

# HS2

## Phase 2a - Ecology and Biodiversity

May 2018

# Legal requirements for ecology and biodiversity

## Protected Sites

- Sites of international importance for nature conservation are European sites protected under the Habitats Regulations 2017 – Special Protection Areas, Special Areas of Conservation.
- Sites of national importance are protected under the Wildlife and Countryside Act 1981 (as amended) – Sites of Special Scientific Interest. Local Nature Reserves are protected under the National Parks and Access to Countryside Act 1949.

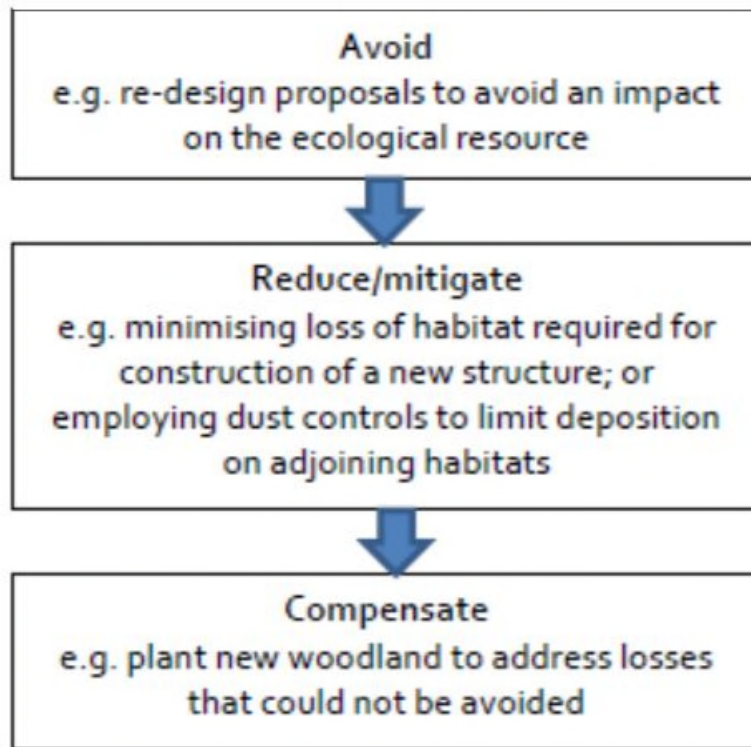
## Other Sites

- Ramsar sites are wetlands of international importance designated under the Ramsar Convention 1971. It is Government policy to treat Ramsar sites like European sites and afford them the same level of protection.
- County wildlife site designation (including Local Wildlife Sites and Biodiversity Alert Sites) confers no legal protection on a site but affirms a site's importance for wildlife in a local policy context.
- Ancient woodlands have no specific legal protection but are subject to policy protection.

## Protected Species

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

# The Mitigation Hierarchy



- The design of the Proposed Scheme reflects the mitigation hierarchy consistent with the National Planning Policy Framework (2012) and guidance on Environmental Impact Assessment (2015) published by the Chartered Institute of Ecology and Environmental Management.
- Efforts have been made to reduce the duration, scale and extent of the predicted effects in instances where avoidance has not been reasonably practicable.
- Appropriate compensation or enhancements have been identified to offset effects that are still predicted following mitigation.

