Ecology and Biodiversity - Overview

June 2016

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Legal requirements for ecology and biodiversity

Sites

- Sites of international importance for nature conservation are protected under the Habitats Regulations 2010 – Special Protection Areas and Special Areas of Conservation

- Sites of national importance are protected under the Wildlife and Countryside Act 1981 – Sites of Special Scientific Interest and Local Nature Reserves

- County wildlife sites are non-statutory. They are protected through the planning process. Most ancient woodlands are county wildlife sites

Species

- A number of species including bats, great crested newts and badgers enjoy statutory protection.

HS2 Ltd policy to ecology and biodiversity

Policy

- Although there is no legal requirement to do so, HS2 Phase One has the objective of seeking to achieve no net loss to biodiversity for the project as a whole (4.8.7, Annex 4, draft Environmental Minimum Requirements)

- HS2 Ltd has sought to realise that objective through the design of the Bill scheme.

- HS2 Ltd has developed a metric to measure losses and gains to biodiversity in consultation with Defra and Natural England. The metric was published in the main Phase One Environmental Statement.

- The interim results of the loss and gain calculation were published in January 2016.

Surveys and the precautionary approach

- Surveys of habitats and species have been undertaken on all lands within Bill limits where access has been obtained. These surveys are reported in the main ES and updated in the SES documents that accompany the Additional Provisions.

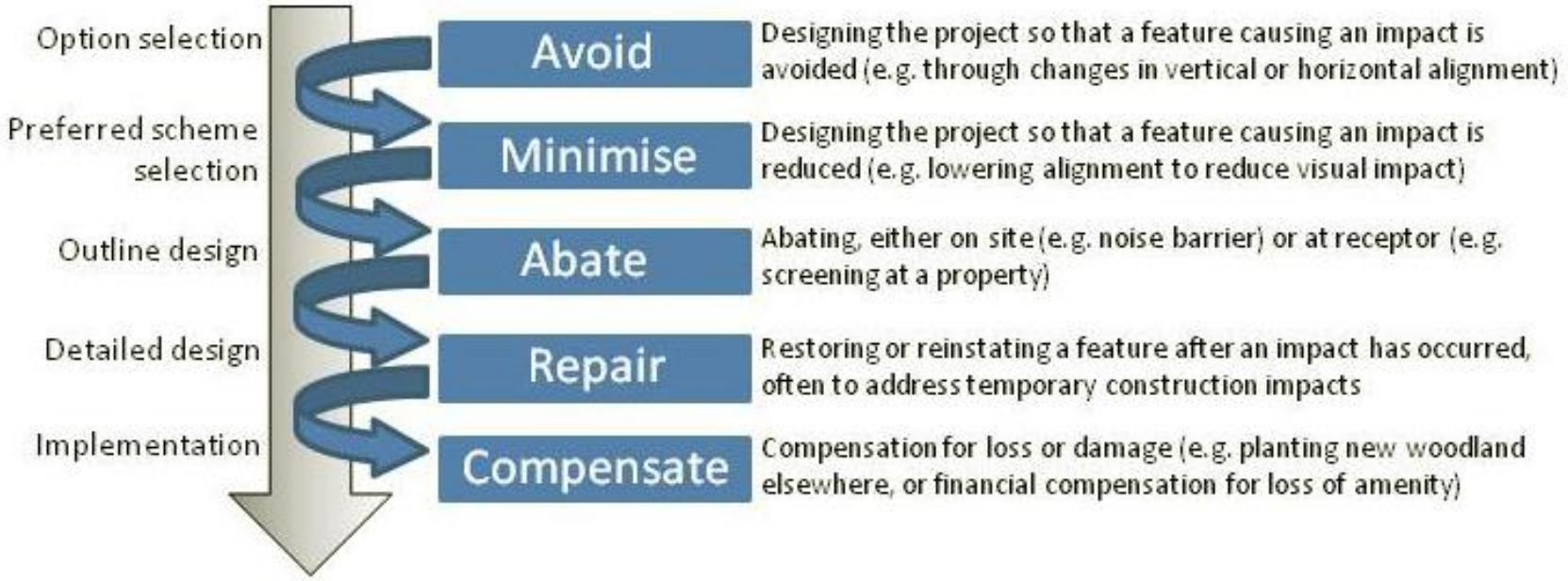
- Best practice methods have been used for ecological surveys. Methods have been agreed with Natural England. They are set out in the Field Survey Methods and Standards document which forms part of Volume 5 of the main ES.

- Assessment of effects on designated sites, habitats and species is based on survey results together with baseline data obtained from local record centres and other sources.

- HS2 Ltd has no statutory right of access for surveys. In the absence of survey data, a precautionary approach has been adopted.

Applying the Mitigation Hierarchy to ecology and biodiversity

- Development of the project has been undertaken in accordance with the mitigation hierarchy:



Internationally and nationally protected sites (1)

- The route has been designed to avoid all internationally protected sites.
- Four nationally protected sites are directly affected by the proposed scheme (three Sites of Special Scientific Interest (SSSI) and one Local Nature Reserve).
- Measures to mitigate or provide appropriate compensatory measures have been developed in consultation with Natural England.

Internationally and nationally protected sites (2)

Examples:

- Long Itchington Wood SSSI. The scheme is in bored tunnel to avoid direct loss of this ancient woodland site.
- Mid-Colne Valley SSSI. An additional provision was brought forward to reduce the loss of ancient woodland within the SSSI to less than 0.1 ha
- The Bill includes powers to provide compensatory habitats where SSSIs are affected. Measures have been agreed with Natural England.
- At Helmdon Disused Railway SSSI a green bridge was added through an additional provision. This will increase connectivity between the two sections of SSSI.

Examples of Ecological mitigation

- A bespoke 850m bat mitigation structure alongside Sheephouse Wood SSSI in Buckinghamshire to protect Bechstein's bats from being struck by passing trains.

- Provision of new nest boxes for barn owls at a safe distance from the railway to augment the population of this protected species. This will be informed by a research project on barn owl dispersion.

Maintaining connectivity

- Wildlife connectivity is provided along the route by means of bored tunnels, cut and cover tunnels, viaducts, bridges and underpasses.

- There will be 16 green bridges, many of which are provided specifically to create connectivity for wildlife. The Promoter has taken an evidence based approach to the provision of green bridges.

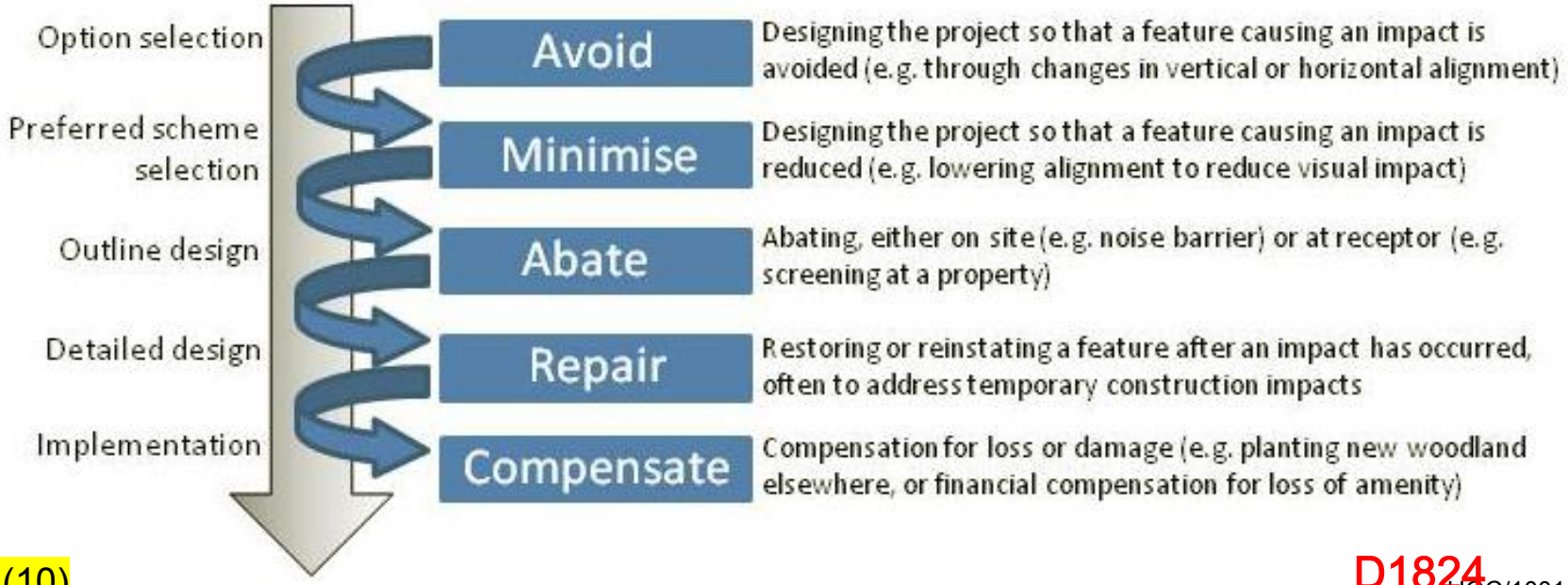
- In the Bernwood Forest area, surveys confirm the requirement for five green bridges with a minimum green width of 30m for protection of Bechstein's bats.

