Appendix C

Environmental Impact Assessment and Report to Inform an Appropriate Assessment - Monsal Trail Cycle Route.

Revision 00 July 2010.

Ecological Impact Assessment and Report to Inform an Appropriate Assessment

Monsal Trail Cycle Route

Andrew McCarthy Associates

AMA ecology & environment

Ecological Impact Assessment and Report to Inform an Appropriate Assessment

Monsal Trail Cycle Route

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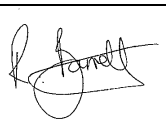
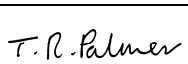
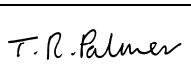
		Signature			
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CONTENTS

1 INTRODUCTION

1.1 Scope of Assessment

Andrew McCarthy Associates (part of the SLR group) was commissioned by Peak District National Park Authority (PDNPA) to undertake ecology surveys and assessments of the proposed Monsal Trail Cycle Route, Peak District National Park. This document is the ecology chapter of the Environmental Statement (ES) combined with information specifically to inform an Appropriate Assessment required of the PDNPA (the Competent Authority) to satisfy the Habitats Regulations 2010, which implement the requirements of the Habitats Directive (92/42/EEC). Under Article 6 of the Habitats Directive an Appropriate Assessment (AA) is required to assess whether the development of the Monsal Trail Cycle Route will have an adverse effect on the integrity of the Natura 2000 sites (European sites)[1].

In summary, the scope of the ecological assessment:

- Identifies statutory designated areas within or adjacent to the site;
- Identifies any rare, notable or protected species or habitats within or adjacent to the site;
- Considers the potential for effects on valued receptors (including Natura 2000 Sites) arising from the Development within and adjacent to the site;
- Describes mitigation of adverse effects within or adjacent to the site; and
- Identifies residual effects taking into account the above assessment.

The principal issues are as follows:

- Direct habitat loss due to land take by the cycle track;
- Indirect disturbance effects, i.e. the displacement of species as a consequence of construction work, or due to the operational phase of the cycle route; and
- The effect of increased public recreation.

Figures are included as necessary within the chapter and other supporting ecological information is contained in Ecology Technical Appendix (AMA, 2010).

All staff involved in the collection of field data and subsequent analysis are employed either directly of indirectly by Andrew McCarthy Associates Ltd.

[1] The assessment does not consider the effect of the Development on the Bat populations, as this is subject to a separate report.

1.2 Definition of Study Area

The study area was selected to include all areas within the potential zone of ecological influence of the development. The field survey area was defined by the existing Monsal Trail comprising the disused railway line between Bakewell and Chee Dale and two route options, the Cowlow route and the Woo Dale route, continuing from the western end of the Monsal Trail (see Figure XX). The study area was extended for 30m and 500m either side of the route for badgers and great crested newt respectively[2]. The desk study collated existing records of protected and/or notable species/sites within 2 km of the site.

1.3 Overview - site description and the development proposals

The Monsal Trail, Cowlow and Woo Dale route options are mainly restricted to existing tracks, paths or roads. Where there are no tracks, the habitat comprises semi-improved mesotrophic grassland including the National vegetation Classification (NVC) communities MG1 *Arrhenatherum elatius*, MG5 *Cynosurus cristatus* – *Centaurea nigra*, MG6 *Lolium perenne* – *Cynosurus cristatus* and MG7 *Lolium perenne*. At the western end there is one area which is of greater interest; one section of flower rich grassland containing many calcicoles (a CG2 *Festuca ovina* – *Avenula pratensis* /MG1 community mosaic) along the Cowlow route.

Habitats in the wider environment comprise a mosaic of semi-improved, improved and unimproved grassland, tall ruderal vegetation, woodland and scrub. Of particular interest are the CG2/CG6 calcareous grassland communities which surround the Woo Dale valley and the W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland which is adjacent to the River Wye along the Woo Dale route. Both are listed as an Annex I features of The Wye Valley Special Area of Conservation (SAC).

The Development proposes to create a cycle route link between Buxton and Bakewell linking the surfaced sections of the Monsal Trail at the eastern end to Buxton in the west by a hard-surfaced track of at least 1.5m in width. The route will be approximately 20km long. The proposals are outlined in documents supplied by the PDNPA (Buxton & Monsal Trail – Woo Dale & Wye Dale Link, The Monsal Trail – Chee Dale to Bakewell and Buxton to Monsal Trail: Daisymere Lane to Monsal Trail Section Comparison of Alternative Routes). Essentially the proposals are as follows:

[2] Where access permitted.

Existing Disused Railway Tracks and Paths:

- Refurbish existing hard-surfaces along the disused railway and tracks with dressed stone to an equivalent standard as the completed Bakewell section of the route;
- Install ramps at the Coombs Lane Viaduct;
- Opening of four disused railway tunnels and modification of a further six;
- Install a balustrade between the Cressbrook and Litton Tunnels; and
- Water-proof approximately 400m of existing hard-surfaces with asphalt at the River Wye Viaduct, Miller's Dale Junction, Miller's Dale Viaduct, Chee Tor Bridge, East Buxton Viaduct and the Monsal Dale Viaduct.

Woo Dale Route Option:

- Refurbish existing hard-surfaces along tracks with dressed stone to an equivalent standard as the completed Bakewell section of the route;
- Lay a stone base on Church Lane and complete with a cattle grid and wicket fence;
- Install a ramp at the Wye Dale car-park;
- Construct a 2.5m wide, stone based track following the farm track through Woo Dale (2km);
- Newly construct footpath over River Wye; and
- Newly construct path for approximately 0.5km adjacent to the River Wye.

Cowlow Route Option:

- Refurbish existing hard-surfaces along the tracks with dressed stone to the standard seen within the completed Bakewell section of the route;
- Construct a new route on the field paths and zig-zag tracks to the quarry (approximately 2.2km); and
- Reconstruct the existing track from the Central Lime Works tunnel to the disused railway track (approximately 0.5km).

2 ASSESSMENT APPROACH

2.1 Legislation

Ecological features are protected under various UK and European legislative instruments principally consisting of:

- Wildlife and Countryside Act (WCA) 1981, as amended in quinquennial review and by the Countryside and Rights of Way (CRoW) Act 2000;
- The Conservation of Habitat and Species Regulations 2010;
- Protection of Badgers Act 1992;
- Hedgerow Regulations 1997;
- Environmental Impact Assessment Regulations 1999; and
- Natural Environment and Rural Communities Act 2006.

2.2 Guidance and Policy

Full planning policy relevant to the development will be summarised in the Planning Policy Context of the ES document. Other relevant documents are:

- The UK Biodiversity Action Plan (BAP) [3];
- Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9)[4];
- The revised version of the ODPM Circular 06/2005 Defra Circular 01/2005 document[5]; and
- The Peak District Biodiversity Action Plan: A Living Landscape[6].

2.3 Desk Study

A desk study was conducted in March 2010 to search for records of statutory sites for nature conservation, protected species, or priority habitats and species for nature conservation listed in biodiversity action plans. In addition, a web-based data search

[3] Anon (1995). *The UK Biodiversity Action Plan (as amended*). HMSO, London.

[4] Anon (2005), *Planning Policy Statement 9: Biodiversity and Geological Conservation*. Office of the Deputy Prime Minister.

[5] Communities and Local Government (2010) *Draft government circular: biodiversity and geological conservation – statutory obligations and their impact within the planning system*. Communities and Local Government Publications, London.

[6] http://www.peakdistrict-nationalpark.info/place/BAP/

was conducted using the Magic Interactive Map[7] and National Biodiversity Network Gateway[8] websites. Detailed results can be found within the associated Ecology Technical Appendix (AMA, 2010).

2.4 Field Survey

Field surveys were undertaken between April and June 2010 and comprised 'extended' Phase 1 Habitat Survey of the whole proposed cycle route and National Vegetation Classification (NVC) surveys of the Cowlow and Woo Dale route options. Water vole, otter, bullhead and white-clawed crayfish were also surveyed for.

2.4.1 'Extended' Phase 1 Habitat Survey

The principal survey method used to record and map broad habitat types was 'extended' Phase 1 Habitat Survey (JNCC 1993[9] and IEA 1995[10]). Botanical nomenclature followed Stace[11]. Fieldwork was undertaken in March 2010 by Andrew McCarthy Associates.

2.4.2 NVC Survey

A more detailed assessment, in the form of a rapid NVC assessment, was undertaken of the Woo Dale and Cowlow route options. This survey was undertaken in June 2010. Identification of NVC communities and sub-communities was achieved by an experienced NVC surveyor mapping the communities visually using the species identified and the NVC keys Rodwell, 2003[12] to confirm initial community identification.

2.4.3 Water Vole and Otter Survey

The site of the proposed bridge construction over the River Wye and for a distance of 200m in either direction was surveyed for signs of otter and water vole. The survey comprised a search for characteristic signs of water vole and otter activity.

[7] http://www.magic.gov.uk/website/magic

[8] http://data.nbn.org.uk/

[9] JNCC (1993). *Handbook for Phase 1 Habitat Survey – a technique for environmental audit*. Nature Conservancy Council, Peterborough.

[10] IEA (1995). *Guidelines for Baseline Ecological Assessment*. E & F Spon.

[11] Stace, C. (1999). *Field Flora of the British Isles*. Cambridge University Press, Cambridge

[12] Rodwell, J.S. (2003) *British Plant Communities Volume 1: Woodlands and Scrub*. Cambridge University Press.

2.4.4 White-clawed Crayfish and Bullhead

Whilst undertaking the water vole and otter survey, suitable sections of the River Wye were subjected to netting and stone turning for bullhead and white-clawed crayfish.

2.5 Determining Magnitude of a Potential Effect

The assessment methodology used for this document is based on the Institute for Ecology and Environmental Management (IEEM) guidelines[13], and is followed by assigning value to a site or feature of interest and in assessing the magnitude of the potential effect. The IEEM guidelines have no legal standing and are not a substitute for professional judgment and interpretation. However, they are well established and recognised guidelines which are utilised throughout the industry.

The IEEM guidelines set out the following process for assessment involving:

- Determining the nature conservation value of the ecology present within the site and adjacent areas that may be affected by the development, and the level of sensitivity of the receptor to the development;
- Identifying potential effects based on the nature of the construction, operation and decommissioning of the development;
- Determining the magnitude of the potential effects, i.e., the size of the change in the population / status of the receptor as a result of the development. Where the receptor is a species of fauna this includes consideration of the behavioural sensitivity of the receptor and the duration and reversibility of the potential effect;
- Determining the significance of the effects based on the interaction between the magnitude of the effect and the nature conservation value of the receptor likely to be affected;
- Identifying mitigation and compensation measures proposed to avoid, reduce or remedy significant adverse effects; and
- Determining the residual effect significance after the proposed mitigation measures have been implemented, including a description of any legal and policy consequences.

It is impractical for an assessment of the ecological effects of a development to consider every species and habitat that may be affected; instead it focuses on 'valued

[13] IEEM (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom*. Winchester.

ecological receptors'. Such receptors are species and habitats that are valued in some way, and could be affected by the proposed development; other valued ecological receptors may occur on or in the vicinity of the site of the proposed development but are not considered because there is no potential for them to be significantly affected.

The value of species populations and habitats is assessed with reference to:

- Their importance in terms of 'biodiversity conservation' value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations);
- Any social benefits that species and habitats deliver; and
- Any economic benefits that they provide.

The value of ecological receptors has been assigned following a standard geographic frame of reference (Table 1).

Table 1. Definitions of Nature Conservation Policy: Importance / Sensitivity.