# Internationally and nationally protected sites

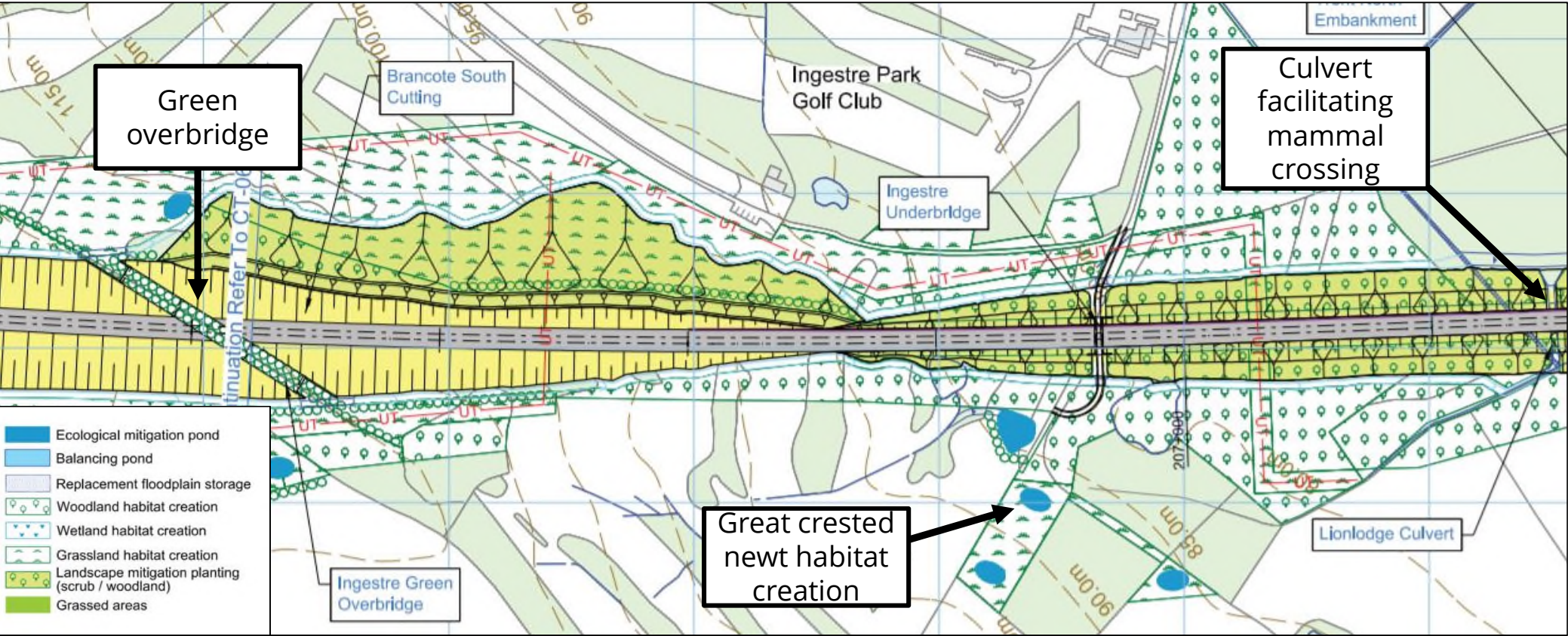
- The design avoids any direct impact on internationally or nationally protected sites.
- There are five sites of international importance for nature conservation which, although not directly impacted, have been assessed.
  - Cannock Chase Special Area of Conservation (SAC);
  - Midland Meres and Mosses Phase 1 Ramsar site;
  - Midland Meres and Mosses Phase 2 Ramsar site;
  - West Midlands Mosses SAC; and
  - Pasturefields Salt Marsh SAC.
- Measures to avoid, mitigate or provide appropriate compensatory measures have been developed in consultation with Natural England, and no likely significant effects are reported at any of the sites listed above.

# Examples of ecological mitigation

- Great crested newt translocation and habitat creation.
- Bat boxes and the creation of foraging habitat.
- Provision of new nest boxes for barn owls at a safe distance from the railway.
- Enlarged culverts for mammals, including otter and water vole.
- Green bridges and ecological underbridges to facilitate wildlife movement.

