Worcestershire County Council

Minerals Local Plan
Habitats Regulation Assessment

Record of Assessment - Consultation Draft

November 2016

worcestershire
county council

Contents

1. Executive Summary

1.1. This document is a record of the Habitats Regulations Assessment ('HRA') for the Worcestershire Minerals Local Plan ('MLP') in compliance with Article 6(3)(Regulation 61) of Council Directive 92/43/EEC on the '*Conservation of natural habitats and of wild fauna and flora*' 1992 (hereafter referred to as the 'Habitats Directive') and Regulation 102 of the Conservation of Habitats and Species Regulations 2010 (hereafter referred to as the 'Habitats Regulations'). As the Minerals Local Plan is neither directly connected with nor necessary to the management of a European site, it is not exempt from the Habitat Regulations Process.

1.2. A HRA Scoping Assessment of the Second Stage Consultation of the MLP (undertaken in 2013 by Worcestershire County Council), screened-in a number of European sites (part of the Natura2000 network) within and around the county of Worcestershire. The nature, conservation objectives, pressures and threats facing each of the following sites were considered:

- Lyppard Grange Ponds SAC;
- Bredon Hill SAC;
- River Wye SAC;
- Downton Gorge SAC;
- Fens Pools SAC;
- Dixton Wood SAC;
- River Clun SAC;
- Walmore Common SPA/Ramsar;
- Severn Estuary SAC/SPA/RAMSAR, noting that:

1.3 Whilst Ramsar sites are not European sites, NPPF paragraph 118 states that Ramsar sites should be given the same protection as European sites. For the purpose of this report, the phrase 'European site' includes Ramsar sites, along with Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) unless otherwise stated.

1.4 The HRA Scoping Assessment identified potential effects of mineral working and highlighted potential in-combination effects with other plans and policies on selected SACs. Mitigation measures were recommended with the intention of the Plan avoiding, cancelling or reducing any foreseeable risks of adverse impact upon European sites.

1.6 Consultees comments were been obtained and are presented within this record. While Natural England have provided a small number of specific recommendations regarding the evidence scanning process and potential for impacts arising through certain mineral extraction activities, Natural England agreed with the general breadth, detail and recommendations of the Scoping Assessment and confirms that the mitigation and best practice approaches set out within the HRA Scoping Assessment were considered to be adequate.

1.7 As the MLP was refined during the period 2013 to 2016 the conclusions of the Scoping Assessment and HRA consultees responses were duly taken into consideration. In the MLP's Third Stage Consultation documents, a spatial strategy and a suite of draft development management policies have emerged which, together, demonstrate compliance with the best practice and mitigation measures as recommended and endorsed by consultees.

1.8 While the MLP Third Stage Consultation draft is therefore considered compliant with Article 6(3)(Regulation 61) of the Habitats Directives, this Assessment does not remove the need for subsequent Habitats Regulations Assessment of later iterations of the plan, nor of any other plans, projects, or permissions associated with, or arising out of the measures identified in the MLP. Acceptance that the MLP is consistent, so far as can be ascertained, with the requirements of the Habitats Directive and Habitats Regulations does not therefore guarantee that any plan or project derived from the Minerals Local Plan will also be found consistent.

2. Introduction

Background to HRA

2.1. Habitats Regulations Assessment (HRA) is the process that competent authorities must undertake to consider whether a proposed development plan or programme is likely to have significant effects on a European site designated for its nature conservation interest. HRA is often referred to as 'Appropriate Assessment' (AA) although the requirement for AA is first determined by an initial 'Screening' stage undertaken as part of the full HRA.

2.2. The purpose of this record is therefore to evidence the processes through which the Worcestershire Minerals Local Plan has been robustly and soundly evaluated through the course of its Habitats Regulations Assessment; to review recommendations made at HRA Scoping Assessment stage in relation to the emerging and revised MLP documents, and to report consultees' opinions and advice during this process.

Legislation

2.3. The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance. The Habitats Directive establishes a network of internationally important sites designated for their ecological status. These are referred to as Natura2000 (N2K) sites or "European Sites".

2.4. Natura2000 is the centrepiece of EU nature & biodiversity policy. It is an EU-wide network of nature protection areas. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the 1979 Birds Directive. Natura2000 is not a system of strict nature reserves where all human activities are excluded. Whereas the network will certainly include nature reserves most of the land is likely to continue to be privately owned and the emphasis will be on ensuring that future management is sustainable, both ecologically and economically. The establishment of this network of protected areas also fulfils a Community obligation under the UN Convention on Biological Diversity. Natura2000 applies to both 'Birds Sites' and to 'Habitats Sites', which are divided into biogeographical regions. It also applies to the marine environment.

2.5. In the UK, the Habitats Directive is implemented via the protection of the Conservation of Habitats and Species Regulations, 2010 (Statutory instrument 2010/490). Articles 6 (3) and 6 (4) of the Habitats Directive require the application of HRA to all land use plans and an AA to be undertaken on proposed plans or projects which are not necessary for the management of the site but which are likely to have a significant effect on one or more European sites either individually, or in combination with other plans and projects.

2.6. The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Ramsar Convention is the only global environmental treaty that deals with a particular ecosystem. The treaty was adopted in the Iranian city of Ramsar in 1971 and the Convention's member countries cover all geographic regions of the planet. The UK has designated 170 Ramsar sites covering 927,748 hectares.

2.7. The government's policy[1] is to afford Ramsar sites the same level of protection as that provided for Natura 2000 sites and therefore Ramsar sites are considered alongside European sites in this assessment. In the UK, many Ramsar sites are also SPAs and most have statutory underpinning as Sites of Special Scientific Interest ('SSSIs') which are protected under the Wildlife and Countryside Act, 1981 (as amended by the Countryside and Rights of Way Act, 2000).

Guidance and Process

2.8. The Habitats Directive and the Habitats Regulations set the requirement for HRA but do not prescribe how HRA/AA should be undertaken. Guidance on HRA of plans has been produced for Local Authorities in England by the Department for Communities and Local Government (DCLG[2]).

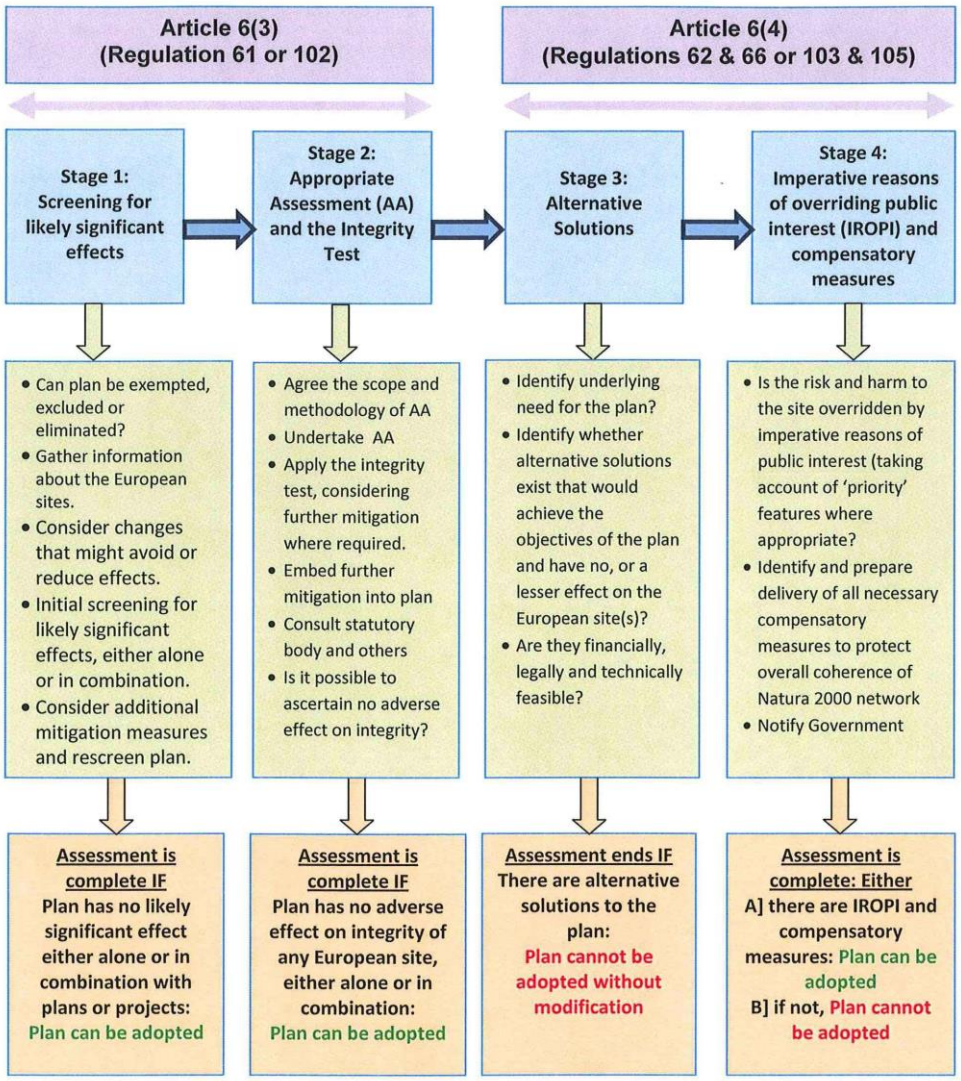
2.9. Reference is made within this document both to DCLG guidance and the methodologies established in the Habitats Regulations Assessment Handbook (DTA Publications) 6th Edition (June 2016), as is illustrated in the following extract from the Handbook:

[1] www.defra.gov.uk/rural/protected/internationally-designated-sites/

[2] Planning for the Protection of European Sites: Appropriate Assessment (Guidance for Regional Spatial Strategies and Local Development Documents), April 2006, Department for Communities and Local Government

Habitats Regulations Assessment Process

Outline of the four stage approach to the assessment of plans under the Habitats Regulations



Dealing with uncertainty

2.10 The assessment of effects can be affected by uncertainty in a number of ways; some of these are addressed below.

2.11 Regulatory Uncertainty:
Some plans will include references to proposals that are planned and implemented through other planning and regulatory regimes, for example, trunk road or motorway improvements. These will be included because they have important implications for spatial planning, but they are not proposals of the County Planning Authority (CPA), nor are they proposals brought forward by the MLP itself. Their potential effects will be assessed through other procedures. The CPA may not be able to assess the effects

of these proposals and it may be inappropriate for us to do so as this would result in unnecessary duplication.

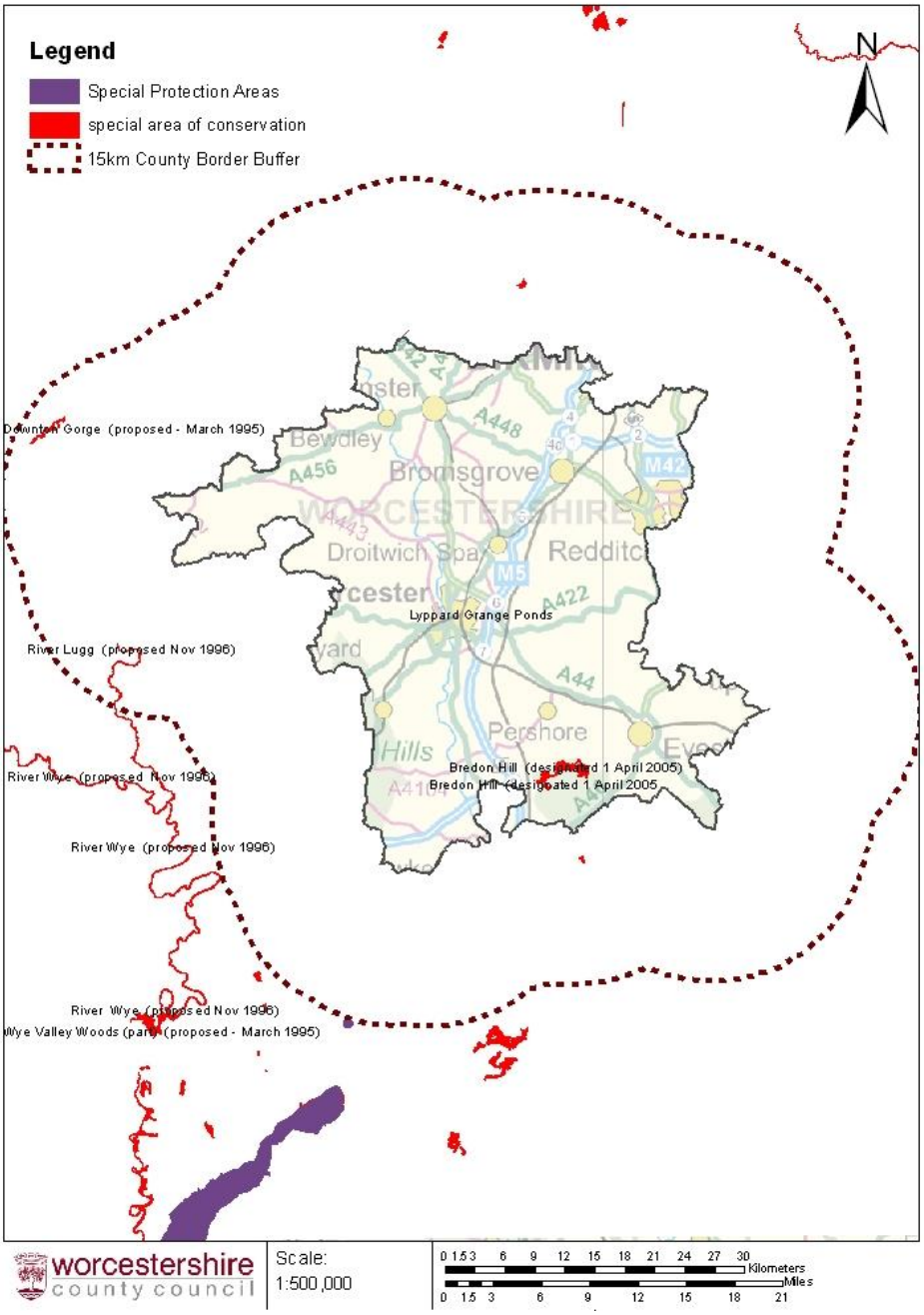
2.13 Planning Hierarchy Uncertainty:
The higher the level of a plan in the hierarchy the more general and strategic its provisions will be and therefore the more uncertain its effects will be. The protective regime of the Directive is intended to operate at differing levels. In some circumstances assessment 'down the line' will be more effective in assessing the potential effects of a proposal on a particular site and protecting its integrity. However, three tests should be applied (see below).

2.14 As has been established within the HRA Screening Assessment, it is deemed appropriate to consider relying on the HRA of lower tier plans and projects, in order for the CPA to ascertain a higher tier plan would not have an adverse effect on the integrity of a European site. This is acceptable only when:

A. The higher tier plan assessment cannot reasonably assess the effects on a European site in a meaningful way; whereas
B. The HRA of the lower tier plan or project, which will identify more precisely the nature, scale or location of development, and thus its potential effects, will be able to change the proposal if an adverse effect on site integrity cannot be ruled out, because the lower tier plan or project is free to change the nature and/or scale and/or location of the proposal in order to avoid adverse effects on the integrity of any European site (e.g. it is not constrained by location specific policies in the higher tier MLP); and
C. The HRA of the plan or project at the lower tier is required as a matter of law or Government policy.

2.16 Implementation Uncertainty:
In order to clarify the approach where there is uncertainty because effects depend on how the plan is implemented, and to ensure compliance with the Regulations, it may be appropriate to impose a caveat in relevant policies, or introduce a free-standing policy, which says that any development project that could have an adverse effect on the integrity of a European site will not be in accordance with the plan. This would help assessors to reasonably conclude, on the basis of objective information, that even where there are different ways of implementing the MLP, and even applying the precautionary principle, no element of a subservient plan or project could argue that it draws support from the MLP, if it were to adversely affect the integrity of a European site.

3. Scanning and site selection list



3.1. The scope of the Habitats Regulations Assessment of the Worcestershire Minerals Local Plan encompasses all of the European sites in Worcestershire (2 sites: Lyppard Grange Ponds SAC and Bredon Hill SAC) and within a 15 km buffer of the County (4 sites: Fens Pools SAC, Dixton Woods SAC, Downton Gorge SAC and River Wye/Afon Gwy SAC). A 15km buffer is considered the upper limit of dry deposition of pollutants (e.g. dispersal of dust from a mineral extraction site) and follows Environment

Agency Guidance under the Habitats Regulations[3]. It is also noted that Natural England have confirmed[4] a 15km buffer around Warwickshire was an acceptable buffer to screen in European sites for a Minerals Local Plan HRA exercise, however specific commentary regarding hydrological linkage and European sites beyond 15km of the County borders is recognised and explored further within this HRA, the consultees responses can be found within Appendix 5.

3.2. Walmore Common SPA and Ramsar, located just over the 15 km buffer have also been included within the Assessment. In addition, the Severn Estuary SAC, SPA and Ramsar (approximately 20km south of Worcestershire's borders, but hydrologically linked to the Rivers Severn, Avon, Wye and Teme), have been considered; given the importance of the estuary in a regional context and the potential hydrological pathway for mineral workings along these catchments to impact this downstream site.

3.3. These sites are listed in the Table below with a description of their location in relation to Worcestershire County boundary.

Table 1 - European Sites to be Considered within the HRA Screening Assessment

European Site	**Location in relation to Worcestershire County**	**Qualifying Feature** (refer to Table 2 for further information)
Lyppard Grange Ponds SAC (1.09 ha)	Central	Great Crested Newt population.
Bredon Hill SAC (359.86 ha)	South central	Violet Click Beetle population
Dixton Wood SAC (13.14 ha)	2 km from the central southern boundary	Violet Click Beetle population
Fens Pools SAC (20.4 ha)	7 km from the central northern boundary	Great Crested Newt population
River Wye / Afon Gwy SAC (2234.89 ha)	10 km from western boundary	Habitats: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; Rivers with floating vegetation often dominated by water-crowfoot. Transition mires and quaking bogs; very wet mires often identified by an unstable 'quaking' surface. Species: White-clawed crayfish(*Austropotamobius pallipes*) Sea lamprey(*Petromyzon marinus*)

[3] Environment Agency (2010) Horizontal Guidance Note H1- annex F "Air Emissions"
[4] Email dated 10/06/2015, appended to Warwickshire County Council's Minerals Plan Draft Habitat Regulations Assessment, October 2015.

		Brook lamprey (*Lampetra planeri*) River lamprey(*Lampetra fluviatilis*) Twaite shad (*Alosa fallax*) Allis shad (*Alosa alosa*) Atlantic salmon (*Salmo salar*) Bullhead (*Cottus gobio*) Otter (*Lutra lutra*)
Downton Gorge SAC (69.3 ha)	12km from northwest boundary	Habitats: *Tilio-Acerion* forests of slopes, screes and ravines; mixed woodland on base-rich soils associated with rocky slopes.
Walmore Common SPA (52.85 ha)	15 km from southern boundary	Supports overwintering (non-breeding) population of Bewick's swan (*Cygnus columbianus bewickii*)
Walmore Common Ramsar (52.85 ha)	As above	Internationally important population of overwintering (non-breeding) *Cygnus columbianus bewickii*
Severn Estuary SAC (73,715.4 ha)	20 km from the southern boundary	Habitats: Estuaries Mudflats and sandflats Saltmarsh Species: Sea lamprey (*Petromyzon marinus*) River lamprey (*Lampetra fluviatilis*) Twaite shad (*Alosa fallax*)
Severn Estuary SPA (24,700.01 ha)	As above	Supports overwinter populations of: *Cygnus columbianus bewickii* Curlew (*Numenius arquata*) Dunlin (*Calidris alpina alpina*) Pintail (*Anas acuta*) Redshank (*Tringa totanus*) Shelduck (*Tadorna tadorna*) Supports Ringed plover (*Charadrius hiaticula*) on passage.
Severn Estuary Ramsar (24,662.98 ha)	As above	Regularly supports an assemblage of at least 20,000 waterfowl

3.4. It is recognised that designations for some of the sites are based predominantly on species rather than habitats, however supporting habitats are also given due consideration within this assessment, as they underpin the Conservation Objectives.

3.5. The River Clun SAC is located just outside the 15km buffer (at approximately 16km from the northwest border of Worcestershire) however as the site has no obvious hydrological link to mineral resource areas in Worcestershire we have excluded this site from further consideration.

3.6. Although the Severn Estuary is also located beyond the 15km radius of focus, we have screened this site in both for its clear hydrological link to

riverine terraces within Worcestershire and for its importance in both a local and regional context.

3.7. For plans showing the location and boundaries of the Natura2000 sites please refer to Appendix 1.

Conservation Objectives

3.8. Conservation objectives of European sites are set by Natural England[5] to ensure that the obligations of the Habitats Directive are met, particularly to ensure that there should be no deterioration or significant disturbance of the qualifying features from their condition at the time the status of the site was formally identified. The conservation objectives are also essential in determining whether the effects of a plan or project are likely to have a significant effect (Article 6.2 of the Habitats Directive).

3.9. Following advice obtained by Natural England, a record is presented here of both the Conservation Objectives currently available online, as well as referencing the SAC Conservation Objectives Supplementary Advice Documents (where available), SSSI Favourable Condition Tables and Site Improvement Plans to provide an additional level of detail to inform the scope and nature of the HRA.

