Highways England A27 Arundel Bypass Consultation

Response by Butterfly Conservation

Summary

Having thoroughly reviewed the plans to improve the A27 at Arundel, including site visits to assess the potential impacts of Options 1, 3 and 5A, Butterfly Conservation wishes to register its strongest possible objection to the proposals for routes 3 and 5A, based on the unacceptable and irreparable environmental damage they would cause.

Butterfly Conservation also recognises that Option 1 would cause significant environmental damage, albeit at a much reduced level when compared to Options 3 and 5A. Butterfly Conservation is supportive of the additional, wide single-lane option referred to as the ‘New Purple’ route by Arundel A27 Forum, which follows the line of Option 1 but causes less environmental damage, being more restricted in its length and land-take.

Objections to Options 3 and 5A

Habitat loss and fragmentation

Option 3 would involve the loss of c.24 hectares of ancient woodland. However, the environmental damage affecting Lepidoptera (butterflies and moths), some of which are of high conservation concern, would not be restricted to habitat loss alone. This route would cause significant fragmentation and isolation of areas of regionally important woodland habitat, resulting in the disruption of vital dispersal corridors.

Butterfly Conservation (BC) also recognises the similar, negative impact on other faunal groups, including bats and Hazel Dormouse. Furthermore, BC notes that there is no mitigation measure available to compensate for the loss of ancient woodland.

Option 5A would involve the loss of c.6 hectares of ancient woodland. The loss of other areas of woodland, which although relatively small and set in more open countryside (e.g. The Shaw, Binsted Park), would also negatively impact some species of Lepidoptera, removing important foodplants including Wych Elm, English Oak and sallow. Areas such as this currently provide important nurseries, vital in supporting the populations of some species found in the larger area of woodland to the north, including the Purple Emperor.

However, the environmental damage affecting Lepidoptera, some of which are of high conservation concern, would not be restricted to habitat loss alone. This route would disrupt the system of hedgerows and ditches, which woodland species of butterfly and moth use as dispersal corridors when moving through the wider landscape. These movements are critical in supporting a healthy metapopulation structure.

BC also recognises the similar, negative impact on other faunal groups, including bats, Hazel Dormouse and Water Vole.

Key Butterfly and Moth Species Affected

The following species of butterfly and moth, of particular importance, would be adversely affected by the routes proposed under Options 3 and 5A:

**Pearl-bordered Fritillary** *Boloria euphrosyne*

Section 41 species of principal importance under the NERC Act in England; UKBAP Priority Species; Protected under Schedule 5 of the 1981 Wildlife and Countryside Act (for sale only).

BC is currently conducting the *Fritillaries for the Future* project, with the aim of rebuilding a coherent, landscape-scale metapopulation of the regionally endangered Pearl-bordered Fritillary. Rewell Wood supports the last, naturally occurring, large population of this species in Sussex. Work is underway in woodlands to the east of the Arun Valley, to encourage natural colonisation. The fragmentation of woodland habitat and disruption of both woodland and hedgerow dispersal corridors, inevitably caused by Options 3 and 5A, will severely hamper these efforts.

**White Admiral** *Limenitis camilla*

Section 41 species of principal importance under the NERC Act in England; UKBAP Priority Species.

This declining species would be particularly hard-hit by Option 3, through the loss of habitat. The area including Binsted Wood, Paine’s Wood and Tortington Common is listed within the top five most important sites for this species in Sussex, and within the top three sites for West Sussex (*The Butterflies of Sussex*, 2017).

**Purple Emperor** *Apatura iris*

Protected under Schedule 5 of the 1981 Wildlife and Countryside Act (for sale only).

This iconic woodland species is present throughout most of the area potentially affected by Options 3 and 5A, including the shaws and copses to the south of the main woodland block, which probably provide the main breeding areas.

**Drab Looper moth** *Minoa murinata*

Section 41 species of principal importance under the NERC Act in England; UKBAP Priority Species.

This nationally scarce moth has one of its Sussex strongholds in the Rewell Wood area and readily colonises any patches of woodland habitat where periodic management (e.g. coppicing) encourages Wood Spurge to flush. BC is currently conducting a project to assist this species in the county.