Level of Value	Examples of Definitions
International	An internationally designated site e.g. SPA, SAC, Ramsar, or site considered worthy of such designation; A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller area of such habitat which are essential to maintain the viability of a larger whole; A regularly occurring, substantial population of an internationally rare species.
National (UK)	A nationally designated site e.g. SSSI, or site considered worthy of such designation; A viable area of priority habitat type as identified in the UK BAP, or of smaller areas of such habitat which are essential to maintain the viability of a larger whole; A regularly occurring, substantial population of a nationally rare species.
Regional (East Midlands)	Areas of internationally or nationally important habitats which are degraded but are considered readily restored; A regularly occurring, substantial population of a regionally scarce species.
County (Derbyshire/Peak District)	A site designated as a Wildlife Site or Site of Interest for Nature Conservation (SINC); A regularly occurring, substantial population of a species scarce in the County.
Local i.e. District/Parish	Viable areas of Local BAP Priority Habitat[14], or small areas of such habitat which are essential to maintain the viability of a larger whole; A regularly occurring, population of a species scarce in the District/Parish.
Negligible	A habitat which offers little value for nature conservation e.g. arable field.

A species, population or habitat is considered to represent a valued ecological receptor where it is considered to be of Local or greater importance in biodiversity conservation terms. Therefore if a species population or habitat is considered to be of negligible value, no significant effect can occur. Negligible value species or habitats are therefore scoped out of the continuing assessment.

Effects (or potential effects) on valued receptors are described in the following terms:

[14] http://www.ukbap.org.uk/lbap.aspx?id=387

- Duration (Short-term: <5 years, Medium-term: 5-15 years, Long-term: 15-25 years and Permanent: >30 years);
- Direct or Indirect;
- Adverse or beneficial;
- Magnitude of the effect on the conservation status[15] of the particular valued receptors and the integrity[16] of the habitats that support them based on the above three factors. Wherever possible, the magnitude of effect is quantified. Professional judgment is then used to assign the effects on the receptors to one of four classes of magnitude (Table 2); and
- Degree of Certainty (Likely: More than 95% sure of a particular fact. Probable: Over 50% but below 95% sure of a particular fact, or of the likelihood of that effect occurring. Possible: over 5% but less than 50% sure of a particular fact or of the likelihood of an effect occurring. Unlikely: less than 5% sure of effect occurring).

Table 2. Criteria describing magnitude of effect.

Magnitude	Definition
High	A permanent or long-term effect on the integrity of the site or conservation status of a habitat, species assemblage/community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	A permanent or long-term effect on the integrity of the site or conservation status of a habitat, species assemblage/community, population or group. If adverse, this is unlikely to threaten its sustainability; if beneficial, this is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short term but reversible effect on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the range of variation normally experienced between years.
Negligible	A short term but reversible effect on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the normal range of annual variation.

To ascertain the significance of an effect magnitude is assessed against each valued receptor. To guide assessment of significance a matrix table is utilised (Table 3). Within the matrix 'Not Significant (Minor)' is used to acknowledge circumstance whereby an impact may occur, albeit that it is unlikely to be significant in EIA terms. To ensure compliance with legislation, and to eliminate or reduce any likely significant

[15] 'Conservation status' is the ability of a habitat, a plant or animal community/population to maintain its distribution and/or extent/size.

[16] 'Integrity' is the coherence of the ecological structure and functions of a site or habitat that enables it to sustain its plant and animal communities and populations.

effects mitigation was identified and incorporated throughout the design process in addition to being tailored due to potential effects of the Development.

Table 3. Estimating the Overall significance Category.

Magnitude of impact	**Value of Receptor**					
	International	***National***	***Regional***	***County***	***Local (District / Parish)***	***Negligible***
High	Significant (Major)	Significant (Major)	Significant (Major)	Significant (Major)	Not Significant (Minor)	Negligible
Medium	Significant (Major)	Significant (Major)	Significant (Major)	Not Significant (Minor)	Negligible	Negligible
Low	Not Significant (Minor)	Not Significant (Minor)	Not Significant (Minor)	Not Significant (Minor)	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Options in the 'Significant (Major)' category are likely to be unacceptable on nature conservation grounds alone (even with compensation proposals).

2.6 Determining Significance

The significance of an effect is largely a product of the value of the ecological receptor and the magnitude of the effect on it, moderated by professional judgement. The concept of significance lies at the heart of the Ecological Impact Assessment (EcIA) process. A significant effect is defined in ecological terms as an effect on the integrity or conservation status of a defined site, habitat or species. The significance of an effect is determined by considering the combination of the nature conservation value of the receptor and the magnitude of the effect and applying professional judgement as to whether the integrity of the receptor will be affected. This concept can be applied to both designated sites (for example, a Site of Special Scientific Interest, SSSI) and to defined populations (for example a local bat population). The concept underpins much of the European legislation in relation to nature conservation.

The geographic frame of reference does not necessarily imply a level of sensitivity to the development. For example, if a county wildlife site is cited for the population of a particular species of invertebrate, that population is of county importance, but other

features of the site may be less important. Similarly, legal protection at a national level, or the presence of a priority species or habitat in the UK Biodiversity Action Plan, does not always imply national importance.

Within this assessment a finding of significant effect means that the predicted effects are considered likely to affect the integrity of a receptor at a particular geographic scale of influence. This may be at site level or district level or at other levels. Accordingly, there is no single threshold over which an effect is determined to be significant or not significant for EIA purposes. Rather, this assessment presents information to assist in determining the levels at which any predicted effects on the integrity of a receptor may be discernable. Mitigation measures and detailed design work may ameliorate or reduce some of the consequences upon affected interests.

Effects not considered to be significant would be those where no effects on the integrity of the receptor are predicted. These could range from low magnitude effects on receptors of high value to high magnitude effects on receptors of low value. Such effects may be raised as local issues but are not considered to be significant. Nevertheless, they are of relevance in enhancing the subsequent design of the proposed development and consideration of mitigation or compensation measures. Clearly, effects of negligible magnitude, or effects on receptors of negligible conservation value are not considered to be significant.

Significant effects will be priorities for mitigation and/or enhancement. In some cases, for example where there may be direct disturbance to bats, there may also be a legal obligation to provide such mitigation. It should be noted that, alongside the criteria provided, professional judgement is applied in determining the significance of potential effects.

Where there is doubt over the appropriate level of significance, for example where there is uncertainty about the full extent of the local resource (habitat area or population size), this is stated and as a precaution the higher level of significance of the effect is applied.

2.7 Scoping and Consultation

Table 4 below provides a summary of the consultation undertaken with regards to ecology to date.

Table 4: Consultation Reponses

Consultee	Response/Comments
Natural England (NE)	Appropriate assessment required and assessment of cycle routes impacts on features of the SSSI. Surveys required to look at effects to protected species and habitats including potential impacts such as pollution along the River Wye.

The 'Protected Species' database compiled by Natural England for the Peak District National Park Authority was also searched for archive records of protected species within 2km of the proposed cycle route.

3 BASELINE CONDITIONS

3.1 Desk Study

A full list of habitats and species recorded within the data search study area is provided in the associated Ecology Technical Appendix (AMA, 2010). Those habitats and species that require assessment within the Ecological Impact Assessment framework are summarised below.

3.1.1 Statutory Sites

There are seven statutory sites within 2 km of the development. These are considered in Table 5 below:

Table 5. Statutory Site Details

Site name	Designation	Distance from application site
The Peak District Dales	SAC	Within Application Site
The Wye Valley (SK 154722)	SSSI	Within Application Site
Topley Pike and Deepdale (SO 099717),	SSSI	20m south of the Woo Dale. Separated from the site by the A6 trunk road.
Calton Hill (SK 119715)	SSSI	800m south of the Wye Dale car-par
Monks Dale (SK 135745)	SSSI	150m north of Miller's Dale
Cressbrook Dale (SK 173738)	SSSI	200m north of Upperdale
Longstone Moor (SK 195735)	SSSI	1.5km north east of Monsal Head

The location of the Peak District SAC and the Wye Valley SSSI in comparison the proposed cycle route can be viewed on Figures 004a-g and 005a-g found within the Ecology Technical Appendix (AMA, 2010).

3.1.2 Protected and Notable Species within 2km

The 'Protected Species' database holds current records of water vole *Arvicola terrestris* and historic records of otter *Lutra lutra* and white-clawed crayfish *Austropotamobius pallipes* within the River Wye. All species of common reptile including common lizard *Zootoca vivpara*, grass snake *Natrix natrix*, slow worm *Anguis fragilis* and adder *Vipera beris* are recorded along the cycle route and great crested newt populations are also recorded. The PDNPA also have information that indicates that bullhead *Cottus gobio* are also recorded within the River.

There are numerous botanical records of uncommon flora along the cycle route but these are connected with the wider environment rather than being found within the proposed cycle track corridor (see Figures 001a – 001e within the Ecology Technical Appendix (AMA, 2010) for desk study results).

3.1.3 Habitats

The Peak District Biodiversity Action Plan identifies habitats and species deemed to be of significance in the region. Criteria used to determine significance include the rarity of a species or habitat on the national or local scale and whether or not the species or habitat is declining. However, some species that are not rare or declining are included within the Local BAP because they are indicative of a particular habitat or are valued by the public.

Species and habitats relevant to the site, for which action plans have been prepared within the Peak District Biodiversity Action Plan (LBAP) are listed below:

- Upland Ashwood;
- Parkland/Veteran trees;
- Limestone Dales;
- Hay Meadows;
- Unimproved Grassland;
- Rough Grazing;
- Rush Pasture;
- River Corridor Habitats;
- Ponds;
- Limestone Heath;
- Water Vole;
- Curlew, lapwing and twite; and
- White-clawed crayfish.

3.2 Field Survey

3.2.1 Extended Phase 1 Habitat Survey and NVC Survey

A summary of the main habitats found on and adjacent to the development site is provided in the following section with more detailed information being provided in the Ecology Technical Appendix (AMA, 2010). Please refer to Figures 002 – 002l for the extended Phase 1 Survey results of the disused railway track and Figures 003a – 003c for the extended Phase 1 Habitat and NVC results of the Woo Dale and Cowlow route options (Appendix 2, Ecology Technical Appendix, AMA 2010).

3.2.2 General Overview

The study area is dominated by hard-standing and bare ground of existing tracks, paths and roads and is lined by semi-improved habitats including grassland, tall herb communities, woodland and scrub. There are limited areas containing communities with greater interest including those rocky habitats associated with the former railway cuttings and those surrounding the Woo Dale and Cowlow route options in the western section of the proposed trail which include calcareous and flower-rich grassland. Table 6 provides a synopsis of the main habitats and protected species or their field signs found on or adjacent to the study area.

Table 6. Main habitats recorded within and outwith the development site.

Habitat	Details
Habitats within the application site boundary	
Hard-standing	The majority of the proposed cycle trail comprises hard-standing surfaces of existing tracks and roads. Negligible ecological inertest.
Improved grassland (including MG6 and MG7)	Pastures dominated by perennial rye grass with occasional herbs are limited along the proposed cycle route but are common in the wider environment especially surrounding the Cowlow and Woo Dale route options. Low ecological interest.
Semi Improved grassland (including MG1)	Majority of the habitat lining the trail comprises this habitat which has experienced improvement through draining and management and contains limited species of interest. Limited ecological interest.
Species-rich Semi-Improved Grassland (including MG5)	Smaller sections of the habitat surrounding the disused railway and those surrounding the Cowlow and Woo Dale route options comprised grassland which contained more floral diversity.
Tall Ruderal/Herb (including OV26)	Communities dominated by tall ruderal species is located adjacent to the route is many sections especially where scrub has been removed. Limited ecological interest.
Butterbur dominated community	Section of habitat adjacent to the River Wye that is dominated by butterbur and sedges.
Scrub	Continuous and scattered scrub is located throughout the survey area. Limited ecological interest.
Woodland	Sections of the route are lined by woodland including mixed species assemblages as described in the Technical Appendix.
Woodland - W8 community	W8 communities are located along the Woo Dale route option including sub-communities e (herb Robert sub-community) and f (Ramsons sub-community).
Rocky Outcrops and Scree	Small sections of the route mainly associated with the railway cuttings comprise exposed rock surfaces, some of which support good assemblages of bryophytes and some species of alpines.
Water features	River Wye is adjacent to the trail for a short section in the Woo Dale route option and there are several shallow ditches alongside the disused railway, with low botanical diversity, dense shading and limited capacity to support associated fauna.

