forming 9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion), 9190 Old acidophilous oak woods with Quercus robur on sandy plains and 9130 Asperulo-Fagetum beech forests is not likely to result in a significant adverse effect on site integrity. Their retention also provides opportunity to help habitat connectivity and replace existing, collapsing old growth woodland which is in decline due to a combination of factors including climate change, pests & diseases and natural ecological dynamic processes.

**Table 7-3: Potential to reverse Old Growth Woodland Fragmentation**

Potential to relink severely fragmented old growth stands	Other areas of Oak allocated for development into old growth stands	Areas not critical to reversing past fragmentation
Amberwood Broomy Frameheath Holidays Hill	Foldsgate	Aldridgehill Appleslade Burley Outer Rails Foxhunting Godshill Kings Hat Furzey Lawn Hasley Holly Hatch Little Linford Great Linford Fenny Knap Norley Pignalhill Wilverley Wooson's Hill

Source: Sanderson, 2007

## 7.4.2 Mitigating conflicts of conifer plantation on heathland habitat restoration potential

Mitigating the conflict of conifer on potential heathland habitat is more difficult to reconcile in the long-term. The FP proposes that many of these areas are to become mixed or native woodland over the next 150-200 years. Over the next 10-20 years or so it is not likely that significant changes will take place to prevent heathland restoration in the future and in reality, the initial transition is as likely to promote the emergence of heathland communities as it is broadleaf regeneration. Experience and observation on the ground suggests that where soils are nutrient poor and the heathland seedbank is retained in the soil then heathland communities start to re-emerge once the light levels are restored before any significant broadleaf transition starts to take place although birch incursion can be an issue. Grazing helps with the restoration of heathland habitats while limiting the development of broadleaf regeneration. With grazing, experience in the New Forest has shown that broadleaf regeneration will still occur but potentially over several decades as opposed to 5 to 10 years within a non-grazed, fenced enclosure plot. General broadleaf regeneration will still take place sporadically throughout an Inclosure depending on the soil conditions, management regime, light levels and deer pressure. However, broadleaf regeneration can be manually controlled where it threatens habitat condition.

Certain Inclosures are difficult to reconcile and need further survey and re-evaluation at the next Forest Plan Review (starting in 5 years' time) to agree their long-term vision as

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conversion to native woodland may not be the best way forward and is currently contrary to long-term SAC Conservation objectives. These Inclosures are:

- Appleslade
- Burley Outer Rails
- Little Linford
- Busketts
- Foxhunting
- Great Linford
- Kings Hat
- Crab Hat
- Hasley
- Wilverley
- Godshill

Approval is required under the FP to work these Inclosures. Due to the complexity of the mosaic habitat types found within these Inclosures, taking them out of the existing FP until their future is decided and not carrying out any management activities could be more damaging in the long term particularly when there is scope to improve the condition of existing habitats and start to restore niche areas of open habitat along rides, glades and under conifer stands through targeted thinning.

Due to the age of the stands and structure, it is unlikely that any operations that take place within these Inclosures over the next 10-years would significantly damage the existing condition of the habitats or restoration potential. However, careful management would be required to hold an "interim" position to prevent high levels of broadleaf regeneration in areas of potential heathland habitat within the existing conifer stands until the future of these Inclosures is decided.

To mitigate the risk that the habitat restoration potential is not compromised by the FP proposals and to ensure that these areas are protected over the next 10 years and beyond, a local Operations Guidance Note will be prepared to sit alongside the OSA process and Thinning Plan detailing management principles, notably:

- To apply the 20% thinning rule in priority areas (i.e. areas that are shown as heathland on the AHC map) to allow heathland communities to emerge
- Control of levels of broadleaf/conifer regeneration below the main canopy and in glades in priority areas where it is threatening the emergence of heathland communities

Monitoring the success of management actions will be assessed by FE be during OSA preparation process and through SSSI condition assessments carried out by NE.

Appropriate training will also be given to Foresters (especially those new into the role or the New Forest) to ensure they are aware of the priorities and features to target when drawing up OSA plans for individual Inclosures.

### 7.4.3 Mitigating woodland on acid grassland incorporating SAC habitat type 4010 Northern Atlantic wet heaths, 4030 European dry heaths, 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils

For those Inclosures where woodland is proposed to remain on acid grassland (e.g. Appleslade, Little Linford and Broomy) more detailed botanical surveys will be carried out within the next 5 years to determine where acid grassland restoration could take place in the future. Grazing would be required to restore good quality acid grassland and this would need to be considered as part of the grazing strategy as only Appleslade is currently thrown open to grazing. However, there is scope to allow acid grassland to start to emerge through opening up of glades and through ride management and mowing.