Table 2 - Conservation Objectives for the European sites

European Site	Conservation Objectives
Lyppard Grange Ponds SAC	**SAC SITE CODE UK0030198 Conservation Objectives:** To maintain the designated habitats in favourable condition for the qualifying feature (great crested newts), which is defined in part in relation to a balance of habitat extent (extent attribute). • Habitat Types represented (Biodiversity Action Plan categories) • Lowland ponds and neutral grassland/ parkland **Supplementary Advice on Conserving and Restoring Site Features:** Targets to maintain the attributes supporting the Qualifying Features (i.e. conservation measures, supporting habitat extent, distribution of supporting habitat, adaptation and resilience of supporting features, soil/substrate/nutrient cycling, water quality/quantity, air quality, improving overall Habitat Suitability Index for Great Crested Newts and maintaining population and meta-population viability) include: • Implement the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain the structure, functions and supporting processes associated with Great Crested Newt and/or its supporting habitats. • Maintain the total extent of the habitats which support the Great Crested Newt feature at: Lowland Ponds – 0.09ha Lowland Grassland - 1.00ha

5 Refer to: www.naturalengland.org.uk/ourwork/conservation/designatedareas/sac/conservationobjectives.aspx

	• Maintain the distribution and continuity of the Great Crested Newt and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site • Restore the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site • Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal:bacterial ratio, within typical values for the Great Crested Newt's supporting habitat • Maintain pond water quality and quantity to a standard which provides the necessary conditions to support the feature; • Pond levels should typically be between 200-1000mm but ponds are seasonal and can dry out completely in dry summers. • Maintain the quality of pondwaters within the site as indicated by the continued presence of an abundant and diverse invertebrate community. • Maintain or, where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk). • For this SAC, maintain an overall Great Crested Newt Habitat Suitability Index score of no less than 0.8. • Maintain the number and/or surface area of ponds present within the site at 2 ponds covering 0.09ha. • Maintain the permanence of water within ponds present within the site • Maintain a high cover of macrohytes, typically between 50-80%, within ponds • Maintain the quality of terrestrial habitat likely to be utilised by Great Crested Newts, with no fragmentation of habitat by significant barriers to newt dispersal. • Ensure pond perimeters are generally free of shade (typically no more than 60% cover of the shoreline) • Ensure fish and wildfowl are either absent or rare in all ponds. • Maintain the abundance of the Great Crested Newt population at a level which consistently exceeds an average peak count of 100 adults, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent. • Maintain a consistent presence of great crested newt eggs in breeding ponds at a level which is likely to maintain the abundance of the population at or above its target level. • Maintain the connectivity of the SAC population with its associated meta-population (either within or outside of the site boundary
Bredon Hill SAC	**SAC SITE CODE UK0012587 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely

	• The populations of qualifying species, and, • The distribution of qualifying species within the site. The Conservation Objectives (COs) for Bredon Hill SAC are focussed on the component Site of Special Scientific Interest (SSSI): Bredon Hill. The COs for the European interest on the SSSI are: • to maintain, in favourable condition, the habitats for *Limoniscus violoceus*, with particular reference to the wood-pasture and ancient ash woodland.
Dixton Wood SAC	**SAC SITE CODE UK0030135 Conservation Objectives:** The Violet click beetle (*Limoniscus violaceus)* was discovered at Dixton Wood in 1998 and it has been found at the site on a single occasion subsequently. It is a small site with large number of ancient ash *Fraxinus excelsior* pollards, and supports a rich fauna of scarce invertebrate species associated with decaying timber on ancient trees. **Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. The Conservation Objectives (COs) for Dixton Wood SAC are underpinned by the objectives indicated in the Favourable Condition Tables of the SSSI units: • maintaining, in favourable condition, the habitats for the population of violet click beetle; • principle risks to the site's integrity are lack of future replacement pollards (age-class skewed to older generation) and game management practices. • These are issues addressed through provision for the creation of new pollards as well as management of existing resource to prevent loss through senescence and wind-blow.
Fens Pools SAC	**SAC SITE CODE UK0030150 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying species • The structure and function of the habitats of the qualifying species

	• The supporting processes on which the habitats of the qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. **Qualifying Features:** S1166*. Triturus cristatus*; Great crested newt The Conservation Objectives (COs) for Fens Pool SAC are underpinned by the objectives indicated in the Favourable Condition Tables of the SSSI units: To maintain the extent of the amphibian habitat (terrestrial and aquatics). • No loss of area or fragmentation of site (through significant barriers to amphibian dispersal) compared with status at designation.
River Wye / Afon Gwy SAC	**SAC SITE CODE UK0012642 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. The Conservation Objectives (COs) for River Wye SAC are underpinned by the objectives indicated in the Favourable Condition Tables of the SSSI units • River Lugg • Lower Wye The COs for the European interest on the SSSIs are to maintain, in favourable condition, the qualifying features of: • floating formations of water crowfoot (*Ranunculus*) of plain and sub-mountainous rivers and populations of: • Atlantic salmon (*Salmo salar*) • Allis shad (*Alosa alosa*) • Twaite shad (*Alosa fallax*) • Bullhead (*Cottus gobio*) • Brook lamprey (*Lampetra planeri*) • River lamprey (*Lampetra fluviatilis*) • Sea lamprey (*Petromyzon marinus*) • White-clawed crayfish (*Austropotamobius pallipes*) and the river and adjoining land as habitat for populations • Otter (*Lutra lutra*)
Downton Gorge	**SAC SITE CODE UK0012735 Conservation Objectives:**

SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. **Qualifying Features:** H9180. *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes **Supplementary Advice on Conserving and Restoring Site Features:** Targets to maintain the attributes supporting the Qualifying Features (i.e. maintain extent and distribution, structure and function of the feature and their supporting processes) include: • Maintain the total extent of the H9180 feature at 69.3 ha • Maintain the distribution and configuration of the H9180 feature, including where applicable its component vegetation types, across the site • Ensure the component vegetation communities of the H9180 feature are referable to and characterised by the following National Vegetation Classification type (s): ▪ W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis w*oodland ▪ W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland. ▪ Mosaic of W8/W10 types • Restore an appropriate tree canopy cover across the H9180 feature, which will typically be between 30-90% of the site • Maintain areas of permanent/temporary open space within the H9180 feature, typically to cover approximately 10%of area • Maintain areas of relatively undisturbed mature/old growth stands or a scatter of large trees allowed to grow to over-maturity/death on site (e.g. a minimum of 10% of the woodland). • A minimum of 3 fallen lying trees >20 cm diameter per ha and 4 trees per ha allowed to die standing. • Restore at least 3 age-classes (pole stage/ medium/ mature) spread across the average life expectancy of the commonest trees. • Restore an understorey of shrubs to cover 20% of the stand area. • Restore a graduated woodland edge into adjacent semi-natural open habitats, other woodland/wood-pasture types or scrub. • Maintain the resilience of the H9180 feature by ensuring a diversity of site-native trees (at least 4 site native tree species) e.g. ash/ small-leaved lime/ aspen/ alder/ sycamore/ rowan/ bird cherry/ birch) is present across the site. • Reduce browsing to a (low) level that allows a well-developed understorey with no obvious browse line, & lush ground vegetation with some grazing-sensitive species evident (e.g. bramble, ivy), and tree seedlings and sapling common in gaps. • Maintain the potential for sufficient natural regeneration of desirable

	trees and shrubs to occur. typically seedlings and saplings of desirable species should be visible in sufficient numbers in gaps, at the wood edge and/or as regrowth as appropriate • No planting, apart from exceptional circumstances to restore conifer plantation to broadleaves. • Restore the abundance of the species listed below to enable each of them to be a viable component of the H9180 habitat; • Ash *Fraxinus excelsior,* elms *Ulmus spp.* Hazel *Corylus avellana,* oaks *Quercus spp.,* large-leaved lime *Tilia platyphyllos,* small-leaved lime *T. cordata* and wild service *Sorbus torminalis*. • Distinctive species; Wood Fescue, *Festuca altissima,* Water Betony *Scrophularia umbrosa,* Lily of the valley, Herb Paris *Convallaria majalis, Paris quadrifolia,* Rock Stonecrop,*Sedum forsterianum* • Lower plant assemblage, including epiphytic lichens • Assemblage of ferns including *Gymnocarpium dryopteris* (Oak Fern) and Brittle Bladder Fern (*Cystopteris fragilis*). • Assemblage of notable saproxylic (decaying-wood) invertebrates • Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the H9180 feature • Ensure sycamore is not preventing regeneration of native trees and shrubs. • Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal:bacterial ratio, to within typical values for the H9180 habitat. • Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site • Restore the concentrations and deposition of air pollutants to within the site-relevant Critical Load or Level values given for the H9180 feature of the site on the Air Pollution Information System (www.apis.ac.uk). • At a site, unit and/or catchment level (as necessary), maintain natural hydrological processes to provide the conditions necessary to sustain the H9180 feature within the site • Maintain any artificial light at a level which is unlikely to affect natural phenological cycles and processes to the detriment of the H9810 feature and its typical species at this site. • Implement management measures (either within and/or outside the site's boundary as appropriate) which are necessary to maintain and restore the structure, functions and supporting processes associated with the H9180 feature The site is therefore potentially vulnerable to the effects of air- and water-borne pollution, particularly in respect of its significant lichenological interest. However these effects are not related to the management of the site.
Walmore Common SPA	**SPA SITE CODE UK9007051 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features

	• The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site. **Qualifying Features:** A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding) This SPA holds an internationally important bird assemblage of *Cygnus columbianus bewickii* • no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline • significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure; • relevant attribute: disturbance in feeding or roosting areas; • measure: reduction or displacement of wintering birds.
Walmore Common Ramsar	Internationally important bird assemblage of *Cygnus columbianus bewickii* • no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. • maintain no less than 43 individuals, representing an average of 0.5% of the GB population (i.e. the 5 year peak mean 1998/9-2002/3)
Severn Estuary SAC	**SAC SITE CODE UK0013030 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. The COs for the European interest are to maintain, in favourable condition, the qualifying features of: • estuaries • mudflats and sandflats not covered by seawater at low tide • atlantic salt meadows
Severn Estuary SPA	**SPA SITE CODE UK9015022 Conservation Objectives:** Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the

	qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site. **Qualifying Features:** A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding) A048 *Tadorna tadorna*; Common shelduck (Non-breeding) A051 *Anas strepera*; Gadwall (Non-breeding) A149 *Calidris alpina alpina*; Dunlin (Non-breeding) A162 *Tringa totanus*; Common redshank (Non-breeding) A394 *Anser albifrons albifrons*; Greater white-fronted goose (Non-breeding) Waterbird assemblage • no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline • significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure; • relevant attribute: disturbance in feeding or roosting areas; • measure: reduction or displacement of wintering birds. "Supporting habitats" are identified which describe the key habitats within the European marine site necessary to support the interest features i.e. the qualifying bird species. The "favourable condition table" contains further detail on habitat conditions. • subject to natural change, maintain in favourable condition the habitats for the internationally important populations of the Annex 1 and migratory species • intertidal mudflats and sandflats (Annex 1 species, migratory species and waterfowl assemblages); • saltmarsh communities (Annex 1 species, migratory species and waterfowl assemblages); and • shingle and rocky shore (migratory species and waterfowl assemblages).
Severn Estuary Ramsar	No less than 68,026 individuals in the assemblage (i.e. the 5 year peak mean between 1988/9 – 1992/3). • Relevant attribute which may cause deterioration: Nonphysical disturbance, noise (e.g. coastal development); visual (coastal development). Non-toxic contamination: changes in nutrient loading and changes in organic loading (industrial outfalls). • No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. Target number of Annex II species: • Dunlin >41,683; • Shelduck >2,892; • Redshank >2,013; (i.e. the 5 year peak mean between 1988/9 – 1992/3). Maintain in a favourable condition the habitats for the internationally

important assemblages of waterfowl listed, in particular:
• saltmarsh - Upper and lower saltmarsh provide important feeding and roosting areas. The European white-fronted geese graze on a range of saltmarsh grasses and herbs. The birds feed on the saltmarsh and the transition to coastal grazing marsh in front of the sea defences in the upper estuary.
• mudflats and sandflats; and
• coastal lagoons.

Key Site Sensitivities

3.10. The key site sensitivities for each habitat type were established by reviewing information provided within the Conservation Objectives and supporting information as has been set out in Supplementary Advice Documents (where available), SSSI Favourable Condition Tables and Site Improvement Plans.

3.11. The key sensitivities of the habitat types associated with each group of European sites are listed. Where sites are primarily designated for their faunal interest, they have been included in the category which best represents the habitat type used by the species in question, but it is recognised that these species will also utilise other habitat types.

Table 3 - Key European Site Sensitivities

Habitat Type and Species Associated European Site	Key Sensitivities Represented Across the European sites by habitat type (assuming no direct habitat loss)
Ponds and Pools • Lyppard Grange Ponds SAC – Great Crested Newt • Fen Pools SAC – Great Crested Newt	• Water quality - eutrophication is a threat, particularly from point source pollution (e.g. sewage outfalls) but also from surface runoff or groundwater pollution and atmospheric deposition • Water levels – a high and stable water table is fundamental. • Siltation (e.g. excessive poaching of lake margins by stock, suspended sediments leading to transport of nutrients) • Scrub or tree encroachment (leading to shading, nutrient and hydrological effects) • Maintenance of appropriate grazing regime • Spread of introduced non-native species • Recreational pressure / disturbance (particularly on-water activities with potential to disturb sediment and increase turbidity in lakes) • Development pressure • Diffuse air pollution from traffic and agriculture.
Woodland • Bredon Hill SAC • Dixton Wood SAC • Downton Gorge SAC	• Water quality – e.g. pollution through groundwater and surface run-off sources • Water level – maintenance of water table essential e.g. restrict new drainage ditches around wet woodlands • Maintenance of appropriate grazing regime • Heavy recreational pressure • Spread of non-native / invasive species • Scrub encroachment • Atmospheric pollution (nutrient deposition and acidification)

	○ *Of these sites only Downton Gorge is considered sensitive to air pollution due to its sensitive lower plants (lichens and bryophytes); the site is currently in exceedence of its critical loads and therefore considered at risk from further diffuse air quality impacts* • Development pressure
<u>Rivers</u> • River Wye / Afon Gwy SAC • Severn Estuary SAC	• Water quality – pollution through agricultural run-off and sewage outputs is a problem • Flow (flow regime should be characteristic of the river). Abstraction should be regulated. • Suspended sediments/siltation – through intensification of agricultural practices and other disturbance e.g. soil degradation around stock feeding points. • Inappropriate dredging • Recreational pressure and disturbance – can lead to disturbance, damage and increases in suspended sediment e.g. footpath erosion, water-based activities • Atmospheric pollution - deposition of oxides of nitrogen & sulphur, acidification of river water (deposition of nitrogen & ammonia) • Climate change - change in rainfall patterns and transpiration rates, including temperature – more algal blooms, reduced summer flow. Including high rainfall – more erosive runoff and sedimentation. • Illegal fish poaching • Spread of introduced non-native species • Artificial barriers to fish migration
<u>Wet Grassland</u> • Walmore Common SPA and Ramsar	• Maintenance of appropriate grazing regime • Water level – maintenance of hydrological regime (grassland communities are strongly influenced by the quantity and base status of the groundwater) • Water quality – nutrient enrichment from fertiliser run-off etc • Scrub encroachment (often due to undergrazing) • Development pressure • Spread of introduced non-native species • Human disturbance (off-road vehicles, burning (vandalism)) • Atmospheric pollution e.g. nitrous oxides from vehicle exhausts.
<u>Estuarine Habitats</u> • Severn Estuary SAC/SPA/Ramsar	• Water quality – pollution • Recreational/tourism disturbance • Development e.g. dock/harbour creation, coastal defence works • Erosion • Siltation • Dredging • Over-fishing • Maintenance of appropriate grazing regime • Spread of non-native species • Disturbance to bird feeding and roosting habitat (noise / visual)

4. Key Potential Impacts

4.1. Minerals extraction and its associated infrastructure has the potential to cause severe damage to the conservation interests of Natura2000 sites through the loss, degradation and fragmentation of valuable habitat areas and a reduction in biodiversity. However, there may be potential benefits through restoration of minerals working in habitat creation and improving connectivity, Table 4 (below) summarises the potential impacts of minerals developments.

Table 4 - Generic Minerals Impacts Associated with Different Materials

Material	Activities associated with minerals development	Environmental Impacts
All materials	Site operations will normally include: • Extraction of minerals by blasting or mechanical extraction etc. • Development of ancillary infrastructure. • Processing of the materials. • Transportation of materials around the site. Transportation of minerals by road, rail, waterway, conveyor or pipeline. Site restoration (either during and/or after workings) and aftercare.	Land take & Habitat Loss/Fragmentation • From continued extraction of aggregates and the development of ancillary infrastructure. Any land take within a Natura2000 site is likely to have an adverse impact upon site integrity. It is likely to impact on species populations and species movements. • The impact may also relate to habitat features beyond the designated site boundary. For example, any fragmentation or loss of habitat associated with a SAC woodland, or equally any significant areas of woodland or hedgerows (or other habitats valuable in the context of the SAC's conservation objectives) in the vicinity of the SAC may have an adverse effect on species through the loss of foraging or commuting habitat. Similarly, removal of a habitat adjacent to or within vicinity of an SAC or SPA habitat may have a negative impact on the designated site through a reduction in buffering, changes to local hydrology, severance and barrier effects or edge effects. • Restoring quarries to biodiversity can be positive for nature

		conservation. Partial and full restoration of extraction sites has the potential to improve the SACs and SPAs through increasing the robustness of sites. This could be either through enhancing buffers or improving the connectivity of sites. Disturbance • Noise and light pollution from extraction, ancillary facilities, transportation and some types of restoration may impact upon fauna such as bats and birds. For example, restoration for amenity (dog-walking/water sports) or primarily for agriculture or afforestation can have a detrimental effect on the conservation value of local sites (e.g. modification of foraging value, or may promote the deterioration of nearby botanically rich grasslands). • Biological disturbance can also include factors such as: o Direct mortality (increased vehicular activity on and nearby sites), o Out competition by non-native species (introduced via after-use such as the introduction of *Dikerogammarus villosus* through boating on amenity lakes, but an equal risk through forestry or development end-uses), o Selective extraction of species (e.g. through fishing) o Introduction of new species or habitats (e.g. through inappropriate restoration landscaping proposals) o Changes in predator/prey numbers (e.g. restoration to woodland/heathland), o Introduction of disease, o Rapid fluctuations in populations, o Natural succession, o Loss/damage of plant species (e.g. by operational activities such as dredging, and inappropriate restoration after-uses). Water pollution • Contamination of habitats may occur from a number of sources.

		• Impacts may include reductions in prey species with subsequent impacts on the food chain, bioaccumulation of toxins in the food chain or eutrophication. • Contaminants can be transported large distances with surface or ground water. Impacts may depend on the strength of the pathway between the source and the site. • Wetland habitats are particularly vulnerable to pollution from surface or ground water sources. Air pollution • From on site operations and transportation may result in reduced condition and integrity of European sites. • The impacts of nitrogen and nitrogen oxides deposition on vegetation growth are of particular concern. • Other pollutants including sulphur dioxide, ozone and particulates. • Air pollution has been linked to ill health amongst trees, particularly over-mature specimens, and also a failure to regenerate, either from coppice, pollard or seed. • Air pollution may also cause changes in species assemblages, for example in lichens. Dust • Dust from extraction and on site operations may have an impact on habitats and species. • Potential for affecting the growth of plants. • Dust could also get into water sources. Soil compaction • Damaging ability of soil to support vegetation, modifying hydrological processes or pathways. Potential for impact to be generated either during extraction or through inappropriate

		restoration operations. Soil pollution • Pollution or contamination of watercourses during initial ground investigation works (e.g. boreholes may provide pathways for contaminated water), • Operational activities: previously contaminated aggregates, transport of aggregates, industrial processes on site (especially processing of fuels, oils and solvents), dewatering may bring in contaminated water from off-site. • After-use such as industrial, commercial or residential development may cause soil pollution, as may future use as landfills through leachate or extractant pollution. Hydrology • Decreased (for example as a result of extraction) or increased water quantity (for example due to impeded water flow or restoration) ground or surface water levels may impact upon designated habitats. • This could impact on the integrity of the site by causing alterations in the species composition or reducing the extent of target habitats. • Reduced water levels in water courses and water bodies could have direct impacts on wetland habitats and designated wildfowl populations. • Reduced volumes of water would increase the concentration of contaminants. • Any significant or long term changes in ground water levels may also affect woodland sites, either having a direct effect on species (canopy, basal flora or epiphytes) or indirectly by increasing stress and vulnerability to other factors. • Introduced/invasive species Restoration and mitigation could potentially lead to the

		introduction or increased abundance of potential invasive species which could comprise an adverse impact on integrity of Natura2000 sites. Other non-toxic contaminants • Nutrient enrichment (of water and soils) through processes such as dredging, dewatering, agricultural and infilling end-uses. • Changes in salinity (e.g. ground works/boreholes causing pathways for contaminated water), • Changes in turbidity (e.g. through stockpiling finings escaping to watercourse, through industrial processes including sand pumped as slurry to processing plants and water returned to lakes, through production and inappropriate storage of secondary aggregates, by transport of aggregates (via road or conveyor), and by agricultural after-use (e.g. effects of fertiliser) or development (industrial, commercial or residential).
Sand and gravel (land won)	Extracted by hydraulic elevators following the stripping of soil. Crushed, screened and washed. Silt is disposed of. While transport by barge using watercourses such as the River Severn Special Wildlife Site are viable routes from extraction to processing points, transport is often by road because of the small amounts being transported and cost of infrastructure such as wharfs. However, the fact that the material is relatively low value, bulk materials, for which transport costs make up a large proportion of the market price can make water transport more attractive.	• Higher land take from extraction and development of ancillary infrastructure (than crushed rock). Likely to impact on species populations and species movements. Noise levels relatively low (compared to hard rock quarries). • Silt disposal capacity is important – water impacts. • Soil stripping in summer can cause dust problems. • Road/waterway transport impacts. • Potential for hydrological modifications of adjacent land influenced through cone of depression during extraction phases.
Limestone	Extracted through blasting or mechanical extraction, crushing and screening / washing.	• Noise and dust impacts during blasting or mechanical extraction. • Working can be below the water surface so can have water pollution impacts and other hydrological consequences. • Quarries are often located in areas of landscape value.

Sandstone	Extracted through blasting or mechanical extraction, crushing and screening / washing.	• Noise and dust impacts during blasting or mechanical extraction. • Quarries are often located in areas of landscape value. • This can generate large volumes of associated waste material.
Igneous rock	Extracted through blasting, crushing and screening. Material is not washed so no need for silt disposal.	• Noise and dust impacts during blasting. • Quarries are often located in areas of landscape value. • Amounts of waste material
Clay	Mechanical stripping and excavation	• Land take • Road transport impacts • Noise associated with extraction and transport • Dust, especially if clay stockpiles are left out to dry.
Coal	(underground mining) Deep coal is typically reached via a vertical shaft, extracted coal is removed via roadways to be processed via screening, crushing, homogenising and onward transportation to coal preparation plants. The majority of surface tipping comprises spoil heaps immediately adjacent to the point of origin, comprising discard or a mixture of coarse and dewatered treated fines. (surface mining) Modern technology allows extraction to reach depths in excess of 200 metres, although 80 metres is more commonplace. The ratio of overburden to coal is high; consequently, extraction involves massive earth moving operations in order to recover relatively small quantities of coal. Soils and overburden are stripped and stored in large	• Land take - Surface development of the pithead and disposal of colliery waste • Road transport impacts • Noise • Dust • Lighting • Subsidence • Surface water pollution from contaminated run-off • Land take • Road transport impacts • Noise • Dust • Waste piles created during the mining process can contribute sediment to water ways • If mining takes place below the water table then drainage can

	mounds. Once extracted, coal is normally taken by lorry to the nearest blending centre for processing. At large sites traffic generation can therefore be considerable. Most opencast coal sites can be reclaimed to their original or near original levels. This is because of the high overburden to coal ratio and the 'bulking up' effect of returned material.	result in a lowering of the water table as well as land subsidence
Brine	The Worcester Basin is one of a small number of Triassic saltfields in the UK which are economically the most important and account for some 90% of total production (most derived from the Cheshire Basin). In addition to salt, white salt, brine and chlorine production, saltfields in excess of 100m thick are also used for underground storage of gases. Because of dissolution by groundwater, most salt-bearing strata are absent to depths of about 70 meters. Almost all solution mining is now controlled by brine pumping which reduces risk of subsidence. The process, typically developed through a single borehole, recovers up to 25% of the total salt reserve.	• Land take - Surface development and infrastructure associated with boreholes and multiple wells. • Road transport impacts • Noise • Dust • Lighting • Subsidence/settlement • Surface water pollution from contaminated run-off • Hydrological modifications (groundwater/contamination/salinity)

5. Approach to predicting Likely Significant Effects arising from the MLP on European sites

Geographical Proximity to Natura2000 Sites.