- The creation of green corridors alongside the railway will facilitate the north-south movement of wildlife.

Applying the Mitigation Hierarchy

- The mitigation hierarchy has been applied to avoid ancient woodlands wherever possible, to reduce the effects where avoidance has not been possible, and to provide compensatory measures where there is unavoidable loss.

- The approach that has been adopted is set out below:



Ancient Woodland losses

- There are unavoidable losses at 34 ancient woodlands. The total area of ancient woodland lost is 30.4 ha.
- The ancient woodlands affected include 25 that were originally on Natural England's Ancient Woodland Inventory, together with a further 9 that were added to the inventory as a result of heritage studies undertaken by HS2 Ltd.
- In consultation with the Woodland Trust, measures have been taken that reduce the loss of ancient woodland by 10.7 ha.
- The Proposed Scheme has been designed to avoid any loss of ancient woodland within SSSIs along the route at Sheephouse Wood and Long Itchington Wood.

HS2' approach to ancient woodlands

- HS2 Ltd recognises that ancient woodlands are irreplaceable.
- HS2 Ltd is committed to best practice measures to compensate for ancient woodland unavoidably lost to the Proposed Scheme.
- Measures adopted by HS2 are consistent with Natural England's standing advice on ancient woodland and have been discussed in detail with both Natural England's woodland specialists and The Woodland Trust.
- Translocation of ancient woodland soils will be undertaken where appropriate.
- Planting will be undertaken to create new woodlands. These are adjacent to existing woodland and to create new linkages between woodlands where possible.

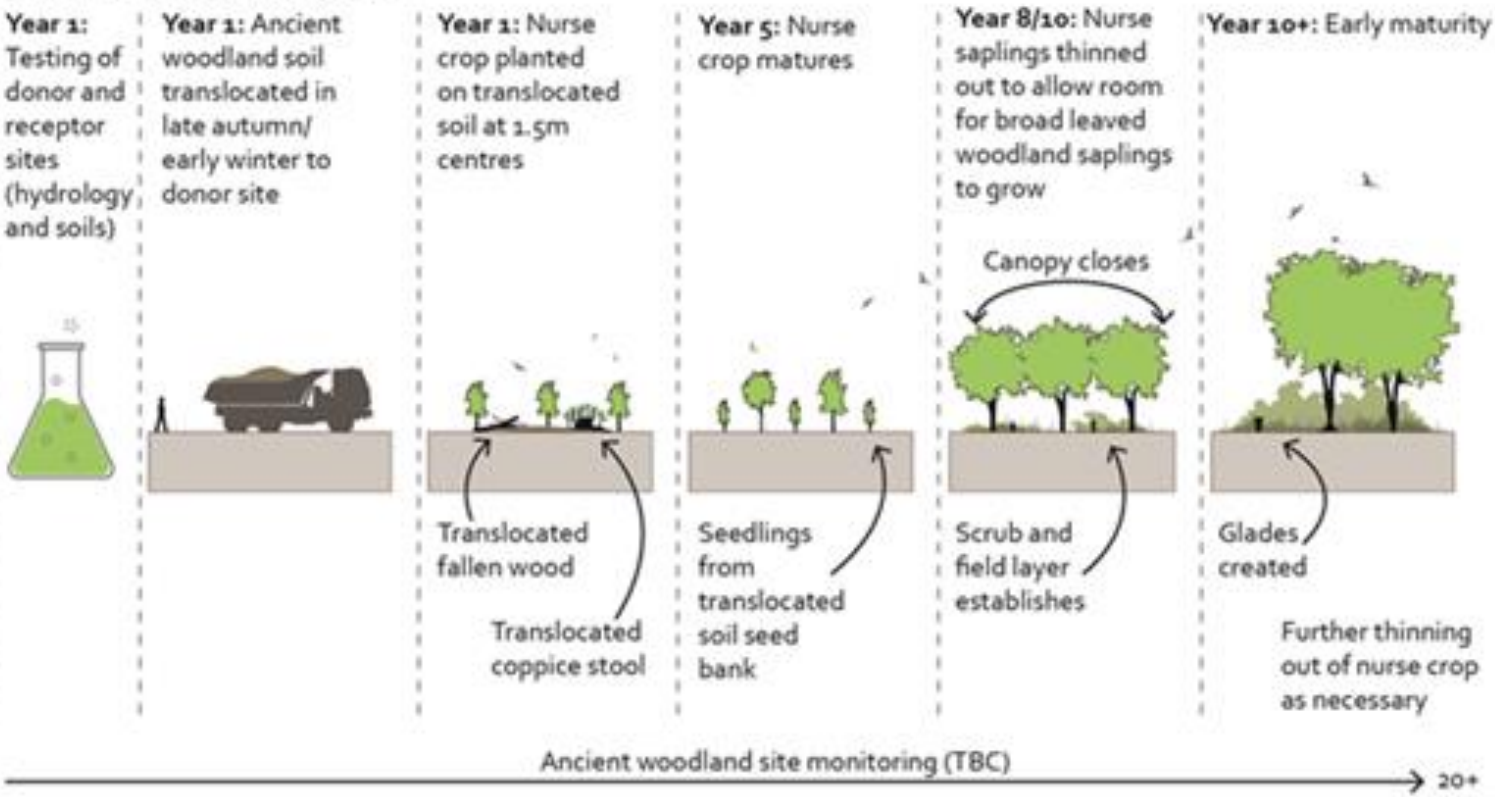
Ancient Woodland – soil translocation

- Ancient woodland soils have distinct chemical and physical properties because they have never been ploughed or fertilised. They contain seeds, spores, bulbs and other material from woodland plants.

- Although translocation of ancient woodland soils cannot re-create an ancient woodland, research to date shows that it can be a valuable starting point for creating woodland of higher ecological value than can be achieved otherwise.

- Wood plants including primrose and early purple orchid growing under regenerating woodland at a soil translocation site created about 15 years ago in north Kent. These species are characteristic of ancient woodland.

Ancient woodland planting



Development of compensatory measures – policy and guidance

- There is no policy or guidance in respect of the appropriate amount of compensation that is appropriate where ancient woodland is lost.

- The inspectors report for the A21 Trunk Road (Tonbridge to Pembury Dualling, December 2013) concluded that a ratio of 2:1 including ancient woodland soil translocation was appropriate.

- The report noted that although the Woodland Trust had requested a ratio of 30:1, the developer needed to take account of not only loss of ancient woodland but also other environmental effects, and that a balanced approach to woodland compensation was required.

Development of HS2 compensatory measures

- Measures have been developed on a site by site basis taking account of the site's specific characteristics and requirements. No ratios have been adopted.

- HS2's approach is set out in Ecological Principles of Mitigation that was developed in consultation with Natural England and is published as an appendix to the Environmental Statement. It embraces the importance of connectivity of habitats.