# Examples of Ecological mitigation

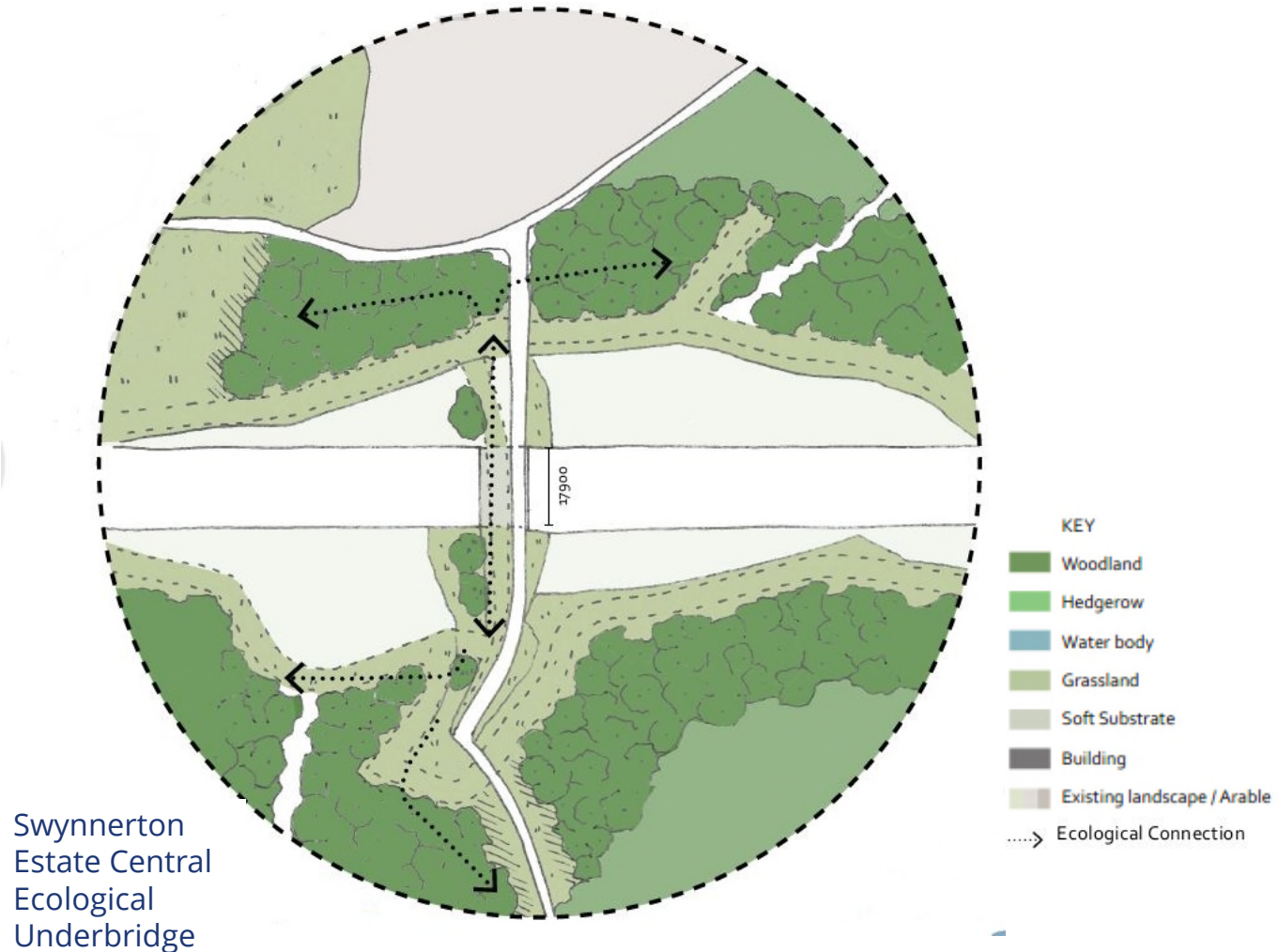
Proposed Scheme map, with ecological mitigation shown (Volume 2: Stone to Swynnerton, CT-06-213)



