

Ecology and Biodiversity - Overview

June 2016

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

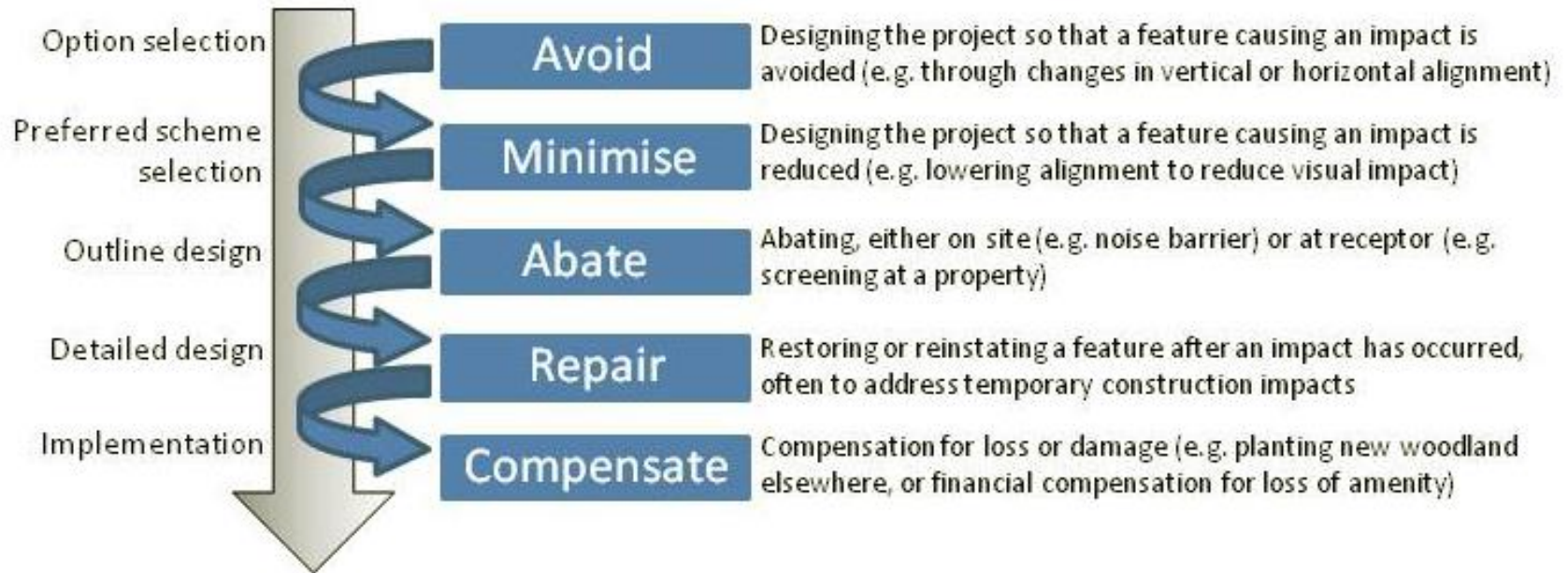
- Although there is no legal requirement to do so, HS2 Phase One has the objective of seeking to achieve no net loss to biodiversity for the project as a whole (4.8.7, Annex 4, draft Environmental Minimum Requirements)
- HS2 Ltd has sought to realise that objective through the design of the Bill scheme.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