- The areas of new woodland to be created are larger than the areas of ancient woodland lost, but no ratios have been used. Route-wide, an area of woodland creation in excess of 150 ha is proposed.

- A balanced approach has been taken to the development of habitat creation measures, taking account of the ecological requirements as well as the effects on loss of high quality agricultural land and agricultural businesses.

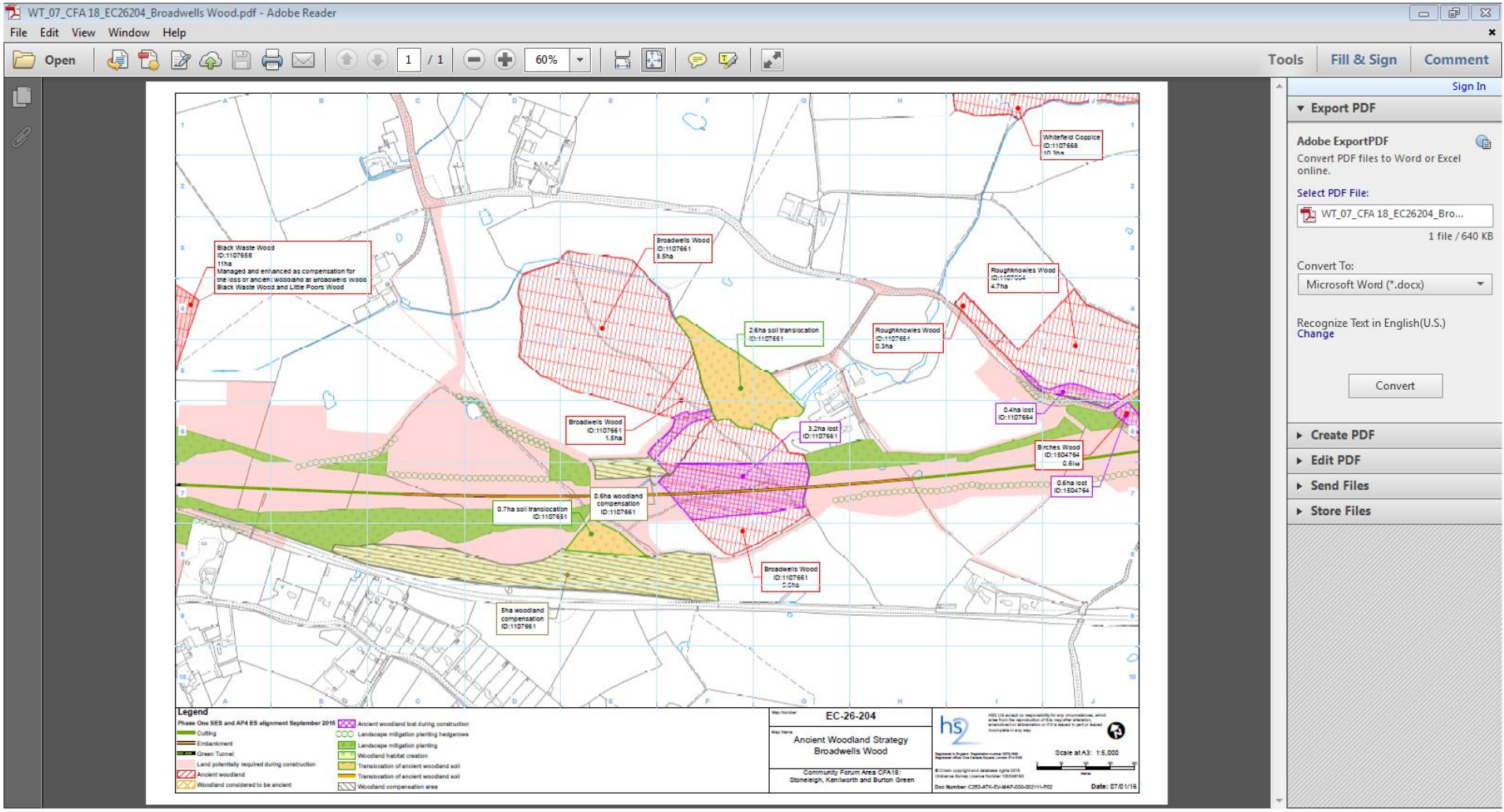
- HS2's biodiversity metric has not been used to develop compensatory measures, it is being used to compare losses and gains route wide.

The ancient woodland strategy

- Ancient woodland strategy documents have been prepared to identify the effects for each ancient woodland as well as the compensatory measures to be used. These documents include maps to show where losses occur and where new woodlands would be created.

- The following slide provides an example of a map for the Broadwells Wood area taken from the strategy documents.

Ancient Woodland Strategy – Broadwells Wood area



Delivery of compensatory measures

- Planting of new woodlands identified in the ancient woodland strategy documents will be undertaken as part of the advanced works, generally within the fist year or two of the project so that the are established as soon as is reasonably possible.

- 1.5 million trees will be planted in the advanced works.

- A further 5.5 million trees will be planted at later stages in the project..

Development of compensatory measures and habitat creation

- Measures to compensate for loss of protected sites and other areas of high nature conservation value have been developed on a site by site basis taking account of the site's specific characteristics and requirements.

- HS2's approach is set out in Ecological Principles of Mitigation that was developed in consultation with Natural England and is published as an appendix to the Environmental Statement. It embraces the importance of connectivity of habitats.

- All habitats required to compensate for losses are identified in the hybrid Bill to ensure deliverability. The project recognises that off-site measures may also be of benefit and it is considering a number of such options as an alternative way of providing the required habitats.

- HS2's biodiversity metric has not been used to develop compensatory measures, it is being used to compare losses and gains route wide.

Progress towards no net loss to biodiversity

- The interim calculation for the route-wide balance indicated a deficit of 3%. The project is taking steps to address this in accordance with the route-wide no net loss objective.

- The House of Commons Select Committee directed HS2 Ltd to consult with Defra to identify a suitable body to undertake an independent review of the approach. Natural England has agreed to undertake this review.

- HS2 Ltd has committed to updating the biodiversity loss and gain calculation prior to Royal Assent. The findings of Natural England's independent review will be taken into account prior to undertaking the re-calculation.

HS2 approach to ecology and biodiversity

- The House of Commons Select Committee concluded that the particular value of green space within the Colne Valley justified an aspiration to no net biodiversity loss in that area.

- The Promoter recognises the importance of biodiversity in the Colne Valley and the major impact of the scheme on the Mid Colne Valley SSSI and the important green spaces in this area.

- The Promoter will work with the other members of the Colne Valley Panel to address these impacts.

Timeline

- The Early Works contracts will involve creation of new habitats and translocation of protected species from the trace to enable main construction to begin.

- Habitat creation areas that will act as receptor sites for species such as great crested newts will be started as soon as possible after Royal Assent.

HS2 Ecology Review Group

- HS2 Ltd has given assurances that it will establish an independent Ecology Review Group (ERG).
- The role of the ERG will be to consider monitoring outputs and advise the nominated undertaker if these appear to show that ecological habitat creation measures are not likely to achieve their objectives.
- The ERG will include representation from local authorities, Natural England, local wildlife trusts and other relevant nature conservation NGOs.
- The ERG will receive monitoring outputs on an annual basis.
- Prospective members will be asked to comment on the draft Terms of Reference prior to them being finalised
- In view of its role in advising the project on monitoring outputs, it is proposed to establish the ERG after Royal Assent.

HS2 destroyed trees in way of train line without permission

This article is more than 2 years old

Contractors removed potential habitats for bats and butterflies in Buckingham nature reserve to prepare for rail line

Tree damage at the Calvert Jubilee nature reserve in Buckinghamshire. Photograph: BBO Wildlife Trust

Patrick Barkham
@patrick_barkham
Fri 10 Jan 2020 07.00 GMT

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Trees were felled and the potential habitats of rare bats and butterflies were destroyed on a nature reserve without permission to make way for HS2, the high-speed rail scheme has admitted.