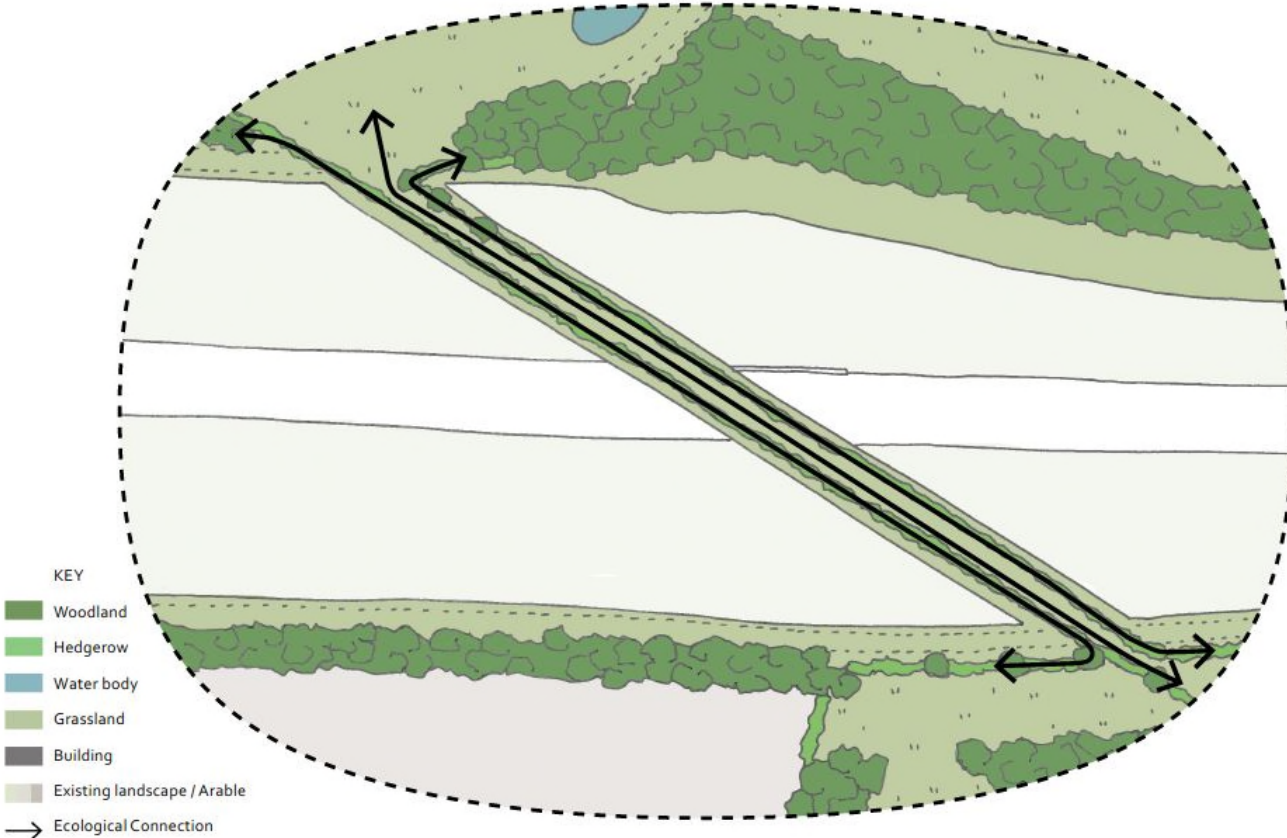


# Permeability of the Scheme

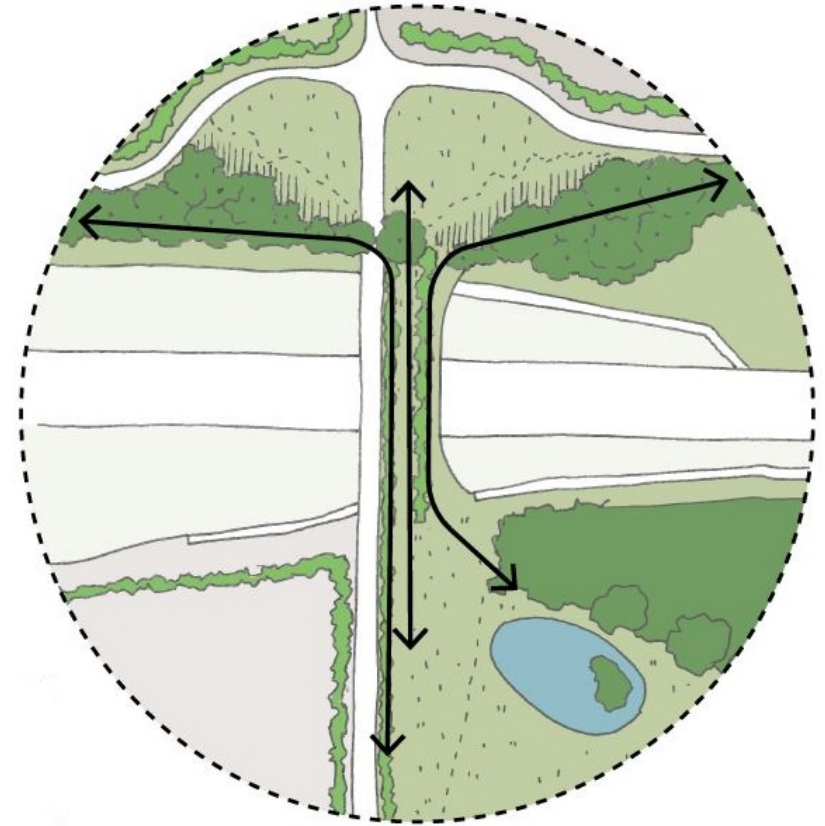
- Wildlife connectivity is maintained across the route by means of tunnels, viaducts, green bridges and ecological underbridges.
- The railway is designed to allow permeability for species such as amphibians and reptiles (which can pass beneath the tracks).
- There will be 5 green bridges and 3 ecological underbridges to maintain connectivity for wildlife.
- The creation of green corridors alongside the railway will facilitate the north-south movement of wildlife.