5.1. Screening for likely significant effects was determined on a proximity basis for many of the types of impacts, using GIS to determine the proximity of the potential minerals site to each Natura2000 site. However, it was recognised that there are many uncertainties associated with using set distances; there are very few standards available as a guide to how far impacts will travel.

5.2. Potential for impact caused by mineral sites within 2.5 km of a Natura2000 site was initially used as a screening tool. This distance reflects a distance used in the draft Appropriate Assessment Report for the Surrey Minerals Plan Preferred Option (December 2006)[6].

5.3. This approach was considered reasonable, as Circular 06/2005 Biodiversity and Geological Conservation summarises the need for planning authorities to consult Natural England before granting any planning permission to a development that is within a 2km consultation area around a Site of Special Scientific Interest (SSSI) notified to the planning authority by Natural England (stemming from a requirement set out in the Town and Country Planning (General Development Procedure) Order 1995). Circular 06/2005 then states that Natural England may also advise a planning authority that it would want to be consulted about other types of development (for example, a major industrial facility) beyond the 2km maximum for a consultation area. While this requirement relates specifically to SSSIs, most Natura2000 sites contain a number of component SSSIs. It was therefore considered to be a reasonable indicator for identifying where a Natura2000 site is proximate to potential mineral sites that may have significant effects. A second distance of 500m was used to indicate 'close' proximity of potential minerals sites to Natura2000 sites. No objections to this

[6] *Habitat Regulations Assessment & Appropriate Assessment of the Surrey Minerals Plan – November 2009*

approach were raised during the consultation phase of the HRA Screening Assessment.

5.4. We recognise that different types of impacts can travel different distances, as has been highlighted in consultation responses from Natural England, impacts are capable of extending greater distances where hydrological linkages exist. Further consideration is set out in the following sections.

Likely Pathway to Impact Model

5.5. The Worcestershire Minerals Local Plan will have spatial implications that extend beyond the intended red-line boundaries of mineral extraction sites. In particular, it is recognised that when considering the potential for effects on European sites, distance in itself may not be a definitive guide to the likelihood or severity of an impact. Other factors such as inaccessibility/ remoteness, the prevailing wind direction, river flow direction, ground water flow direction as well as the cumulative effect of multiple mineral workings in a locality may all have a bearing on the relative distance at which an impact can occur. This means that a plan directing development some distance away from a European site could still have effects on the site and therefore needs to be considered as part of the HRA process.

5.6. Therefore, rather than rely on distance alone, another effective mechanism for considering the scope of the HRA was to use a 'source-pathway-receptor' model (see below) which focuses on whether there is a pathway by which impacts from the plan can affect the identified sensitivities/ vulnerabilities of European sites' environmental conditions.

5.7. For instance, if works are proposed at a quarry (a 'source') which is neither proximate to nor linked hydrologically (i.e. upstream) to a SAC (a 'receptor') it could be proposed that certain impacts, such as increased levels of siltation, sedimentation or changes to

water flow, are highly unlikely to be caused by the proposed operations.

5.8. Similarly if the conservation objectives indicate that a site shows no particular sensitivity to (for example) air pollution issues, then neither source nor pathway would be relevant in determining whether an impact due to modified air quality levels (for example an increase in nitrogen dioxide levels associated with quarry haulage traffic emissions) is likely.

5.9. While this approach cannot broadly exclude the potential of a quarry to have a Likely Significant Effect on a Natura 2000 site, it was a useful tool in narrowing the scope of focus to specific sensitivities of sites and the likelihood of certain operations being able to cause an impact. Once this is established, this process also allows refinement of appropriate and proportionate mitigation.

Physical Loss of Habitat

5.10. For direct loss of habitat it was assumed that effects from minerals extraction or other associated development (aggregate processing plants, conveyors, wharves and so forth) would not be significant unless the minerals site extends within the boundary of the Natura2000 site. Increased pressure leading to habitat loss and/or habitat degradation might be anticipated through mineral extraction activities in the locality of a European site (2500m is a widely accepted 'proximity' figure in national Mineral Local Plans, as described below).

Physical Damage to Habitat

5.11. There were no standard distances able to be used for this impact as it includes a variety of different effects such as sedimentation/siltation, habitat severance, erosion and settlement of ground surface. Therefore, the screening analysis involved consideration of the types of activities that would occur on the individual potential mineral sites (from information provided by Worcestershire County Council) within 2.5km of the Natura2000 sites, as well as a closer look at their location on the map in relation to the Natura2000 site to determine whether they might result in physical damage. For example, if a potential mineral site was very close to a Natura2000 site, e.g. adjacent or within 2500m, there was considered to be a higher likelihood of potential edge effects e.g. habitat

degradation from movement of machinery, and human trampling associated with after-uses.

5.12. Likely Significant Effects from sedimentation or changes in sediment dynamics associated with wharf activities were considered to be uncertain as the specific numbers of shipping movements and location of dredging activities associated with each wharf site were not known.

Hydrological change

5.13. Potential impacts on hydrology are also relevant and could impact on sites outside the plan area if there is a hydrological connection.

5.14. The European sites identified within Worcestershire are Bredon Hill and Lyppard Grange Ponds. Bredon Hill is an extension of the Cotswold escarpment and consists of Lias clays and silts overlain by iron-rich sandy limestone of the Middle Jurassic Inferior Oolite. The clays form an impenetrable barrier to water which seeps naturally through the porous limestone above, forming a natural spring-line around the southern flanks of Bredon Hill. It is difficult to see therefore how a downstream minerals proposal could have any impact to the SAC due to hydrological barriers from any surface waters within the downstream catchment.

5.15. The conservation objectives of Lyppard Grange on the other hand focus on the favourable conservation status of its population of great crested newts and are therefore inexorably entwined with issues pertaining to water quality and level. Focusing initially on water level alone, the River Severn is a major source of water for the West Midlands region. The Stratford-on-Avon District Consultation Core Strategy HRA (March 2010) states the following:

> *"There are currently five major abstraction points. Water levels in the Severn Estuary cSAC/SPA/Ramsar site and Lyppard Grange SAC could be affected if water from the River Severn is over-abstracted, and the River Wye SAC could be affected if water from the River Wye is over-abstracted. There are already significant in-combination impacts on the Severn Estuary sites and the other SACs due to water abstraction, and further impacts are expected in the future. Increased abstraction from the River Severn at Ombersley was proposed in Severn Water's draft Water Resources Management Plan but was withdrawn because of its*

potential to affect the Severn Estuary sites (Treweek Environmental Consultants, 2009)".

5.16. For other hydrological changes (e.g. in salinity, thermal regime, nutrient enrichment and turbidity of water etc), it was not possible to use a set distance as these effects will depend on hydrological continuity between a minerals site and a Natura2000 site.

5.17. Bredon Hill SAC has therefore been screened out from any Likely Significant Effect caused by hydrological changes as mineral operations at sites outside the geographical proximity buffer (see above) or which have no clear hydrological continuity to the SAC are not envisaged.

5.18. As discussed further in 'Spatial Strategy' below, all of the Mineral 'Strategic Corridors' are hydrologically linked and upstream of the Severn Estuary SAC and RAMSAR however the physical distance exceeds 20km from the closest Strategic Corridor (Lower Severn Strategic Corridor). An event of such magnitude so as to cause significant effect on this downstream site would be unlikely but cannot be entirely ruled out, particularly considering cumulative working or in-combination effects. This is discussed further in Section 8.

Non-Physical Disturbance

5.19. From a review of former minerals policy statements[7] (in particular MPS2), Environment Agency internal guidance on HRA and various websites (e.g www.goodquarry.com), it was considered that effects of vibration and noise are more likely to be significant if a minerals site is within 500m of a Natura2000 site with qualifying features sensitive to non-physical disturbance.

5.20. For biological disturbance (e.g. increased predation, out-competition and introduction of non-native species), the 5km ‘buffer’ suggested in Environment Agency internal guidance on HRA was applied around Natura2000 sites where bird species have been identified as a qualifying feature (SPA/Ramsar). This approach will also assist in gauging biological disturbance when considering restoration to mixed, amenity or recreational uses for minerals sites, where such use will increase pressures

[7] Extant government policy and guidance is contained within the National Planning Policy Framework and Planning Practice Guidance. However, the former policy statements and guidance documents contain useful technical information.

such as human disturbance on the conservation objectives of a Natura2000 site.

Toxic Contamination

5.21. For deposition of air pollutants associated with transport, the Highways Agency guideline measure of 200 metres from a road[8] was applied with respect to minerals transported via road networks. In addition, where sites sensitive to air pollution (identified via the APIS website) might be affected by air pollution due to proximity to the minerals site, it was also noted if the Natura2000 site was identified as at risk from air pollution using data set-out in the West Midlands Regional Spatial Strategy "Phase 3 Habitats Regulations Assessment of the Interim Policy Statement on Construction Aggregates".

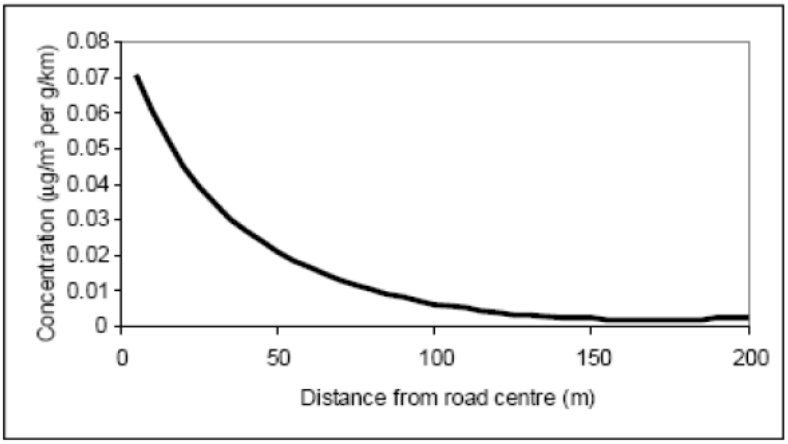


Plate 1 – Traffic contribution to concentrations of pollutants at different distances from a road (source DFT[9])

Non-Toxic Contamination

5.22 Atmospheric pollutants generated by minerals sites generally resolve themselves into dust and traffic exhaust emissions. Vehicle exhaust emissions have already been discussed. Effects of dust on European wildlife sites and vegetation will depend on the prevailing wind direction and the transport distance is related to particle size; large particles (>30µm) will mostly deposit within 100m of the source, intermediate particles (10-30µm) are likely to travel up to 200 - 500m. Smaller particles (<10µm) can travel up to 1km from the source[10]. With regard to the interest features of European sites, it is likely to be the

[8] Highways Agency (2003) *Design Manual for Roads and Bridges, Volume 11*. HA.
[9] www.webtag.org.uk/archive/feb04/pdf/feb04-333.pdf
[10] Scottish Environment Protection Agency. 2003. Technical Guidance Note - Habitats Regulations & The Landfill Regulations Guidance: http://www.sepa.org.uk/pdf/guidance/landfill_directive/habitats_landfill_regulations_guidance.pdf

large and intermediate size particles (i.e. those typically deposited up to 500m from source) which are of most interest since if present in sufficient quantities they can smother vegetation, preventing light penetration to the chloroplasts and blocking stomata thus interrupting photosynthesis and transpiration. In prolonged cases, death can result.

5.23 In relation to potential impact on European and other statutory designated sites, the level of dust deposition likely to lead to a change in vegetation is considered very high (over 1g/m2/day[11]) and current guidance indicates that the likelihood of a significant effect is therefore "*very low except on the sites with the highest dust release close to sensitive habitats*"[12].

5.24. The Planning Practice Guidance accompanying the National Planning Policy Framework expects mineral operators to prepare dust assessment studies to establish baselines and identify site activities which might lead to dust emissions, appropriate mitigation and monitoring efforts. This guidance also identifies the need for dust assessments within 1km of residential properties or other 'sensitive uses' which, for the purposes of the HRA, is thought to include Natura2000 sites where it has been identified that the site's conservation objectives may be compromised by poor air quality.

5.25. It can therefore be assumed that while the effects of dust may occur at up to 1km from a quarry, these would be subject to an appropriate technical assessment and suitable mitigation measures as required under NPPF and specified through MLP policies (discussed further In Section 6), however the effects of dust arising from mineral operations are considered to have a greater likelihood of significance within 500m of a Natura2000 site where that receptor is sensitive to the effects of dust deposition, as most of the dust particles to be deposited within this distance would be of intermediate to large particle size. For these reasons, and for the purposes of screening potential effects of dust on European sites, proximity buffers of 500m and (as a precautionary

[11] Farmer, A M, 1993. The effects of dust on vegetation – a review. Environmental Pollution 79, 63-75 (cited in Guidance on the Assessment of Mineral Dust Impacts for Planning, IAQM, 2016

[12] Guidance on the Assessment of Mineral Dust Impacts for Planning, Institute of Air Quality Management, May 2016 (v1.1)

measure to address non sand-and-gravel extraction operations) 1000m have been selected.

6. Assessing the Minerals Local Plan Third Stage Consultation Documents

6.1 The screening of the Worcestershire Minerals Local Plan has been undertaken following guidance and specific 'screening categories' provided in the HRA Handbook 2016, listed in Table 5a below. Justification is provided as to why these have been screened in or out of any further assessment.

Table 5a – Screening Categories (after HRA Handbook, 2016)

Category	Justification	Screened In or Screened Out
	Administrative Text – introductory text about the plan	Screened out
	The plan makers 'vision' or 'general aspiration'	
	General Statements of overall goals	
	General Statements of broad objectives	
A	General Statement of policy / general aspiration	Screened out
B	Policy listing general criteria for testing the acceptability / sustainability of proposals	Screened out
C	Proposal referred to but not proposed by the plan	Screened out
D	Environmental protection / site safeguard policy	Screened out
E	Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Screened out
F	Policy that cannot lead to development or other change	Screened out
G	Policy or proposal that could not have any conceivable effect on a European site	Screened out
H	Policy or proposal the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects)	Screened out
I	Policy or proposal with a likely significant effect on a site alone	Screened in
J	Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination	To be re-classified as K or L following in-combination test
K	Policy or proposal not likely to have a significant effect either alone or in combination	Screened out after in-combination test
L	Policy or proposal likely to have significant effect in combination	Screened in after in-combination test

Table 5b – Screening Assessment of MLP Chapters and Policies constituting the Third Stage Consultation documents (as of November 2016)

Element of the plan (version reference assessed)	**Assessment and rationale**	**Screening conclusion**	
Chapter One "Introduction"	Administrative text *Establishing document purpose preparation processes and links to other plans and policies*		Screened out
Chapter Two "Portrait"	General description of County *including its geology, its strategic infrastructure including transport, economic condition and environmental assets*		Screened out
Chapter 3 "Vision and objectives"	General statements of overall objectives		Screened out
Chapter 4 "Spatial Strategy and associated policies"	This chapter establishes the protocol through which proposed mineral applications will be evaluated by the MLP: primarily through a 'preferred' strategic location' ("strategic corridors") and where compliance with the proposed individual Corridor-related policies can be demonstrated. This principle is secured in MLP Policy 1 "Strategic location of development" and subsequent policies MLP 2 to MLP 6 relating to the individual Strategic Corridors are considered further below. At Paragraph 5.11 the MLP defines the assessment of known 'specific' sites within the Strategic Corridors: "*The Worcestershire Minerals Local Plan Background Document*	B	Screened out **Rationale**: there is no presumption in favour of a development within a Strategic Corridor where such a development requires further consideration of implications with regards the Habitats Directive. For

	(September 2016) Call for Sites – Deliverability Assessment *considers "acceptable in planning terms" to mean sites within the strategic corridors and with no significant transport issues which cannot be managed through appropriate conditions. Other economic, environmental and amenity issues have not been included in consideration of "appropriate in planning terms" as the level of detail necessary at this stage is different to that required at full application stage. Applications will be required to adequately address such issues in accordance with the policy framework in the Minerals Local Plan and the wider Development Plan*". Additionally, at Paragraph 5.7, the MLP clarifies that: "*There is a presumption in favour of sustainable development where the proposed development is within a strategic corridor and will contribute towards the quality, character and distinctiveness of that corridor"…*"*Proposals will need to be assessed against other policies in the development plan to determine whether they constitute sustainable development".* It is noted that Paragraph 119 of the NPPF states that *"The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined*". Considered as a stand-alone policy MLP1 is therefore screened out at this stage.		sites located either within or outside a Strategic Corridor, further consideration of environmental constraints, including compliance with Habitats Directive requirements through the Habitats Regulations Assessment process, is explicitly required.

	For schemes which come forward outside Strategic Corridors, Policy MLP1 directs (Para 5.17) that applications would be required to demonstrate firstly why such mineral cannot be worked within the Strategic Corridors and furthermore how they would deliver the Green Infrastructure objectives of the MLP. This could be interpreted as facilitating development spatially within or in-proximity to a Natura2000 site, however text within the Reasoned Justification (Para's 5.2 and 5.17) confirms that any such application would require appropriate and robust technical assessments to evidence how it the scheme will address such constraints. Refer also to Section 7 for a further assessment of the proposed Strategic Corridors.		
POLICY MLP2 Avon and Carrant Brook Strategic Corridor	A spatial strategy establishing mineral extraction in the locality but not in proximity to a site, the effects of which could have no significant effect on a European site. While it is noted that no part of the Avon and Carrant Brook Strategic Corridor is located within 500m of a Natura2000 site, a small area of the Corridor is located within 1km of Bredon Hill SAC. The Strategic Corridor is not considered to be hydrologically linked to the SAC. With regards hydrological linkage to downstream European sites, at Paragraph 5.44 MLP02 requires a technical assessment to	H	Screened out **Rationale**: Policy MLP2 states that a "*level of technical study appropriate to the proposed development will be required to demonstrate how the landscape-scale priorities for the corridor and any site-specific considerations have informed the development proposals*". Together with the direction under Paragraph 5.47 (to Policy MLP22) it is considered that appropriate diligence to prevent downstream impacts to Natura2000 sites can be demonstrated.

	accompany planning applications (in line with policy MLP22) these should assess implications with regards hydrological interactions which the scheme may pose throughout its lifetime. **This assessment is subject to the provision of appropriate mitigation established in policy MLP18 and MLP22 (below) and should be re-assessed if these policies are subsequently amended.** **This assessment is also reliant on the assumption that worked minerals will not be transported via the River Severn to a processing site elsewhere, should this scenario result through the MLP the mitigation established through Policy MLP22 (addressed further below) must be appropriately cross-referenced.**		
POLICY MLP3 Lower Severn Strategic Corridor	A spatial strategy establishing mineral extraction in the locality but not in proximity to a site, the effects of which could have no significant effect on a European site. **NOTE: this assessment is reliant on the assumption that worked minerals will not be transported via the River Severn and should this scenario result through the MLP that the mitigation established through Policy MLP18 and MLP22 (explicitly referenced at Paragraph 5.84 and addressed further below) are appropriately cross-referenced.**	H	Screened out **Rationale**: Policy MLP3 states that a "*level of technical study appropriate to the proposed development will be required to demonstrate how the landscape-scale priorities for the corridor and any site-specific considerations have informed the development proposals*". The landforms falling within the Lower Severn Strategic Corridor are considered the most proximate in terms of hydrological linkage with downstream receptors including the Severn Estuary. However the requirement for appropriate technical

			appraisal of extraction proposals, considered together with the opportunity for hydrological betterment through creation of wetland habitats as directed by MLP3 restoration priorities may serve to further reduce any residual risk of downstream impacts. **Recommendation**: Where working in proximity to water, schemes should also explicitly be directed to the requirement for compliance with MLP18.
POLICY MLP4 North East Worcestershire Strategic Corridor	A spatial strategy establishing mineral extraction in an area which is not perceived to have any conceivable effect on a site **NOTE: this assessment is reliant on the assumption that worked minerals will not be transported via the River Severn to a processing site elsewhere, should this scenario result through the MLP the mitigation established through policy MLP 22 and MLP18 (addressed further below) must be appropriately cross-referenced.**	G	Screened out
POLICY MLP5 North West Worcestershire Strategic Corridor	A spatial strategy establishing mineral extraction in an area which is not perceived to have any conceivable effect on a site **NOTE: this assessment is reliant on the assumption that worked minerals will not be transported via the River Severn to a processing site elsewhere, should this scenario result through the MLP the mitigation established through policy MLP18 and MLP22 (addressed further below) must be appropriately cross-referenced**	G	Screened out

POLICY MLP6 Salwarpe Tributaries Strategic Corridor	A spatial strategy establishing mineral extraction in an area which is not perceived to have any conceivable effect on a site **NOTE: this assessment is reliant on the assumption that worked minerals will not be transported via the River Severn and should this scenario result through the MLP that the mitigation established through policy MLP18 and MLP22 (addressed further below) is appropriately cross-referenced.**	G	Screened out
Chapter Six "Steady and Adequate Supply"	This chapter defines the criteria which demonstrate the 'need' and economic demand for mineral products. The likely temporal and spatial landbanks are defined which the County determine as likely to be required in order to meet this demand and Policies instructing how applications relating to specific mineral resources are established which identify how applications must demonstrate compliance with the need and marketability of mineral products. The Chapter therefore establishes general criteria for testing the acceptability / sustainability of proposals.	B	Screened out
CHAPTER 7 Development Management policies *Introduction: development proposals; planning conditions; review*	The early sections of this Chapter establish the terms and framework of use of the proceeding Development Management policies. As such they list the general criteria for testing the acceptability / sustainability of proposals with some examples of environmental safeguarding criteria as follows: *7.6. A test of 'unacceptable adverse impact' is generally stated within the development management policies. This test will be applied as appropriate for each policy topic, (for example: significant harm for heritage assets; likely significant effect for*	B D	Screened out **Rationale**: text which establishes the general criteria used for testing the acceptability / sustainability of proposals Screened out **Rationale**: Environmental safeguard measure for

of mineral permissions; pre-application consultation. .	*European sites) incorporating the advice of the National Planning Policy Framework, legislative requirements and other material considerations.* and *7.7 …It is recognised that even where applications do not cross the county boundary, a development's impacts may be felt further afield. Applications should make clear the physical extent of impacts (both positive and negative) as well as their significance*.		schemes which may require further consideration of implications with regards compliance with the Habitats Directive.
MLP15 Sustainable Design Principles	Policy listing general criteria for testing the acceptability / sustainability of proposals	B	Screened out
MLP16 Health and Quality of Life	Environmental protection / site safeguard policy	D	Screened out
MLP17 Access and Recreation	Policy listing general criteria for testing the acceptability / sustainability of proposals	B	Screened out
MLP18 Biodiversity	Environmental protection / site safeguard policy	D	Screened out **Rationale**: refer to Table 6 below.
MLP19 Landscape	Environmental protection / site safeguard policy	D	Screened out
MLP20 Agriculture and Soils	Environmental protection / site safeguard policy	D	Screened out

MLP21 Geodiversity	Environmental protection / site safeguard policy	D	Screened out
MLP22 Water Environment	Environmental protection / site safeguard policy	D	Screened out **Rationale**: refer to Table 6 below. **Recommendation:** additional supporting text might be considered for addition to 'Reasoned Justification' so as to inform expectations of 'technical assessments' to include assessment of risk and significance of any interactions with downstream receptors including the River Severn/Severn Estuary, as appropriate.
MLP23 Historic Environment	Environmental protection / site safeguard policy	D	Screened out
MLP24 Transport To and From Site	Environmental protection / site safeguard policy	D	Screened out
MLP25 Transport Within Mineral Sites	Policy that steers change in such a way as to protect European sites from adverse effects While MLP25 is explicit that a technical study accompanying any proposals must demonstrate that "*transport would not have an unacceptable adverse impact on the environment*" it is also noted that this policy encourages movement of material using non-road alternatives, thus creating potential for hydrological linkage of extraction operations to the downstream Severn Estuary SAC and	E	Screened out **Recommendation**: stronger reference to MLP18 and MLP22 could be made in order to highlight risks and site safeguarding measures to be adopted as good working practice, or the requirement for appropriate technical study to inform specific projects which are authorised by the plan.