Contractors sealed off public footpaths and removed trees inside Calvert Jubilee nature reserve, in Buckinghamshire, without notifying the landowner, the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT). Work which eradicated habitat where bats could roost was carried out in December, despite the government having ordered

that “irreversible” destruction of ancient woodland should be halted unless deemed absolutely necessary while HS2 is under review.

When the trust raised the alarm after volunteers working at the nature reserve spotted the work being done, an HS2 spokesperson initially insisted it had acted with “the full permission of the landowner”. But in a letter to the wildlife trust seen by the Guardian, HS2 subsequently admitted it did not have permission to undertake the work.

HS2 begins evicting activists from protest site after two years

It claimed it had mistakenly believed the site belonged to another landowner from whom it had permission, despite contractors entering the site past signs clearly identifying it as a BBOWT nature reserve.

Mark Vallance, reserves manager for BBOWT, said he was “livid”, and it was alarming that wildlife habitat could be destroyed by accident.

“It terrifies me that this sort of thing can happen so easily,” he said. “We’ve talked to HS2 numerous times about the impact on our nature reserves.

“If HS2 doesn’t go ahead – and we accept that’s a slim possibility – then there’s been a loss of really good bat habitat here.”

Dozens of limbs from old ash and sallow were removed and several whole trees chopped down. Vallance said the destruction appeared to have deliberately targeted the best bat habitats. The presence of live bats – which are protected by law – has the potential to stop HS2 construction work, set to begin later this year.

Following widespread local protests against the destruction of ancient woodland while the high-speed line is under review, the transport secretary, Grant Shapps, ordered HS2 in September to "consider what works affecting ancient woodland clearances can be delayed for the duration of the review".

But "enabling works" to remove ancient hedgerows and trees before the main contracting works are continuing apace, with miles of hedges grubbed up in recent weeks close to the proposed line through Buckinghamshire, Northamptonshire and Warwickshire.

A leaked copy of the review into HS2's spiralling costs by Douglas Oakervee revealed he is set to endorse the project but his deputy, Lord Berkeley, this week issued a "minority report" castigating the project for "seriously misleading" parliament, with the estimated final cost rising to £107bn.

Boris Johnson admitted costs were likely to rise above £100bn during the election campaign.

Activists demonstrating against the HS2 railway line in Denham, Buckinghamshire. Photograph: Stephen Bell/Alamy Stock Photo

Of the environmental damage, Lord Berkeley – a rail expert who has worked for Eurotunnel, the Rail Freight Group and as a transport minister – said: “Compared to improving existing lines, HS2 is not good for the environment, and HS2 Ltd has exacerbated the situation by its appalling treatment of stakeholders, residents, businesses and councils in the areas over which it plans to construct the lines.”

At Calvert Jubilee nature reserve, the high-speed line requires the removal of the eastern edge of the reserve, including orchid-rich grassland and scrub which until recently contained Buckinghamshire’s last remaining populations of nightingales and turtle doves, as well as all five species of hairstreak butterfly.

In a letter to BBOWT, David Bennett, the delivery director of HS2, apologised for undertaking work without permission and said it had incorporated feedback from the charity on the 75,000 trees it will plant this winter close to the nature reserve as compensation for the destruction.

Bennett said: “Over time these trees will connect areas of existing woodland … and form new bat flight lines away from the HS2 route.”

According to BBOWT, HS2 has repeatedly refused to provide it with precise information about how much of the nature reserve will be removed. Other landowners along the line have reported a similar lack of clarity.

“Every metre counts,” said Vallance. “Even if the land taken was reduced by a couple of metres, it saves a chunk of nature reserve because the track goes through so much of the reserve. Once it’s gone, it’s gone. You can recreate habitat but it takes an awfully long time.”

Like other landowners, BBOWT has not yet been paid compensation for land already taken by HS2. Another landowner, who asked not to be named, said compensation was being withheld to minimise local dissent. “Some landowners feel bullied by HS2,” they said.

Another landowner close to Calvert Jubilee, Christopher Prideaux, whose farm is bisected by the line, described being surrounded by “all manner of chaos” with expensive and ill-planned “enabling works” including the construction of “newt ponds without any newts” on productive farmland.

“This a national crisis,” he said. “I don’t think Westminster will care about the environment. Westminster will care about billions of expenditure.

“HS2 are hoping to get so far down the track that it is too difficult to cancel. This is not true. In financial terms, the first loss is the cheapest loss. What has been spent so far is a fraction of the overall sum. No government has got any right to be blundering ahead with this without a national transport policy.”

In his independent report, Lord Berkeley said HS2 was an “expensive” and “wrong” solution to improving the rail network and recommended spending half HS2’s budget on upgrading existing commuter lines, particularly in northern England and the Midlands.

Hibit 3

1EW03 - Enabling Works Contract

AWE2b-4 - Ecology Site Management Plan - Jones' Hill Wood Ancient Woodland

Document no.: 1EW03-FUS_THE-EV-PLN-CS03-000001

Revision	Author	Checked by	Approved by	Date approved	Reason for revision
C01	[redacted]			12/11/2020	First Submission

D1844

Internal review and approval record

Revision	Author	Checked by	Approved by	Date approved	Reason for revision
C01	[redacted]			26/08/2020	First Submission
C01.1				03/11/2020	Updating document

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Project Terminology

The project terminology used within this document can be found in the 'LWM Project Dictionary' (HS2-HS2-PM-GDE-000-000002). In addition, the following terminology is used:

- An '**Ecological & Arboricultural Permit' (EAP)** must be issued by Fusion prior to any works being undertaken. An EAP will be given out once an ecologist has checked the site and is able to confirm that appropriate mitigation is in place for all ecological impacts on Donor and Receptor Sites. The EAP will be produced by the Fusion personnel organising works, checked and signed by Fusion ecologist and arboriculture team and Fusion Ecological Clerk of Works and issued to the contractors and Ecological Clerk of Works. Translocation works can commence only after an EAP has been issued in order to prevent harm to protected species.
- The **'Suitably Experienced Ecologist'** operates at a strategic design level rather than on-site. The individual is expected to have significant experience of making ecological decisions on a variety of complex projects. They should also have a full working knowledge of wildlife legislation, policy and licensing procedures (where necessary), as well as detailed knowledge of relevant HS2 produced technical documents and appropriate ecological mitigation measures.
- The **'Ecological Clerk of Works' (ECoW)** should work on-site alongside contractors, providing an inspection, monitoring and advisory role in line with the strategic / design level guidance provided by the 'Suitably Experienced Ecologist'. They should be able to make clear ecological decisions on species and habitat issues, seeking best possible ecological outcomes, often on an ad hoc basis, drawing upon appropriate knowledge. Where required, they will need to hold the relevant protected species survey licences.
- **Invasive Non-Native Species (INNS)** are broadly defined as species whose introduction and/or spread threaten biological diversity or have other unforeseen impacts.
- **Dormant season** refers to the period between October and February (weather dependant), when many plant are species are dormant and do not grow or propagate.
- **Growing season** refers to the period between March and September (weather dependant) when the majority of plant species grow and propogate.
- **Donor Site** The ancient woodland site from where soil and woodland material will be taken during the translocation exercise.
- **Receptor Site** The site which will receive the ancient woodland soil and material during the translocation exercise.

Links to other Scheme Documents

Table 1 and Table 2 below shows the other key scheme documents to which this Ecology Site Management Plan (ESMP) is linked and which should be read in conjunction with this ESMP to develop consistent and efficient management and monitoring programmes.