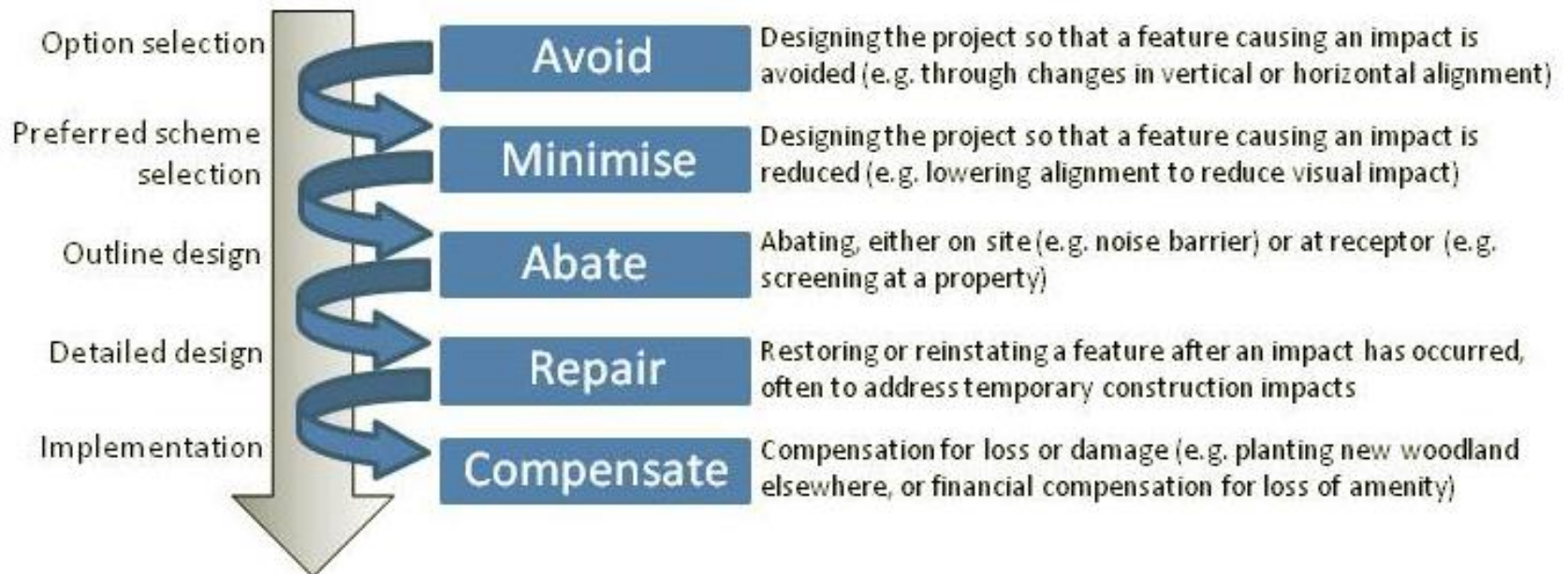
- A bespoke 850m bat mitigation structure alongside Sheephouse Wood SSSI in Buckinghamshire to protect Bechstein's bats from being struck by passing trains.
- Provision of new nest boxes for barn owls at a safe distance from the railway to augment the population of this protected species. This will be 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

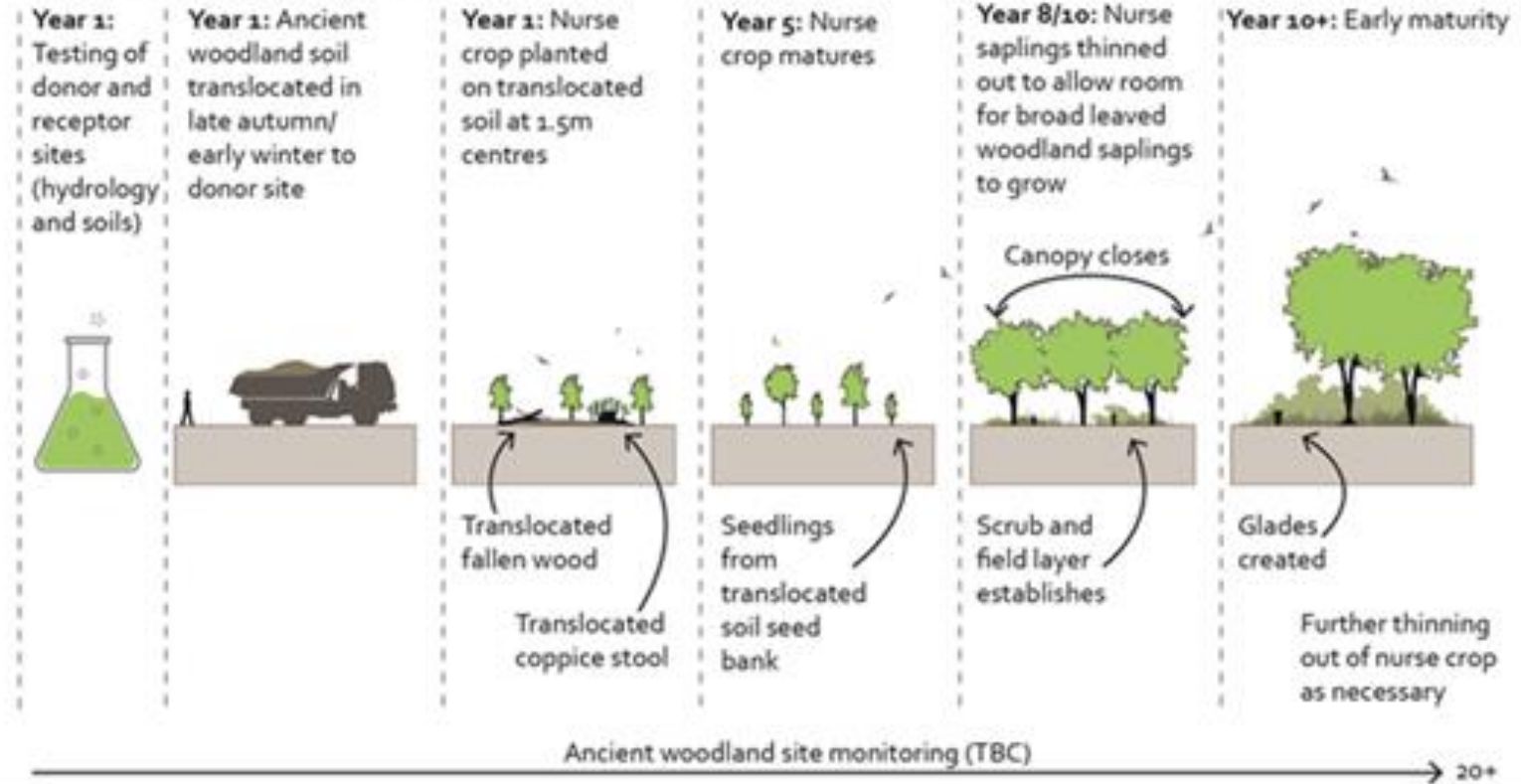
- HS2 Ltd recognises that ancient woodlands are irreplaceable.
- HS2 Ltd is committed to best practice measures to compensate for ancient woodland unavoidably lost to the Proposed Scheme.
- Measures adopted by HS2 are consistent with Natural England's standing advice on ancient woodland and have been 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.

