

Porton to Plain Wildlife Connections

NATURAL
ENGLAND

Creating wildlife connections from Porton Down to Salisbury Plain

“How can Salisbury Plain and
Porton Down be linked so wildlife
can move between them?”

Project Partners



Project Background

Purpose

Wildlife needs to be able to move around, recover from localised extinctions and respond to climate change. Habitat fragmentation often prevents this. The project looks at the distribution of species rich chalk grassland between Salisbury Plain and Porton Down and what this means for key butterfly, bird and bat species.

“Bigger, better, more joined up”.

This follows the ‘Making Space for Nature’ report which outlined the government’s vision for nature conservation in England.

Why here?

This part of Wiltshire lies between two of the largest areas of chalk grassland in the world, Salisbury Plain and Porton Down. Connecting these two places would be a major contribution to defragmenting England’s chalk grassland. However the area of chalk grassland in between is highly

Key Species

Four butterfly species were chosen by the project partners as good proxies of chalk grassland connectivity. Adonis Blue, Chalk Hill Blue, Small Blue and Marsh Fritillary have life cycles which rely on different elements of chalk downland. Lapwing, Corn Bunting, Grey Partridge, Stone Curlew and Barbastelle bats were included to reflect the interests of the local farming community.

This report called for the creation of bigger, more connected and robust networks of habitat to counter current fragmentation and biodiversity loss.

The project takes a landscape scale approach, looking at how the chalk grassland network can be improved across the project area. Through a detailed land use survey, the project identifies the current chalk grassland habitat distribution, and how easily key species can use the landscape in-between. It helps us see where there are opportunities to help these species move around, so creating a landscape that is more resilient to change.

fragmented and little is known about how, or if, key species can traverse this largely arable landscape. It also was an area of interest for the project partners. RSPB, National Trust and Natural England all have land holdings in the area.

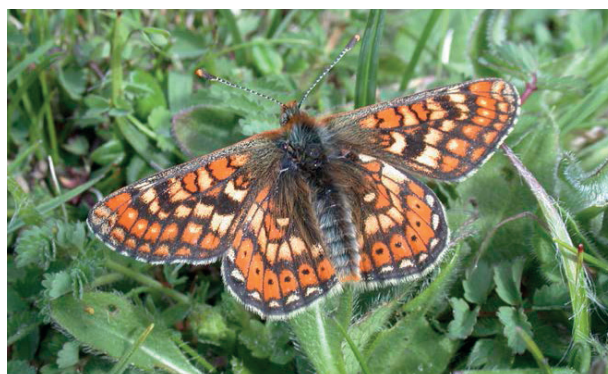
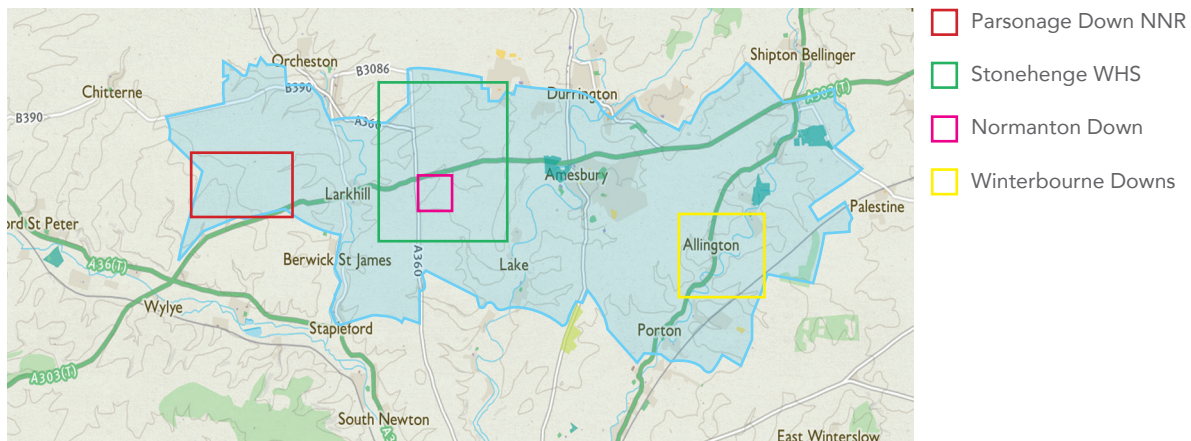


Figure 1: Marsh Fritillary *Euphydryas aurinia* Drewitt, Alan. “Marsh Fritillary” 20 May 2004. Online image. Flickr. 20 August 2018

Methodology

Project Extent

The project covers in excess of 130km² between Salisbury Plain and Porton Down. It includes Natural England's Parsonage Down National Nature Reserve to the west, the Stonehenge World Heritage Site in the centre and the RSPB's nature reserves, Normanton Down and Winterbourne Downs.