# Green bridges



Ingestre Green Overbridge



Colwich Bridleway 23 Accommodation Green Overbridge



# Development of ecological mitigation and compensation measures

- Measures to compensate for loss of sites of high nature conservation value have been developed on a site by site basis using professional judgement, taking account of each site's specific characteristics and requirements.
- HS2's approach is set out in the *Ecological Principles of Mitigation* technical note, developed in consultation with Natural England. It is published as an appendix to the Environmental Statement.
- All habitats required to compensate for losses are identified in the hybrid Bill.
- A balanced approach has been taken during the development of habitat creation measures, taking account of the ecological requirements and the effects on loss of agricultural land.

# No Net Loss in biodiversity



“The Proposed Scheme has the objective of seeking to achieve **no net loss in biodiversity** at a route-wide level”

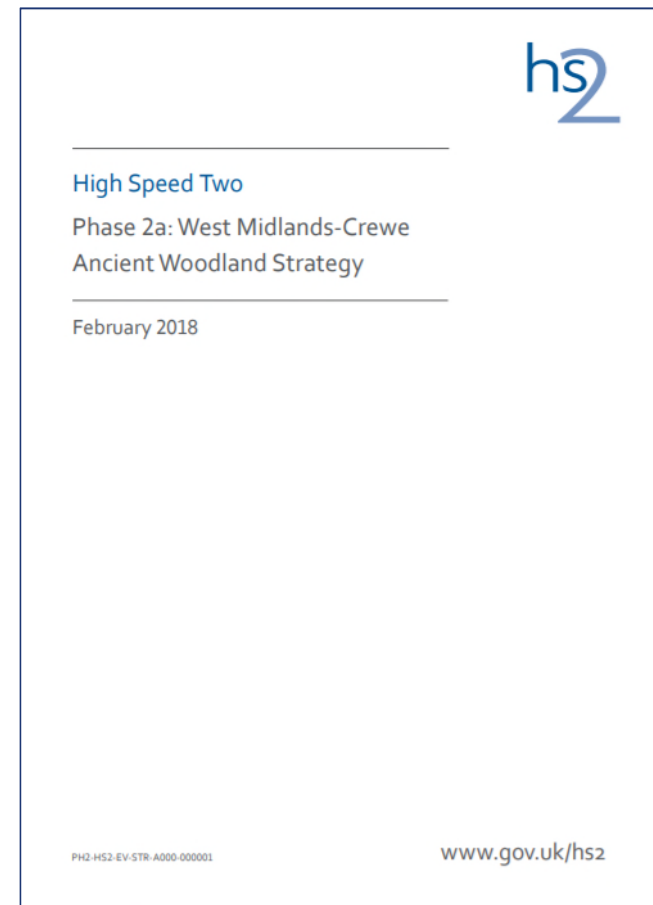
- The scheme design is based on a professional assessment to determine the appropriate mitigation to address its likely ecological impacts.
- The policy commitment to seek to achieve no net loss in biodiversity at a route-wide level is measured using a biodiversity metric to calculate and compare the likely losses and gains of biodiversity on the Proposed Scheme.
- HS2’s biodiversity metric has not been used to develop compensatory measures, it is used as an accounting tool to check that the level of mitigation provided for in the hybrid Bill design is appropriate.