Habitat	Details
Stone Walls	Stone walls are the main habitat boundary feature throughout the survey area. They provide habitat for lichens and bryophytes. Low ecological interest.
Main habitats adjacent to the development site	
Improved grassland (including MG6 and MG7)	As listed above
Semi-improved grasslands (Including MG1 & MG5)	As listed above.
Ponds	There are no ponds within the application area but several within the wider environment. These range from small dew ponds to large fishing lakes.
Marshy Grassland	There are small sections of marshy grassland found in the wider environment and dominated by rush sp.
Tall Ruderal/Herb (including OV26)	As listed above.
Butterbur dominated community	As listed above.
Calcareous grasslands (CG2)	CG2 surrounds the semi-improved grasslands of the Woo Dale farm track. It is an Annex I habitat of The Wye Valley SAC and of international importance.
Calcareous Grassland (CG6)	There is a small area of CG6 grassland along the Woo Dale farm track at the western end of the proposed trail. Lowland Calcareous grassland is listed as a national BAP habitat and limestone Dales are listed as local BAP habitats.
Hedgerows	There are a limited number of hedgerows in the wider environment which are dominated by hawthorn. Negligible ecological interest.
Scrub	As listed above.
Woodland	As listed above.

3.2.3 Plants

Japanese knotweed *Fallopia japonica* was identified along the disused railway line at two separate locations. Both stands were not exhibiting active growth and appeared to have been previously treated with herbicide.

Along the edge habitats of the disused railway line (the hard-surfaced section of the Monsal Trail) there were some interesting plants characteristic of the surrounding habitat such as fairy flax *Linum catharticum,* southern marsh orchid *Dactylorhiza praetermissa,* Grass of Parnassus *Parnassia palustris* and mouse-ear hawkweed *Heiracium pilosella.*

3.2.4 Badger

Two main setts and five smaller outlier setts were identified along the proposed cycle route within the habitat verges surrounding the disused railway line. All setts were at least 2m from the hard-standing of the track. There was evidence of badgers foraging in the area across the whole route.

3.2.5 Water Vole and Otter

The ditches within the area were not deemed suitable for water vole due to the amount of shading or low water levels. However, they are suitable for commuting and foraging otter. The River Wye is considered suitable for both water vole and otter. However, no otter activity was recorded at the site of the proposed bridge crossing or for 200m in either direction. Several disused water vole burrows were recorded approximately 20m east of the proposed bridge crossing and no other activity was recorded. No direct (construction) impacts are considered for this species as it is absent from the impact area, however wider environmental effects are considered to populations which have been identified in the desk study as being present further downstream.

3.2.6 Reptiles

A common lizard was recorded within a pile of brash at the Miller's Dale car park and the grassland, scrub and bare earth areas provide suitable habitat with the stone walls providing refugia.

3.2.7 Great Crested Newt

The ponds within the wider environment provide suitable aquatic and breeding habitat for great crested newts with the areas of grassland and scrub offering good terrestrial habitat.

3.2.8 Birds

The woodland, scrub and grassland areas support a range of bird species including the following notable species recorded during the field surveys:

- willow tit *Poecile montanus*;
- lesser spotted woodpecker *Picoides minor*;
- redstart *Phoenicurus phoenicurus;* and
- peregrine *Falco peregrinus*.

3.2.9 Invertebrates

The areas of flower rich grassland and moist walls of the rocky outcrops provide suitable habitat for a range of invertebrates including butterflies listed on the UK BAP such as dingy skipper *Erynis tages*, wall *Lasiommata megera* and white letter hairstreak *Satyrium w-album*. In addition, the shaded railway cuttings and the butterbur community along the River Wye also provide habitat for a range of invertebrates such as true fly species *Diptera* and snails *Gastropoda* some which are of national importance such as the nationally scarce cranefly *Dicranomyia ornata*.

3.2.10 White-clawed Crayfish, Brook Lamprey & Bullhead

The River Wye is suitable for bullhead and for white-clawed crayfish especially at the faster flowing pool/riffle sections of the river. The presence of bullhead was confirmed during the surveys but no white-clawed crayfish were recorded. Therefore, it is considered likely that this species has become extinct in this river and is not considered within this assessment. It is also considered that the River Wye contains suitable habitat for brook lamprey although no records have been gained either during desk study or field survey.

4 ASSESSMENT OF NATURE CONSERVATION VALUE

This section evaluates the nature conservation value of the habitats and species present within or in the immediate vicinity of the development area. Each ecological feature has been assigned an ecological value according to the geographical scale at which it is important in accordance with the IEEM 2006 guidelines (Table 1). Where sites have designations at different levels (international, national and regional/county/local) the highest value is assigned.

The following tables explain the reasons why values have been assigned to these receptors. In addition, where no potential effects are predicted these receptors are not considered further in the assessment, but rationale for this is provided.

4.1 Protected Sites

Table 7 below details designated sites within 2km of the proposed development area and provides the assigned value for each, together with a brief rationale explaining the value allocated. However, only two of the sites will be affected by the development as the other four are too distant or are separated by barriers such as the A6 trunk road and will not received any direct or indirect effects.

Table 7. Importance of receptor - designated sites.

Site	Value	Description
Sites that have potential to be affected:		
The Peak District Dales SAC	International	SAC - designated for its calcareous grasslands, ash woodlands, scree/ravines and white-clawed crayfish community with other Annex I and II features including European dry heath, calaminarion grasslands, alkaline fens and calcareous scree, rocky slopes, brook lamprey and bullhead.
The Wye Valley SSSI	National	SSSI - designated for its semi-natural woodlands, scrub, calcicolous and acid grasslands and stream habitats.
Sites that are too distant to be affected (not considered further):		
Topley Pike and Deepdale SSSI	National	SSSI - designated for its geological interest and range of woodlands, scrub, grasslands and streams.
Calton Hill (SK 119715)	National	SSSI - designated for its geology
Monks Dale (SK 135745)	National	SSSI - designated for its geological interest and range of woodlands, scrub, grasslands and streams
Cressbrook Dale (SK 173738)	National	SSSI - designated for its geological interest and range of woodlands, scrub, limestone grasslands and streams

Site	Value	Description
Longstone Moor (SK 195735)	National	SSSI - is designated for its limestone heathland and mining spoil heaps containing metallophyte plants.

4.2 Habitats

Table 8 details habitats within and adjacent to the site which are outside of the boundaries for the designated sites outlined in Table 7. It provides the assigned value for each habitat, together with a brief rationale explaining the value allocated.

Table 8. Importance of receptor – habitats.

Habitats	Value	Descriptor
On-site		
Hard-standing	Negligible – Not considered further	Hard surfaced areas providing little benefit to botanical or faunal species.
Improved grassland (including MG6 and MG7)	Negligible - Not considered further	A widespread habitat which is species-poor and contains no rare or threatened species.
Semi-improved grassland (including MG1)	Local	Species poor semi-improved grassland along the verges of the trail containing only common and widespread plant species but with potential to provide a foraging resource for some faunal species.
Species-rich semi-improved grassland (including MG5)	National	Floristically diverse grassland classified as 'Lowland Meadow' on the UK BAP and supporting a range of invertebrates and other faunal species.
Tall Ruderal/Herb	Local	Contains limited floral diversity and is likely to support a limited invertebrate assemblage.
Butterbur Community	Local	Contains limited floral diversity but is likely to support a range of invertebrates.
Scrub	Local	Species poor areas of dense and scattered scrub but providing shelter to a range of animals including birds and reptiles.
Woodland	National	Lowland mixed deciduous woodland and upland mixed ash woodlands are classified as national and local BAP habitats.
Rocky Outcrops and Scree	National	Inland Rock Outcrop and Scree Habitats are listed as national BAP habitats.
Stone Walls	Local	Providing habitat for a range of bryophytes and faunal species.
Water features: River Wye	National	A limestone river supporting a range of fauna and flora. Rivers are listed on the national BAP and LBAP.

Habitats	Value	Descriptor
Water features: ditches and drains	Local	Shallow ditches supporting limited botanical and faunal diversity but providing another habitat type and connectivity between adjacent semi-natural habitats
Off-site		
Improved grassland (including MG6 and MG7)	Negligible - Not considered further	A widespread habitat which is species-poor and contains no rare or threatened species.
Semi-improved grassland (Including MG1 & MG5)	Local/National	As listed above.
Ponds	National	The ponds are considered to represent important wildlife features within the mosaic of habitats and are listed as a national and local BAP habitat.
Marshy Grassland	Local	Rush pasture is listed as a local BAP habitat.
Tall Ruderal/Herb	Local	Contains limited floral diversity and is likely to support a limited invertebrate assemblage.
Calcareous grassland (CG6)	National	Lowland Calcareous grassland is designated as a national BAP habitat.
Calcareous Grassland (CG2)	National	Listed on the national BAP and the LBAP.
Scrub	Local	As above.
Woodland	National	Upland mixed ash, upland oak, upland birch, native pine, lowland mixed deciduous and lowland beech and yew woodlands are all listed as UK BAP habitat.

4.3 Fauna

Table 9 details the UK distribution and population status of fauna recorded on site and provides the assigned value for each, together with a brief rationale explaining the value allocated. Value does not account for whether the species is protected under the relevant legislation. Where such species have been recognised the legal implications of the Development must be accounted for.

Table 9. Importance of receptor – fauna.

Species	Value	Descriptor
Scarce Botanical Species	County	Plants uncommon in the region are found at intervals within the edge habitats of the trail reflecting the species found in the wider community.
Badger	Local	Badger are common and widespread both nationally and at the regional level and the UK population has been increasing since 1995 (JNCC, 2008)[17]. Although the amount of activity surrounding the route suggests there is an abundance of

[17] Anon (1999). Badgers: Guidance for Developers. English Nature, Peterborough.

Species	Value	Descriptor
		high quality foraging habitat, due to the relative abundance of this species both nationally and within Derbyshire, the value of the site for this species is considered to be local.
Otter	Local	Otter population is recorded as localised but generally increasing across the country and especially in England[18]. The River Wye provides suitable habitat for the species but they have not been recorded since the 1990's.
Water Vole	County	The water vole population has rapidly declined in the recent past but appears to be stabilising across the country. However, the species have been reported to have declined within Derbyshire 1999[19].
Great crested newt (non-breeding)	National	Small populations of great crested newt are recorded within 500m of the proposed cycle route. This species has suffered rapid declines in the recent past and is nationally rare, listed as a UK BAP species.
Reptiles	Local	All common and widespread species were recorded along the cycle route. No nationally rare or scarce species were recorded but the common species are important locally.
Birds	National	The mosaic of habitats adjacent to the proposed cycle route provides foraging, shelter and breeding habitat for a range of birds, some which are nationally threatened and listed as UK BAP species.
Dingy Skipper, Wall & White-letter hair-streak	National	The flower-rich areas provide habitat for butterflies listed on the UK BAP which have declined in recent years.
Invertebrates – common and widespread	National	The mosaic habitats provide suitable resources for a range of common and widespread invertebrates, important at a local level to maintain ecosystem functioning. There may also be species which are nationally scarce such as the cranefly *Dicranomyia ornate*.
Bullhead & Brook Lamprey	National	These widespread species are found across England but rarer in Scotland and Europe. Annex II species of the EC Habitats Directive. Therefore, although widespread are important on a national scale.

4.4 Predicted Trends

In the absence of development it is likely that the habitats present on-site will continue in their present state. The species populations currently supported are therefore likely to be maintained on-site in the short to medium term.

4.5 Information Gaps

Information regarding non-statutory designated sites for nature conservation was not sought due to the habitats along the route being primarily statutorily designated. Therefore, it was assumed that any effects to the non-statutory sites in the area would be considered at a higher level under these statutorily designated sites. Also, full presence/absence surveys for brook lamprey were not undertaken. This species is an Annex II feature of the SAC designation and it is therefore assumed that this species is present within the River Wye.

[18] Jessamy Battersby (Edited and compiled), (2005), UK Mammals: Species Status and Population Trends, JNCC/Tracking Mammals Partnership 2005, ISBN 1 86107 568 5

[19] http://www.derbyshirewildlifetrust.org.uk/files/Distrib.pdf

5 IMPACT ASSESSMENT

In this section, potential impacts that may affect the ecological interests within the survey area are described and assessed to determine whether they are potentially significant. The impacts are described in the absence of any mitigation. Table 10 summarises each element of work which may result in a potential impact to ecological features.