Table 1 Key Scheme Documents

Title	Purpose	Reference
The Environmental Memorandum	The Memorandum relates to the environmental aspects of the design and construction of Phase 1 of HS2. It builds upon discussions which have taken place between HS2 Ltd and representatives of the National Environmental Forum comprising the Agencies (Historic England, Environment Agency and Natural England) and representatives from relevant Government departments, including the Forestry Commission.	HS2-HS2-EVSTD- 000-000004
Code of Construction Practice	The document contains control measures and the standards to be implemented throughout Phase 1 of HS2. At a local level, site-specific control measures will be included within Local Environmental Management Plans, to be developed following consultation with the relevant stakeholders. It also provides a consistent approach to the management of construction activities across local authority boundaries, and with a wide range of key stakeholders.	LWM-HS2-EVSTA-000-000107
HS2 (London-West Midlands) Environmental Minimum Requirements General Principles	This document defines and explains the relevant minimum requirements, which are referred to as the 'Environmental Minimum Requirements'. It also contains as annexes a series of papers which support the EMRs, including the Code of Construction Practice, the Planning Memorandum, the Heritage Memorandum and the Environmental Memorandum.	LWM-HS2-EV-STA-000-000107
HS2's Phase One: London-West Midlands Ancient Woodland Strategy	This document (the Ancient Woodland Strategy for HS2 Phase One) provides an area based comparison of the losses of ancient woodland habitat that will occur as a consequence of the scheme and the associated package of compensation measures to be provided in response to those losses that cannot be reasonably avoided.	PH1-HS2-EVSTR-000-000003
Ecological Monitoring Strategy	This document provides an overview of the route-wide approach that will be adopted for the ecological monitoring of mitigation features (for habitats and species), along with guidance on appropriate monitoring methods and when these should be utilised.	-HS2-EVSTR-000-000029
HS2 Technical Standard – Landscape Maintenance, Management and Monitoring Plan	This document has been prepared to demonstrate the strategy, protocols and responsibilities behind the management and maintenance of the scheme's landscape elements, and how this will be monitored.	HS2-HS2-EV-STD-000-00023
HS2 Ecology Technical Standards	The document is used to inform detailed design and delivery of ecological works for HS2 and to provide a basis for the procurement of design and construction contracts. It defines the requirements for both habitats and species and contains details of mitigation methods, where these are required to address impacts and effects that cannot be avoided.	HS2-HS2-EV-STD-000-000017
HS2 Technical Standard –	The purpose of the document is to guide and direct the landscape design	HS2-HS2-EVSTR-000-000010

Landscape Design Approach Requirements	approach for HS2. The approach is based on principles set out within the HS2 Design Vision and reflects the project's commitment to good design. It presents the design aspirations for HS2, to ensure that the project can achieve its full potential through design and construction stages to postconstruction management.	
Technical Standard – Soil Handling for Land Restoration	This Technical Standard sets out the generally applicable route-wide principles for soil handling, together with the maintenance of access to land for management and infrastructure services. It relates primarily to agricultural and forestry soils as opposed to engineering soils.	HS2-HS2-EVSTD-000-000008
HS2 Technical Standard – Plant Procurement Strategy	This document sets out the technical specification for the supply of plant material. It sets out the key standards to be adopted, specification (including quality, provenance and size), standards for supply, handling storage and delivery, guarantee requirements and additional requirements, including quality assurance.	HS2-HS2-ENV-STD-000-000018
Technical Standard – Woodland, Scrub and Hedgerow Management Plan	This document brings together commitments, targets, objectives and information from existing HS2 documentation to provide guidance on the maintenance (establishment phase) and long-term management for woodland (translocated ancient woodland soils and woodland planting), scrub planting and hedgerows (translocated hedgerows and planted hedgerows). This document is designed to inform detailed prescriptions and programmes to be provided within each Ecology Site Management Plan (ESMP), for woodland, scrub and hedgerow habitats.	HS2-HS2-EVPLN-000-000012
Technical Standard – Fencing	This technical standard provides the technical requirements and associated guidance for the design of any fencing (including gates, hedges, free-standing walls, hoardings, barriers and other boundary treatments) required by the HS2 project.	HS2-HS2-CVSTD-000-000002
AWE2– Advanced Planting, Seeding and Landscape Mitigation Sites and Habitat Translocation Area Central Work Package Environmental Management Plan	The Environmental Management Plan outlines the environmental impacts and constraints associated with the design of the works to be undertaken within the Fusion Enabling Works Area Central Works Package Brief AWE2 Work Package Landscape Habitat Translocation Package and the environmental controls to be implemented during design (the scope of work of the package is outlined in Section 2 of the document).	1EW03-FUS-EV-PLN-C000-005442
Organisational License –Badgers – HS2, Phase 1 London to West Midlands	This organisational licence is issued to HS2 Ltd to permit disturbance, interference with and closure of badger setts along the Phase 1 route: between London and the West Midlands.	WML-OR24
Organisational License – Bats – HS2, Phase 1 London to West Midlands	This organisational licence is issued to HS2 Ltd, it permits suitably experienced employees and staff of contractors to undertake certain activities affecting Bechstein's bat, Brandt's bat, Daubenton's bat, Whiskered bat, Natterer's bat, Common pipistrelle bat, Soprano pipistrelle bat, Brown long-eared bat and Noctule bat which are European Protected Species, that would otherwise be unlawful. The	WML-OR32

	licence facilitates the enabling and construction works of HS2 Phase 1.	
Organisational License – Great crested newt – HS2, Phase 1 London to West Midlands	This organisational licence is issued to HS2 Ltd, it permits suitably experienced employees and staff of contractors to undertake certain activities affecting great crested newts that would otherwise be unlawful. The licence facilitates Phase 1 enabling and construction works of HS2 Phase 1.	WML-OR25
Pre-Construction Nesting Bird Survey Methodology/ Breeding Bird Methodology	The document entails guidance on the survey methods which should be applied during all vegetation clearance works and other works which may impact nesting birds and methods to be employed in finding nests and the steps to be taken to ensure that no nests are destroyed during the works.	1EW03-FUS-EV-MST-C000-008590
HS2 Phase One: Great Crested Newt: Populations and Habitats Assessment, Phase 1 Route Wide	Identifies the number of water bodies and areas of terrestrial habitat to be created for great crested newts known at the time of writing. The number of ponds and areas of habitat created may change subject to additional/ updated survey results.	1EW03-FUS-EV-MST-C000-000014
1EW03 HS2 Phase One: Great Crested Newt Unexpected Finds	This document provides the scope of works to be carried out as well as an outline of how the risk levels will be determined. It also explains the Reasonable Avoidance Measures along with the reporting required by the contractors and accredited agents should great crested newts be found or suspected.	
Enabling Works Contract Subcontractor Works Information SWI0200 General Constraints	This Works Information describes the constraints which the Subcontractor complies with in Providing the Works.	1EW03-FUS-CM-XXZ-C000-000986

Table 2 Project Specific Documents

Title	Purpose	Reference
AWE2b-4 Ancient Woodland Translocation Feasibility Study - Jones' Hill Wood	The aim of the feasibility study is to assess whether ancient and seminatural woodland soils, deadwood, coppiced trees and where necessary whole trees and shrubs can be translocated efficiently from Donor Sites to the Receptor Sites. This is to allow for the construction of the HS2 railway line.	1EW03-FUS-EV-REP-CS03-002578
AWE2b-4 Ancient Woodland Translocation Technical Method Statements - Jones' Hill Wood	This Technical Method Statement (TMS) outlines the methodologies which will be used to carry out the Ancient Woodland translocation works.	1EW03-FUS-EV-MST-CS03-000001
AWE2b-4 - Ancient Woodland Translocation Soil Survey Analysis Jones' Hill Wood (Glyn Davies Wood) Report	Provides details on the soil's physical properties and nutrient content on both donor and Receptor Sites, to inform suitable soil management procedures for the affected sites. The soil management procedures will form part of the overall methodology which is detailed in the AEW2b Ancient Woodland Translocation Technical Method Statement.	1EW03-FUS-EV-MST-CS03-

AWE2b-4 - Ancient Woodland Translocation National Vegetation Classification Survey Jones' Hill Wood Report	Provides details on the NVC communities identified within the Jones' Hill Wood Donor Site.	1EW03-FUS-EV-MST-CS03-002579
AWE2b-4 - Ancient Woodland Translocation Arboriculture Jones' Hill Wood Report	Identifies trees, coppice stools, saplings, seedlings and deadwood suitable for translocation. Provides details of pest and disease management.	1EW03-FUS-EV-MST-CS03-002580
AWE2b-4 - Ancient Woodland Translocation Timber Valuation Scoping Jones' Hill Wood Report	Provides a timber valuation scoping report.	1EW03-FUS-EV-MST-CS03-002581
AWE2b-4 - Ancient Woodland Translocation Topographical Survey Jones' Hill Wood Report	Provides methodology and results of the topographical surveys undertaken at the Jones' Hill Wood donor and Receptor Sites.	1EW03-FUS-EV-MST-CS03-002584

Abbreviations and Descriptions

The abbreviations, descriptions and project terminology used within HS2 are documented in the LWM Project Dictionary [HS2-HS2-PM-GDE-000-000002] key abbreviations are detailed in Table 3 below.