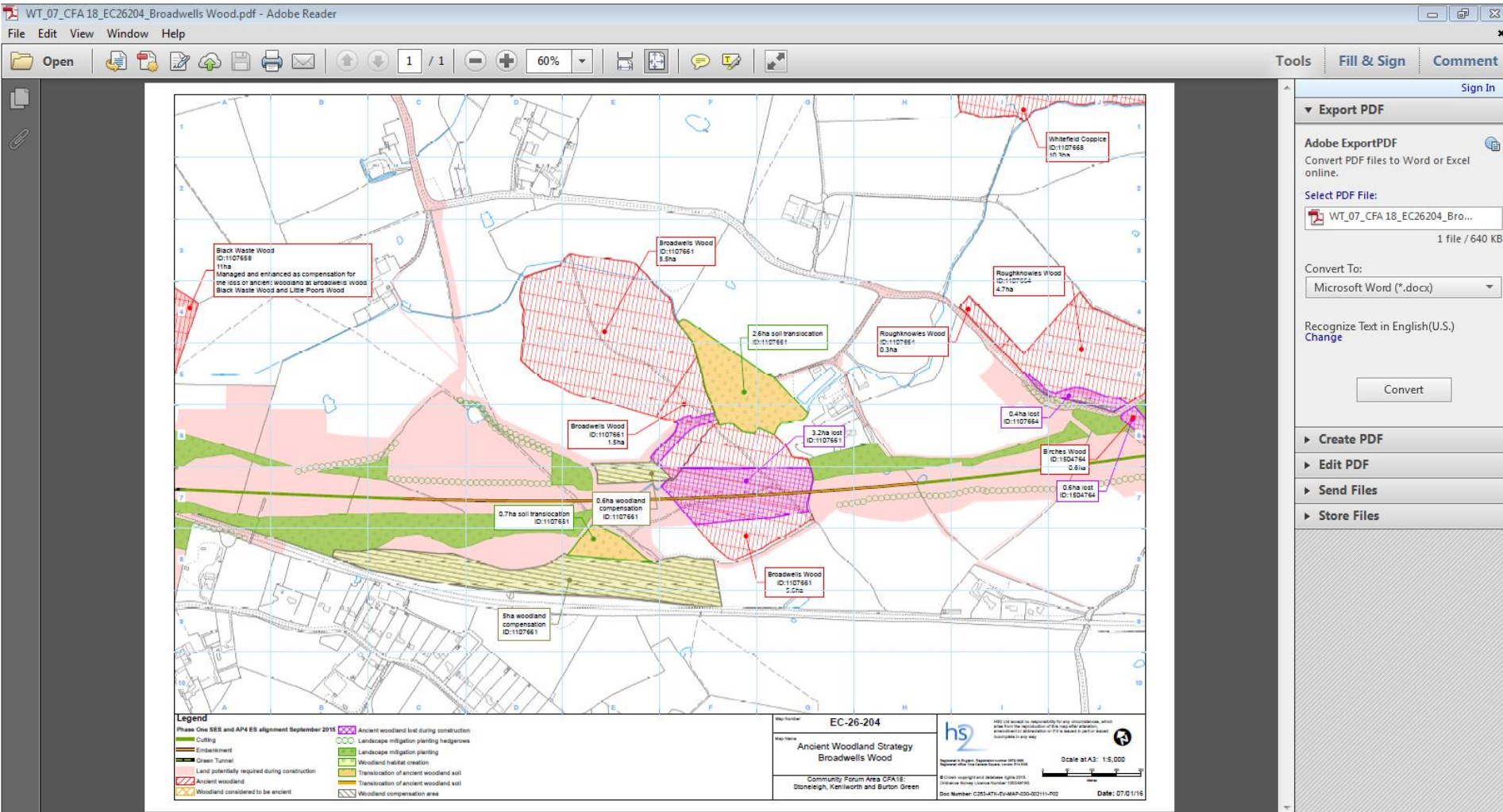
Development of HS2 compensatory measures

- 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 first year or two of the project so that they 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.