### 7.4.4 Mitigating open habitat on ANSW incorporating SAC habitat type 9120 Atlantic acidophilous beech forests, 9130 *Asperulo-Fagetum* beech forests, 9190 Old acidophilous oak woods with *Quercus robur* on sandy plains & 91D0 Bog woodland

A review of the FP relative to the Ancient Woodland Inventory (AWI) has identified a few areas where open habitat is shown in the Long-term vision on areas that are shown as ancient woodland on the Ancient Woodland Inventory (Figure 3/Appendix B). The AWI for the New Forest has largely been derived from the Drivers Map of 1814 (surveyed 1789) which is known to contain some inaccuracies. The AWI is largely reliable but observation in the field and analysis of soil data suggests that some of the areas have a predominance towards open habitat types rather than woodland. Forestry England have ensured that any areas showing as heathland on ancient woodland have been checked and amended in the Design Plan re-stocking layer to natural regeneration or re-stocking with native broadleaf prior as part of the Forest Plan Approval process.

### 7.4.5 Mitigating woodland on lawn incorporating 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caerulea*), 4010 Northern Atlantic wet heaths with *Erica tetralix*

Within the Inclosures where high levels of anomaly occur between the FP and the AHC map lawn habitat was generally a minor component and overall conservation objectives/targets for lawn SAC habitats have been achieved. However, scope still exists to enhance small areas of wet lawn habitats in Inclosures by opening up glades through selective thinning/coppicing and restoring the natural hydrology (depending upon funding availability and recommendations of the Wetland Strategy) to reinstate the natural seasonal flooding regime. Priority to restore lawns will be given to Inclosures that are open to grazing and have already had their hydrology restored. Botanical survey will be required to help target priority areas (E.g. Little Linford, Busketts, Parkhill).

Most of the areas where the AHC shows potential lawn conflicts are where the FP shows broadleaf/riverine woodland. Where wet lawn is showing signs of emergence, selective

thinning and group felling will be used to open up lawns and glades to restore lawn habitat especially if the Inclosure is thrown open to grazing.

### 7.4.6 Mitigating woodland on mire complexes incorporating

Although the FP identifies areas for mire restoration it does not necessarily reflect the whole extent of the mires, for example in Wilverley and King's Hat. This is because survey data is lacking for more minor mire complexes within some Inclosures and the full extent/presence of these mires is not always picked up on the New Forest Vegetation Map (2007) which tends to focus on the Open Forest. Within the FP, mires are often included within the general open forest habitats mapping category rather than mapped individually so their presence can be lost in the strategic mapping.

Artificial drainage within Inclosures has dried out former mire habitats which have been often been planted with conifers. Where mires remnants still exist conifer often grow poorly with a low yield class and many of these former mires are more open in character and as a result and can be easily restored. The AHC map is a good starting point to identify these "lost" mire complexes and future FP maps will be amended to reflect the location of mires more accurately.

Before the next FP review an exercise will be carried out to more accurately survey and identify remnant mire habitats within Inclosures to help specify and prioritise the extent of future mire restoration.

# 8. Summary & Conclusions

Key findings of the Stage 2 HRA Appropriate Assessment are as follows:

1. All European Sites lying within 15km of the nearest Inclosure boundary were characterised and screened for potential risk (pre-mitigation) during Stage 1 Screening. Due to the location and activities specified in the New Forest Inclosures Forest Plan it was considered there could be potential adverse effects to features within the New Forest SAC/SPA/RAMSAR and River Avon SAC/SPA particularly in relation to SAC Conservation Objectives/Targets and future habitat restoration potential. Therefore, further assessment was carried in Stage 2 to determine any likely significant effect.
2. The role of the New Forest Inclosures Forest Plan in helping to recreate/restore SAC habitats and diversifying habitats is recognised by the New Forest SAC Management Plan.
3. Analysis of the likelihood of sediment or pollution from operational activities affecting the River Avon SAC/SPA via the Dockens Water flowing close to Newlands, Broomy, Holly Hatch or South Bentley Inclosures concluded that there would be no adverse effect on the integrity of the site features due to the timing/duration of operations, and the methods which would be used as part of forest operations which must comply with the UKFS to avoid damaging soils and water features.
4. The operational activities that will be carried out in the Inclosures over the next 10 years are primarily required to restore and maintain site features/habitats. Forestry England are confident that the operational risks to existing site feature and future habitat potential will be minimised by ensuring that all operational planning and implementation complies with the United Kingdom Forestry Standard (UKFS) and associated guidance which is the reference standard for sustainable forest management in the UK.
5. The proposals in the New Forest Inclosures Forest Plan were assessed against the Conservation objectives set out for the New Forest SAC/SPA which use the New Forest Ancient Habitat Complex map as the basis for habitat restoration targets. 56 out of 117 Inclosures show a very high, high or medium level of anomaly between the FP long-term vision and the Ancient Habitat Complex map. These anomalies primarily relate to where the SAC conservation objectives seek the restoration of heathland habitats and the Forest Design Plan sets the long-term vision as broadleaf or mixed woodland. Despite the anomalies relating to the extent and type of habitat restoration over the long-term vision (100 to 200 years hence), it is recognised that the latest review of the Forest Plan **significantly moves forward** habitat restoration opportunities. The current version of the New Forest Inclosures Forest Plan can only be approved for a 10-year period and within this period (and beyond) given the scale of the Inclosures and the management actions (which will be carried out in accordance with UKFS) it is considered that the proposals will improve the condition of SAC/SPA/RAMSAR habitats

and benefit SAC/SPA/RAMSAR interest features/species and therefore will not have an overall, adverse effect on site integrity.

6. Where the long-term vision differs from the SAC conservation objectives there are a range of mitigation measures that will be applied over the next 10 years and beyond to protect future habitat restoration potential. These include developing smaller, more intimate mosaics of SAC habitats within certain Inclosures or allowing different but no less valuable SAC habitat types such as 9190 Old acidophilous oak woods with Quercus robur on sandy plains rather than 4010 Northern Atlantic wet heaths with Erica tetralix or 4030 European dry heaths where 18<sup>th</sup> & 19<sup>th</sup> century oak is already established. Given the natural dynamic nature of woodland and heathland and the high ecological value of these habitat types, including their importance for SAC features and SPA birds, it is considered that there will be no adverse effect on the integrity of SAC/SPA interest features across the New Forest SAC or New Forest SPA within the next 10 years.
  
7. There are certain Inclosures where it is more difficult to mitigate habitat anomalies over the longer term and these will be reviewed at the next FP review (starting in 5 year's time), notably:
  - Appleslade
  - Burley Outer Rails
  - Crab Hat
  - Hasley
  - Little Linford
  - Busketts
  - Foxhunting
  - Great Linford
  - Kings Hat
  - Wilverley
  - Godshill

It is considered appropriate for FE to take this approach because:

- These 9 Inclosures will only experience one or two interventions at most within this time frame and careful, targeted management operations during this phase offer opportunity to improve the habitat condition rather than harm it. Therefore, over the next 10 years there will be no adverse effect on the integrity of the New Forest SAC/SPA.
  
- The existing FP proposals have already been undergoing review for 5 years and have undergone extensive consultation. The majority of consultees recognise and support the efforts the Forestry England have made to try and significantly more

forward the FP to benefit SAC habitats and SPA birds. To hold up the FP approval process for a few Inclosures risks the existing FP consent running out which would prevent the Forestry England carrying out management operations that are beneficial to SAC habitats across the whole suite of Inclosures.

- It would be more productive to spend time between now and the next FP review gathering necessary data (e.g. botanical survey data/ground truthing) and considering grazing options in order to make more informed choices about the future vision for these Inclosures at the next FP review.

8. There are no other current plans or projects that have reached the stage where it is possible to assess the in-combination effect with the New Forest Inclosures Forest Design Plan.

Appendix F summarises the status of all the Inclosures post-mitigation. In conclusion:

With regard to the **New Forest SAC** and reasons 3,5,6,7 & 8 above it is considered that the FP proposals will not have an adverse effect on the integrity of the site or its interest features.

With regard to the **New Forest SPA** and reasons 3,5,6,7 & 8 above it is considered that the FP proposals will not have an adverse effect on the integrity of the site or its interest features.

With regard to the **New Forest RAMAR** site and reasons 3,5,6,7 & 8 above it is considered that the FP proposals will not have an adverse effect on the integrity of the site or its interest features.

With regard to the **River Avon SAC** (notably the Docken's Water) and reason 4 above it is considered that the FP proposals will not have an adverse effect on the integrity of the site or its interest features.

With regard to the **River Avon SPA** (notably the Docken's Water) land reason 4 above it is considered that the FP proposals will not have an adverse effect on the integrity of the site or its interest features.

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