	RAMSAR. The environmental protection measures of MLP18 and MLP22 are essential in ensuring no adverse impact is likely. If these policies are subject to further amendment then they should be re-assessed.		
MLP26 Sustainable Development Delivery	Policy listing general criteria for testing the acceptability / sustainability of proposals	B	Screened out
Chapter Eight Safeguarding	Safeguarding policies are designed to prevent unnecessary sterilisation of mineral resources and associated infrastructure by non-mineral developments permitted under other plans or regulatory systems beyond the remit of the MLP. It is noted that the identified area of solid rock resource to be safeguarded against non-mineral developments extends into the borders of Bredon Hill SAC[13] (refer to Figure 27b). The individual policies (MLP27 & MLP28) within this Chapter are intended to protect this Mineral Resource Safeguarding Area from adverse impact and, as Paragraph 8.3 states, "*safeguarding mineral resources does not create a presumption that the resources defined will be worked during the lifetime of the Minerals Local Plan*".	D	Screened out

[13] See 'safeguarding' tab at: http://gis.worcestershire.gov.uk/Website/MineralsLocalPlan/

	While considered in isolation, the supporting text in this Chapter could be interpreted as facilitating future mineral extraction within the SACs borders, however in the context of the wider MLP it is clear that the Chapter acknowledges the presence of a mineral resource to be protected; by deletion of the associated Bredon Hill Strategic Corridor during the development of the Plan, any presumption in favour of development ('sustainable' or otherwise) arising within the SAC boundaries has been removed. Additionally, for sites emerging outside a Strategic Corridor, Paragraph 5.7 clarifies that: "*Proposals will need to be assessed against other policies in the development plan to determine whether they constitute sustainable development".* This is further re-iterated at Paragraph 7.2 which states that "*The Minerals Local Plan should be read as a whole and alongside relevant European, national, regional and local policies*" (noting that NPPF clarifies that the presumption in favour of sustainable development does not apply to any scheme where consideration of the Habitats Directives is, or could be a requirement). Considered in combination with the supporting MLP policies, Chapter 8 therefore provides additional levels of protection against adverse impacts associated with non-minerals developments arising within the Bredon Hill SAC (and arising outside a Strategic Corridor); this is accomplished through the requirement (Paragraph 8.32) for consultation with the Minerals Planning Authority so as to consider the implications of a development with regards to the		

	safeguarded solid-rock resource (and by implication assess whether there is an unacceptable impact on the operation or restoration of a mineral site or its supporting infrastructure). This would be achieved by the requirement for suitably appropriate and robust information to enable the Authority to determine any such impact likely to be caused to the SAC (as established in Paragraphs 7.16, 7.55, 7.119 and 7.121). This mechanism facilitates the requirement for 'lower-tier' projects to undertake a Habitats Regulations Assessment where deemed appropriate to do so. For these reasons, Chapter 8 can be considered to provide environmental protection and safeguarding measures and is screened out of requiring further assessment. It is also noted that Mineral Resource Consultation Areas have been established within 250m of Mineral Safeguarding Areas and no proposals to extract mineral resource from the safeguarded area overlapping Bredon Hill SAC have been identified through Plan consultations to date.		
MLP27 Safeguarding Locally & Nationally Important Mineral Resources	Environmental protection / site safeguard policy	D	Screened out
MLP28	Environmental protection / site safeguard policy	D	Screened out

Safeguarding Permitted Mineral Sites and Supporting Infrastructure			
Chapter Nine Implementation & Monitoring Framework	This chapter establishes the modalities through which the 'vision' and 'objectives' of the Plan will be implemented. Policies within the Plan are cross-referenced so as to establish how individual objectives will be secured and a framework of monitoring is described through which the success of the objectives and policies will be evaluated. With regards Habitat Directive compliance of the plan and subservient projects, Objective 11 is key. Objective 11 states that the MLP will: "*Ensure that mineral development protects and enhances the natural and historic environment and distinctive local character".* This will be achieved through the determination of environmentally acceptable schemes by the County Planning Authority using pre-application consultation as a meaningful tool to help ensure policy compliance is demonstrated within individual applications. Key indicators of success for Objective 11 are: • *No proposals granted which would give rise to unacceptable*	D	Screened out **Rationale**: Environmental protection / site safeguarding

	adverse impact on water quality. • *No proposals granted which would give rise to likely significant effects or unacceptable adverse impacts on internationally, nationally or locally identified natural environment assets, habitats, species or heritage assets (identified in Table 7.1).* *Proposals will be considered to have an unacceptable adverse impact where this is identified by a statutory body or other appropriate bodies or in the committee or delegated report prepared.* See also the test of "unacceptable adverse impact" under Paragraph 7.6.		
Appendices & annexes Appendix 1 Superseded policies Appendix 2 Site Information Appendix 3 Definition of the strategic corridor boundaries	Principally administrative text. Annex 1 identifies a potential Corridor which overlays Bredon Hill Special Area of Conservation and was removed from further consideration within the Plan at an early stage due to multiple constraints against deliverability, including the presence of the SAC. Appendix 2 sets out information from a deliverability assessment of sites put forward during previous consultation phases and proposed for allocation in the Minerals Local Plan, for which no consultee has explicitly identified a specific risk of impact or likely pathway for impact to be caused upon a Natura2000 site. However, it is recognised that a small number of sites with hydrological connectivity to the River Severn (such as Ryall East) have been flagged with potential constraints to extraction. Further consideration is required for issues such as flood risk, pollution control and WFD compliance; measures to address these issues in	D	Screened out **Rationale:** Environmental protection / site safeguarding

Appendix 4 Glossary Annex 1 Sites and corridors which have not been included in the Third Stage Consultation draft of the Minerals Local Plan	compliance with the aforementioned MLP policies will also serve to safeguard downstream Natura2000 sites.		

6.2 A key point to highlight within the assessment of the supporting MLP policies is the reliance placed upon the bespoke survey work and data generated to determine risk of significant adverse effects of individual projects. The MLP is clear that there is a requirement of subservient projects to demonstrate compliance with the Habitats Directive where appropriate to do so. The accompanying technical assessment should look beyond the risk of an effect to provide a justified prediction of the actual likely effect and develop tailored avoidance or mitigation measures proportional to the risk and appropriate to a specific project. The likelihood of impact will clearly depend entirely on how the proposal is to be implemented, and it's therefore appropriate the MLP provides sufficient flexibility to enable a lower tier project to choose a non-damaging alternative if adverse effects are identified. This approach was discussed in more detail within the MLP Screening Assessment[14].

6.3 Summarising the key sensitivities identified in Table 4, the measures highlighted in Table 5, Table 6 highlights the relevant Policy text supporting delivery of mitigation recommended within the HRA Screening Assessment.

Table 6 – Illustrating Draft Policy Demonstrating Consideration of Recommended Mitigation Measures and Best Practice Policy

Impact Risk to Natura2000 Site	Relevant Draft Policy	Relevant Supporting Text (for sake of brevity: refer to MLP consultation documents)
Physical Loss	**MLP18** (reproduced below)	**7.118-7.121** (reproduced below)
Physical Damage		
Dust Deposition	MLP16, **MLP18**	7.65, 7.71-7.76, 7.94-7.95, 7.127
Disturbance (including vibration, visual etc)	MLP16, **MLP18**	7.77-7.85, 7.94-7.95, 7.127
Light Pollution	MLP16, **MLP18**	7.83-7.85, 7.94-7.95, 7.127
Noise Pollution	MLP16, **MLP18**	7.77-7.80, 7.94-7.95, 7.127
Hydrological Change (including Toxic and Non-Toxic Contamination)	MLP16, **MLP18**, **MLP22**, MLP26 (MLP22 reproduced below)	7.61-7.62, 7.65, 7.185, 7.188-7.194, 7.243

[14] CLG (2006) Planning for the Protection of European sites, Consultation Paper

Air Pollution	MLP16, **MLP18**, MLP24	7.67-7.70, 7.228, 7.233
Inappropriate Restoration	MLP15, **MLP18**	Objective 11, 7.18, 7.25-7.28, 7.38-7.40, 7.127, 7.243, 7.244

Draft Policy Text

Policy MLP18 Biodiversity

Planning permission will be granted where it is demonstrated that the proposed mineral development will achieve biodiversity net gain through protecting and enhancing the network of flora, fauna and habitats.
A level of technical study appropriate to the biodiversity feature will be required to demonstrate that the proposed development:

a. will not give rise to any likely significant adverse effects on the integrity of a European site (either alone or in combination with other plans or projects, including as a result of changes to air or water quality, hydrology, noise, light and dust) unless there are no alternative solutions, imperative reasons of overriding public interest are demonstrated and functional compensation is provided; and
b. will not give rise to a significant adverse effect on a Site of Special Scientific Interest, except where the benefits of the development clearly outweigh the importance of the site and where no suitable alternative exists; and
c. will not give rise to the loss or deterioration of Local Wildlife Sites except where the need for and benefits of the development in that location outweigh the impacts; and
d. will not result in the loss of populations of a priority species or areas of priority habitat, including ancient woodland or veteran trees, except where the need for and benefits of the development in that location clearly outweigh the loss; and
e. avoids harm to the biodiversity feature or otherwise reduces it to an acceptable level through appropriate mitigation, with functional compensation accepted only as a last resort; and
f. will optimise biodiversity gain by enhancing, linking and extending existing habitat networks, integrating other green infrastructure components where appropriate; and
g. incorporates appropriate long term management of the restored site.

Reasoned Justification

Protecting biodiversity

7.118
The Conservation of Habitats and Species Regulations 2010, usually called simply 'the Habitats Regulations', provide for the protection of 'European sites' of designated or candidate Special Areas of Conservation and Special Areas of Conservation (SAC) designated under the Habitats Directive,[15] and Special Protection Areas (SPA) classified under the Birds Directive.[16] The Habitats Regulations also apply to Ramsar sites and potential SPAs.

7.119
In determining mineral planning applications, the Mineral Planning Authority will be the competent authority and expects applications to provide appropriate information to enable robust decision-making. The presumption in favour of sustainable development does not apply where

[15] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm
[16] Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds.
http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.

7.120
There are a number of Sites of Special Scientific Interest (SSSI) within Worcestershire that are designated and protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000. The Mineral Planning Authority will exercise its duty to take reasonable steps to further the conservation and enhancement of the special features of SSSI. Local Wildlife Sites are designated at the local level and Ancient Woodland is recognised as a locally and nationally important habitat.

7.121
The technical assessment accompanying the planning application will be expected to set out the options considered and clearly explain why the submitted proposal was chosen and how harm is avoided, mitigated or compensated. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. Planning applications should identify the hierarchy of international, national and locally designated sites, so that their protection is commensurate with their status and appropriate weight is given to their importance and the contribution that they make to wider ecological networks. A Habitats Regulations Assessment will be required in relation to the designated European sites.

Policy MLP22: Water Environment

Planning permission will be granted where it is demonstrated that the proposed mineral development will protect and enhance the water environment.

A level of technical study appropriate to the relevant water feature will be required to demonstrate that, taking account of climate change, the proposed development:

a. will avoid increasing flood risk to people and property, managing any residual risk through suitable adaptation and mitigation measures; and
b. will not cause unacceptable adverse impact on the quality, quantity or flow of ground and surface water resources; and
c. avoids harm to the water environment or otherwise reduces it to an acceptable level through appropriate mitigation, with functional compensation accepted only as a last resort; and
d. will optimise gains for the water environment, integrating other green infrastructure components where appropriate; and
e. incorporates appropriate long term management of the restored site.

7. Assessing Spatial Policy in Relation to Mitigation Recommended Within MLP Screening Assessment

The emerging Spatial Strategy

MLP Third Stage Consultation draft, 2016

Delivering the Spatial Strategy

"The spatial strategy identifies five strategic corridors, each of which has a distinct character. It outlines priorities for each of the strategic corridors, and how mineral development can contribute to delivering these priorities. Taking a landscape-scale approach to considering assets that need to be protected and those that can be enhanced within the framework of these priorities provides a significant opportunity to deliver sustainable development that connects with the local setting, links or extends existing green infrastructure networks and delivers a positive legacy.

Planning applications will be expected to demonstrate how the identified priorities have informed the design of the proposed development and how they will be delivered at all stages of working, restoration and after-use".

7.1 The Second Stage Consultation on the MLP identified key mineral resource areas within the county. A process of clustering using a threshold of 200hectares of mineral available for extraction was employed primarily as this was considered to be a threshold at which meaningful landscape-scale restoration efforts could be achieved. The clustering was informed by a series of deliverability exercises including market-led factors to ensure that each cluster could realistically be implemented by the minerals industry. The resulting clusters were then organised into 'corridors' (refer to Appendix 2) which were based on a number of environmental character commonalities which assisted in informing the emerging restoration priorities for each corridor. The HRA is therefore capable of exploring beyond the broader mineral resource areas tested in 2013 in order to evaluate the physical proximity and linkages

between Natura2000 sites and the proposed mineral extraction 'corridors'.

7.2. The Spatial Strategy initially identified seven strategic corridors where mineral resources would have potentially facilitated extraction operations (refer to appended plans), these consisted of:

- North East Worcestershire Corridor
- North West Worcestershire Corridor
- Salwarpe Tributaries Corridor
- Avon and Carrant Brook Corridor
- Lower Severn Corridor
- Malvern Hills Corridor
- Bredon Hill Corridor

7.3. During the development of the Third Stage Consultation draft, both the Malvern Hills and Bredon Hill Strategic Corridors were deleted and excluded from further consideration within the MLP for a number of reasons related to the practicalities and deliverability of mineral resource within these areas, including the presence of and protection afforded to the Bredon Hill SAC.

7.4. Focusing on the remaining 5 corridors taken forward within the developing MLP, tables 7 and 8 highlight where potential conflict between imposing the geographical proximity buffers to Natura2000 sites (within Worcestershire and therefore within the influence of the Minerals Local Plan) and the presence of a Strategic Corridor for mineral extraction may occur (refer to Appendix 4 for further details).

Table 1 – European sites located within 2.5km of Worcestershire Strategic Corridors

	Strategic Corridor				
Natura2000 site	**Avon & Carrant Brook**	**Lower Severn**	**North-east Worcestershire**	**North-west Worcestershire**	**Salwarpe Tributaries**
Bredon Hill SAC	✓	X	X	X	X
Lyppard Grange SAC	X	X	X	X	X

Table 8 – European sites located within 0.5km of Worcestershire Strategic Corridors

	Strategic Corridor				
Natura2000 site	**Avon & Carrant Brook**	**Lower Severn**	**North-east Worcestershire**	**North-west Worcestershire**	**Salwarpe Tributaries**
Bredon Hill SAC	X	X	X	X	X
Lyppard Grange SAC	X	X	X	X	X

7.6 The Spatial Strategy is therefore unable to eliminate the potential for a pathway for impacts arising from mineral extraction within the Avon and Carrant Brook Strategic Corridor to impact Bredon Hill SAC by proxy of physical distance to the site boundary alone (refer to Figure 27a for further illustration). This is particularly relevant to risk of physical and non-toxic contamination impacts, which might arise through pathways such as increased human trampling (associated with mineral site after-use) and the emissions of smaller particles (<10micrometers known to disperse >1km from source). However, this assessment should be tempered by the knowledge that it is the larger and intermediate particles which are considered to hold greater likelihood of posing an adverse impact on European sites (by smothering vegetation) and that prevailing wind conditions typically drive emissions in a north-easterly direction from the Corridor source (and are therefore likely to disperse any pollutants away from the direction Bredon Hill SAC).

Summary

7.7 The MLP Developmental Policies have highlighted the necessary avoidance and mitigation measures to be employed for all mineral operations and specifically those projects which require further ('downstream') HRA due to potential for causing Likely Significant Effect upon a European site. This would include. but is not limited to, operations within Strategic Corridors which fall within the SAC proximity buffers as discussed within Section 5, In addition, this is also applicable to applications for mineral extraction which may have hydrological linkages to European sites.

7.8 It is explicit within the policy framework of the Minerals Local Plan that appropriate technical assessments submitted to the County Planning Authority in support of a proposed scheme otherwise facilitated by the MLP will include a Habitat Regulations Assessment where it is considered appropriate to do so.

7.9 By securing the due diligence, avoidance and best practice measures (as has been outlined within the HRA Screening Assessment), the MLP aims to ensure the risk of Likely Significant Effect upon a European site caused by permitted mineral schemes is avoided. This will be particularly relevant to schemes coming forward within the Lower Severn and Avon and Carrant Brook Strategic

Corridors (as well as windfall sites outside the Corridors throughout the County), specifically where hydrological linkage to downstream European sites is demonstrated.

7.10 The removal of Bredon Hill Strategic Corridor within the Spatial Strategy has significantly reduced risks of direct impact and hence Likely Significant Impact upon Bredon Hill SAC.

7.11 As an iterative design process, there remains a possibility that Development Policies may develop in a manner which contradicts or threatens to override the protection otherwise afforded to European Sites by the over-arching Draft Policy MLP18. Therefore, there remains a need to review the full text of the emerging MLP document up to adoption so as to re-assess any amendments posed to the final policy wording.

8. The 'In Combination' Assessment

8.1. It is a requirement of the Habitat Regulations that the impacts and effects of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.

8.2. In practice, in combination assessment is of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential.

8.3. It is noted that English Nature Habitats regulations Guidance Note HRGN4 states that "*Regulation 52 does not require a competent authority to assess any implications of a plan or project which would be more appropriately assessed by another*". Additionally, Paragraph 5.9 of DCLG Draft Guidance on Appropriate Assessments[17] (August 2006) states: "*The assessment of significant effects of a given option needs to take account of the option's impact in combination with other plans and projects. Only other key plans and projects which the RPB or LPA consider most relevant should be collected for the "in-combination" test. An exhaustive list could render the assessment exercise unworkable. Consult Natural England on the list identified*."

8.4. During the consultation process for the Worcestershire MLP HRA Screening Assessment, Natural England provided no additional plans or projects to the list proposed for consideration, and therefore in order to avoid unnecessary duplication or consideration of plans or projects without conceivable pathway to cause impact to a European site in combination with the MLP, we have focused more detailed consideration towards those plans and projects considered more likely to interact with European sites through hydrological change (i.e. causing downstream effects either alone or in-combination with operations permitted through the Worcestershire MLP).

8.5. Plans in preparation by neighbouring Mineral Planning Authorities are at different stages of the planning process: Herefordshire Council is currently in the early stages of

[17] *Planning for the Protection of European Sites: Appropriate Assessment – Guidance For Regional Spatial Strategies and Local Development Documents August 2006*

reviewing the existing adopted plan (2002-2016, adopted March 2007) and has just completed a call for sites. Hereford's Minerals Policy Direction Paper (January 2010) identified that all options under consideration had:

> '"*likely local impacts on designated features including impacts upon water levels, water quality, clean gravel, sedimentation, disturbance, erosion, aggregate extraction, flood defence and dredging. Transport emissions were considered to be an issue for air quality over a wider area*".

The document highlights the sensitivity of the River Wye SAC to direct and indirect impacts from gravel extraction operations, particularly as there are active sand and gravel pits within 100m of the designated site borders. Dredging was previously identified as a potential source of in-combination impact (specifically to the downstream Severn Estuary site) caused through a number of other plans and projects working in conjunction with the activities facilitated by the Minerals Local Plan. There is a recognised risk that adverse impact to the Severn Estuary through the River Wye acting as a hydrologic pathway (joining the Severn Estuary at Chepstow) could potentially be exacerbated by adverse effects caused by projects enabled by the Worcestershire MLP. However, the Third Consultation Draft of the MLP makes explicit reference to dredging only within the context of the Minerals Safeguarding chapter (Para 8.25) requiring the protection against sterilisation of infrastructure associated with mineral extraction which includes "secondary and marine-dredged materials". The MLP does not therefore explicitly advocate for measures such as dredging or other disturbance of marine sediment. In highlighting the necessity for careful consideration of activities with potential to affect water flow and water quality through environmental safeguarding developmental policies, in combination with seeking betterment of natural habitats associated with flood prevention and control, the MLP reduces risk of in-combination effects exacerbating any downstream hydrological impact to the Severn Estuary.

8.6. Warwickshire County Council's Minerals Local Plan was made available for public consultation in October 2016 and is supported by the Draft Habitat Regulations Assessment (October 2015). This report was a second-round consultation document having benefitted from input by statutory consultees through its Stage 1 screening

exercise (June-September 2015). The conclusions drawn in the October 2015 HRA were that Natura2000 sites within the sphere of consideration in Worcestershire's MLP were screened out, therefore indicating no likely pathway for impacts which would result in in-combination effects.