Surveys

Surveys were carried out in two stages across the entire project area to assess the landscape permeability for the target butterfly species. The first stage was completed by volunteers from Natural England, RSPB and Butterfly Conservation who visited and classified all field parcels as arable, grassland or woodland and picked out key features such as nectar rich areas, field margins or hedgerows. This allowed for parcels to be categorised based on a permeability scale (see figure 4). The volunteer's survey results were then used in the second stage; targeting specialist ecologists on to possible species rich chalk downland areas.

A methodology was created in partnership with butterfly conservation to determine whether these grassland patches were of sufficient quality to be considered breeding patches for the target butterflies. This methodology looked at habitat structure,

topography, food plant abundance and presence of shelter such as scrub.

Parcels categorised as breeding habitat were then mapped alongside areas that, although not right for breeding, the butterflies would be attracted to and therefore fly across e.g. nectar rich areas and flower rich road verges. These maps (figures 4 & 5) give an indication of habitat connectivity and potential locations to link ecological networks.



Results

Permeability and Habitat Networks

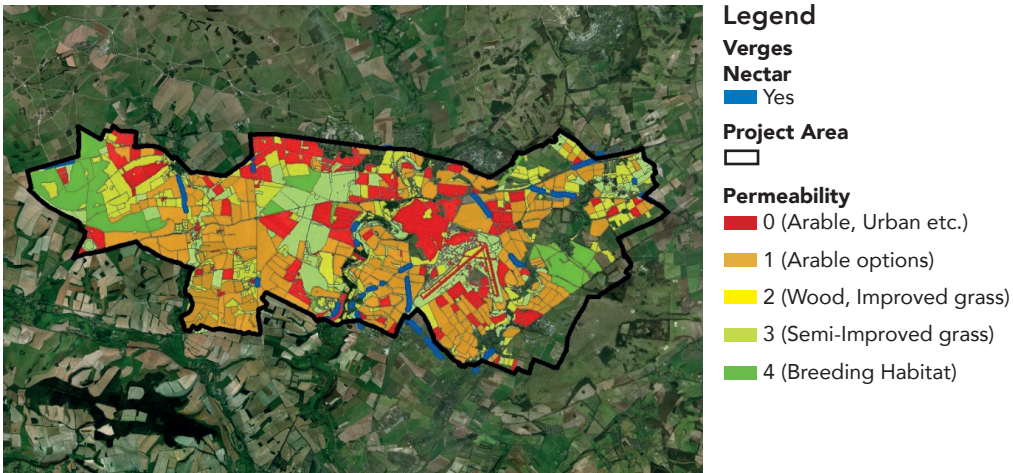


Figure 4: Permeability

The map above shows the permeability of the project area. Each parcel was given a score for permeability (0-4), which was associated with the current land use as shown in the legend. Added to this are the road verges deemed to be a significant nectar source, following a drive past survey.

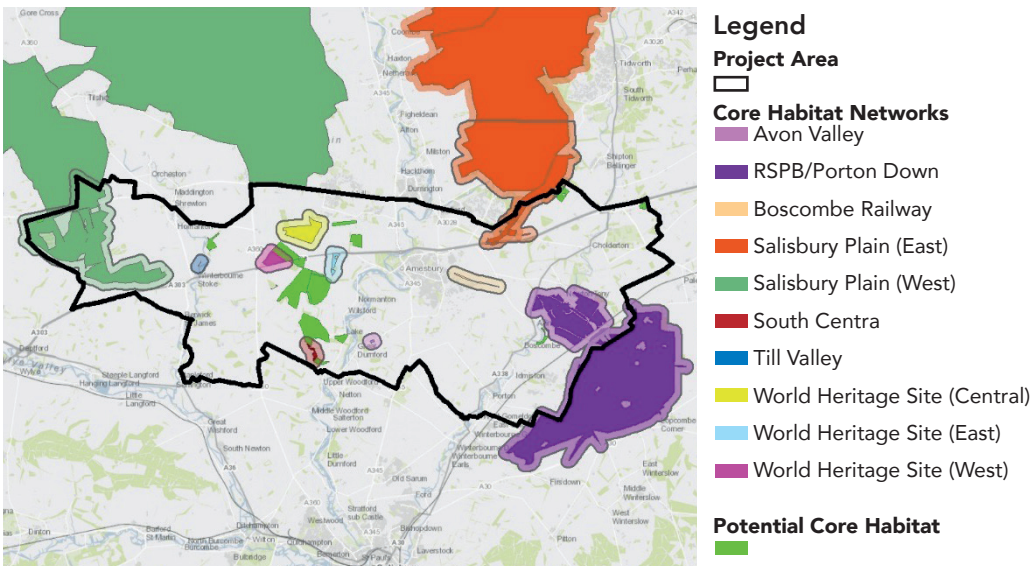


Figure 5: Habitat Networks

For the map above, the breeding habitat patches highlighted in fig 4 have had a 250m buffer added to them. Where these buffers overlapped it was considered that those patches were connected and thus form part of the same network. Each network is represented by its own colour and the 250m buffer is visible around each site.