5.1 Potential Impacts

5.1.1 During Construction

5.1.1.1 Refurbish Existing Tracks

The section of track from Coombs Road to the Headstone Tunnel will require no works as the track has previously been laid with dressed stone providing a suitable surface for walkers and cyclists. However, the rest of the existing Monsal Trail will require small areas of infill where the track has become degraded. In addition, several areas will require water-proofing using asphalt or bitumen. These include the River We Viaduct, Miller's Dale Junction, Miller's Dale Viaduct, Chee Tor Bridge, East Buxton Viaduct, Monsal Dale Viaduct, Coomb's Lane Viaduct and the bridleway between the A6 and Blackwell Mill on the Woo Dale route.

Refurbishing the existing hard-standing would have minimal impact on the ecological features of the area due to hard-standing being of negligible ecological importance.

5.1.1.2 Reconstruct Existing Tracks

Should the Woo Dale route be chosen, approximately 2km of the farm track will require reconstructing to allow for a 2.5m wide track. This will involve clearing the organic material to the stone base, adding new stone to form a 3m wide base and laying a sealed surface (bitumen) up to 2.5m wide. A similar process would be used for the Cowlow route on the track leading from the Central Lime Works tunnel to the disused railway track.

For the Woo Dale route, the track beside the A6 would require widening to 2.5m and Church Lane would require organic material cleared to reveal to stone base and balustrades will need to be installed in areas where safety could be comprised.

This process would involve removing the vegetation currently present on the existing tracks to enable the reconstruction. For the majority this is species poor semi-

improved grassland with the exception of an area of floristic diversity along the Cowlow route. Therefore, there would be an amount of habitat loss including semi-improved grassland and flower rich areas.

5.1.1.3 Construct New Tracks

Tracks would need constructing for both the Cowlow and Woo Dale routes. Approximately 0.5km of new track would need to be constructed adjacent to the River Wye for the Woo Dale route and 2.2km of track would need to be constructed along the field margins of the Cowlow route. This would be achieved via a combination of excavation and fill using stone excavated from elsewhere on the route.

The construction would result in habitat loss of species-poor semi-improved grassland along the Cowlow route[20] and species poor and small areas of species rich semi-improved grassland and butterbur communities along the Woo Dale route.

5.1.1.4 Construct of Footpath over River Wye

A 10m span 2m wide footpath bridge over the River Wye requires construction which would include creating a stone abutment on either bank to support the bridge where there is existing rough stonework. The bridge is anticipated to be 1.7m above the existing water level.

The modifications to the bank may cause environmental effects such as pollution incidents and sediment release which could impact on habitats and all animals within the water course (see environmental effects below).

5.1.1.5 Ramp Installation

Two ramps are required: one to access the disused railway line from the Blackwell Mill access road and another at Coombs Lane Viaduct. These will be created by excavation and fill using material excavated during the project. At Coombs Lane Viaduct, the ramp will meet the track and the track will be lowered to provide a safe parapet wall over the viaduct itself.

The ramps will be located within woodland and follow an existing track in the case of Blackwell Mill and semi-improved grassland following a field boundary at Coombs Lane Viaduct. The ramps will result in a small loss of this type of habitat.

[20] This is correct providing the Cowlow route remains on the north side of the field boundary and does not enter the species-rich grasslands which are within the SAC boundary to the south.

5.1.1.6 Open Disused Tunnels and Stabilising Rock Faces

Four tunnels require re - opening and a further two require modification to allow access to cyclists and rock faces require stabilisation for health and safety reasons. The opening of the tunnels would have a negligible impact to the ecology resource (excluding bats) and the modification to rock faces would potentially result in vegetation, such as bryophytes and alpines, being removed.

5.1.1.7 Environmental Effects

There is potential for environmental effects, such as increased sediment in water courses, pollution incidents, water-runoff and dust deposition, to affect the surrounding habitats and species especially where works are adjacent to sensitive habitats such as the River Wye. Any dust deposition or pollution events including sediment could affect white-clawed crayfish and bullhead within the River.

5.1.1.8 Stone Wall Management

Stone walls along the route which are in a defunct state will be repaired or re-built providing habitat for bryophytes and shelter for reptiles, amphibians and small mammals.

5.1.1.9 Installation of Temporary Construction Compound

A temporary site compound will be located at the Miller's Dale car park where there will be no anticipated impacts due to the area being hard-surfaced.

5.1.2 <u>During Operational Phase</u>

5.1.2.1 Recreation

The route will lead to an increased amount of recreation to the area which could result in disturbance of both habitats and species within the area.

5.1.2.2 Land-Use Change

Where the route would divide grazing fields, especially along Woo Dale potentially with the use of fencing, there may be some compartmentalisation of the valley leading changing grazing regimes and a consequent modification of vegetation communities.

5.1.3 <u>Decommissioning Phase</u>

There would be no detrimental impacts anticipated at this stage due to the track gradually deteriorating and being colonised by surrounding vegetation over time.

5.2 Potential Cumulative Impacts

There are no other similar operations in the area. Therefore, no cumulative impacts on ecological interests are predicted to occur.

Table 10. Potential Effects

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
<u>During Construction Phase</u>						
Track Construction/Re-construction/Ramp Installation						
Peak District Dales SAC	Direct	Loss of habitat through the Woo Dale route including improved, semi-improved and species-rich grassland, butterbur community areas and bare ground surrounding the farm track. Minor loss of species-rich grassland surrounding path from disused railway to Central Lime Works tunnel for the Cowlow route option. **Woo Dale = 4250 m^2** **Cowlow = 300 m^2**	Construction works will last XX weeks and the track will be permanent.	Adverse	None	***Low Adverse*** Habitats to be lost are small areas of improved and semi-improved grassland/butterbur communities with limited species-rich areas and bare ground abundant in wider environment. No Annex I or Annex II features affected. Likely.
The Wye Valley SSSI	Direct	Loss of habitat: **Disused Railway Line = 500m^2** **Woo Dale route option = 4250m^2** **Cowlow route option = 300m^2**	As Above	Adverse	None	***Low Adverse*** Areas mostly comprise improved and semi-improved habitats adjacent to the completed disused railway line. Of interest, only small areas of flower-rich grassland along the Cowlow route, butterbur community, rock faces and edge habitats of woodland surrounding the Blackwell Mill track to be used as a ramp on the Woo Dale route, features of the SSSI, are to be lost. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Semi-improved grassland	Direct	Areas to be lost to sections of created/refurbished track: New track of Cowlow Route = 6600m^2 Reconstruction of Woo Dale farm track = 3000 m^2 Reconstruction of hard surfaces for disused railway track, Cowlow and Woo Dale route = 1500m^2 **Disused Railway Total= 500 m^2** **Woo Dale Total = 3500m^2** **Cowlow Total = 7100 m^2**	As above	Adverse	None	***Low adverse*** Minor loss of species poor semi-improved grassland. Likely.
Species-rich semi-improved grassland	Direct	A potential minor loss of a section adjacent to the track which leads from the quarry to the disused railway track on the Cowlow route = **300m^2.** New track along River Wye of the Woo Dale route = **1200m^2**	As above	Adverse	None	***Low adverse*** Minor loss of the species-rich semi-improved grassland resource abundant in wider environment. Probable.
Tall Ruderal/Herb	Direct	A small amount may be cleared to widen track in certain areas along the disused railway track = **a maximum of 500m^2.**	As above	Beneficial	None	***Low beneficial*** A minor loss of a tall ruderal habitat leading to clearance helping other plants to encroach. Probable.
Butterbur Community	Direct	A minor loss of butterbur community from the construction of the new track along the River Wye = **50m^2**.	As above	Adverse	None	***Low adverse*** A minor loss of a butterbur habitat, abundant along the River Wye. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Scrub	Direct	A small amount of scrub may be cleared to widen track in certain areas along the disused railway track = **a maximum of 500m^2.**	As above	Beneficial	None	***Low beneficial*** A minor loss of a dense scrub habitat leading to clearance helping other plants to encroach. Probable.
Water features: ditches and drains	No loss expected	NA	NA	NA	NA	***Negligible*** Likely.
Woodland	Direct	A small area of woodland surrounding the track at Blackwell Mill may be lost to the ramp installation: **A maximum = 200m^2**	The works will last XX weeks and the ramp will be permanent.	Adverse	None	***Low Adverse*** Minimal losses of habitat surrounding track. Probable.
Great Crested Newt	Direct	Potential killing of low numbers of individuals and small areas of habitat to be lost will be a maximum of: **Disused Railway Total= 500 m^2** **Woo Dale Total = 4750 m^2** **Cowlow Total = 7400m^2**	The works will last for XX weeks and the tracks will be permanent.	Adverse	None	***Low Adverse*** Small losses of sub-optimal terrestrial habitat and potential losses of a small number of individuals Probable.
Reptile	Direct	Potential killing of low numbers of individuals and small areas of habitat to be lost will be a maximum of: **Disused Railway Total= 500 m^2** **Woo Dale Total = 4750 m^2** **Cowlow Total = 7400m^2**	The works will last for XX weeks and the tracks will be permanent.	Adverse	None	***Low Adverse*** Small losses of habitat and potential losses of a small number of individuals. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Invertebrates – BAP Butterflies	Indirect	Loss of small areas of flower-rich habitat and food/host plants: **Disused Railway Total= 500 m^2** **Woo Dale Total = 1250 m^2** **Cowlow Total = 300 m^2**	The works will last for XX weeks and the tracks will be permanent.	Adverse	None	***Low Adverse*** Small losses of habitat. Probable.
Invertebrates – widespread and nationally scarce	Indirect	Loss of small areas of flower-rich habitat and food/host plants, butterbur community and rocky outcrop areas: **Disused Railway Total= 700 m^2** **Woo Dale Total = 4750 m^2** **Cowlow Total = 7400 m^2**	The works will last for XX weeks and the tracks will be permanent but the rock faces will be re-colonised in the medium term.	Adverse	None	***Low Adverse*** Small, localised losses of habitat. Probable.
Scarce Botanical Species	Direct	Potential for loss of scarce plants along the route from track construction and re-construction.	The works will last for XX weeks and the tracks will be permanent.	Adverse	None	***Medium adverse*** A loss of individual plant species from limited sections of the route that may re-colonise from surrounding environments in the long-term. Probable.
Breeding Birds	Indirect	Possible loss of a small amount of potential breeding habitat (scrub & long grassland) cleared to widen track in certain areas along the disused railway track = a maximum of 500m^2.	The works will last for XX weeks and the tracks will be permanent.	Adverse	None	***Low Adverse*** Small losses of potential breeding habitat. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Badger	Indirect	Potential disturbance to setts and small loss of foraging land. Disturbance of setts, some used for breeding, and a small loss of foraging.	The works will last for XX weeks and be temporary for disturbance but permanent for habitat loss.	Adverse	None	***Low Adverse*** The minor disturbance to badger will not include any sett destruction and will be temporary not affecting the conservation status. Likely.
Construction of Bridge						
Peak District Dales SAC	Direct	A small section of the river bank equalling approximately 10m will be re-profiled or disturbed to allow for bridge construction.	Works will last XX weeks and will be permanent.	Adverse	None	***Low Adverse*** Re-profiling works and disturbance of a small section of bank will be temporary. Probable.
Invertebrates – widespread and nationally scarce	Indirect	Loss of small area of butterbur dominated community alongside the River Wye which provides habitat for invertebrates. **Approximately 10m^2.**	The works will last for XX weeks and the tracks will be permanent but the rock faces will be re-colonised in the medium term.	Adverse	None	***Low Adverse*** Small, localised losses of habitat. Probable.
Otter	Indirect	Disturbance of a small section of river bank which may be used by commuting and foraging otter.	Works will last XX weeks and will be temporary.	Adverse	None	***Low Adverse*** Disturbance of a small section of bank will be temporary and will not affect any places of shelter. Probable.
Stabilising Rock Faces						