Table 3 Abbreviations and Descriptions

Word/Abbreviation	Description
Agreement	A collective term for a Subcontract, Purchase Order or similar document between Fusion and another party that specifies the scope of work and plant, equipment, materials or services.
Authorised Person	A member of the Fusion Project Team who has been formally appointed to take responsibility for a task or function.
AWS	Area Wide Surveys
BAP	Biodiversity Action Plan
Checklist	A proforma schedule of required inspections of a particular item that is normally signed to confirm completion of the required inspection
CoCP	Code of Construction Practice
EAP	Ecological and Arboricultural Permit
ECoW	Ecological Clerk of Works
EMS	Ecological Mitigation Strategy
EPS	European Protected Species
EPSL	European Protected Species Licence
ERG	Ecological Review Group
EMP	Environmental Management Plan
EMRs	Environmental Minimum Requirements

ESMP	Ecology Site Management Plan
ESW	Environmentally Sensitive Worksite
ETS	Ecological Technical Standards
EWC	Enabling Works Contract
Examination	A formal report of an observation of work completed, or in progress
EWC	Enabling Works Contract
GCN	Great Crested Newt
GCN LICL	GCN Low Impact Class Licence
HPI	Habitat of Principal Importance
HS2	High Speed 2
H&S	Health and Safety
Independent Inspector	A person deemed competent to carry out inspection and who is not a member of the team responsible for the manufacture, installation or construction of the item.
Inspection	Examination (e.g. visual assessment, measuring,) of an item to determine whether or not characteristics/attributes comply with the Agreement
INNS	Invasive Non Native Species
Material(s)	Supplied products that form the works and include fabricated items and plant.
MWC	Main Works Contract
MWCC	Main Works Civils Contracts
NERC	Natural Environment and Rural Communities
Non-Conformance	Non-fulfilment of a requirement.
NGOs	Non-Governmental Organisations
NPPF	National Planning Policy Framework
NVC	National Vegetation Clasification
PRoW	Public Rights of Way
RAMs	Risk Assessment and Method Statements
Record	Supplied components or inspection and testing carried out.
SNCO	Statutory Nature Conservation Organisation
SSSI	Site of Special Scientific Interest
Supplier	An individual or organisation that is party to an Agreement with Fusion to supply material.
TPO	Tree Preservation Order

LEMPs	Local Environmental Management Plans

1 Introduction

1.1 Key Details

1.1.1 This ESMP relates to two sites within Jones' Hill Wood, Northamptonshire, the Jones' Hill Wood ancient woodland Donor Site (hereafter referred to as the 'Donor Site') and the Jones' Hill Wood Receptor Site (hereafter referred to as the 'Receptor Site'). The locations of the Donor Site and Receptor Site are shown on Figure 1.

1.1.2 Jones' Hill Wood is a 1.8ha area of lowland mixed deciduous woodland that is recognised as Ancient and Semi-Natural Woodland. It is located 5 miles east of Princes Risborough and 6 miles south east of Aylesbury, Oxfordshire, at Grid Reference: SP 88724 04422 (See Figure 1). The Donor site scheduled for translocation is 0.7ha.

1.1.3 The Receptor Site has been designed to provide compensation for the loss and severance of ancient woodland within Jones' Hill Wood. The Receptor Site will also provide habitat connectivity and habitat enhancements for foraging and commuting bats and breeding birds.

1.1.4 The Receptor Site is approximately a 0.7 ha arable field and is located to the east of the Donor Site. The Receptor Site and Donor Site are less than 25m apart.

1.1.5 Figure 1 shows the Receptor and Donor Site boundaries in relation to other areas of ancient woodland, relevant to the ESMP's objectives.

1.1.6 The Receptor Site is excluded from the net gain habitat calculations for the HS2 project because it includes removing material from existing irreplaceable habitat and consequently cannot be considered as a habitat gain, as detailed in Hs2 Phase One: London-West Midlands Ancient Woodland Strategy (PH1-HS2-EV-STR-000-000003).

1.2 Purpose of the Ecological Site Management Plan (ESMP)

1.2.1 The project is required to produce an ESMP prior to any work commencing, for habitat creation areas, designated sites, and ancient woodlands, as described in Paragraph 4.8.3 of the Environmental Minimum Requirements (EMRs) Annex 4: Environmental Memorandum (document reference: HS2-HS2-EV-STD-000-000004). Key documents that were consulted in developing the ESMP are included in Table 1 and Table 2 above.

1.2.2 The purpose of this ESMP is to:

- Describe the current condition and status of the Donor and Receptor Sites prior to habitat creation measures being implemented (Section 2 – Baseline Conditions).
- Identify site objectives and targets for the Receptor and Donor Sites relating to both establishment and end condition, including timescales (Section 3 – ESMP Site Objectives).

- List in detail the specific management actions and prescriptions to be followed to ensure successful habitat establishment, development and achievement of the desired end condition (Section 4, 5 and 6).
- Detail the monitoring and reporting requirements of the ESMP and the mechanisms by which review and adaptive change to the ESMP will take place (Section 7 – Monitoring).
- Assign responsibilities for these actions and prescriptions and roles in implementing these (Section 8 – Responsibilities).
- Set out a programme of works for all actions and associated requirements of the ESMP for the specified 50-year period (Section 9 – Programme of Works).

1.2.3 This ESMP will be updated at the detailed design and as built staged. This initial draft has been produced in parallel with the development of the detailed design. Prior to commencement of monitoring, reviews will be undertaken both on completion of detailed design and on production of 'as built' drawings. During monitoring, the ESMP will be updated to reflect changing conditions and changes in best practice for example changes in biosecurity or response to climate change.

1.2.4 The ESMP objectives will be reviewed every five years or as required. The aim of this document is to aid the management of the Receptor Site for biodiversity. A record of all amendments should be kept in Appendix 1 of the revised ESMP and include all the reasons and types of changes to the document. All operators who routinely use the ESMP should be made aware of any updates to the document and have access to the updated version.

1.2.5 This plan has been produced in accordance with the Ecology Technical Standards (HS2-HS2-EV-STD-000-000017) and using the HS2 template (HS2-HS2-PM-TEM-000-00004).

1.3 Aims and Objectives

1.3.1 The ESMP objectives are to provide a plan to ensure that translocated and planted habitats at the Receptor Site are managed and monitored to ensure their long-term survival and provide suitable mitigation for the loss of ancient woodland.

1.3.2 The aim of the Donor Site is to retain as much of the ancient woodland as possible that is not needed for translocation.

1.3.3 The Receptor Sites aim is to create an area of the same size and variety as the woodland removed, that can eventually develop into ancient woodland and contribute to benefit the areas biodiversity.

1.3.4 The Jones' Hill Wood Receptor Site shall include:

- Translocated ancient woodland soils.

- Translocated coppice stools.
- Translocated deadwood.
- Translocated monoliths (trees with minimum height of 12m containing suitable roosting features for bats and birds).
- Creation of W14 (NVC classification) woodland *Fagus slvatica - Rubus fruticosus* woodland and;
- Protection of newly exposed ancient woodland edges.

1.3.5 The Receptor Site is excluded from the net gain habitat calculations due to removing material from irreplaceable habitat as detailed in Hs2 Phase One: London-West Midlands Ancient Woodland Strategy (PH1-HS2-EV-STR-000-000003).