8.7. Gloucestershire's Minerals Local Plan benefits from a Habitats Regulations Assessment 'Baseline Report' prepared in June 2016. This fifth iteration of the document reflects "*minor changes agreed* [with Natural England and the Environment Agency] *as a result of comments received during the consultation on Site Options and Policy in June 2014*". As a developing evidence base in the HRA process, the documents draws no definitive conclusions but scopes in a range of potential impacts caused through mineral working and possible pathways where sensitives of scoped European sites could be impacted. This list includes a number of sites also scoped within the sphere of the Worcestershire MLP HRA. However, focusing on likelihood of downstream impacts to the Severn Estuary SAC/SPA and following communication with Natural England (July 2006), it is noted that the site is "*unlikely to be affected directly by on land mineral extraction but there could be significant indirect effects from changes to water flow patterns into the site. (Note: marine aggregate extraction could have implications for many of the sites features by disruption of the sedimentary systems and natural processes operating throughout the estuary)"*.

8.8. Of Dixton Wood SAC, Gloucestershire's HRA evidence base documents cites Natural England (2006 communication) as specifying that the site would be "*affected by mineral workings that affect soil water movements, or which cause dust deposition. Similarly the site would be affected by waste sites that led to contamination of the soil water*". Bredon Hill SAC shares the same qualifying features and notable sensitives which appear to confirm that hydrological impacts will be less relevant than mineral workings (and associated airborne pollutants particularly within a 2-500m radius) are of greatest likelihood of causing LSE to these sites. However at this stage no specific mineral proposals which could be facilitated through the Gloucestershire Minerals Local Plan within 2-500m of these two sites have been identified and therefore in-combination effects

caused by multiple and simultaneous mineral workings facilitated by both plans are considered unlikely.

8.9. Other issues pertaining to potential impacts arising from generic and specific mineral extraction operations likely to emerge through the Worcestershire MLP are likely to relate to increased site disturbance (e.g. human recreational or developmental pressure), and the risk of air and/or water pollution events. The key plans and projects that may therefore require consideration in the Worcestershire Minerals Plan HRA process are therefore likely to be:

Plan, Policy or Project
Water catchment and management:
Worcestershire Surface Water Management Plan
River Severn Catchment Flood Management Plan (2009)
Severn Trent Water Resources Management Plan
Severn River Basin Management Plan (2009)
The Worcestershire Middle Severn Catchment Abstraction Management Strategy
The Severn Corridor Catchment Abstraction Management Strategy
The Teme Catchment Abstraction Management Strategy
Severn Trent Water Asset Management Plan
Severn Estuary Flood Risk Management Strategy (EA)
Severn Estuary River Basin Management Strategy
Gloucestershire Flood Risk Management Strategy
Gloucester, Churchdown & Innsworth Surface Water Management Plan
Tewkesbury Surface water Management Plan
The Warwickshire Avon Catchment Abstraction Management Strategy
Worcestershire Plan Documents:
Worcestershire LEP Strategic Economic Plan
Worcestershire Green Infrastructure Strategy (2013)
Worcestershire Single Sustainable Community Strategy (2011)
Worcestershire Climate Change Strategy (2012-2020)
Worcestershire County Council Waste Core Strategy
Wyre Forest District Council LDF Core Strategy
Bromsgrove District Council Core Strategy
South Worcestershire Development Plan
Redditch Borough Council Core Strategy
Adjoining Authorities Development Plan Documents:
Gloucestershire Minerals Local Plan (2003)
Gloucestershire County Council Minerals Core Strategy
Gloucestershire Waste Core Strategy (2012)
Forest of Dean District Council Core Strategy
Gloucester, Cheltenham and Tewkesbury Joint Core Strategy
Cotswolds District Council LDF Core Strategy
Warwickshire County Council Minerals Local Plan
Warwickshire County Council Waste Core Strategy
Stratford-on-Avon District Council LDF
Staffordshire County Council Minerals Local Plan
Staffordshire County Council Waste Core Strategy
South Staffordshire Core Strategy
Shropshire Council LDF Core Strategy
Shropshire & Wrekin Council Minerals Local Plan

Transport Plans:

Worcestershire County Council Local Transport Plan 4
Gloucestershire County Council Third Local Transport Plan
Herefordshire Council Second Local Transport Plan
Warwickshire Local Transport Plan
West Midlands Local Transport Plan
Staffordshire Local Transport Plan
Shropshire Local Transport Plan

8.10 Focusing on predicted and potential impacts identified through HRA documents supporting these plans and policies (where available), we have tabulated potential in-combination effects with activities associated with the MLP which, cumulatively, may have the potential to cause a Likely Significant Effect on European sites.

Table 2 - Cumulative effects assessment

Impact identification	Assessment of potential cumulative effects.
Noise and vibration	Potential cumulative effects of construction and transport related activities such as those delivered through Development and Transport Plan Documents and Strategic developments. For example: Increased HGV movements from industrial and residential developments, as well as passenger vehicle traffic from urban areas and transport routes will increase noise levels, potentially impacting on the Natura2000 sites. Dependant on transport routes vibrations and visual disturbance may cause a nuisance on nesting and foraging birds. However, it is noted that the draft Habitats Regulations Assessment of Worcestershire's LTP4 (September 2016) states that "*Many of the threats and pressures identified in relation to the Severn Estuary sites are not relevant to the LTP4, as they relate to issues in closer proximity to the site. The only threat/pressure identified in relation to the Severn Estuary sites that has potential to be significantly affected by the LTP4 is 'Human induced hydraulic conditions'. This allows the Severn Estuary Ramsar site to be screened out of further analysis*".

Water resource reduction	Potential cumulative effects of water abstraction and water quality through activities delivered through Water Catchment and Management Strategies. For example: dewatering during extraction operations may impact on local sites of nature conservation importance (potentially including Natura2000 sites) through the lowering of water tables and settlement and this effect may be further compounded by abstraction of groundwater or surface water for use in agriculture, industry, domestic water supplies or tourism. Abstraction from aquifers has resulted in falling groundwater levels at a regional level in recent years. Increased density requires additional water resources which will further serve to increase pressure on the availability of water resources and habitat areas. It is thought the draft developmental policies within the MLP hold an explicit objective and directive for environmental betterment, specifically for creation of wetland habitats and alleviation of flooding issues within the riverine corridors, and that this will assist in minimising any residual risk of in-combination effects otherwise pressurising water resources.
Air emissions	Potential cumulative effects may include compounding fugitive dust and emission from operation of machinery / plant and vehicle emissions (e.g. during haulage) with construction and transport related activities such as those delivered through Development and Transport Plan Documents, Strategic developments and Waste Core Strategies. For example: emissions from minerals extraction processes may be further compounded by particulate emissions including dust, vehicle emissions from transport, bio-aerosols, biogas emissions, organic compounds, principle emission components from technologies energy from waste processes include carbon dioxide, acid gases, heavy metals, particulates, dioxins and furans. The principal emissions from other forms of development relate to vehicle emissions, existing Air Quality management Areas (AQMA's) are likely to be exacerbated by additional development. Worcester City, Wychavon, Bromsgrove and Wyre Forest have designated AQMA's and have declared issues specifically relating to the control of Nitrogen Dioxide (NO_2) levels. Of the aforementioned plans and projects, Worcestershire's LTP4 is considered to have greatest influence in causing adverse impacts through air pollution. The HRA identifies that Bredon Hill SAC has sensitivity to air pollution with

	existing Nitrogen deposition being on average 27.7kg/N/ha/yr which is in exceedance of its critical load[18]. The HRA goes on to identify that no schemes proposed within the LTP4 are located within 200m of Bredon Hill and therefore no LSE is anticipated. An analysis of the Spatial Strategy indicates that no sites within or outside a Strategic Corridor are located within 500m of Bredon Hill SAC and therefore no in-combination effect is predicted.
Chemical emissions	Potential cumulative effects may include compounding chemical emissions from mineral extraction operations through diffuse pollution events within the catchment of the Rivers Severn, Avon, Teme or Stour leading to a cumulative impact on the integrity of a downstream Natura2000 site. For example: Industrial development along the Severn may contribute towards chemical emissions to air, water and land in combination with those emissions associated with extraction of minerals. Where major roads pass near waterways, there is the possibility of exhaust emissions and other chemicals relating to transport (hydrocarbons – such as oils and petrol, traces of heavy metals associated with motor vehicles, Polycyclic aromatic hydrocarbons PAH's – from vehicle exhausts and asphalt roads, de-icing agents, etc) entering the watercourse in combination with those emissions associated with road haulage of minerals. Setting aside point-source pollution events which are addressed through MLP22, there remains a possibility that chemical pollutants could enter watercourses through pathways such as construction dust or dust arising from mineral extraction. MLP16 requires a robust technical assessment of the potential impacts of dust/noise/vibration and air quality as specified by Worcestershire Regulatory Services, however it is also noted that the LTP4 HRA states that "*It is expected that these schemes will lead to an increase in suspended sediment from construction dust. The effects of this are likely to be minor and remain localised, thus not affecting the Severn Estuary European sites*".
Land	Potential cumulative effects may include soil and watercourse contamination, land-take and fragmentation and disturbance of European sites. For example: urban extensions may require an increase in number of Sewage Treatment Plants which could

[18] Air Pollution Information Systems (APIS), site relevant critical loads, Bredon Hill SAC, available at: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0012587&SiteType=SAC&submit=Next,

	potentially result in compounding soil and watercourse contamination. Restoration of previous minerals can result in point source pollution events, dewatering caused by extraction activities, subsidence, settlement issues, extractant/leachate contamination or additional pressure for land-take within the borders or in the locality of existing Natura2000 sites. This can be further compounded by development or industrial activities where permitted on adjacent sites. The value of the wetland systems depends on the connectivity of habitats; this makes them vulnerable to piecemeal loss as the loss of one habitat can have serious implications for others. Development may lead to increased fragmentation increasing stresses on smaller areas which in turn decreases the ability of the river corridor and its habitat areas to function. The increase in recreational use of the Severn, Avon, Teme or Stour (for instance by encouraging the restoration of riverine terrace quarries to green infrastructure/amenity resources) may increase the numbers of people and their dogs visiting local sites which may include Natura2000 sites. Increase in recreational pressure would also most likely be the result of housing developments and any associated improved access and recreation opportunities, which could in turn have a significant impact on breeding birds due to visual disturbance, trampling of habitat (particularly nesting sites) and disturbance and predation by dogs.
Pathway identification	Water is the primary potential cumulative pathway. Transfer of chemical pollutants, organic compounds and sediments to connecting waterways and water bodies within the Natura2000 sites and the potential impact of dewatering (lowering of water tables and settlement) on a Natura20000 site and surrounding local area (i.e. connecting habitat) are the primary potential impacts. Other potential pathways may include noise, vibration, and air quality, as previously discussed. The spatial accumulation of effects has also been identified as a potential pathway. Urban extension and related development (i.e. residential, commercial, industrial, transport) may indirectly contribute towards reduction in water quality and increased pressure on the structure and function of a Natura2000 site (e.g. noise, air, visitation through recreation, fragmentation / loss of connectivity, etc). Spatial accumulation of effects regarding the indirect impacts from urban extension and related development are likely to manifest over time.

	Potential cumulative and in-combination impacts are identified here, primarily through watercourse pollution and increased vehicular activity. Although the magnitude/extent duration and reversibility of these potential effects is, at this stage, not ascertainable, in the absence of mitigation they may have the potential to disrupt the structure and function of Natura2000 sites.
Prediction	However, the emerging MLP developmental policies identify sources and pathways with potential for adverse environment impact and require appropriately robust technical assessment of individual 'lower-tier' projects for LSE of European sites. It is clear at this stage that the scale, methodology and restoration aims of the emerging schemes will be required in order to make a more detailed robust determination of individual project's compliance with the Habitat Directive requirements.

9. Consideration of potential Likely Significant Effects on European sites

Impacts and Sensitivities

9.1. The following categories of principal site sensitivities to impact, and likely impacts raised by mineral extraction operations have been identified[19], pathways through which such impacts could occur are given further consideration in Table 9.

Table 3 - LSE Assessment (with consideration typical avoidance/mitigation approaches)

Site	Broad Sensitivity Category	Key Site Sensitivity	Considerations for Plan Led Avoidance/Mitigation, or Escalation of Issue for Appropriate Assessment
Bredon Hill	Terrestrial Modification	• Land-take/developmental pressure/soil compaction • Inappropriate grazing regime	• In its current format the MLP directs schemes away from causing direct impact within the SAC by use of Strategic Corridors and policy based environmental safeguards for those sites emerging both within and/or outside Strategic Corridors. • No land take within the SAC borders is advocated within the MLP • No land take within proximity (<500 meters) of the SAC border is advocated. • Where extraction areas are proposed within 1km of a SAC, further exploration of potential for LSE and requirement for appropriate avoidance measures

[19] Based on: Table B: Sensitivities of European sites to different types of impact, WMRSS Phase Three, Habitats Regulations Assessment of the Regional Interim Policy Statement for Construction Aggregates, Treweek Environmental Consultants, March 2010.

			are secured through MLP policies. • No likely pathway identified which would influence grazing regime.
	Disturbance	• Heavy recreational pressure • Spread of non-native / invasive species • Scrub encroachment	• Not highlighted as a key issue but increased human disturbance may impact decaying wood and opportunities for Violet Click Beetle. Recreational pressure unlikely to increase unless quarry restoration aims to introduce new amenity attractions which, in turn, could increase footfall to the nearby SAC. Alternatively, would a new amenity resource in proximity to the Natura2000 site draw visitor pressure away from the SAC? When establishing the design principles underlying a restoration scheme's Green Infrastructure Concept Plan, these issues should be carefully considered (in line with Policy MLP15 and MLP17). • Introduction of new species or modification of habitat management practice/requirement can be avoided by excluding mineral sites from the proximity (i.e. <500m) of a SAC.
	Water quality/flow	• Groundwater and surface run-off pollution events, • Changes in water table.	• No hydrological connectivity anticipated. • Good practice guidance to be adopted in all sites to address risk of surface water ('point source') pollution events. • Sites known to be hydrologically linked to a

			Natura2000 site will require further (project based) assessment of potential for LSE.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• APIS identified that acid and nitrogen deposition currently exceeds vegetation thresholds. • Sites requiring road haulage are to not be permitted within 500m of a SAC (to address air pollutant issues) unless suitable technical assessment confirms avoidance measures can avert any potential for LSE being caused to this SAC.
Lyppard Grange	Terrestrial Modification & Disturbance	• Land-take • Physical damage/soil compaction • Disturbance • Introduction of invasive species/scrub	• No land take within the SAC borders is advocated, • No land take within proximity (<500 meters) of the SAC border – site is surrounded by existing residential and commercial development. • Where extraction areas are proposed within 1km of a SAC, further exploration of potential for habitat severance from local landscape is directed through MLP policy requirements and, if LSE identified, appropriate avoidance measures must be formulated. • No likely pathway identified which would influence current management (i.e. scrub control) requirements.
	Water Quality/Flow	• Increased siltation, turbidity or sedimentation, • Eutrophication, • Changes in water table.	• No direct hydrological links anticipated, so no direct impact to turbidity, siltation or sedimentation is expected. • Upstream quarries could potentially exacerbate

			existing invasive species issues (e.g. restoration to low intervention flood alleviation land could act as a reservoir for Himalayan balsam). However it is difficult to envisage invasive species such as balsam reaching the site via existing watercourses. • Appropriate ecological input to be required when considering quarry restoration schemes. • Good practice guidance to be adopted in all sites to address risk of surface water ('point source') pollution events. • Sites found to be hydrologically linked to this SAC will require further (project based) EIA assessment of potential for LSE. These measures secured by emerging MLP policies.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• Diffuse air pollution from traffic (e.g. haulage) and agriculture (e.g. on restoration) to be avoided – quarry sites within 500m of the SAC must be avoided or vehicular emissions evaluated through appropriate technical assessment and acceptable mitigation measures secured.
Dixton Woods	Terrestrial Modification & Disturbance	• Land-take/developmental pressure/soil compaction • Inappropriate grazing regime	• No pathway anticipated due to distance of site from Worcestershire's borders. • Where extraction areas are proposed within 1km of this SAC, further exploration of potential for habitat severance from local landscape is required through MLP policy (requiring appropriate technical

			assessment) and, if LSE identified, acceptable mitigation to be secured. • No likely pathway identified which would influence grazing regime.
		• Heavy recreational pressure • Spread of non-native / invasive species • Scrub encroachment	• Not highlighted as a key issue but increased human disturbance may impact decaying wood and opportunities for Violet Click Beetle. Recreational pressure unlikely to increase unless quarry restoration aims to introduce new amenity attractions which, in turn, could increase footfall to the nearby SAC. Alternatively, would a new amenity resource in proximity to the Natura2000 site draw visitor pressure away from the SAC? When establishing the design principles underlying a restoration scheme's Green Infrastructure Concept Plan, these issues should be carefully considered (in line with Policy MLP15 and MLP17). • Introduction of new species or modification of habitat management practice/requirement can be avoided by excluding mineral sites from the proximity (i.e. <1km) of a SAC. • No likely pathway identified which would influence current management (i.e. scrub control) requirements.
	Water quality/flow	• Groundwater and surface run-	• No hydrological connectivity anticipated.

		off pollution events, • Changes in water table to preserve wet woodland	• Good practice guidance to be adopted in all sites to address risk of surface water ('point source') pollution events. • Sites known to be hydrologically linked to the SAC will require further (project based) technical assessment of potential for LSE.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• Diffuse air pollution from traffic (e.g. haulage) and agriculture (e.g. on restoration) to be avoided – as the site is >200m from Worcestershire's borders, no pathway to impact is anticipated.
Downton Gorge	Terrestrial Modification & Disturbance	• Development pressure • Soil compaction • Inappropriate woodland management regime • Heavy recreational pressure • Spread of non-natives • Scrub encroachment to W8/W6 woodland communities	• No land take within the SAC borders or within proximity (<500 meters) of the SAC is anticipated due to its distance from Worcestershire's borders. • No pathway to modify maintenance regime or recreational pressure is identified. • No anticipated pathway for introduction of non-natives or increase in woodland scrub is identified.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• No likely pathway identified due to distance from Worcestershire borders; deposition of air pollutants from any increased vehicular activity is not envisaged.
	Water Flow/Quality	• Eutrophication	• No hydrological link between Worcestershire's

		• Acidification • Siltation/sedimentation/turbidity • Groundwater pollution events • Changes in water table	mineral resource areas and the SAC has been identified and therefore no pathway to modify water levels or flow is anticipated.
Walmore Common	Terrestrial Modification & Disturbance	• Development pressure • Soil compaction • Scrub encroachment (often due to undergrazing) • Maintenance of appropriate grazing regime • Spread of introduced non-native species • Human disturbance (off-road vehicles, burning (vandalism))	• No land take within the SAC borders or within proximity (<500 meters) of the SAC is anticipated due to its distance from Worcestershire's borders • Where extraction areas are proposed within 1km of a SAC, further exploration of potential for habitat severance from local landscape must be subject to appropriate technical assessment and, if LSE identified, acceptable mitigation to be secured. • No likely pathway identified which would influence current management (i.e. scrub control) requirements. • Introduction of new species or modification of habitat management practice/requirement is not anticipated due to the distance of this site from Worcestershire's borders. • Human disturbance pressure thought unlikely to increase unless restoration of a local quarry aims to introduce new amenity attractions which, in turn, could increase footfall to the nearby SAC. Alternatively, would a new amenity resource in proximity to the Natura2000 site draw visitor pressure away from the SAC? When establishing

			the design principles underlying a restoration scheme's Green Infrastructure Concept Plan, these issues should be carefully considered (in line with Policy MLP15 and MLP17).
	Water quality/flow	• Maintenance of quantity and base status of the groundwater. • Water quality – nutrient enrichment from fertiliser run-off *etc*	• No hydrological connectivity anticipated. • Good practice guidance to be adopted in all sites to address risk of surface water ('point source') pollution events. • Sites known to be hydrologically linked to the SAC will require further (project based) technical assessment of potential for LSE.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• No pathway anticipated due to distance of site from Worcestershire's borders.
Fen Pools	Terrestrial Modification & Disturbance	• Development pressure • Recreational pressure / disturbance • Soil compaction • Spread of introduced non-native species • Scrub or tree encroachment (leading to shading, nutrient and hydrological effects) • Maintenance of appropriate	• No pathway to impact from development pressure, non-native introduction, modification of management regime or tree/scrub encroachment is anticipated due to the distance between this site and Worcestershire's borders.

		grazing regime	
	Water quality/flow	• Water levels, • Siltation • Eutrophication • Increased sediment and turbidity • Groundwater pollution events	• SAC is upstream of all mineral resource areas within Worcestershire and therefore there are no anticipated hydrological connections to proposed sites. As such there are no anticipated LSE on water quality or flow issues pertaining to this SAC. • Good practice guidance to be adopted in all sites to address risk of surface water ('point source') pollution events.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• No pathway anticipated due to distance of site from Worcestershire's borders.
River Wye	Water quality/flow	• Water quality (particularly sensitive to pollution/eutrophication) • Flow (flow regime should be characteristic of the river). • Abstraction sensitive. • Suspended sediments/siltation • Inappropriate dredging • Artificial barriers to fish migration • Atmospheric pollution - deposition of oxides of	• As a tributary of the Severn the Wye is upstream of Worcestershire's mineral resource areas and as such impacts such as increased siltation, turbidity, abstraction or sedimentation by mineral extraction within Worcestershire is not anticipated. • Obstructions of the Severn (e.g. barriers to fish movement, or which would obstruct the flow of the river) are discouraged within the MLP. • Where wharfs are advocated or required to transport materials from site to site, policies are in place which maintain the normal river characteristics (including flow regime and

		nitrogen & sulphur, acidification of river water (deposition of nitrogen & ammonia)	safeguarding downstream water quality), to address risk of point source pollution events and eutrophication through enrichment of the watercourse.
	Disturbance	• Recreational pressure and disturbance – can lead to disturbance, damage and increases in suspended sediment e.g. footpath erosion, water-based activities • Illegal fish poaching • Spread of introduced non-native species	• Human disturbance pressure is thought to be unlikely to increase unless restoration of a local quarry aims to introduce new amenity attractions which, in turn, could increase footfall to the nearby upstream SAC. Alternatively, would a new amenity resource in proximity to the Natura2000 site draw visitor pressure away from the Wye SAC? When establishing the design principles underlying a restoration scheme's Green Infrastructure Concept Plan, these issues should be carefully considered (in line with Policy MLP15 and MLP17). • Restored quarries could potentially exacerbate existing invasive species issues (e.g. restoration to low intervention flood alleviation land could act as a reservoir for Himalayan balsam which could spread upstream along the Wye). Appropriate ecological input to restoration strategies and planning conditions could help protect against the spread of invasive species into the SAC.
Severn Estuary	Water quality/flow	• Pollution events, for example through agricultural run-off or sewage,	• The HRA Screening Assessment for the Worcestershire Waste Core Strategy (ERM, 2009) identified no likely direct or indirect effects, alone or

		• Flow regime should be characteristic of the river. • Inappropriate dredging • Erosion • Siltation • Over-fishing • acidification of river water (deposition of nitrogen & ammonia)	in combination, through disturbance, deposition of air or water pollutants to the saltmarshes of the Severn Estuary, predominantly due to the distance between potential sources and receptors. • Where proposals are thought likely to impact downstream habitats (i.e. by proposed dredging, changes to flow-regime, by introducing increased risk of siltation, eutrophication or turbidity of downstream SACs) a project based HRA will be required to determine whether they pose LSE on the SAC/SPA/Ramsar and appropriate avoidance and/or mitigation measures must be formulated. In its current draft, dredging is not advocated within the MLP. • Obstructions of the Severn (e.g. barriers to fish movement, or which would obstruct the flow of the river) are not advocated within the MLP. • Where wharfs are advocated or required to transport materials from site to site, policies seek to maintain the normal river characteristics (including flow regime/safeguarding downstream water quality), to address risk of point source pollution events and eutrophication through enrichment of the watercourse. • Extraction of minerals, especially in the riverine terrace (where return or creation of new agricultural

			land is proposed) should be subject to appropriate water quality control regimes. Key objectives of extraction within the river terraces include the recreation of functional wetland habitats and therefore hydrological betterment might be anticipated.
	Terrestrial Modification/Disturbance	• Maintenance of appropriate grazing regime, • Recreational/tourism disturbance • Development e.g. dock/harbour creation, coastal defence works • Illegal fish poaching • Spread of introduced non-native species • Artificial barriers to fish migration • Disturbance to bird feeding and roosting habitat (noise / visual)	• Any mineral extraction proposals will be in excess of 5km from the site's borders and therefore no pathway for impacts such as noise or vibrations or increased tourist pressure on restored sites is foreseen which could otherwise impact the bird feeding and roosting habitats for which, in part, this SAC/SPA/Ramsar has been notified. • Restored quarries could potentially exacerbate existing invasive species issues (e.g. restoration to low intervention flood alleviation land could act as a reservoir for Himalayan balsam which could spread downstream along the Severn). Appropriate ecological input to restoration strategies and planning conditions could help protect against the spread of invasive species into the SAC/SPA/RAMSAR. • Obstructions of the Severn (e.g. barriers to fish movement, or which would obstruct the flow of the river) are not advocated within the MLP. • Where wharfs are advocated or required to

			transport materials from site to site, policies seek to maintain the normal river characteristics (including flow regime etc), to address risk of point source pollution events and eutrophication through enrichment of the watercourse.
	Air Quality	• Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.	• No pathway anticipated due to physical distance between source and receptor; deposition of air pollutants from proposed works is not anticipated.