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Rocky Outcrops and Scree	Direct	Small areas affected by stabilising rock faces equating to **a maximum of 200m^2.**	The works to specific rock faces will last approximately XX weeks.	Adverse	None	***Medium adverse*** A loss of bryophyte and alpine plant community that would re-colonise in the long-term. Probable.
Repairing Stone Walls						
Stone Walls	Direct	All stone wall features which are adjacent to the cycle path and in a defunct state will be repaired. This will amount to **at least 500m.**	Construction works will last XX weeks and further works may occur at any time of year. The repairs will be permanent.	Beneficial	None	***Low beneficial*** Restoration of stone walls will provide habitat and shelter for species Probable.
Great crested newt	Direct	Potential disturbance and killing of great crested newt sheltering within wall but ultimately providing more sheltering opportunities once repaired.	Construction works will last XX weeks. The repairs will be permanent.	Adverse (short-term)/ Beneficial (long-term)	None	***Low adverse (short-term) / beneficial (long-term)*** Potential harm to a small number of individuals but more refugia opportunities in the future. Probable
Reptile	Direct	As above	As above	As above	None	***Low adverse (short-term) / beneficial (long-term)*** As above.
Environmental Effects (sediment run – off, pollution and dust deposition)						

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Peak District Dales SAC	Indirect	Small scale disturbance and potential environmental effects to a section of the river and at the edge of existing tracks or at the edge of the SAC boundary during bridge and adjacent track construction/reconstruction.	Works will last for XX weeks and will be temporary.	Adverse	None	***High Adverse*** Pollution effects may be experienced by a small area of edge habitats of the track and the river and all supported fauna which includes sensitive Annex II species. Probable.
The Wye Valley SSSI	Indirect	Small scale disturbance and potential environmental effects to habitats at the edge of existing tracks or at the edge of the SSSI boundary during bridge and track construction/reconstruction.	Works will last for XX weeks and will be temporary.	Adverse	None	***Low Adverse*** Effects will be temporary and reversible and only effect the edge habitats of the track. Probable.
Water vole	Direct	Pollution events could potentially harm water vole populations further down stream in the River Wye by harming individuals and by rendering the river unsuitable habitat.	As above	Adverse	None	***High Adverse*** The environmental effects could threaten the sustainability of the population until the environmental effects had dispersed. Probable.
Bullhead and Brook Lamprey	Direct	Environmental effects, especially dust deposition and pollution run-off, in localised area affecting the species.	As above	Adverse	None	***High Adverse*** The environmental effects could threaten the sustainability of the population until the environmental effects had dispersed. Probable.
All Habitats	Indirect	Small scale disturbance and potential environmental effects to all surrounding habitats during bridge and track construction/reconstruction.	As above	Adverse	None	***Low Adverse*** Effects will be temporary and reversible and only effect the edge habitats of the track will be affected. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
Spread of Japanese Knotweed						
Invertebrates (common and BAP/ nationally scarce species)	Direct	Construction works could spread the invasive plant leading to out-competing of other native flora including food plants of these species.	Permanent.	Adverse	None	***Low Adverse*** Japanese knotweed would out-compete localised vegetation communities leading to small losses of food/host plants. Probable.
The Wye Valley SSSI, Grassland, tall ruderal, woodland habitats.	Direct	Construction works could spread the invasive plant leading to out-competing of other native flora.	Permanent.	Adverse	None	***Low Adverse*** Japanese knotweed would out-compete localised vegetation communities. Probable.
During Operational Phase						
Recreation						
Peak District Dales SAC	Direct	There will be increased recreation pressure to the area leading to potential trampling and littering of edge habitats.	Recreation will be constant and permanent.	Adverse	None	***Medium Adverse*** A long-term impact which could affect the integrity of the sensitive parts of the site. Probable.
Wye Valley SSSI	Direct	As above	As above	Adverse	None	***Medium Adverse*** A long-term impact which could affect the integrity of the sensitive parts of the site. Probable.

Feature	Direct / Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Magnitude and Confidence
All Habitats	Direct	As above	As above	Adverse	None	***Medium Adverse*** A long-term impact which is unlikely to threaten to sustainability of the habitats. Probable.
Changes in Land-Use						
Peak District Dales SAC	Direct	Compartmentalisation of habitats may lead to a change in grazing regime and modification of habitats.	The tracks would be permanent.	Adverse	None	***Medium Adverse*** A permanent impact which could affect the habitat composition of the SAC. Possible.
Wye Valley SSSI	Direct	As above	As above	Adverse	None	***Medium Adverse*** A permanent impact which could affect the habitat composition of the SSSI. Possible.

5.3 Assessment of Significance

Each ecological receptor has been valued with preference to its geographical scale of importance and the magnitude of potential effects has been identified. These factors are combined to determine whether an effect is significant at a geographical scale with the overall assessment of significance presented in Table 11 below.

Table 11. Significance of Impacts to Valued Receptors

Receptor	Value	Magnitude		Overall Assessment
Peak District Dales SAC	International	Construction – Habitat Loss / disturbance	Low	Not significant (Minor)
		Construction – Environmental Effects	High	Significant (Major)
		Operational - Recreation	Medium	Significant (Major)
		Operational – Land-use	Medium	Significant (Major)
The Wye Valley SSSI	National	Construction – Habitat Loss / disturbance	Low	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)
		Operational – Land-use	Medium	Significant (Major)
Species Poor Semi-Improved Grassland	Local	Construction – Habitat Loss / disturbance	Low	Negligible
		Construction – Environmental Effects	Low	Negligible
		Construction – Japanese knotweed	Low	Negligible
		Operational - Recreation	Medium	Negligible
Species Rich Semi-Improved Grassland	National	Construction – Habitat Loss / disturbance	Low	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)

Receptor	Value	Magnitude		Overall Assessment
Tall Herb/ ruderal	Local	Construction – Habitat clearance	Low beneficial	Negligible (beneficial)
		Construction – Environmental Effects	Low	Negligible
		Construction – Japanese knotweed	Low	Negligible
		Operational - Recreation	Medium	Negligible
Butterbur Community	Local	Construction – Habitat Loss / disturbance	Low	Negligible
		Construction – Environmental Effects	Low	Negligible
Scrub	Local	Construction – Habitat clearance	Low beneficial	Negligible (beneficial)
		Construction – Environmental Effects	Low beneficial	Negligible
		Operational - Recreation	Medium	Negligible
Water features: Drains & Ditches	Local	Construction – Environmental Effects	Low	Negligible
		Operational - Recreation	Medium	Negligible
Woodland	National	Construction – Habitat Loss / disturbance	Low	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)
Rocky Outcrops and Scree	National	Construction – Habitat Loss / disturbance	Medium	Significant (Major)
		Construction – Environmental Effects	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)
Stone Walls	Local	Construction – Habitat Improvement	Low beneficial	Negligible (beneficial)
Great crested Newt	National	Construction – Habitat Loss / disturbance / killing	Low	Not significant (Minor)
		Construction – stone wall repair	Low	Not significant (Minor) Adverse (short Term)/ Beneficial (long term)

Receptor	Value	Magnitude		Overall Assessment
Reptile	Local	Construction – Habitat Loss / disturbance / killing	Low	Negligible
		Construction – stone wall repair	Low	Negligible Adverse (short Term)/ Beneficial (long term)
Invertebrates – BAP butterflies	National	Construction – Habitat loss / disturbance	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)
Invertebrates – Widespread & Nationally scarce	National	Construction – Habitat loss / disturbance	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)
Scarce botanical species	County	Construction – Habitat loss / disturbance	Medium	Not significant (Minor)
Breeding Birds	National	Construction – Habitat loss / disturbance	Low	Not significant (Minor)
Badger	Local	Construction – Habitat loss / disturbance	Low	Negligible
Otter	Local	Construction – Habitat loss / disturbance	Low	Negligible
Water vole	County	Construction – Environmental Effects	High	Significant (Major)
Bullhead & Brook Lamprey	National	Construction – Environmental Effects	High	Significant (Major)

6 MITIGATION AND ENHANCEMENT MEASURES

6.1 Mitigation

6.1.1 Mitigation Incorporated within the Scheme

6.1.1.1 Route Options

This document provides an impact assessment of the works to the disused railway line which comprises the hard-surfaced track and both the Woo Dale and Cowlow route options. The PDNPA will consider impacts to both of the route options and choose the most appropriate; the route which causes least ecological impact and allows for biodiversity gain to the surrounding environment. The Table below (Table 12) offers a comparison between the two routes illustrating all impacts of 'Not Significant (Minor)' and above and excluding those impacts that will occur along the disused railway section.

Table 12. Impacts to the Cowlow and Woo Dale route options in the absence of mitigation.

Cowlow Route Option					Woo Dale Route Option				
Receptor	**Value**	**Magnitude**		**Overall Assessment**	**Receptor**	**Value**	**Magnitude**		**Overall Assessment**
Peak District Dales SAC	International	Construction – Habitat Loss / disturbance	Low – 300m^2	Not significant (Minor)	Peak District Dales SAC	International	Construction – Habitat Loss / disturbance	Low – 4250m^2	Not significant (Minor)
		Construction – Environmental Effects	NA	NA			Construction – Environmental Effects	High	Significant (Major)
		Operational - Recreation	NA	NA			Operational - Recreation	Medium	Significant (Major)
		Operational – Land-use	NA	NA			Operational – Land-use	Medium	Significant (Major)
The Wye Valley SSSI	National	Construction – Habitat Loss / disturbance	Low - 300 m^2	Not significant (Minor)	The Wye Valley SSSI	National	Construction – Habitat Loss / disturbance	Low - 4250m^2	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)			Construction – Environmental Effects	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)			Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)			Operational - Recreation	Medium	Significant (Major)
		Operational – Land-use	Medium	Significant (Major)			Operational – Land-use	Medium	Significant (Major)
Species Rich Semi-Improved Grassland	National	Construction – Habitat Loss / disturbance	Low - 300m^2	Not significant (Minor)	Species Rich Semi-Improved Grassland	National	Construction – Habitat Loss / disturbance	Low - 1200m^2	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)			Construction – Environmental Effects	Low	Not significant (Minor)

Cowlow Route Option					Woo Dale Route Option				
Receptor	**Value**	**Magnitude**		**Overall Assessment**	**Receptor**	**Value**	**Magnitude**		**Overall Assessment**
		Construction – Japanese knotweed	Low	Not significant (Minor)			Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)			Operational - Recreation	Medium	Significant (Major)
Woodland	National	NA	NA	NA	Woodland	National	Construction – Habitat Loss / disturbance	Low - 200m^2	Not significant (Minor)
		Construction – Environmental Effects	Low	Not significant (Minor)			Construction – Environmental Effects	Low	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)			Construction – Japanese knotweed	Low	Not significant (Minor)
		Operational - Recreation	Medium	Significant (Major)			Operational - Recreation	Medium	Significant (Major)
Great crested Newt	National	Construction – Habitat Loss / disturbance / killing	Low	Not significant (Minor)	Great crested Newt	National	Construction – Habitat Loss / disturbance / killing	Low	Not significant (Minor)
		Construction – stone wall repair	Low	Not significant (Minor) Adverse (short Term)/ Beneficial (long term)			Construction – stone wall repair	Low	Not significant (Minor) Adverse (short Term)/ Beneficial (long term)
Invertebrates – BAP butterflies	National	Construction – Habitat loss / disturbance	Low - 300m^2	Not significant (Minor)	Invertebrates – BAP butterflies	National	Construction – Habitat loss / disturbance	Low - 1250m^2	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)			Construction – Japanese knotweed	Low	Not significant (Minor)

Cowlow Route Option					Woo Dale Route Option				
Receptor	**Value**	**Magnitude**		**Overall Assessment**	**Receptor**	**Value**	**Magnitude**		**Overall Assessment**
Invertebrates – Widespread & Nationally scarce	National	Construction – Habitat loss / disturbance	Low - 7400m^2	Not significant (Minor)	Invertebrates – Widespread & Nationally scarce	National	Construction – Habitat loss / disturbance	Low - 4750m^2	Not significant (Minor)
		Construction – Japanese knotweed	Low	Not significant (Minor)			Construction – Japanese knotweed	Low	Not significant (Minor)
Scarce botanical species	County	Construction – Habitat loss / disturbance	Medium	Not significant (Minor)	Scarce botanical species	County	Construction – Habitat loss / disturbance	Medium	Not significant (Minor)
Breeding Birds	National	Construction – Habitat loss / disturbance	Low	Not significant (Minor)	Breeding Birds	National	Construction – Habitat loss / disturbance	Low	Not significant (Minor)
Water vole	County	NA	NA	NA	Water vole	County	Construction – Environmental Effects	High	Significant (Major)
Bullhead & Brook Lamprey	National	NA	NA	NA	Bullhead & Brook Lamprey	National	Construction – Environmental Effects	High	Significant (Major)

6.1.1.2 Minimising Habitat Loss

The proposed cycle route follows existing tracks and paths where possible to minimise impacts on the surrounding ecology. The current footprint of the hard-standing trail along the disused railway track will be the limit of construction activities along this section to minimise habitat loss and disturbance. In addition, the site compound will be located within the Miller's Dale car park upon hard-standing to further reduce impacts to ecology.