Two additional species of conservation concern are considered highly likely to occur in areas potentially impacted by Option 5A. Survey work is required to clarify their status. These are:

**White-letter Hairstreak** *Satyrium w-album*

Section 41 species of principal importance under the NERC Act in England; UKBAP Priority Species; Protected under Schedule 5 of the 1981 Wildlife and Countryside Act (for sale only).

This species was only detected in a dozen 2x2 kilometre tetrads in West Sussex during the 2010 – 2014 period (*The Butterflies of Sussex*, 2017), but has previously been recorded in the area potentially affected by Option 5A, where suitable habitat currently remains.

**Brown Hairstreak** *Thecla betulae*

Section 41 species of principal importance under the NERC Act in England; UKBAP Priority Species; Protected under Schedule 5 of the 1981 Wildlife and Countryside Act (for sale only).

No surveys have yet been performed to confirm the presence, or otherwise, of this species, which occurs within the local landscape.

Objections to Option 1

Habitat loss

Option 1 would involve the loss of c.5.5 hectares of ancient woodland. In this case the potential environmental impact affecting Lepidoptera, some of which are of high conservation concern (see above), would be largely restricted to habitat loss, which would be at a greatly reduced level (for ancient woodland and/or hedgerow and ditch habitats), relative to Options 3 and 5A.

The potential impacts of habitat fragmentation and isolation, and the disruption of Lepidoptera dispersal corridors (and for other faunal groups), as arising through Options 3 and 5A, are considered to be reduced in this case, due to the in-line nature of Option 1.

Overall, the potential environmental impact on Lepidoptera (and for other faunal groups) caused by Option 1 is considered to be much smaller than that posed by either Options 3 or 5A.

Wider concerns relating to the consultation process

Bearing in mind the very different potential impacts on Lepidoptera, and other fauna and flora, BC is surprised to see, and fundamentally disagrees with, the equal categorisation of Options 1, 3 and 5A under the section ‘Nature Conservation’ in Highways England’s ‘Environmental appraisal’ (Consultation Brochure pp.28-29). This has the effect of ‘flattening’ the perceived potential impacts on ‘Nature Conservation’ posed by the three options.

In terms of ‘Nature Conservation’, when looking at the potential loss of ancient woodland (the entire habitat type west of Arundel in Option 1), the difference in land-take between Option 1 (5.5 hectares) and Option 3 (24 hectares) is very significant, the latter representing an increase of 336.4%. However, the potential difference in negative impacts is substantially larger than this when other habitat types and issues of habitat connectivity are taken into account.

The above categorisations are even more surprising when very small journey time savings of 3-7 minutes for Option 1, and 4-8 minutes for Option 3, are used as the basis for differentiating between ‘Moderate – Slight Benefit’ (Option 1) and ‘Major Benefit’ (Option 3) under the section ‘Improve capacity whilst supporting local planning authorities to manage the impact of planned growth’ in Highways England’s ‘Objectives assessment’ (pp.26-27).

In Highways England’s ‘Costs and Benefits’ section (p.30) of the Consultation Brochure, the ‘Most likely cost’ attributed to Options 1 (£135m), Option 3 (£260m) and Option 5 (£250m) is used to generate ‘Benefit to Cost’ ratios of 3.6 (best), 2.0 (worst) and 2.6 respectively. All are categorised as being of ‘High’ value for money, with the threshold for ‘High’ being 2.0. However, this process does not take into account the potential costs of mitigation measures, the scale and nature of which cannot be determined at this time. Butterfly Conservation considers that these additional costs are likely to be substantially higher for Options 3 and 5A, further increasing the relative value for money of Option 1.

This inconsistent approach appears, in every case, to demonstrate a bias, favouring Options 3 and 5A over Option 1.

Steve Wheatley

Butterfly Conservation Senior Regional Officer – South East England

Neil Hulme

Butterfly Conservation *Fritillaries for the Future* Project Officer

Butterfly Conservation Sussex Branch Conservation Adviser