

### Roadside biodiversity and conservation in the southwest of England

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### Roads and the Natural Environment

- Roads cut through virtually every terrestrial ecosystem in the world and have become a permanent part of the landscape.
- Roads have a great ecological impact on the environment.
- However, with the increasing loss of biodiversity throughout the world, road verges have attracted much attention and have become important areas of conservation as they often hold the only connection with the past natural ecosystems.





### **The Soft Estate**



In the UK, the total area of road verge habitat, or 'soft estate', is considerable, occupying around 178,000 ha in England and Wales. In England, the area of soft estate managed by Highways England along motorways and trunk roads (often referred to as the strategic road network) covers an area of approximately 30,000 ha that includes a wide range of species and habitats.



### The importance of road verges

- Often is the best quality habitat in the area and often the only link to past landscapes.
- Can be of particular ecological value especially when adjacent to designated areas.
- Connect wider landscape and ecosystems.
- Relatively undisturbed.
- Can be of high aesthetic value. For some road users, road verges offer the only connection to natural environment.





#### iTree Study:

 An analysis of the trees in the soft estate in Devon and Cornwall. By combining field collected information with local phenological, climate and pollution data it is capable of calculating the function and a range of benefits (ecosystem services) provided by the soft estate.

Area 1 Headline Figures Baseline Facts		
Total Number of trees	303,000	
Tree cover	34.9%	
Most common species	Ash, Field maple and Sycamore	
Replacement cost (trees)	£91,400,000	
Values		
Pollution removal (trees)	29 tonnes p/yr	£611,000 p/yr
Carbon storage (for trees in year of study (2014))	22,200 tonnes	£1,260,000
Carbon sequestration (trees)	1980 tonnes p/yr	£113,000 p/yr
Avoided Runoff (trees)	75,753.48 cu m p/yr	£40,020 p/yr
Amenity Valuation (trees)	£40,161,044	
Total Annual Benefits	£764,020	
Per hectare Benefits (trees)	£1528.04	
Screening Valuation (trees)	£64,000,000	



#### Habitat connectivity study:

Using readily available data (EnvIS, habitat and species data, maps and LiDAR aerial photography) we prepared a habitat map of the area surrounding the trunk road and associated soft estate. Applying Earth Observation techniques (EO) it was also possible to identify hedgerows throughout the area of interest and build additional complexity into the habitat permeability analysis.





• Green Bridges: A38 Haldon Hill and A38 Saltram





#### **Pollinator Study**:

A baseline survey carried out with the assistance of Buglife to help Highways England fulfil their commitment to support The National Pollinator Strategy as well as its own Biodiversity Plan vision.

This study covered a variety of roadside habitats and contributes to the way roadside verges are managed.

In total, 866 taxa were recorded including 32 different species of bees, 16 nationally scarce species, 4 species of principal importance and 1 endangered species.





**Species rich grassland creation:** 

A simple method of grassland creation has been adapted to road. It uses the 'whole crop' method, harvesting the seed material from existing local species rich roadside verges and introducing them at pre-prepared sites where invasive scrub and self-seeding trees had taken over.





#### Tree and hedge planting:

 Habitat connectivity at landscape scale: around 10,000 native trees and shrubs planted to enhance connectivity and provide habitat for birds, mammals and insects in Devon and Cornwall.









 A30 Goss Moor Marsh Fritillary Project (in partnership with Natural England and Eden Project)





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# Where do we go from here?





### Thank you <a>leonardo.gubert@highwaysengland.co.uk</a>

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