10. Summary and Invitation for Comments

11.1. The HRA has identified potential effects of mineral working and highlighted potential in-combination effects with other plans and policies on SACs within and beyond a 15km radius of Worcestershire's borders.

11.2. The emerging developmental policies, spatial strategy and associated reasoned justification text within the Third Consultation Draft of the MLP is believed to satisfactorily address these sources and the potential pathways which could otherwise adversely impact a European site. In addition, the Third Stage Consultation on the Minerals Local Plan includes a suite of policies which intend to resolve any remaining ambiguity or uncertainty of potential for LSE upon a Natura2000 site arising from schemes facilitated by the plan, through requirement of an appropriate and robust technical assessment or project-level HRA.

11.3. This HRA examines draft Minerals Local Plan policies and a spatial strategy based on strategic corridors of potential mineral extraction activity (refer to Appendix 2) but has not assessed individual site allocations specifically. The proposed site allocations are all within the proposed strategic corridors, but contain little detail other than their geographical location which would enable more comprehensive assessment.

11.4. This Assessment does not therefore remove the need for later Habitats Regulations Assessment of subservient plans, projects, or permissions associated with, or arising out of the MLP. Acceptance that the MLP is consistent, so far as can be ascertained, with the Habitats Regulations does not guarantee that any plan or project derived from the Plan will also be found consistent.

Next steps

11.5. These findings are subject to consultation comments and advice from Natural England and wider stakeholders. If the findings of this assessment are determined to be sound, and assuming that any further amendments arising from the Third Consultation draft of the MLP are *de-minimis*/non-material in nature and do not erode the

measures secured, the "Template for Recording the Conclusion of the Habitats Regulations Assessment" (Appendix 6) will be completed and submitted to Natural England prior to adoption of the final Minerals Local Plan.

Appendix 1. Location and boundaries of local Natura2000 sites.

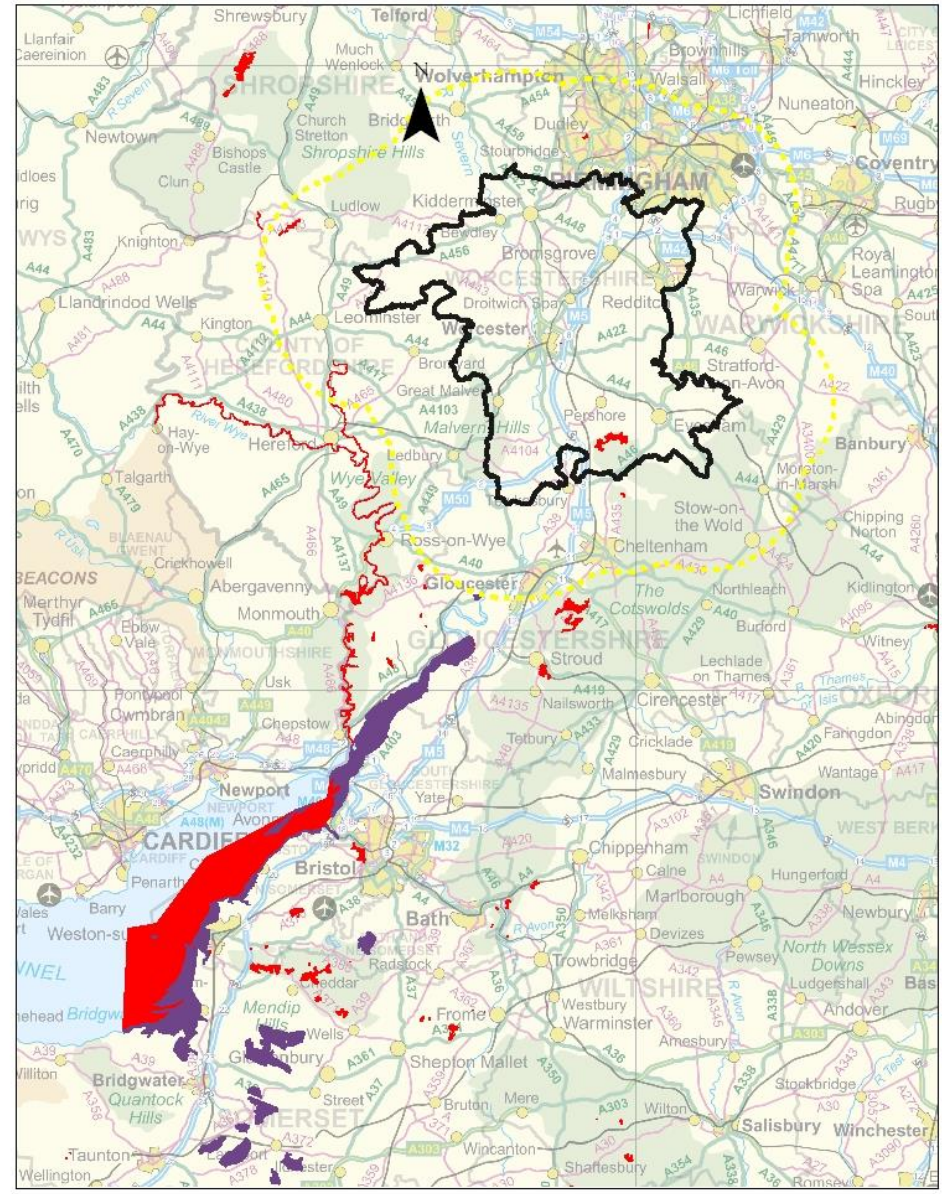
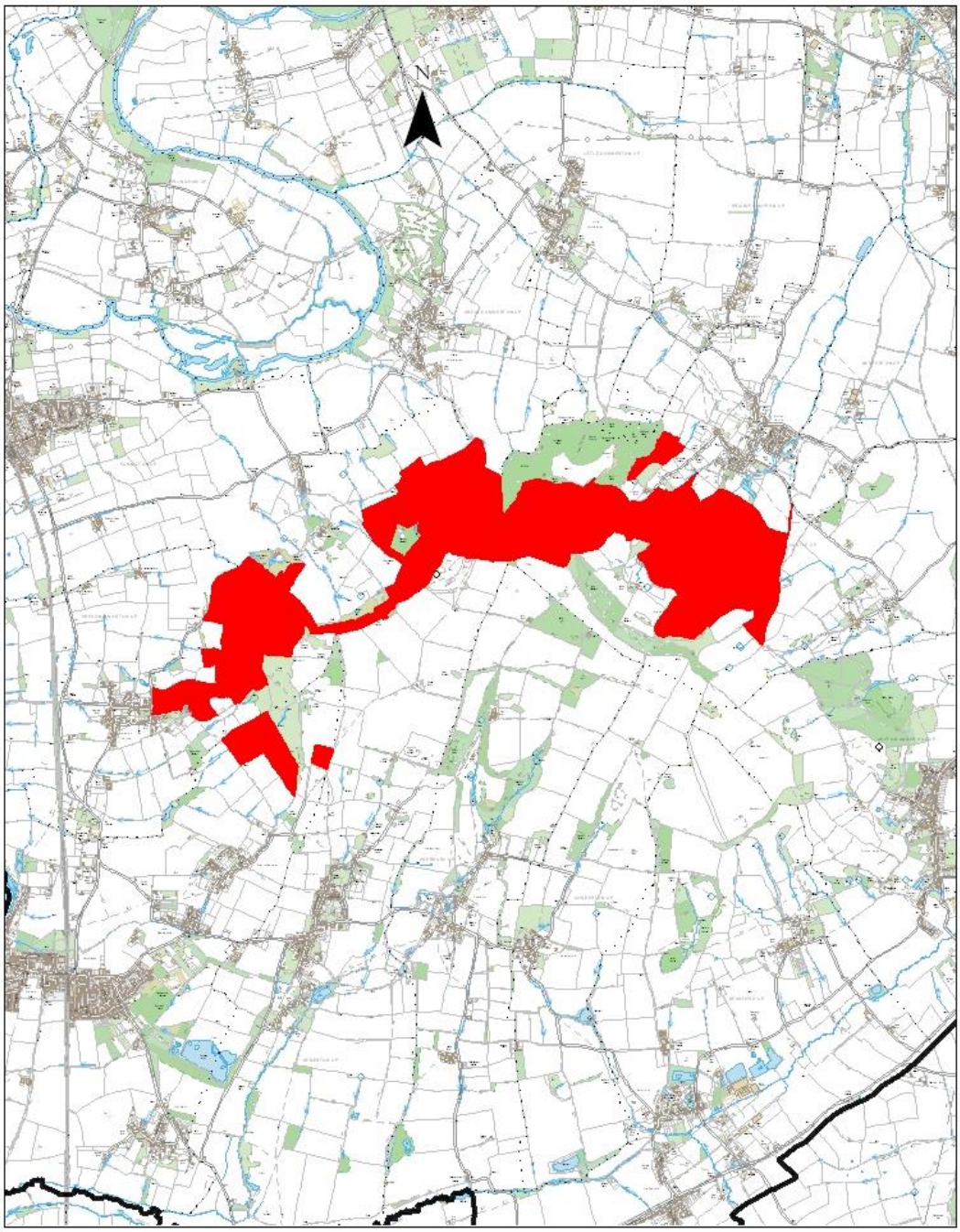


Figure 1: Showing overview of Worcestershire and surrounding Natura2000 sites identified within this report. SACs marked in red, SPAs marked in purple, 15km County boundary marked in yellow. Detailed plans below.



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Worcester
WR5 2NP

0 0.15 0.3 0.6 0.9 1.2 1.5
Kilometers

Figure 2: Bredon Hill SAC

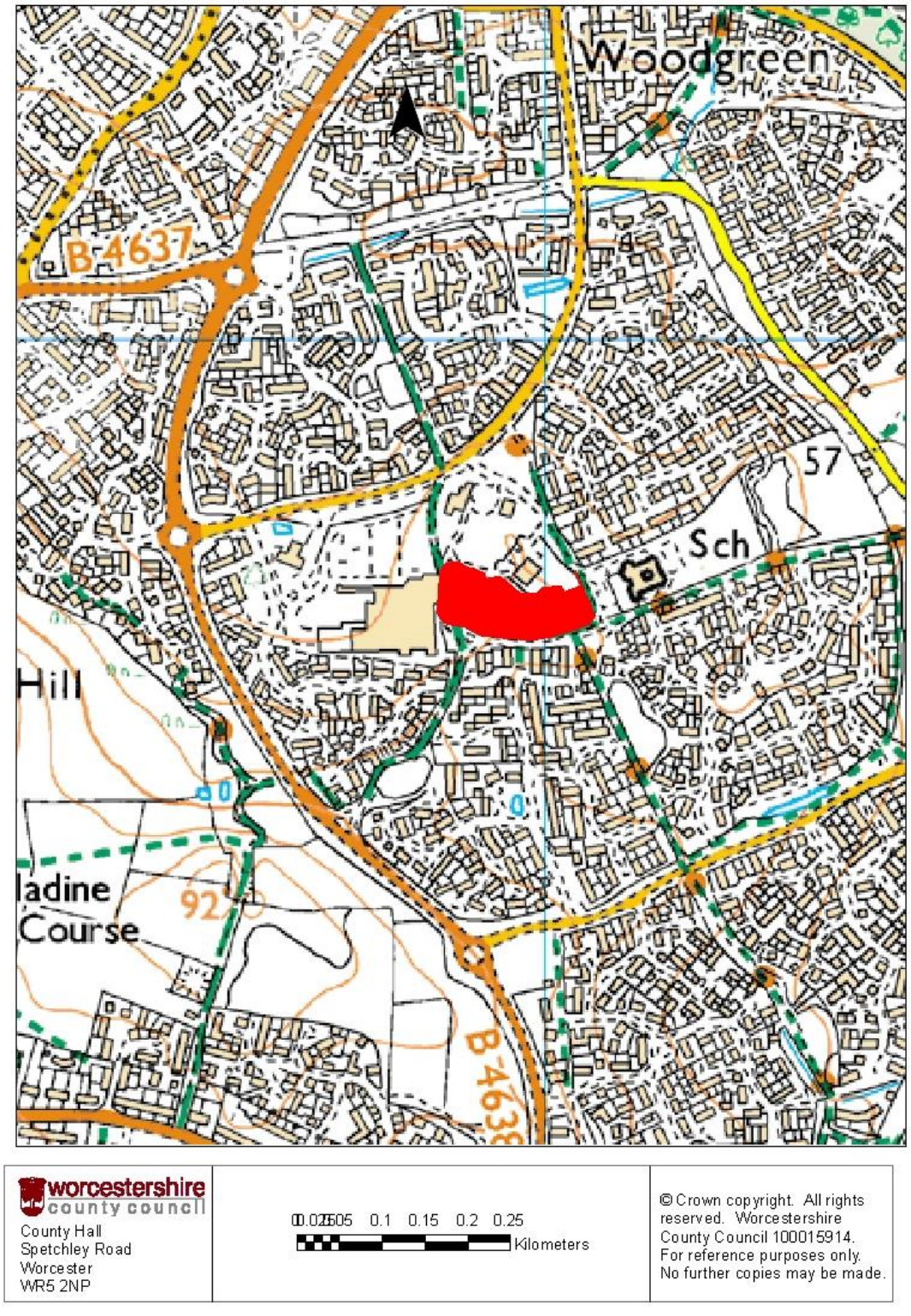


Figure 3: Lyppard Grange Ponds SAC

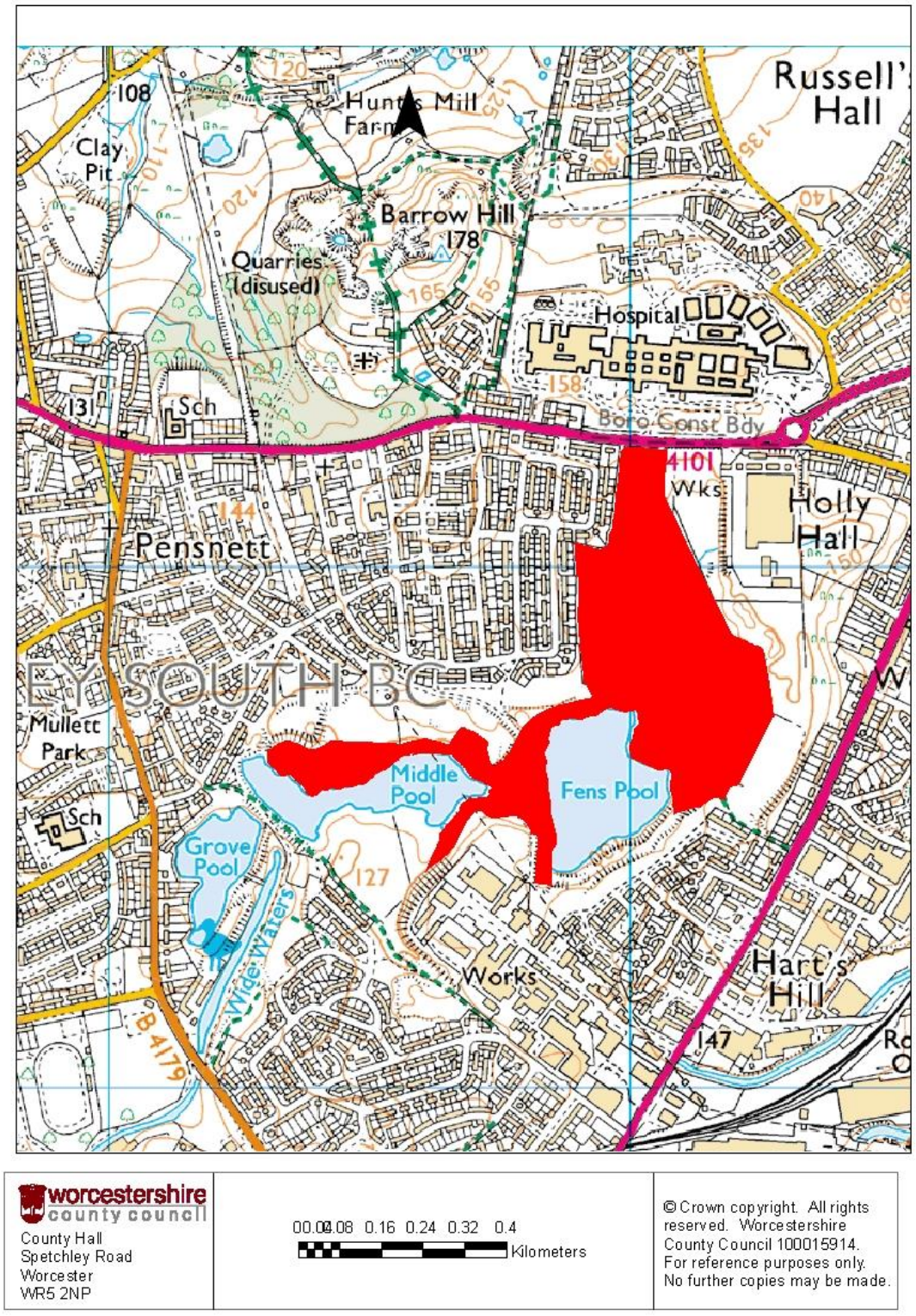
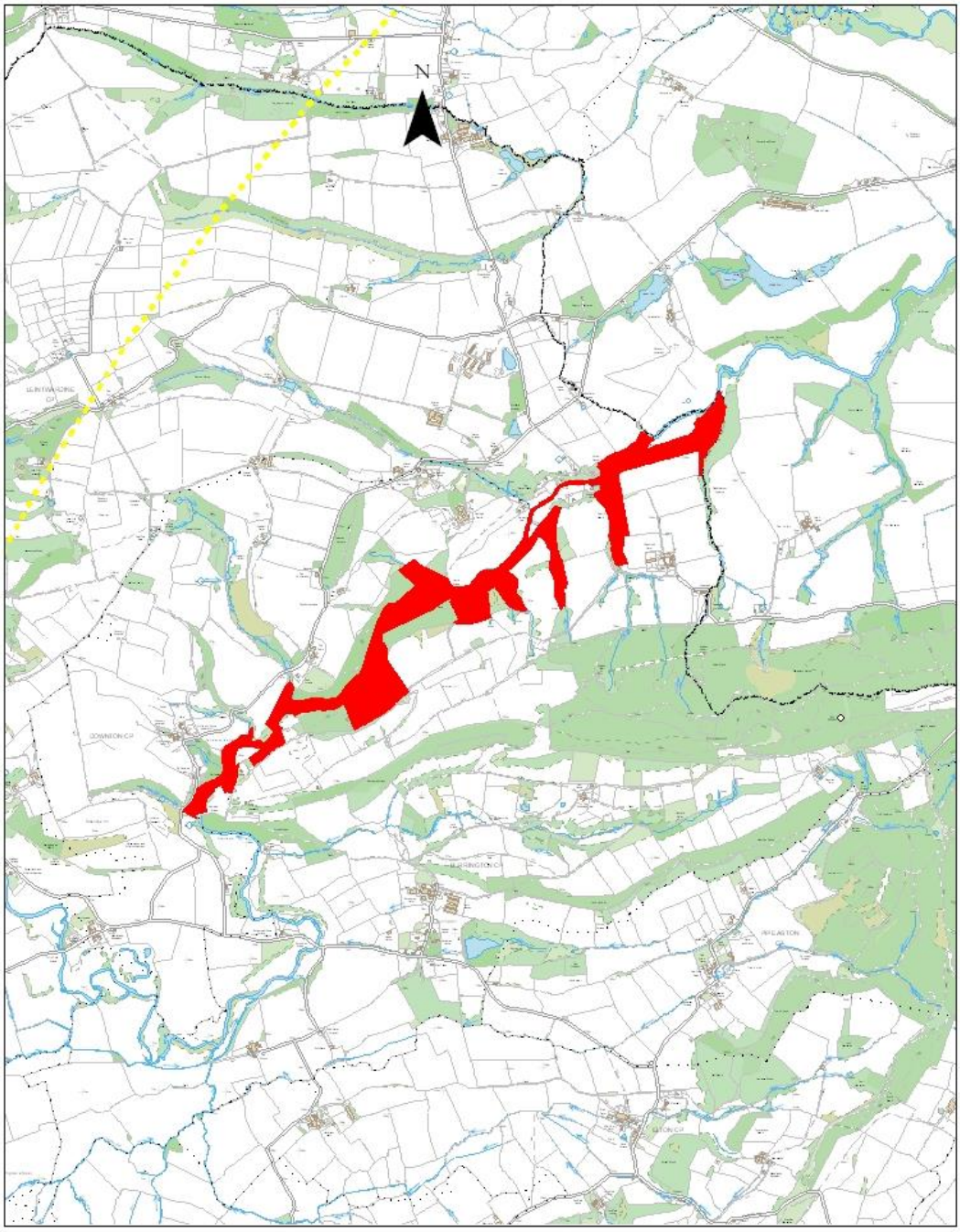