# Ancient Woodland: the mitigation hierarchy

- HS2 Ltd recognises that ancient woodlands are irreplaceable and has sought to avoid impacts to the habitat wherever reasonably practicable.
- HS2 Ltd is committed to best practice measures to compensate for ancient woodland unavoidably lost to the Proposed Scheme.
- Measures adopted by HS2 Ltd are consistent with Natural England's standing advice on ancient woodland and have been discussed 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 adjacent to existing woodland and to create new linkages between woodlands where possible.
- Ancient woodlands could also be enhanced through management works, including invasive plant species removal, woodland thinning and fencing to prevent animal grazing damage.

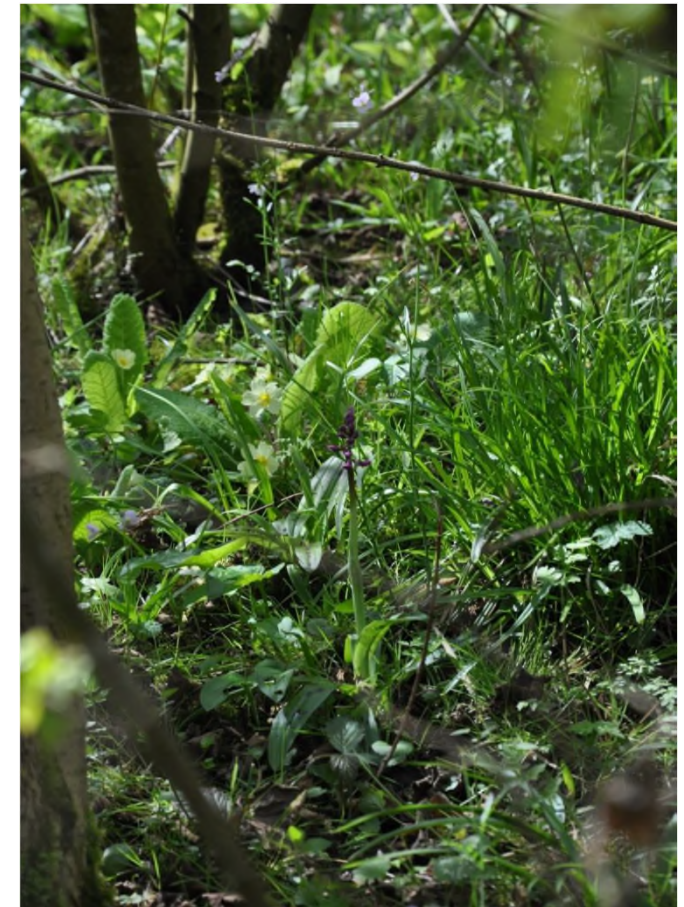
# The Phase 2a Ancient Woodland Strategy

- Our Ancient Woodland Strategy details the compensation measures to be provided for each directly affected ancient woodland.
- The Proposed Scheme would involve the loss of 10.2ha (across 10 woodlands) and of 27 ancient/veteran trees.
- Bespoke package of measures for each affected woodland including:
  - 77.1ha of new woodland planting;
  - The translocation of up to 10.2ha of ancient woodland soils; and
  - Enhancement of 12.9ha of ancient woodland.
- We aim to further reduce the effect on woodland and ancient/veteran trees during detailed design.