Bats and the Project Area

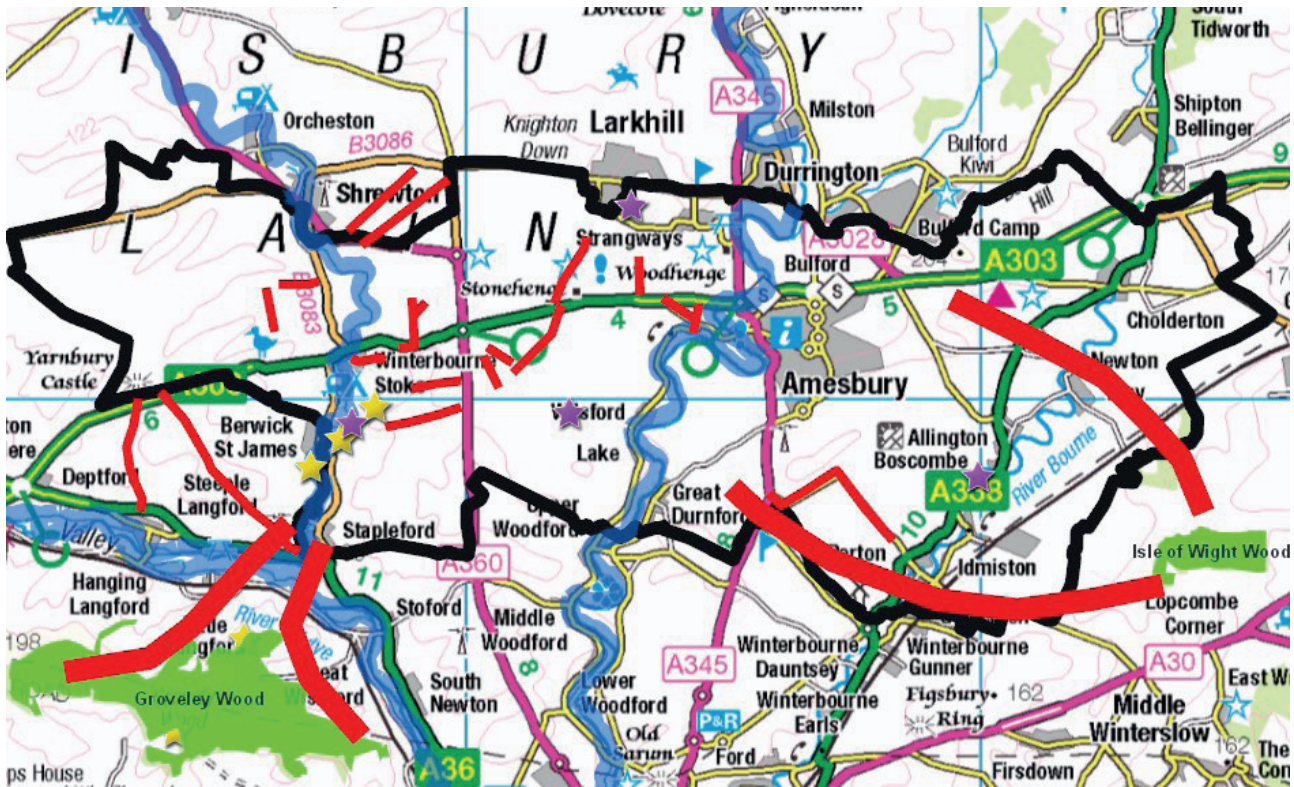


Figure 6: Bats

Legend

Project Area [Black outline]	Smaller Roosts
Important Flight Paths [Red line]	★ Barbastelle
Important Bat Woodlands (Roosts) [Green line]	★ Noctule
	River Foraging Areas [Blue line]

Bat information gleaned from previous extensive bat surveys in the area as well as discussions with the county bat recorder allowed for the creation of the above map (Fig. 6). Both recordings and roosts locations were included with many featuring along the A303 corridor. Four main flight paths were highlighted. 1) from Groveley Wood to the south of the project area, 2) from Isle of Wight wood (Porton Down) to the east, 3) along the river valleys of the Till (and Wylve) and 4) along the Avon valley. Smaller but also important flight paths have also been drawn, many of which are likely dependant on landscape features such as hedgerows and shelter belts.