6.1.2 Mitigation Incorporated within Construction

6.1.2.1 Minimising Habitat & Botanical Species Loss

Important flower-rich, butterbur or calcareous communities adjacent to the route will be marked out (and possibly fenced) to enable construction works to minimise land take of these areas. In addition, important habitat areas through woodland will also be marked by fencing where appropriate to prevent construction machinery or equipment being placed in these sensitive areas. Where equipment is required to be stored on site, areas of low botanical diversity will be used.

Where flower-rich grassland is to be removed, it will be removed as turves and stored adjacent to the track. Once the track is reconstructed, the grassland will be replaced as the verge aiming to retain the habitat as far as possible. Seed harvesting would also be considered to enable the re-creation of representative communities where appropriate.

Where rocky outcrops require stabilisation, efforts will be made to minimise the extent of disturbance to bryophytes and alpine vegetation placing rock anchors in areas of least vegetation coverage. Where the majority of the vegetation covering the rock face will be unavoidably affected, an ecologist will survey the area prior to works and remove all important plants for storage and re-planting following works, seed harvesting would also be considered. A method statement for these works will be compiled and agreed with Natural England prior to works

6.1.2.2 Environmental Effects

All works will be undertaken following standard best practice procedures to minimise environmental effects. Procedures such as damping down to prevent excessive dust deposition will be undertaken in addition to adherence to those strategies outlined in the Environment Agency's Pollution Prevention Guidelines (particularly PPG6 for

construction sites[21]). This will be particularly important during bridge construction to prevent sediment or polluted run-off entering the water course and affecting the faunal populations further downstream. The use of sediment entrapment mats will also be considered (such as the Hy-Tex Sedimat[22]).

6.1.2.3 Great Crested Newt/Reptile Protection

There is potential for terrestrial habitat disturbance and the killing/injuring of great crested newt and reptiles throughout the construction of the track. The risk is only associated with the removal of small areas of grassland and scrub, where it is considered there is a low likelihood of the taxa being present (due to the ponds being located at some distance from the works). Such effects are not considered to pose a significant threat to the viability of local populations. However, in recognition of a minor potential risk to small numbers of great crested newt and/or damage of small areas of potential terrestrial habitat a precautionary approach to the works is proposed, this would be required to potentially meet legal obligations. Mitigation to minimise harm to any great crested newt/reptile populations includes:

- All grassland and scrub habitats to be cut by hand to 150mm prior to clearance works to ensure the habitat is less desirable for reptiles/amphibians and encourage them to leave the area;
- Hand searching suitable habitats and supervising the removal of topsoil prior to works and an ecological watching brief during any deconstruction of rock piles or stone walls;
- Restricting the removal of topsoil ideally to the period mid-March and mid-June when most adult great crested newt would be occupying aquatic rather than terrestrial habitats and reptiles would be most mobile; and
- Immediately ceasing all operations in the event that any great crested newt or reptiles are found during habitat clearance works. Under these circumstances the Licensing authority (Natural England) would be contacted to discuss the need for a licence/method statement to enable the lawful continuation of works.

6.1.2.4 Prevention of Harm to Breeding Birds

Clearance of grassland, scrub, trees and rocky habitats have potential to support breeding birds. Clearance of these habitats could lead to destruction of active nests

[21] Environment Alliance (2007) PPG6 Working at Construction and Demolition Sites. Environment Agency.

[22] http://www.hy-tex.co.uk/ht_bio_sed.html

and contravention of the Wildlife and Countryside Act 1981 (as amended). Therefore, all vegetation clearance/rock modification will be undertaken outside of the bird breeding season (March-August inclusive). If this is not possible, an ecologist will survey vegetation/rocky features for evidence of nesting birds and declare them free of nesting birds immediately prior to works. Should active nests be found, an appropriate buffer zone will be erected and maintained until the nesting attempt is complete.

6.1.2.5 Protection against Spread of Japanese Knotweed

Stands of Japanese knotweed were identified along the route within 7m of the proposed cycle route. All stands appeared to have been treated with herbicide and were not in active growth. However, should the plants recover from the treatment enter into an active growth phase the works have the potential to spread the species by carrying aerial and subterranean parts of the plant (from any excavations)across the site. Japanese knotweed is listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended) as an invasive plant for which it is an offence to cause to grow in the wild. Therefore, prior to works, these stands will be marked out along the route and a buffer zone of 7m maintained. Where they show active growth, they will be treated with a course of suitable herbicide treatments.

6.1.2.6 Protection of Badgers and Otters

Badgers are prolific throughout the survey area. Therefore, to prevent entrapment, no excavations shall remain open over night unless they are fenced or provided with an egress (such as a plank of wood acting as a ramp). In addition, otters may occasionally use the River Wye for commuting and foraging. Therefore, works within 50m of the River Wye shall cease at dusk to ensure that there is no unnecessary disturbance to commuting and foraging otters. The River Wye shall remain un-obstructed to allow safe passage of otters using the river.

6.1.3 Mitigation Incorporated within Operation

6.1.3.1 Minimising Recreation Pressure

Recreation pressure will be limited to the hard-standing surfaces of the cycle route via fencing or dry stone walls. This will be particularly important if the Woo Dale route is selected. In addition, information signs discussing the sensitive nature of the surrounding environment will be erected to inform the public along with an agreed strategy to deal with the disposal of litter.

6.1.4 Monitoring

6.1.4.1 Minimising Habitat Modification

The habitats within the SAC and surrounding the newly created route (Woo Dale or Cowlow route options) will be monitored biennially for a period of twenty years to assess the impacts of the cycle route with regards to recreation and land-use change. This will be achieved via NVC assessment using representative quadrat sampling. Any modifications to the vegetation communities will be assessed and strategies for ensuring that important habitats are maintained would be considered and implemented. Strategies and management options would include increasing/reducing grazing pressure, removal of un-wanted species, mowing regimes for grassland areas. A report would be produced following each visit and a copy would be supplied to the PDNPA and to Natural England for review.

6.2 Enhancement Measures

Beyond the immediate requirement for mitigation, as identified above, the development has also incorporated measures to enhance the site for biodiversity thus complying with the following:

- The Natural Environment and Rural Communities (NERC) Act, 2006 ;
- PPS 9;
- Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System, ODPM 06/2005; and
- Regional Spatial Strategy (RSS) for Yorkshire and The Humber (Humber Estuary sub area policy), 2008.

The terrestrial habitat lining the cycle route will be managed sympathetically in order to encourage diversity of herpetofauna, birds, mammals and invertebrates. Management will include to the selective removal of dense scrub thickets and non-native herbs, by physical removal only.

Areas that have dense scrub and tall ruderals cleared will be replaced with calcareous, flower-rich communities. In addition, the verges of the tracks which are to be reconstructed will also be restored to contain floristically rich grassland communities. To achieve this, soil material with a high proportion of limestone and limestone filings excavated from elsewhere on the route will be used as the substrate. The soil will be seeded with seeds harvested from the CG2 grassland areas surrounding the route. Growth of the habitat will be monitored annually for 2 years to ensure that the vegetation community has become established.

7 PREDICTED RESIDUAL IMPACTS AND CONCLUSION

Overall, the residual significance of the development on the assessed features (for both route options) is considered to be not significant. Table 13 below illustrates the residual impacts that remain following the mitigation and enhancement measures outlined in section 6 above.

Table 13. Residual Effects and Summary of Significance

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
Peak District Dales SAC	International	Construction – Habitat Loss / disturbance	Low	Minimise loss of flower-rich grassland areas and fence sensitive habitats.	**Not significant (Minor)** No features of the SAC would be affected and all important/sensitive areas would be avoided. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	High	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** **Magnitude reduced to Low:** Environmental effects will be prevented and would not affect integrity of SAC. Likely.	N/A
		Operational - Recreation	Medium	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**Not significant (Minor)** **Magnitude reduced to Low:** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Medium	Monitoring and closely guided management.	**Not significant (Minor)** **Magnitude reduced to Low:** Change sin vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
The Wye Valley SSSI	National	Construction – Habitat Loss / disturbance	Low	Minimise loss of flower-rich grassland areas and disturbance of woodland.	**Not significant (Minor)** Only small areas of important habitats would be lost and all important/sensitive areas would be avoided. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** Environmental effects will be prevented and would not affect integrity of SSSI. Likely.	N/A

[23] Enhancement measures are not considered as part of the overall assessment but are additional improvements to the surrounding environment.

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
		Construction – Japanese knotweed	Low	Stands to be fenced and active stands to be treated.	**Negligible** **Magnitude reduced to Negligible.**	N/A
		Operational - Recreation	Medium	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**Not significant (Minor)** **Magnitude reduced to Low:** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Medium	Monitoring and closely guided management.	**Not significant (Minor)** **Magnitude reduced to Low:** Change sin vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
Species Poor Semi-Improved Grassland	Local	Construction – Habitat Loss / disturbance	Low	N/A	**Negligible**	N/A
		Construction – Environmental Effects	Low	N/A	**Negligible**	N/A
		Construction – Japanese Knotweed	Low	Prevent spread of plant and eradicate any healthy stands.	**Negligible**	N/A
		Operational - Recreation	Medium	N/A	**Negligible**	N/A
Species Rich Semi-Improved Grassland	National	Construction – Habitat Loss / disturbance	Low	Minimise loss of flower-rich grassland areas.	**Not significant (Minor)** Only small areas of species-rich habitats would be lost and all important/sensitive areas would be avoided. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** Environmental effects will be prevented and would not affect integrity of grassland. Likely.	N/A

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
		Construction – Japanese Knotweed	Low	Prevent spread of plant and eradicate any healthy stands.	**Negligible** **Magnitude reduced to Negligible**	N/A
		Operational - Recreation	Medium	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**Not significant (Minor)** **Magnitude reduced to Low:** Recreation will be limited to the cycle path. Probable.	N/A
Tall Herb/ ruderal	Local	Construction – Habitat clearance	Low beneficial	N/A	**Negligible (beneficial)**	N/A
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Negligible**	N/A
		Construction – Japanese Knotweed	Low	Prevent spread of plant and eradicate any healthy stands.	**Negligible**	N/A
		Operational - Recreation	Medium	N/A	**Negligible**	N/A
Butterbur Community	Local	Construction – Habitat Loss / disturbance	Low	N/A	**Negligible**	N/A
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Negligible**	N/A
Scrub	Local	Construction – Habitat clearance	Low beneficial	N/A	**Negligible (beneficial)**	N/A
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Negligible**	N/A
		Operational - Recreation	Medium	N/A	**Negligible**	N/A
Drains & Ditches	Local	Construction – Habitat Loss /	Low	N/A	**Negligible**	N/A