Figure 4: Fen Pools SAC



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WR5 2NP

0 0.15 0.3 0.6 0.9 1.2 1.5
Kilometers

Figure 5: Downton Gorge SAC

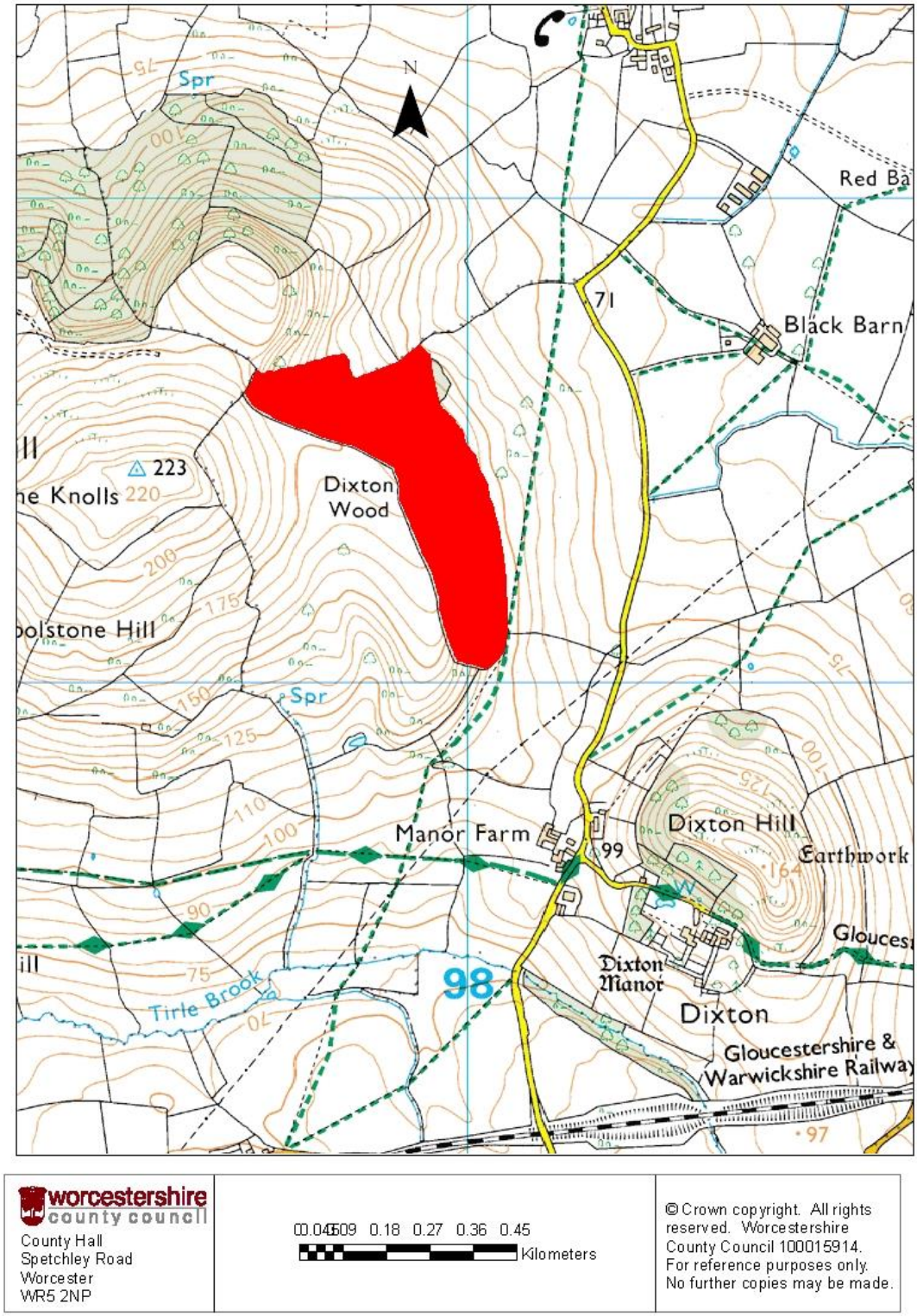

Figure 6: Dixton Woods SAC

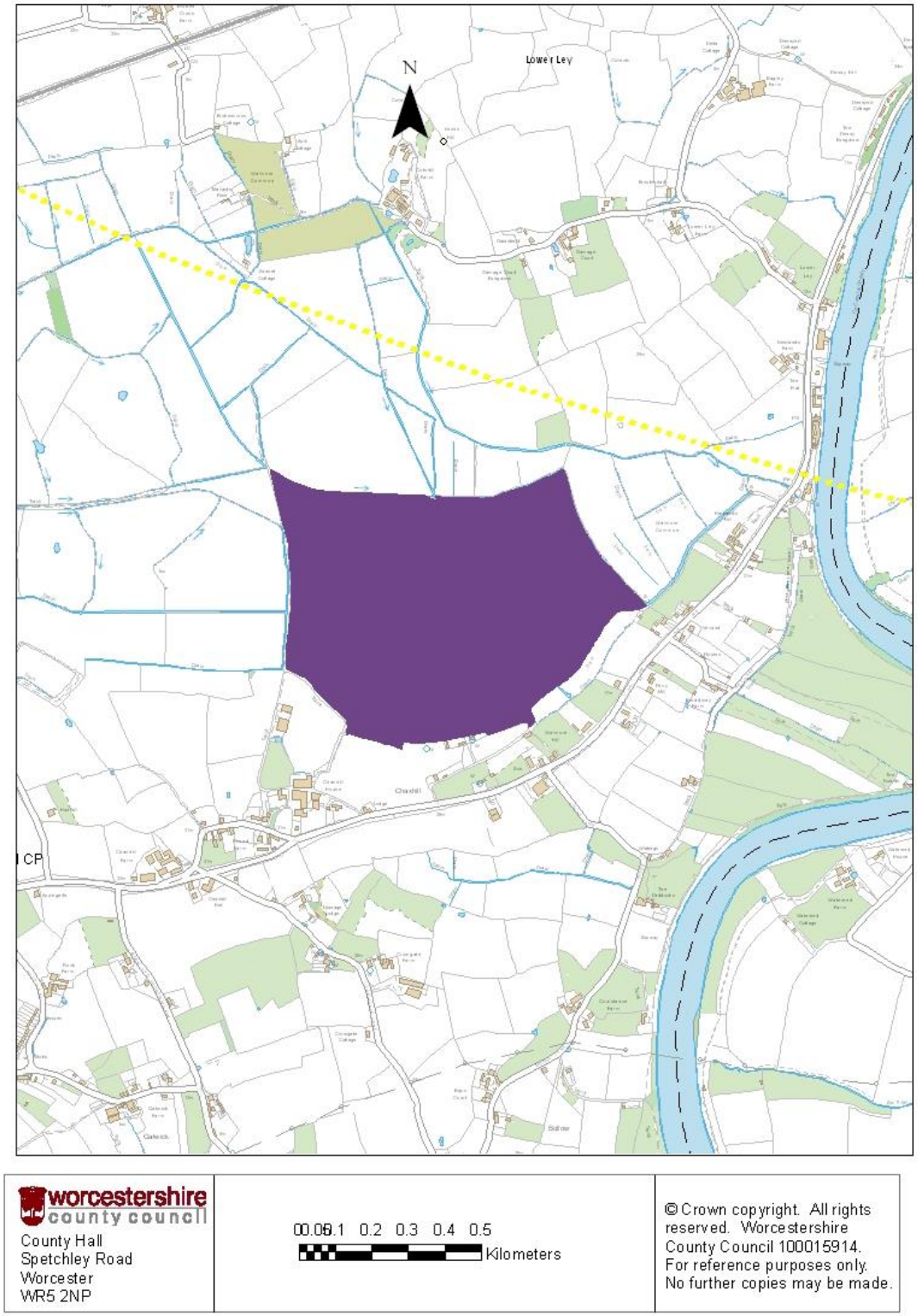

Figure 7: Walmore Common SPA

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0 0.5 1 2 3 4 5
Kilometers

Figure 8: River Wye SAC

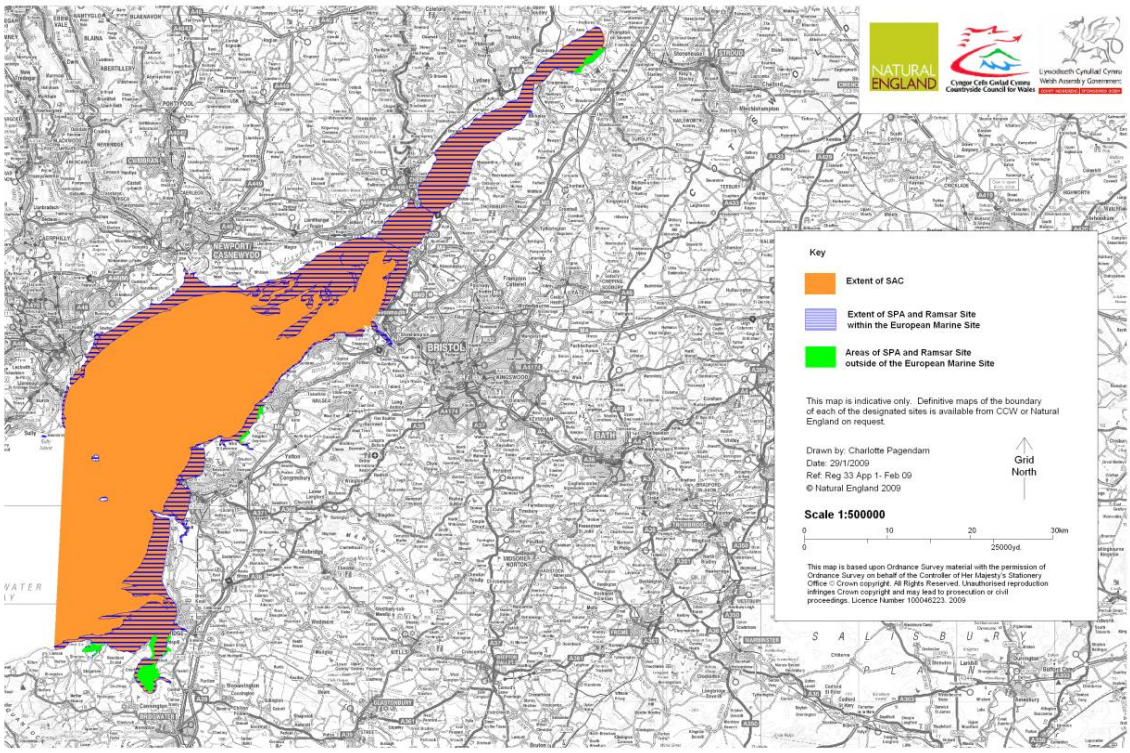

Figure 9: Severn Estuary SAC, SPA & RAMSAR.

Appendix 2. Showing Strategic Corridors for Mineral Extraction

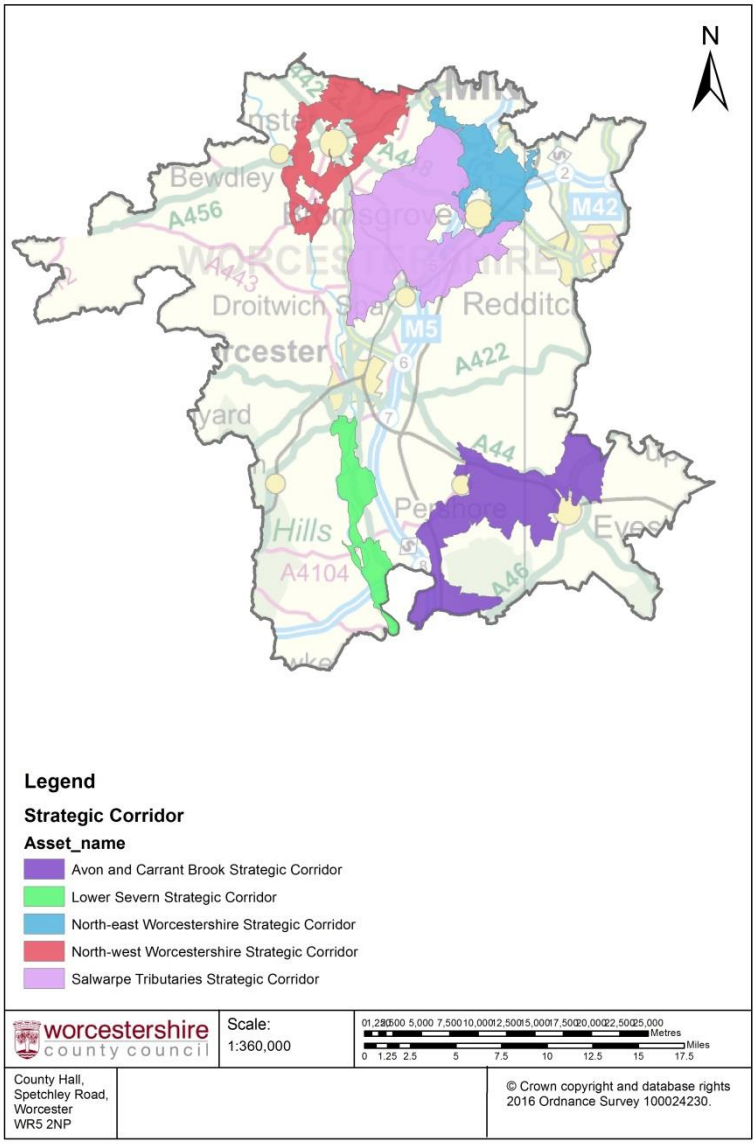

Figure 10: Showing Strategic Corridors for mineral extraction within the County as defined in the Third Consultation document for the Minerals local Plan. This plan omits the deleted Bredon Hills and Malvern Hills Strategic Corridors which are shown in Figures 16 and 17 below.

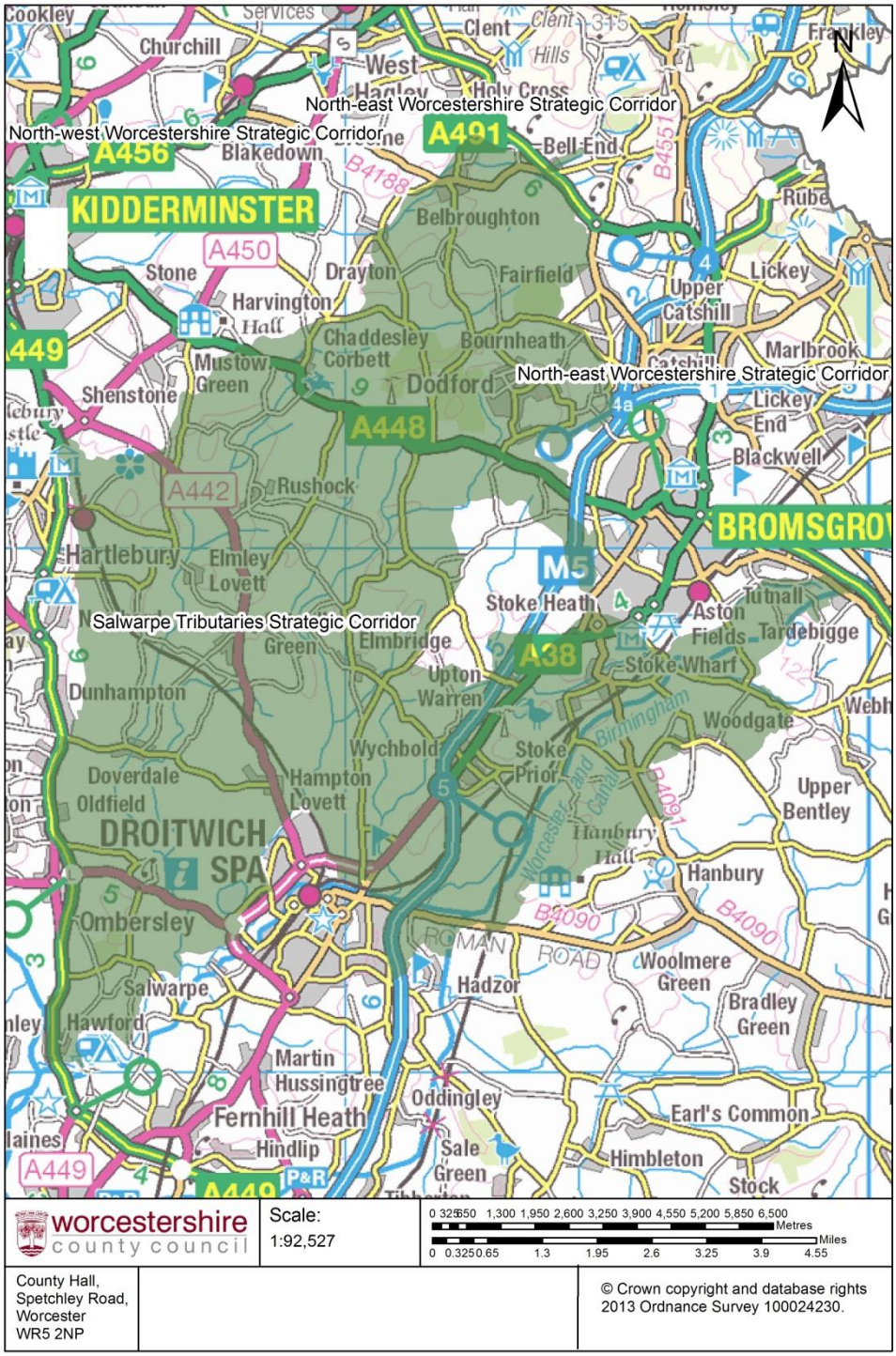

Figure 11 – The Salwarpe Tributaries Strategic Corridor.