# Ancient Woodland – Soil translocation

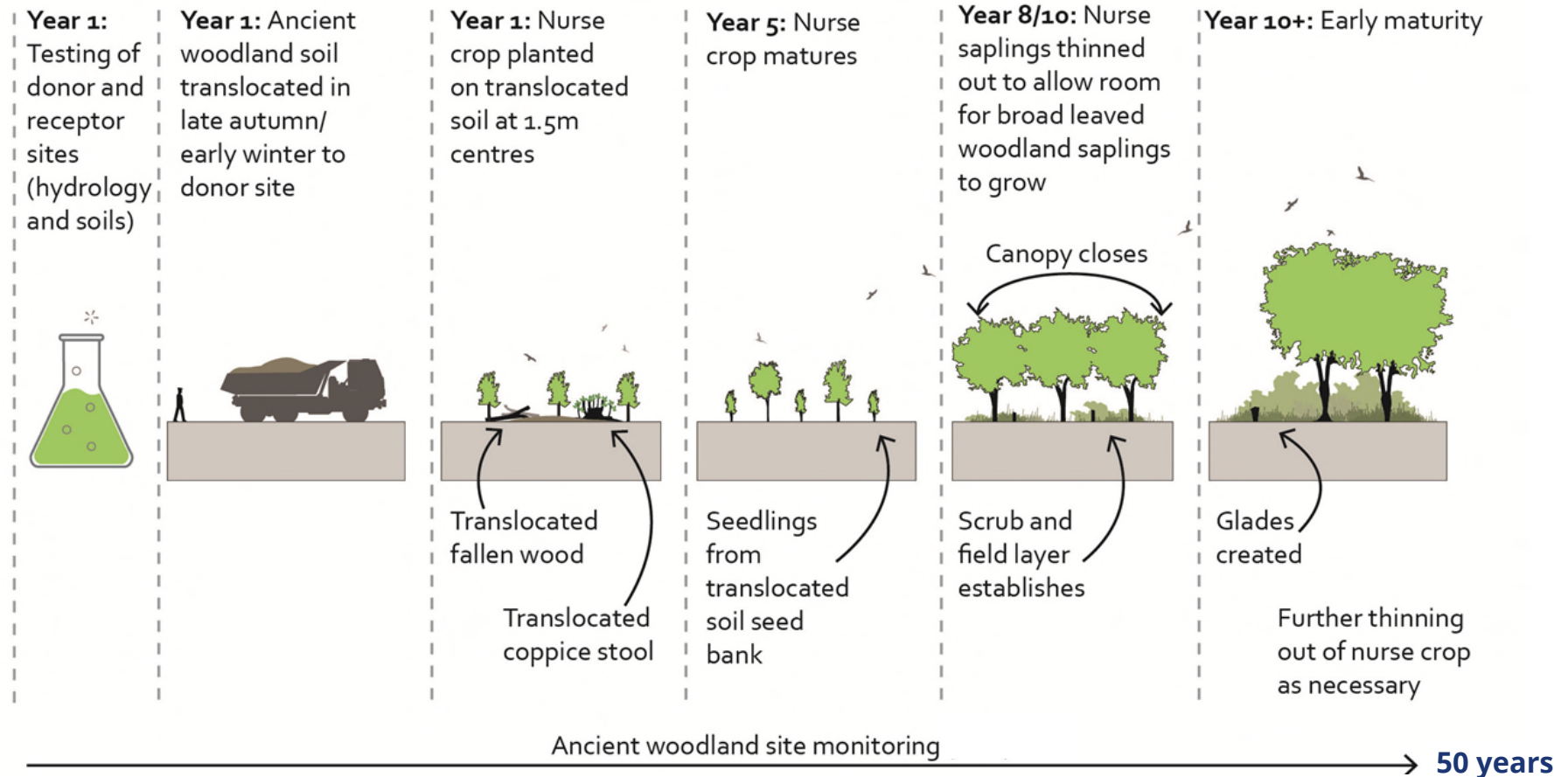
- Ancient woodland soils have distinct chemical and physical properties because they have never been ploughed or fertilised. They contain seeds, spores, bulbs and other material from woodland plants.
- Although translocation of ancient woodland soils cannot re-create an ancient woodland, research to date shows that it can be a valuable starting point for creating woodland of higher ecological value than can be achieved otherwise.
- Woodland plants including primrose and early purple orchid growing under regenerating woodland at a soil translocation site created approximately 15 years ago in north Kent. These species are characteristic of ancient woodland.



Early purple orchid in ancient woodland ground layer



# Ancient Woodland Compensation Approach



# Ongoing Monitoring and Management

- HS2 Ltd is committed to monitoring the effectiveness of ecological mitigation and compensation measures for a sufficient period to ensure the objectives of the proposals for nature conservation are achieved.
- An Ecology Review Group comprised of relevant statutory bodies, non-governmental and local authorities will review the outputs of monitoring for habitat creation sites and make recommendations for remedial action where appropriate.
- Monitoring, maintenance and management periods beyond the establishment period for each habitat will be discussed and agreed with Defra and Natural England.
- After an initial period of maintenance, the nominated undertaker will seek to return the majority of land to previous landowners or other interested parties (including local authorities and wildlife trusts) under appropriate and effective management arrangements.