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
		disturbance				
		Construction – Environmental Effects	Medium	Good practice guidelines followed to prevent effects.	**Negligible**	N/A
		Operational - Recreation	Medium	N/A	**Negligible**	N/A
Woodland	National	Construction – Habitat Loss / disturbance	Low	Minimise loss of edge habitat of woodland surrounding tracks, ramp and paths.	**Not significant (Minor)** Minimise land take and fencing will be erected where appropriate during construction. Probable.	N/A
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** Environmental effects will be prevented and would not affect integrity of the woodland. Likely.	N/A
		Construction – Japanese Knotweed	Low	Prevent spread of plant and eradicate any healthy stands.	**Negligible** **Magnitude reduced to negligible**	N/A
		Operational - Recreation	Medium	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**Not significant (Minor)** **Magnitude reduced to Low:** Recreation will be limited to the cycle path. Probable.	N/A
Rocky Outcrops and Scree	National	Construction – Habitat Loss / disturbance	Low	Minimise loss of bryophyte and alpine plant coverage on rock faces or store and replace.	**Not significant (Minor)** **Magnitude reduced to Low:** There will be limited land take of scree/rocky habitats and works will minimise effects to vegetation found upon. Probable.	N/A
		Construction – Environmental Effects	Low	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** Environmental effects will be prevented and would not affect integrity of the habitat. Likely.	N/A

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
		Operational - Recreation	Medium	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**Not significant (Minor)** **Magnitude reduced to Low:** Recreation will be limited to the cycle path. Probable.	N/A
Stone Walls	Local	Construction – Habitat Improvement	Low beneficial	N/A	**Negligible (beneficial)**	N/A
Great crested Newt	National	Construction – Habitat Loss / disturbance / killing	Low	Ecological clerk of works to oversee works which may affect the species.	**Not significant (Minor)** Prevention of harm to a small number of individuals and very small habitat losses.	Restore habitats along verges of the cycle route with grassland communities rich in invertebrate food sources.
		Construction – stone wall repair	Low/ Low beneficial	Ecological clerk of works to oversee works which may affect the species.	**Not significant (Minor) / beneficial** Prevention of harm to a small number of individuals and more refugia opportunities in the future	N/A
Reptile	Local	Construction – Habitat Loss / disturbance / killing	Low	Ecological clerk of works to oversee works which may affect the species.	**Negligible**	Restore habitats along verges of the cycle route with grassland communities rich in invertebrate food sources.
		Construction – stone wall repair	Low/ Low beneficial	Ecological clerk of works to oversee works which may affect the species.	**Negligible**	N/A
Invertebrates – BAP butterflies	National	Construction – Habitat loss / disturbance	Low	Minimise loss of flower-rich/ calcareous grassland areas.	**Not significant (Minor)** Only small areas of species-rich habitats would be lost and all important/sensitive areas would be avoided. Probable	Restore habitats along verges of the cycle route with flower-rich CG2 communities.
		Construction – Japanese knotweed	Low	Stands to be fenced and active stands to be treated.	**Negligible** **Magnitude reduced to Negligible.**	N/A
Invertebrates – Widespread and Nationally	National	Construction – Habitat loss / disturbance	Low	Minimise loss of flower-rich/ calcareous grassland areas and rocky habitats.	**Not significant (Minor)** Only small, localised losses of habitat. Probable.	Restore habitats along verges of the cycle route with flower-rich CG2 communities.

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
Scarce		Construction – Japanese knotweed	Low	Stands to be fenced and active stands to be treated.	**Negligible** **Magnitude reduced to negligible**	N/A
Scarce Botanical Species	County	Construction – Habitat loss/disturbance	Medium	Areas to be affected which are flower rich or plants upon rock faces will be surveyed by an ecologist prior to works to enable avoidance or rescue of important species.	**Not Significant (Minor)** Losses of important plant species will be avoided and there is scope for providing further habitats supporting such species along the cycle route.	Restore habitats along verges of the cycle route with flower-rich CG2 communities.
Breeding Birds	National	Construction – Habitat loss / disturbance	Low	Vegetation clearance/rock face modification will be undertaken outside of the breeding bird season or an ecologist will declare the area free of birds immediately prior to works.	**Not significant (Minor)** Small losses of potential breeding habitat. Probable.	N/A
Badger	Local	Construction – Habitat loss / disturbance	Low	All excavations to be provided with an egress or fencing overnight.	**Negligible**	N/A
Otter	Local	Construction – Habitat loss / disturbance	Low	As above and works within 50m of water courses will cease at dusk. The River Wye will remain unobstructed outside of working times.	**Negligible**	N/A
Water vole	County	Construction – Environmental Effects	High	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** **Magnitude reduced to Low:** Environmental effects will be prevented and will not affect integrity of the species. Probable.	N/A
Bullhead & Brook Lamprey	National	Construction – Environmental Effects	High	Good practice guidelines followed to prevent effects.	**Not significant (Minor)** **Magnitude reduced to Low:** Environmental effects will be prevented	N/A

Receptor	Value	Effect/ Magnitude		Mitigation	Overall Assessment	Enhancement[23]
					and will not affect integrity of the species. Probable.	

7.1 Conclusion

In conclusion, the development will result in limited losses of mainly hard-surfaced and semi-improved habitats which are widespread and common within the wider environment. Where more diverse habitats are to be affected, losses will be minimised and enhancements installed where possible. Mitigation will seek to prevent any adverse effect on species present throughout the cycle route and maintain populations in a favourable conservation status, and it is recommended that such proposals are secured by condition of the planning consent. A condition pertaining to the requirement for an Ecological Management Plan detailing the protective mitigation measures and ongoing enhancements as well as monitoring protocols should also be secured by condition.

The assessment concludes that there will be no significant detrimental effects to the sites which are designated for their ecological importance (Peak District Dales SAC) and The Wye Valley SSSI and that the integrity of their qualifying features will remain intact. However, the impacts to the SAC are further discussed in section 8 of this document.

8 INFORMATION TO SUPPORT AN APPROPRIATE ASSESSMENT

8.1 Terms of reference

This information has been compiled to inform an appropriate assessment required of PDNPA to satisfy the Habitats Regulations 2010, which implement the requirements of the Habitats Directive (92/42/EEC). As stated in the Introduction, the assessment is required under Article 6 of the Habitats Directive to assess whether the development of the Monsal Trail cycle route will have an adverse effect on the integrity of the Natura 2000 sites (European sites).

8.2 Information Sources

Key baseline information from the field surveys undertaken by Andrew McCarthy Associates is summarised in section 3 of this report, with the Ecology Technical Appendix (AMA, 2010) containing detailed survey information.

8.3 Natura 2000 Site Potentially Assessed

The following information summarises the components and conservation objectives of the Peak District Dales SAC which may be potentially affected by the development proposals.

8.3.1 Interest Features

The Peak District SAC contains seven habitats of Annex I importance including:

- As a primary feature; Semi-natural dry grasslands and scrubland faces: on calcareous substrates (Festuco-Brometalia) including CG2 communities and calcareous scrub;
- As a primary feature; Tilio-Acerion forests of slopes, screes and ravines;
- European dry heaths;
- Calaminarian grasslands of the Violetalia calaminariae;
- Alkaline fens;
- Calcareous and calcsist screes of the montane to alpine levels (*Thlaspietea rotundifolii*); and
- Calcareous rocky slopes with chasmophytic vegetation.

The following important Annex II species are also listed as primary or qualifying features of the SAC designation:

- As a primary feature; White-clawed crayfish known to occur in the River Dove;
- Brook lamprey; and
- Bullhead.

8.3.2 Conservation Objectives

It is stated that the most likely threat to the site would be inappropriate grazing where current management is allowing light grazing throughout the year with a gap during spring/early summer. Overgrazing or lack of grazing could lead to loss of important vegetation communities.

Developments, particularly quarrying works may threaten the site due to dust deposition and interference with drainage patterns in addition to land take from woodland areas. The woodland areas are threatened by overgrazing leading to neglected ground flora, neglect leading to encroachment of scrub and the dominance of sycamore.

8.4 Scope of the Assessment

8.4.1 Introduction

The Article 6 'appropriate assessment process' focuses on establishing whether or not the requirements of the Habitats Regulations, specifically the potential effects to European designated sites and their qualifying features, are being met.

8.4.2 The Habitats Regulations process

The key parts of the Habitats Directive that relate to planning and development control are Articles 6(3) and 6(4), which state:

6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4 (see below), the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely

affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public (emphasis added).

6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

The term integrity is used here in accordance with the definition adopted by the Circular 06/2005 on Biodiversity and Geological Conservation whereby designated site integrity refers to "…*coherence of ecological structure and function…that enables it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified*". Integrity therefore refers to the maintenance of the conservation status of a site or species population at a specific location or geographical scale.

There are four stages of the assessment process as shown in Table 14 (below).

Table 14: The Appropriate Assessment Process.

Stage	Descriptor
STAGE 1 Screening	To identify the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and to consider whether such impacts are likely to be significant.
STAGE 2 Appropriate Assessment	To consider the impact on the integrity of a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, with respect to a site's structure and function and conservation objectives. Where there are considered to be adverse impacts on site integrity at this stage, or where it cannot be demonstrated that there will not be adverse impacts on integrity, potential mitigation approaches must be proposed.
STAGE 3	The process which investigates alternative means of achieving the

Consideration of alternatives	objectives of the plan or project that avoid adverse impacts on the integrity of the Natura 2000 site
STAGE 4 Consideration of remaining adverse impacts	To assess compensatory measures where it is deemed that the project must proceed because of Imperative Reasons of Overriding Public Interest (IROPI). If an assessment concludes that there would be adverse effects on the integrity of the Natura 2000 site, but that there are reasons of overriding public interest (IROPI), then compensation measures (Stage 4) are required.

The study to inform an appropriate assessment (this document) is (in this case) conducted by the applicant under consultation with the statutory conservation organisation - Natural England with the Competent Authority (normally the LPA, in this case the PDNPA) responsible for undertaking the Appropriate Assessment acting under the advice of the SNCO. The process involves i) identification of the conservation objectives of the European site and the identification of the parts of the project or plan that may affect these objectives ii) an assessment/prediction of the impacts/effects of the project or plan on the European site (either alone or in combination with other plans or projects) iii) determination of whether there will be an adverse impact on the integrity of the European site and iv) the development of mitigation measures to avoid or reduce the impacts, if iii) applies.

8.4.3 Scope of the appropriate assessment

8.4.3.1 Sites

It is considered that potential for significant effects arising from the development proposals may be apparent for the Peak District Dales SAC. For the boundary of the SAC in comparison to the proposed cycle route please see Figures 004a-g, Appendix 2 of the Ecology Technical Appendix (AMA, 2010). There are no other Natura Sites considered to be potentially affected.

8.4.3.2 Habitats

The Disused Railway Track (Bakewell to Chee Dale)

The proposed cycle route follows existing hard-surfaced paths of the completed Monsal Trail disused railway track between Bakewell and Chee Dale which are mainly outside of the SAC but within a 20m distance of the site boundary. The track is directly adjacent to the SAC for approximately 2km including woodland, scrub, tall ruderal and semi-improved grassland habitats.

A length of 0.3km of the cycle route lies within the SAC and traverses a short section of woodland habitat east of the Chee Tor tunnel and a smaller section at the western exit of the Headstone tunnel. However, this section comprises the hard-surfaced area of the Monsal trail disused railway line and therefore will not involve direct land-take from the SAC.

The Cowlow Route Option

The proposed Cowlow route option does not enter into the SAC with the exception of a small section from the disused railway line at Chee Dale up to the Central Lime Works amounting to 300m^2 of species-rich grassland. This section follows an existing track but it will require re-construction to enable a path suitable for bicycles. Sections of the proposed route are within 10m of the SAC but are separated by stone walls.

The Woo Dale Route Option

A new section of track will require construction along the River Wye for approximately 0.5km within the Woo Dale route (1250m^2). The section traverses semi-improved grasslands (MG1 and MG5) and a small area of butterbur community (50m^2). Approximately 1km of the Woo Dale farm track will require reconstruction (3000m^2); this section is within semi-improved grassland (MG1). A small area, approximately 10m^2 will also be lost to create the footpath over the River Wye. There is also approximately 0.3km immediately adjacent to the SAC including unimproved grassland and woodland and in the wider environment habitats include:

- CG2 and CG6 Grassland; and
- W8 Ash Woodland;

No other habitats which form an interest feature of the European/international sites are considered to be subject to a likely significant effect from the development proposals, and the appropriate assessment will therefore focus on these two habitats.