1.3.6 This ESMP should be considered an active document and will be updated as required. A record of any changes and updates can be found in Appendix 1.

1.4 Consultations

1.4.1 Key documents that were consulted in developing the ESMP include:

- HS2 Information Paper E26: Indicative Periods for the Management and Monitoring of Habitats Created for HS2 Phase One;
- HS2 No Net Loss in Biodiversity Calculation: Methodology and Results;
- HS2 Phase 1 Ecological Monitoring Strategy;
- HS2 Approach Document – Ecological Resilience to Climate Change; and
- Other scheme documents as listed in Tables 1 and 2 above.

1.4.2 HS2 and Fusion are responsible for the facilitation of stakeholder liaison including the landowners through appointed community engagement personnel (where appropriate), the relevant Wildlife Trust and other nature conservation Non-Governmental Organisations (NGOs) as required by the Register of Undertakings and Assurances and in accordance with the requirements in section 4.8.3 of the Environmental Memorandum and Code of Construction Practice (CoCP) (document references HS2-HS2-EV-STD-000-000004 and LWM-HS2-EV-STA-000-000107 respectively), which form part of the EMRs.

1.4.3 The ESMP contents should be shared with the following organisations;

- The Environment Agency;
- Natural England;
- The Forestry Commission;

- The Woodland Trust;
- Buckinghamshire County Council;
- Chiltern District Council;
- The Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust;
- EffiageKier (main works contractor); and
- Local residents and other Landowners.

1.4.4 Consultation with stakeholders will be undertaken as required by the Register of Undertakings and Assurances and in accordance with the requirements in section 4.8.3 of the Environmental Memorandum and Code of Construction Practice, which forms part of the Environmental Minimum Requirements (HS2, 2017). Stakeholders include the landowners and Natural England (where appropriate), the relevant local planning authority, wildlife trust and other nature conservation Non-Governmental Organisations (NGO's). Previous consultations have resulted in the following Undertakings and Assurances for Jones' Hill Wood outlined in Table 4.

1.4.5 All consultation with the relevant parties and consequential responses will be recorded in Appendix 2.

Table 4 Undertakings and assurances relating to the ESMP site

U&A reference	Description	Consideration within this feasibility study
U&A_1643 Buckinghamshire County Council	The Secretary of State will require the nominated undertaker to: a) Not use sustainable placement at Calvert to dispose of material other than inert surplus excavated material; b) Examine all other options for the management of surplus excavated material currently planned for sustainable placement at Calvert; and c) Only place such material at that location if no other option is considered to be reasonably achievable when all aspects including environmental impacts (including traffic and transport) are assessed.	Surplus soil use discussed in Section 4.10
U&A_1646 Buckinghamshire County Council	The Secretary of State will require the nominated undertaker to consider incorporating stretch targets for excavated material diverted from landfill so that contractor incentives (relating to individual contracts and areas in HS2 Phase 1) are introduced to encourage delivery of those targets.	Surplus soil use discussed in Section 4.10 and timber reused or sold as in 2.6

U&A reference	Description	Consideration within this feasibility study
U&A_6238 Aylesbury Vale District Council	The Secretary of State will require the nominated undertaker to, as the detailed design stage approaches, establish a regular meeting with Aylesbury Vale District Council and Buckinghamshire County Council, to discuss issues of detailed design in the Calvert and Steeple Claydon area (including at and around the Infrastructure Maintenance Depot), consistent with the General Principles of the Environmental Minimum Requirements, and HS2 Information Paper G6, Design Development - Detailed Design and the Role of Planning Authorities.	Responsibility of the appointed subcontractor
U&A_6239 Aylesbury Vale District Council	The Secretary of State will require the nominated undertaker to invite East West Rail representatives, Network Rail and any other relevant major project or statutory body representatives to the regular meeting where appropriate to secure effective coordination of works.	Responsibility of the appointed subcontractor
U&A_6240 Aylesbury Vale District Council	The Secretary of State will require the nominated undertaker to participate in any future discussions or governance arrangements which may be established by Buckinghamshire County Council or Aylesbury Vale District Council to manage shared objectives for the local area, particularly in relation to the integration of HS2 plans with those of other committed or proposed projects for the area.	Responsibility of the appointed subcontractor
U&A_6241 Aylesbury Vale District Council	In line with the requirements specified in the General Principles of the Environmental Minimum Requirements, the Secretary of State will require the nominated undertaker to seek to use reasonable endeavours to adopt mitigation measures that will further reduce any adverse environmental impacts around the Calvert area, in so far as these mitigation measures do not add unreasonable costs to the project or unreasonable delays to the construction programme. Any proposals for further mitigation which may be incorporated into the detailed design of the Proposed Scheme in the Calvert area will be discussed at the regular liaison meeting with the relevant local authorities.	Ecology is discussed in Section 2 and environmental responsibility will be the duty of the appointed subcontractor
U&A_6242 Aylesbury Vale District Council	By prior agreement between the nominated undertaker and Aylesbury Vale District Council, relevant third parties may be invited to the regular meeting, including where appropriate Buckinghamshire County Council and the Promoter of the East West Rail scheme, in order that a holistic approach to environmental mitigation may be maintained.	Responsibility of the appointed subcontractor
U&A_6257 Aylesbury Vale District Council	By prior agreement between the nominated undertaker and Aylesbury Vale District Council, relevant third parties may be invited to the regular meeting, in order that a holistic approach to environmental mitigation may be maintained.	Responsibility of the appointed subcontractor

U&A reference	Description	Consideration within this feasibility study
U&A_11660 Buckinghamshire County Council	The Promoter will seek approval of the relevant highway authority to implement appropriate monitoring across a screenline (at a point on each road intersecting an imaginary line, so that total flows on all roads along the imaginary line can be assessed and changes in flow between each road evaluated)of local roads in the areas of Dunsmore, the Lee and Ballinger Common from the A413, to determine any unintended diversion of traffic due the impacts of HS2 construction traffic using the A413. Monitoring will be reported and regularly reviewed at the relevant Local Traffic Liaison Group Meeting, established in accordance with the Code of Construction Practice and the Route-Wide Traffic Management Plan.	Responsibility of the appointed subcontractor
U&A_11000 Buckinghamshire County Council	The Promoter will require the nominated undertaker, at the detailed design stage, to make provision, where it is prudent and reasonably practicable to do so, for the early planting of trees associated with the Proposed Scheme, provided that these trees are not required to be removed on completion of the Proposed Scheme	Supplementary planting and management is discussed in Section 4.9.
U&A_11692 The London Road (HP22 6PN) Residents Group	The Secretary of State for Transport will require the Nominated Undertaker, as far as reasonably practicable, to meet the nominated representatives of the London Road (HP22 6PN) Residents Group on a regular basis, and at intervals of no longer than 6 months, to discuss planned works in the area of Wendover.	Responsibility of the appointed subcontractor
U&A_11407	To compensate for the loss of ancient woodland the nominated undertaker will use best practice measures such as re-using the ancient woodland soils and creating new mixed deciduous woodland.	This is set out in in this report and detailed within the Technical method Statement
U&A_46	In addition, the nominated undertaker will ensure compliance, where appropriate, with other relevant nature conservation policy.	This is set out in in this report and detailed within the Technical method Statement
U&A_11490	Land which will not be disturbed by the Proposed Scheme during construction (e.g. around features like retained trees) will be fenced off, clearly marked and not traversed by machinery.	A RPA and CEZ will be set up and fenced off from the works surrounding the retained ancient woodland.
U&A_11491	Large construction vehicles will not be driven or hauled within the land required for the project from which topsoil/ subsoil has not been stripped (except for the purposes of stripping) unless protective temporary surfaces are used. Wheeled machinery will not go over soil stockpiles, unless necessary for seeding, sward maintenance or weed control.	Detailed in the technical method statement is the order in which the works will be carried out to avoid driving over soil for translocation.