Birds and the Project Area

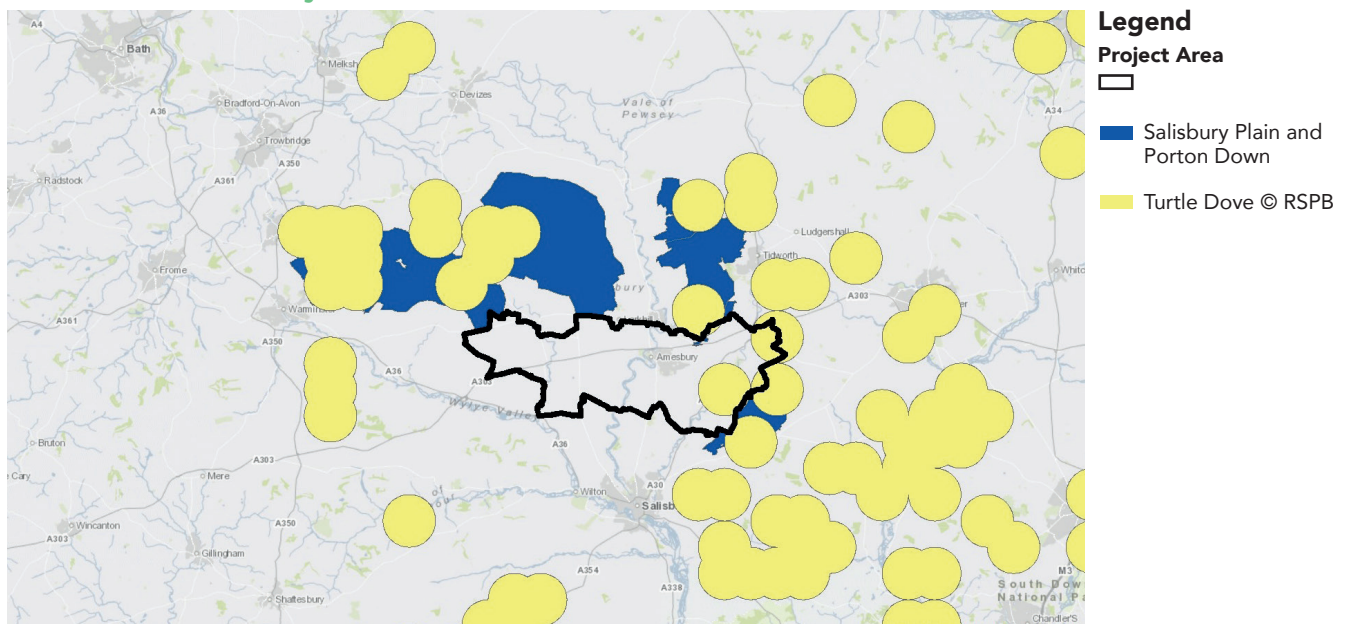


Figure 7: Birds

Figure 7 shows how there are very few records of turtle dove in the project area. If turtle doves were able to establish in the project area it would help connect the Salisbury Plain population at the western edge of its range to the rest of the population to the east and would increase overall

resilience across the range. Bird data from across the project area has been collated from the RSPB farmland bird database and maps like the one above have been created for 6 species; Corn Bunting, Grey Partridge, Lapwing, Stone Curlew, Tree Sparrow and Turtle Dove.

Conclusion and Next Steps

The key conclusions of the project are as follows:

1. The area is a very arable landscape with a limited chalk grassland resource to work with.
2. Parsonage Down is functionally connected to Salisbury Plain.
3. There are a cluster of core and potential core habitats around Stonehenge habitats.
4. Whilst there is no functional link between the chalk grasslands of Salisbury Plain and Porton Down, creating such a link is a hard but not insurmountable task, especially in the context of the A303 road scheme and development at Boscombe Down.

What Now?

With a vastly improved understanding of the habitats and key species in the project area, there appear to be a number of ways to improve connectivity in both the farmed and non-farmed environment. These include:

Farmed environment opportunities	Non-farmed environment opportunities
Butterflies and chalk grassland	
Improvement of 'potential core habitat' sites to form larger World Heritage Site network.	A303 scheme – both existing verge management and the proposed Stonehenge tunnel scheme.
Link World Heritage Site network north to Salisbury Plain Central.	Other linear features such as existing bridleways.
Take opportunities as the map inevitably evolves.	Mitigation and enhancements associated with new development e.g. Boscombe Down.
	Urban green space management around Amesbury including the new country park.
Barbastelle Bats	
Improvement/creation of hedgerows especially along key flight paths.	Development at Boscombe – looking at lighting regimes.
Management of woodland for bats.	Hedgerow planting linked to existed and new bridleways and connecting habitats.
Farmland Birds	
Ensuring all lifecycle stages are catered for; chick food, nesting habitat and winter feed.	Housing development – look to mitigate the effect housing development has on arable fields and nesting sites.

Natural England is actively working with partners to find ways to realise these opportunities. If you want to help progress these, or discuss the project, please contact:

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