8.4.3.3 Species

Species for which potentially significant effects may occur are:

- Brook Lamprey; and
- Bullhead.

White-clawed crayfish are also listed as a primary feature of the SAC but are now considered absent from the River Wye and are therefore not included within this assessment.

8.4.3.4 In combination effects

There are no other developments known within the area which would cause in combination effects and therefore this issue is scoped out of the assessment process.

8.5 Consideration of Potential Effects

8.5.1 Status of Affected Features within Application Area

8.5.1.1 CG2 Grassland

The extent of calcareous grassland within the UK has suffered a rapid decline in the last 50 years leading to a total area of 33,000 – 41,000ha remaining in Britain[24]. The Peak District Dales SAC has one of the most extensive areas of CG2 grassland type in the UK with a diversity of structure unrivalled across the country with transitions from grassland through to heath, scrub and woodland[25]. The SAC contains approximately 985ha of 'Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia)' Annex I habitat.

8.5.1.2 W8 Ash Woodland

The Peak District Dales provide a good example of this woodland – scrub – grassland mosaic. The woodland habitat is not extensive across the UK but is found in fragmentary stands[24]. The Peak District Dales SAC contains approximately 875ha of the 'Tilio-Acerion forests of slopes, screes and ravines' Annex I habitat.

8.5.1.3 Brook Lamprey

This is a widespread species of which the River Wye within the Peak District Dales SAC contains a 'significant presence' [26].

8.5.1.4 Bullhead

This is widely distributed species common in England but rarer in Scotland. The Peak District Dales SAC contains a 'significant presence'[26].

[24] http://www.ukbap.org.uk/ukplans.aspx?id=12

[25] http://www.jncc.gov.uk/protectedsites/SACselection/SAC.asp?EUCode=UK0019859

[26] http://www.jncc.gov.uk/protectedsites/SACselection/n2kforms/UK0019859.pdf

8.5.2 Potential Effects on Integrity

8.5.2.1 Land-take/disturbance during construction

A small section of the Monsal Trail disused railway line which already comprises a hard-standing surface is located within the SAC (a 0.3km length). However, it is unlikely that there will be any land loss from this section due to the track being in a suitable condition to support cyclists at present. This also applies to the habitats which are adjacent to the route amounting to an approximate length of 2km.

The Cowlow route option will require construction of an existing track which leads from the Monsal Trail disused railway track to the Central Lime Works tunnel. A small section of this area lies within the SAC and will amount to an approximate land loss of 300m^2 of species-rich grassland.

The Woo Dale route requires the construction of a new track alongside the River Wye for 0.5km through semi-improved species poor/species rich mosaic grassland and a small section of butterbur community (50m^2). This amounts to a loss of 1250m^2. In addition, the Woo Dale farm track requires modification from the bare ground to a hard-standing surface which will amount to approximately 3000m^2 of species poor semi-improved grassland being lost.

Therefore, none of the Annex I features would be directly affected by the development.

8.5.2.2 Environmental Effects during construction

During construction, any environmental effects such as pollution run-off or dust deposition would potentially affect the surrounding habitats and species including the Annex II species, bullhead and brook lamprey found within the River Wye.

8.5.2.3 Recreation Pressure during Operational Phase

The effects of recreation including littering and trampling has the potential to damage the sensitive habitats including the CG2 grasslands and ash dominated woodlands.

8.5.2.4 Land-use Modification during Operational Phase

The effect of changes to land management has the potential to modify existing sensitive habitats including the CG2 grasslands and ash dominated woodlands.

8.5.3 Significant Level/Adverse Effect on Integrity

The table below illustrates the effect of the significance of potential impacts upon the SAC and features of interest without mitigation, enhancement or compensation.

Table 15. Potential Effects to the Integrity of the SAC.

Feature	Direct/ Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Assessment of Effect on Integrity
<u>During Construction Phase</u>						
Track Construction/Re-construction/Ramp Installation						
Species-rich grassland (MG5/CG2)	Direct	Minor loss of species-rich grassland surrounding path from disused railway to Central Lime Works tunnel for the Cowlow route option. **Cowlow = 300 m²**	Construction works will last XX weeks and the track will be permanent.	Adverse	None	***No Adverse Effect*** Habitats to be lost are small areas of semi-improved grassland with limited species-rich areas abundant in wider environment. Potentially very small areas of CG2 Annex I habitats (less than 0.1% of the total habitat resource of the SAC) could be affected but would not affect the integrity of the rest of the site.
Mosaic of Species rich/poor semi-improved grassland	Direct	Minor loss of habitat adjacent to the River Wye: **Woo Dale route option = 1200m²**	As Above	Adverse	None	***No Adverse Effect*** Area comprises improved and semi-improved habitats adjacent to the River Wye. No Annex I or Annex II features affected and therefore no impact to the overall integrity of the site.

Feature	Direct/ Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Assessment of Effect on Integrity
Butterbur Community	Direct	Small area to be lost to construction of new track adjacent to River Wye and in vicinity of bridge construction: New track = 50m^2 Bridge Construction = 10 m^2	As above	Adverse	None	***No Adverse Effect*** Minor loss of species poor habitat.No areas of Annex I features being affected there would be no impact to the overall integrity of the site.
Species-poor semi-improved grassland	Direct	New track along River Wye of the Woo Dale route = **1200m^2**	As above	Adverse	None	***No Adverse Effect*** Minor loss of the species-poor semi-improved grassland resource abundant in wider environment. No areas of Annex I features being affected there would be no impact to the overall integrity of the site.
Environmental Effects						
Bullhead and Brook Lamprey	Direct	Environmental effects, especially dust deposition and pollution run-off, in localised area affecting the species.	Works will last for XX weeks and will be temporary.	Adverse	None	***Adverse Effect*** The environmental effects could threaten the sustainability of the population of Annex II features until the environmental effects had dispersed. This could impact upon the integrity of the communities.
All Habitats	Indirect	Small scale disturbance and potential environmental effects to all surrounding habitats during bridge and track construction/reconstruction.	As above	Adverse	None	***No Adverse Effect*** Effects will be temporary and reversible and only effect the edge habitats of the track will be affected.
During Operational Phase						

Feature	Direct/ Indirect Impact	Extent / Scale of Effect	Duration / timing and frequency / Reversibility	Adverse / Beneficial	Cumulative Assessment	Overall Assessment of Effect on Integrity
Recreation						
Al habitats	Direct	There will be increased recreation pressure to the area leading to potential trampling and littering of edge habitats.	Recreation will be constant and permanent.	Adverse	None	***Adverse Effect*** A long-term impact which could affect the integrity of the sensitive Annex I features of the site.
Changes in Land-Use						
All Habitats	Direct	Compartmentalisation of habitats may lead to a change in grazing regime and modification of habitats.	The tracks would be permanent.	Adverse	None	***Adverse Effect*** A permanent impact which could affect the Annex I features and habitat composition of the SAC.

8.6 Mitigation, Enhancement and Compensation

The mitigation proposals are concerned with reducing the overall land take, preventing environmental effects and adverse recreational impacts and ensuring that there are no adverse changes to land-use which could modify the existing habitats.

The main mitigation proposal are outlined above in section 6 of this document. The particular points which are to be considered for the SAC are:

- Minimise Habitat Loss Disturbance (6.1.2.1);
- Prevent Environmental Effects (6.1.2.2);
- Minimise Recreation Pressure (6.1.3.1; and
- Minimise Habitat Modification (6.4.1).

8.7 Predicted Residual Impacts

Table 16 illustrates the predicted residual impacts that remain following the mitigation and enhancement measures. In can be seen that in the presence of mitigation measures there overall impact assessment is 'No Adverse Effect' to the integrity of the SAC.

Table 16. Residual Effects and Summary Significance

Receptor	Value	Effect	Mitigation	Overall Assessment	Enhancement[27]
Species-rich grassland grassland (MG5/CG2)	CG2 is an Annex I habitat	Construction – Habitat Loss / disturbanc	Minimise loss of flower-rich grassland areas and fence sensitive habitats.	**No Adverse Effect** The CG2 grassland areas would be avoided and small losses would not impact on the integrity of the site.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Good practice guidelines followed to prevent effects.	**No Adverse Effect** Environmental effects will be prevented and would not affect integrity of SAC.	N/A
		Operational - Recreation	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**No Adverse Effect** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Monitoring and closely guided management.	**No Adverse Effect** Changes in vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
Mosaic of species rich/poor Semi-Improved Grassland	Local importance not Annex I	Construction – Habitat Loss / disturbance	Minimise loss of flower-rich grassland areas and fence sensitive habitats.	**No Adverse Effect** Flower-rich areas would be avoided and there would be no impact upon the integrity of the SAC. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Good practice guidelines followed to prevent effects	**No Adverse Effect** Environmental effects will be prevented and would not affect integrity of SAC. Likely.	N/A
		Operational - Recreation	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**No Adverse Effect** Recreation will be limited to the cycle path. Probable.	N/A

[27] Enhancement measures have not been considered within the overall assessment to the effect the cycle route on the integrity of the SAC.

Receptor	Value	Effect	Mitigation	Overall Assessment	Enhancement[27]
		Operational – Land-use	Monitoring and closely guided management.	**No Adverse Effect** Changes in vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
Butterbur Community	Local importance not Annex I	Construction – Habitat Loss / disturbance	Minimise loss of habitats.	**No Adverse Effect** Only small areas of species poor habitat would be lost. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Good practice guidelines followed to prevent effects.	**No Adverse Effect** Environmental effects will be prevented and would not affect integrity of grassland. Likely.	N/A
		Operational - Recreation	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**No Adverse Effect** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Monitoring and closely guided management.	**No Adverse Effect** Changes in vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
Species poor semi-improved grassland	Local importance not Annex I	Construction – Habitat Loss / disturbance	Minimise loss of habitats.	**No Adverse Effect** Only small areas of species poor habitat would be lost. Probable.	Restore habitats along verges of the cycle route with CG2 communities.
		Construction – Environmental Effects	Good practice guidelines followed to prevent effects.	**No Adverse Effect** Environmental effects will be prevented and would not affect integrity of the SAC. Likely.	N/A
		Operational - Recreation	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**No Adverse Effect** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Monitoring and closely guided management.	**No Adverse Effect** Changes in vegetation communities would be monitored for 20 years with specific management	N/A

Receptor	Value	Effect	Mitigation	Overall Assessment	Enhancement[27]
				targets set. Likely.	
All Habitats	Including Annex I habitats CG2 & Ash Woodland	Operational - Recreation	Placement of fencing and signage and monitoring effectiveness of fencing for 20 years.	**No Adverse Effect** Recreation will be limited to the cycle path. Probable.	N/A
		Operational – Land-use	Monitoring and closely guided management.	**No Adverse Effect** Changes in vegetation communities would be monitored for 20 years with specific management targets set. Likely.	N/A
Bullhead & Brook Lamprey	Annex II feature	Construction – Environmental Effects	Good practice guidelines followed to prevent effects.	**No Adverse Effect** Environmental effects will be prevented and will not affect integrity of the species. Probable.	N/A

8.8 In-combination Effects

There are no schemes which known to be within the vicinity of the proposed cycle route which would cause in-combination effects.

8.9 Conclusions

The assessment predicts no adverse effects on the integrity of the relevant conservation objectives/qualifying features. Habitat loss and disturbance is minimal and traverses areas which are not Annex I features and are mainly semi-improved habitats. In addition, to compensate for any losses to Annex I features, (there may be small losses of CG2 community should the Cowlow route option be chosen) CG2 grassland communities will be restored along the cycle path verges.

Any environmental effects from the proposed cycle route will be minimised via good practice construction methods and recreational pressure will be contained via the use of fences and stone walls. To monitor any changes within the communities, and especially within the surrounding environment containing the CG2 and ash woodland habitats, extensive monitoring will be undertaken. This monitoring will guide management to ensure that there are no losses of important habitats and the proliferation of Annex I habitats are encouraged.

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