U&A reference	Description	Consideration within this feasibility study
U&A_11492	All soil materials will be handled under suitable weather and soil conditions using appropriate machinery. The stripping, storage and reinstatement of soils will be carried out with reference to the LSSRPs and will be accompanied by a soil audit report produced by the contractor.	Detailed in section 6.6 of this report.
U&A_11493	The sources, locations, contents and approximate volumes of soil stockpiles will be available from soil survey records compiled prior to the stripping and storage of soils. These records will form part of the baseline information and will be made available. In defining target restored profiles the volumes of available soils in storage will be related to the areas of each parcel of land to be restored.	Estimations of volume of soil for translocation are detailed in section 5.10 of this report
U&A_11494	Soils will be handled when least susceptible to damage, and in accordance with Defra's CCoP. The MAFF Good Practice Guide, 2000 (Sheets 1 to 4) describes the typical machinery that will be used in most cases to strip and transport soil materials into and out of store, and to reinstate topsoils and subsoils. For example, alternative specialised machinery will be used for landscape planting on areas with steeper slopes see section 4 below). Soil handling machinery will be restricted to marked haul routes and will not traverse undisturbed or replaced soils, except where such trafficking is essential for the permitted operations agreed with the nominated undertaker.	Soil handling procedures are set out in the technical method statement to ensure good practice.
U&A_11495	3.7 Defra's CCoP describes methods for the construction of soil stockpiles and the DMRB provides guidance on the storage of topsoils for engineering purposes. These documents set out a range of heights for topsoil and subsoil storage. For the translocation of soils from sensitive Donor Sites the soils will generally be removed, transported and reinstated at the Receptor Site without a period of storage. 3.8 Areas to be used for storing topsoil will first be cleared of vegetation. Areas to be used for storing subsoils will be stripped of topsoil (and this material will be temporarily stockpiled). Once the soil stockpile has been completed the area will be fenced-off to prevent any disturbance or contamination by other construction activities.	Soil handling procedures are set out in the technical method statement and no topsoil or subsoil should be removed and installed on the same day, so storage of soil is not required.
U&A_11497	Following the placement of excavated materials, the surface will be graded to create the required contours and landform, minus the specified thickness of subsoil and topsoil cover. Excavated material may be overfilled to allow for a period of settlement to the design profile or required landform.	A topographical survey of Jones' Hill Wood donor and Receptor Site has been carried out (see appendix 6) the topography will be re-created as best possible on the Receptor Site.

U&A reference	Description	Consideration within this feasibility study
U&A_11499	Reinstatement will involve topsoil being placed above subsoil. Where upper subsoil is to be replaced, it will be placed above lower subsoil. The methodology used will be based on Defra's CCoP to minimise damage to soils. Approaches may be modified to suit particular soil types or local circumstances. The completed restoration will be cultivated to a seed bed appropriate to the first crop or vegetation, as agreed with landowners, farmers or tenants. Aftercare and subsequent monitoring will then be carried out.	Depths of soil layers for both sites are detailed in appendix 4 and amounts of soil for translocation to ensure top sub soil is layered upon lower subsoil.
U&A_11500	Similar soil reinstatement methods will be applied to land reinstated for landscape planting on land with shallow to moderate gradients, and where access permits. Alternative methods using specialised machinery will be applicable for landscape planting on areas with steeper slopes, particularly for cuttings and embankments. Soil placement on inward-facing railway slopes will be in accordance with the DMRB. Soil depths and fertility requirements will be specified for different planting or habitats. For the translocation of soils from sensitive Donor Sites efforts will be made to match the soils in donor and Receptor Sites.	The topographical survey recorded only very mild gradient across both the receptor and Donor Site.
U&A_9581 To the Woodland Trust	Prior to commencement of construction, surveys of the ancient woodlands identified within Bill limits and publish the results as soon as is reasonably practicable	The appendices detail surveys undertaken on the ancient woodland. Further surveys are still required.
U&A_9590 To the Woodland Trust	Prior to commencement of construction, the Promoter will: engage with the Petitioner on any proposed compensation identified by the Promoter [nominated undertaker] in light of the published surveys in the form of the Site Management Plan, and have regard to any reasonable representations about any proposed compensation that the Petitioner may make.	The ESMP details the site management plan for Jones' Hill Wood
U&A_9588 To the Woodland Trust	The Promoter will require the nominated undertaker to have regard to the guidance in Natural England's Standing Advice on avoiding damage to or loss of ancient woodland or ancient and veteran trees and for compensation for any unavoidable loss.	This report details the feasibility of the compensation measures set out by Fusion and includes measures to avoid damage on retained ancient woodland
U&A_9586 To the Woodland Trust	The Promoter will require the nominated undertaker to seek to use planting stock for ancient woodland compensation measures that is sourced and grown within the UK.	Stock will be sourced from the UK.
U&A_9585 To the Woodland Trust	The Promoter will require the nominated undertaker to establish appropriate objectives in site management plans for each area of ancient woodland habitat compensation against which to monitor progress.	These are detailed in the ESMP which sets out the site objectives and monitoring periods in conjunction with the ancient woodland translocation

U&A reference	Description	Consideration within this feasibility study
U&A_9584 To the Woodland Trust	The Promoter will ensure that a management regime is in place to ensure, as far as reasonably practicable, that the ecological objectives of ancient woodland compensation set out in the site management plan are achieved within an appropriate timescale. The appropriate period of monitoring and management of new habitats is set out in Information Paper E26 (Indicative Periods for the Management and Monitoring of Habitats Created for HS2 Phase One) ('IP E26'). The Environmental Memorandum will be revised to reflect the information in IP E26.	The ESMP report sets out the advised site management post translocation
U&A_10723 To the Woodland Trust	Requiring the nominated undertaker to provide a clear plan and methodology for each area of Ancient Woodland soil to be translocated as a result of the Proposed Scheme within the relevant Ecology Site Management Plan for the local area and to engage with the Woodland Trust in the development of those arrangements.	A plan for the translocation of ancient woodland are detailed within the technical method statement based upon the surveys detailed in this report.
U&A_10724 To the Woodland Trust	The Secretary of State will require the Nominated Undertaker to consult with the Woodland Trust in respect of any construction activities undertaken within, or within 100m of, an area of Ancient Woodland which have been assessed as likely to have an adverse effect on the woodland, as reported in the Environmental Statement deposited with the Bill.	This report along with the ESMP and technical method statement when finalised should be submitted to the Woodland Trust.
U&A_10725 To the Woodland Trust	The Secretary of State will require the Nominated Undertaker to: (i) grow all trees for the Proposed Scheme in the United Kingdom; (ii)when sourcing tree seed stock for the purposes of the Proposed Scheme, to use reasonable endeavours to source such seed stock from the United Kingdom whilst recognising that, in line with the Secretary of State's commitment to planning for future resilience to climate change, some seed stock is to have an origin and provenance from 0° - 5° latitude south of the planting location; (iii) to put in place a system of plant passports for all seed and plant material to reduce risks to biosecurity.	Climate change has been considered in the ESMP and stock will be sourced from the UK.

1.5 Legislation

1.5.1 The following key legislation is relevant to this ESMP at the time of writing:

- Agreement on the Conservation of Populations of Bats in Europe 1991;
- Animal Welfare Act 2006;
- Conservation of Habitats and Species Regulations 2017 (as amended);

- Conservation of Wild Birds (2009/147/EC) (also known as EC Birds Directive);
- Environment Act 1995;
- Forestry Act 1967 – relating to felling licences;
- Natural Environment and Rural Communities Act 2006: biodiversity duty (Section 40) and species and habitats of principal importance (Section 41);
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992;
- Town and Country Planning (Trees) Regulations 1999 amended by Town and Country Planning (Tree Preservation) (England) Regulations 2012 – relating to Tree Protection Order's (TPO's);
- Weeds Act 1959;
- Wild Mammals (Protection) Act 1996; and
- Wildlife and Countryside Act 1981 (as amended).

1.6 Site Ownership

1.6.1 It is understood that HS2 own and possess the Donor and Receptor Sites. The undertakings and assurances (U&As) considered in Table 4 are relevant to the ecological and landscape management and monitoring of the site.