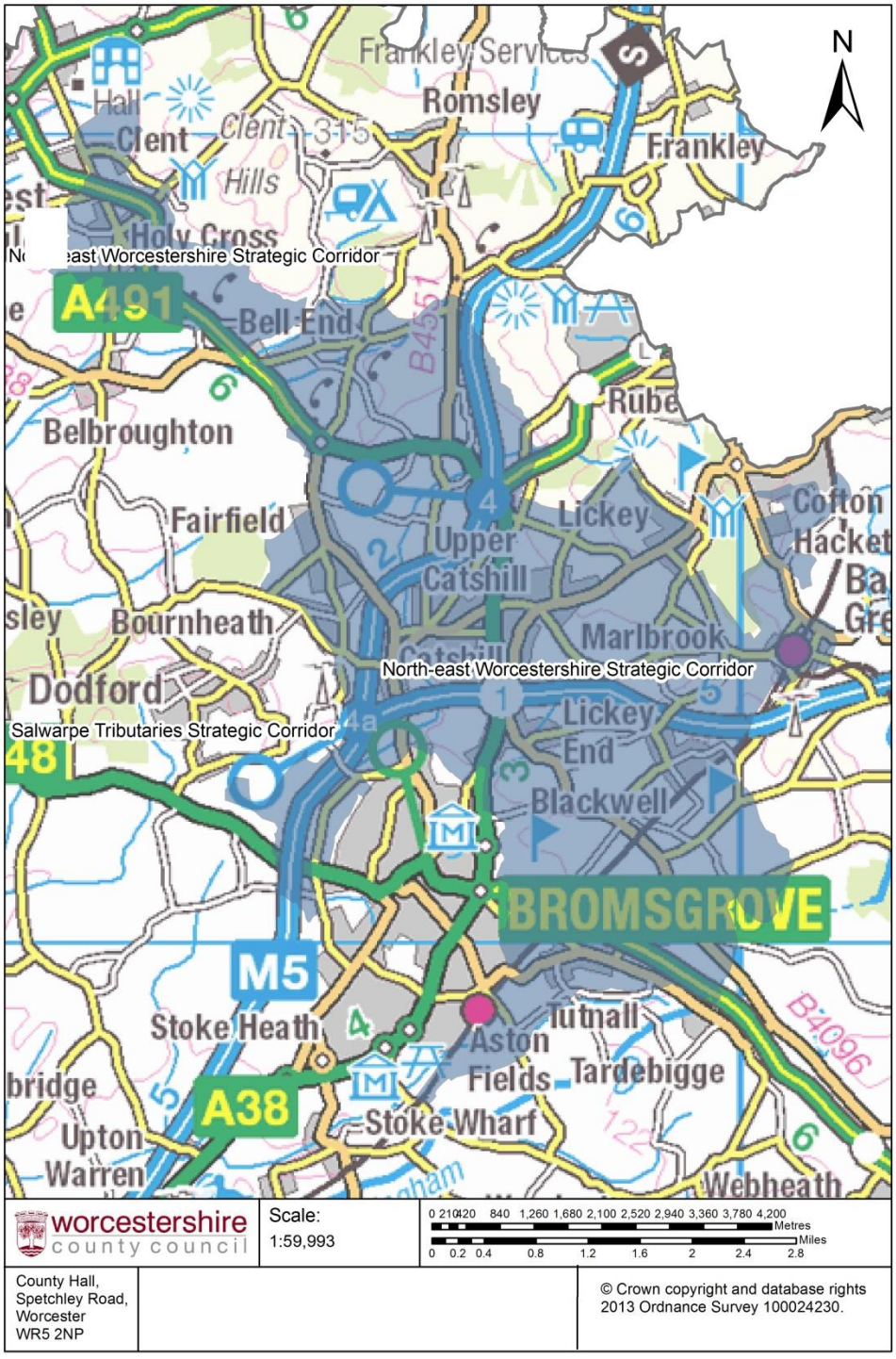

Figure 12 – The North East Strategic Corridor

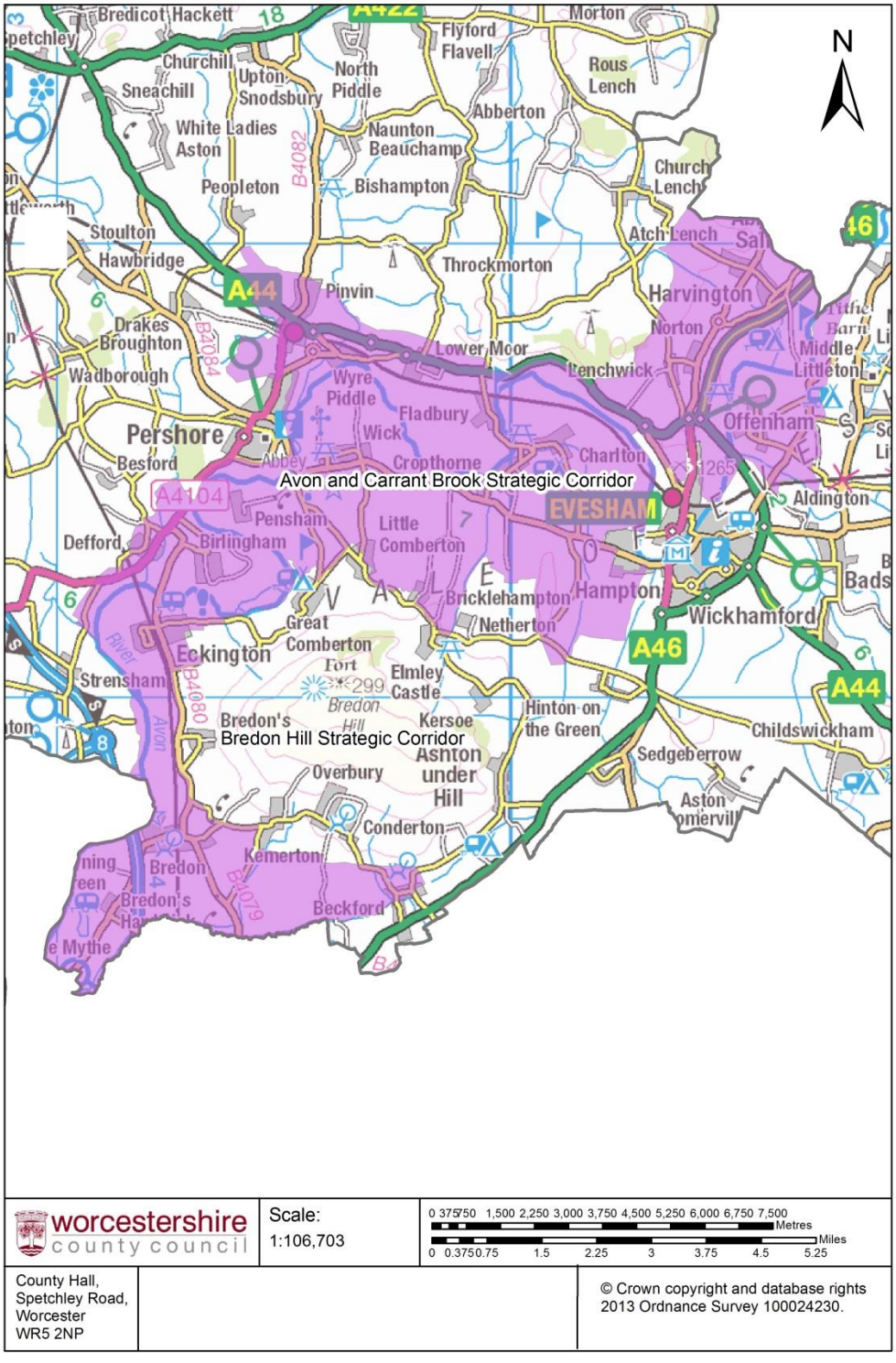

Figure 13 – The Avon and Carrant Brook Strategic Corridor

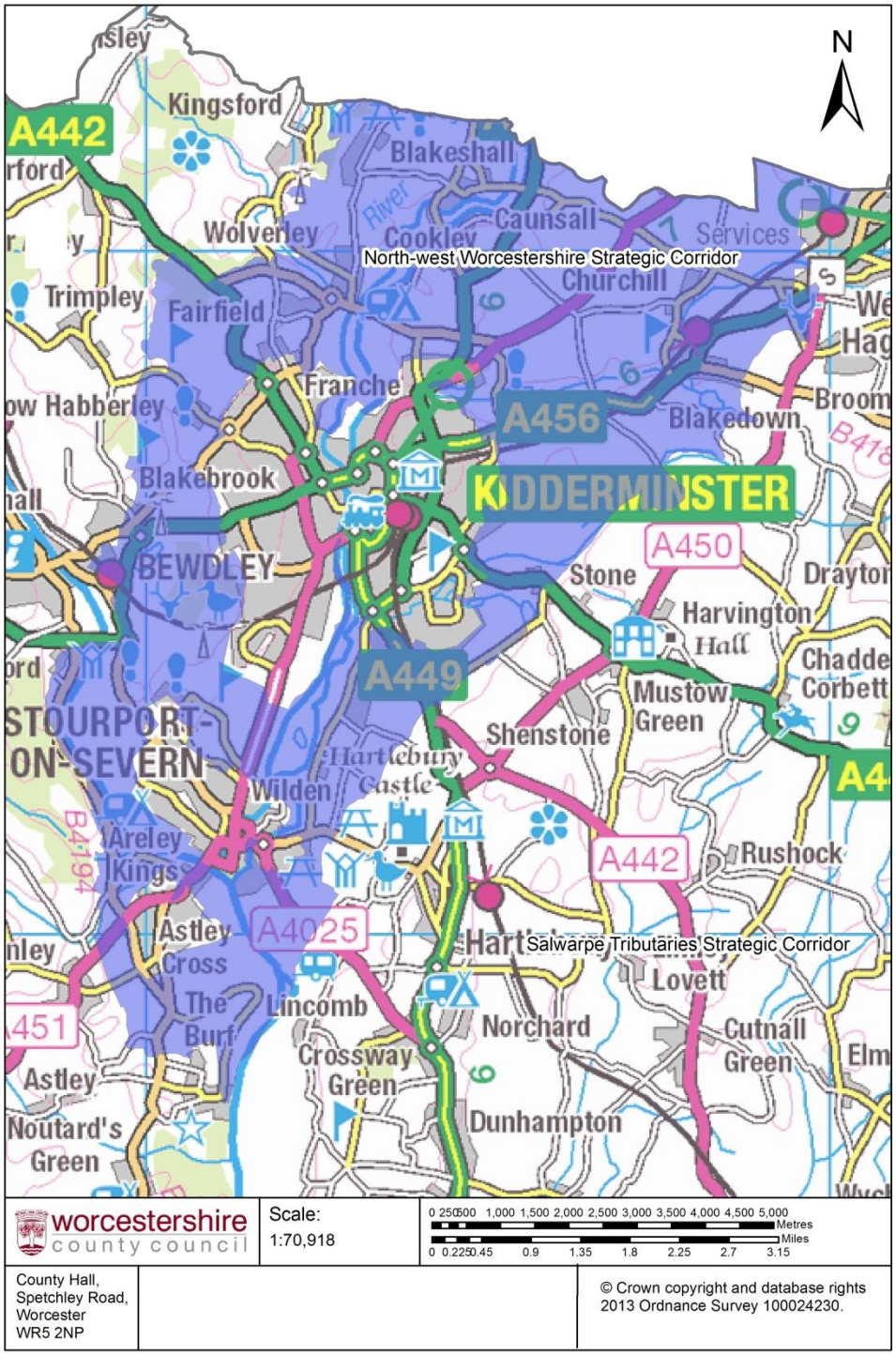

Figure 14 – The North West Strategic Corridor

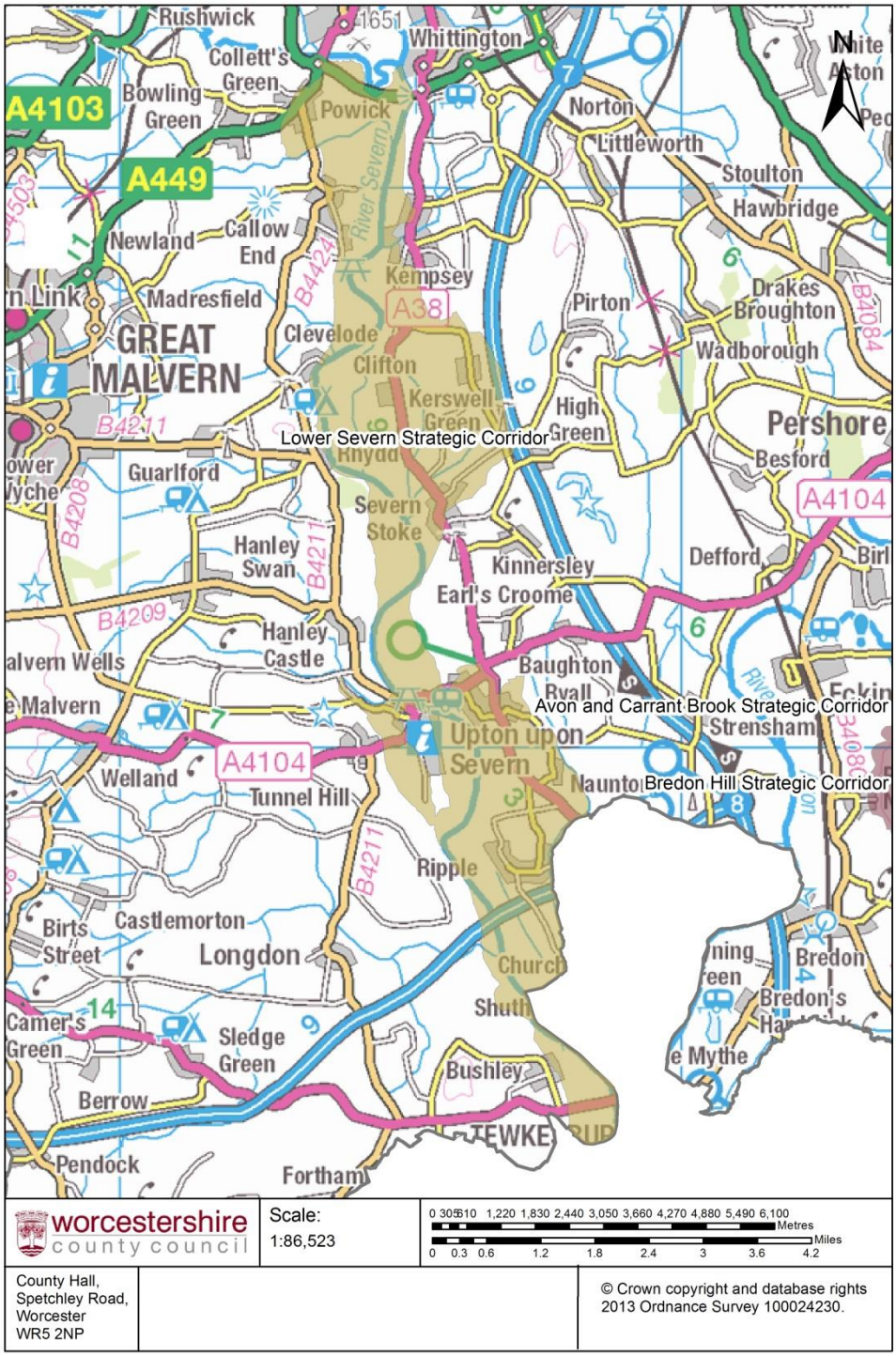

Figure 15 – The Lower Severn Strategic Corridor

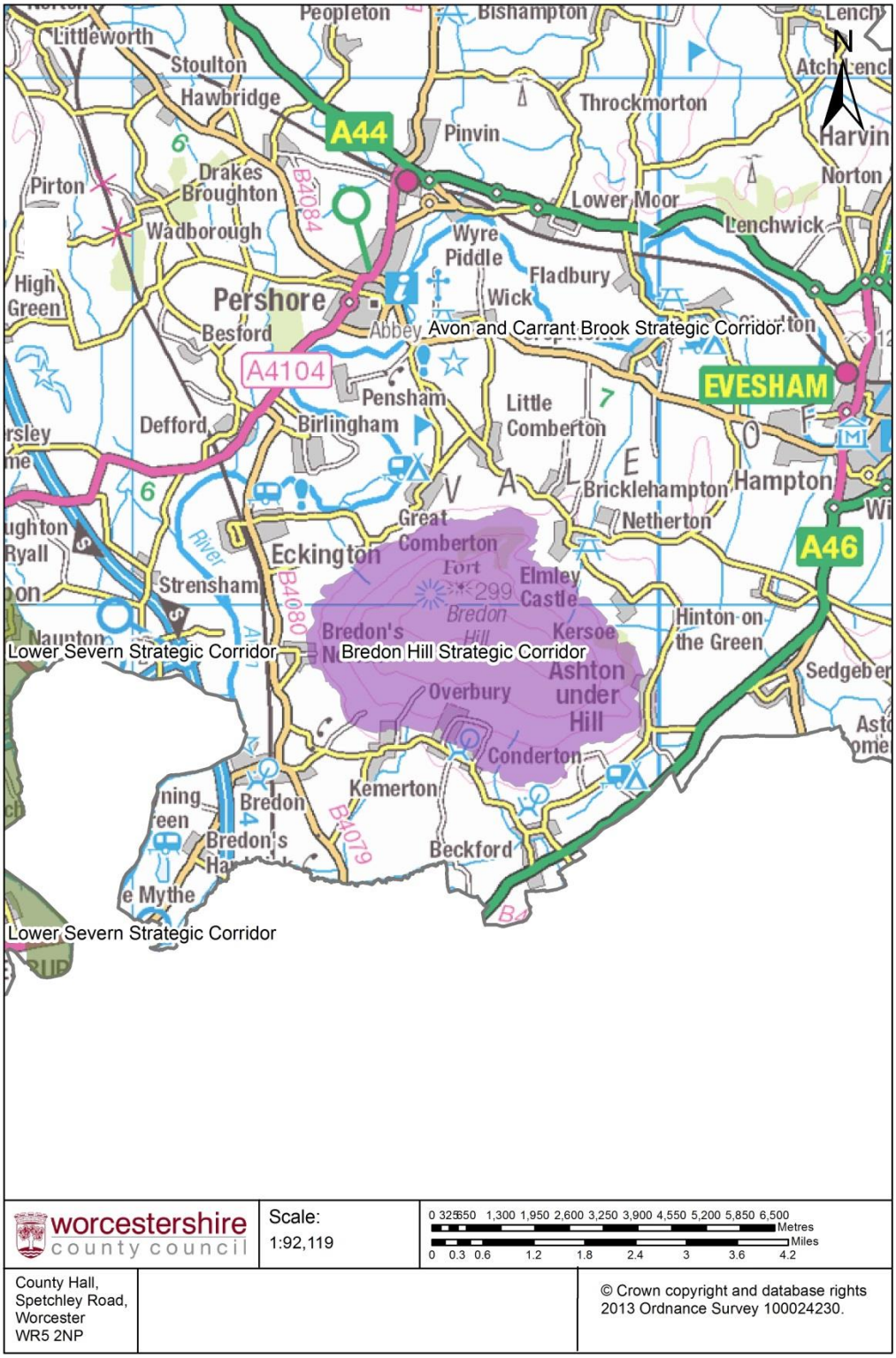

Figure 16 - Showing the deleted Bredon Hill Corridor (removed during the development of the Third Consultation Minerals Local Plan document).

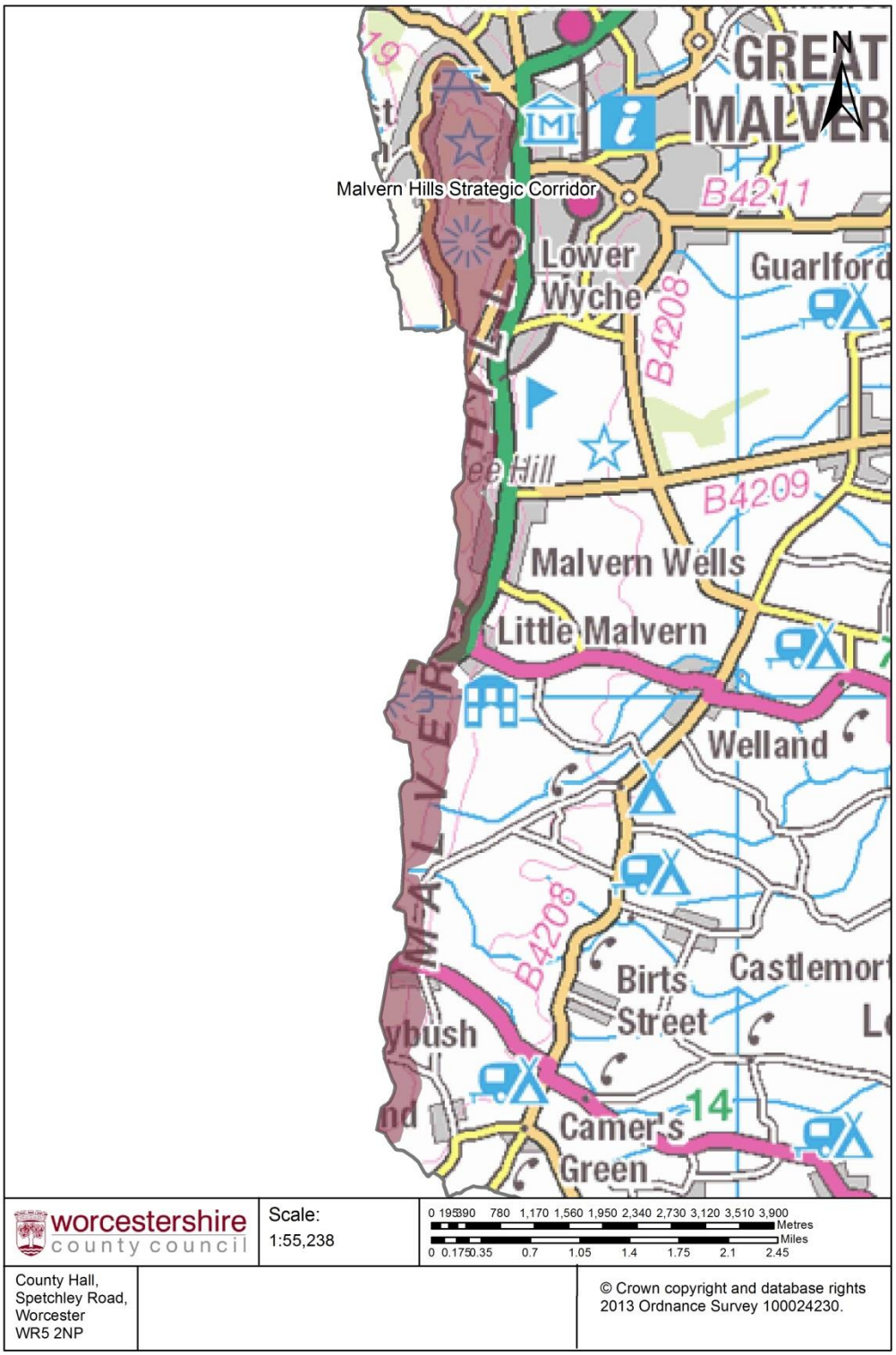

Figure 17 – Showing the deleted Malvern Hills Corridor (removed during the development of the Third Consultation Minerals Local Plan document).

Appendix 3. Natura2000 sites with illustrative proximity buffers

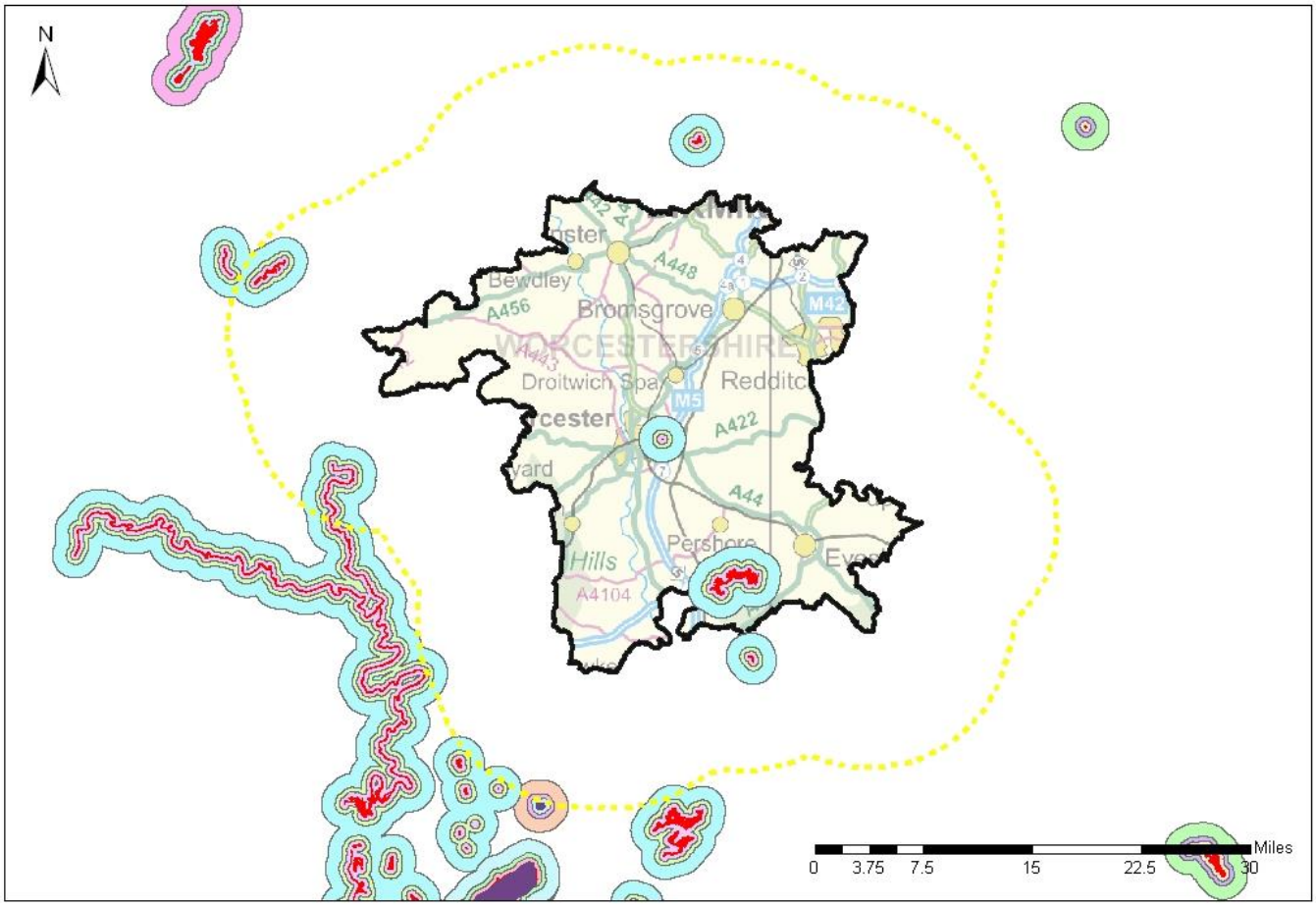

Figure 118: Showing Natura2000 site overview with 500, 1000 and 2500 meter proximity buffers highlighted.

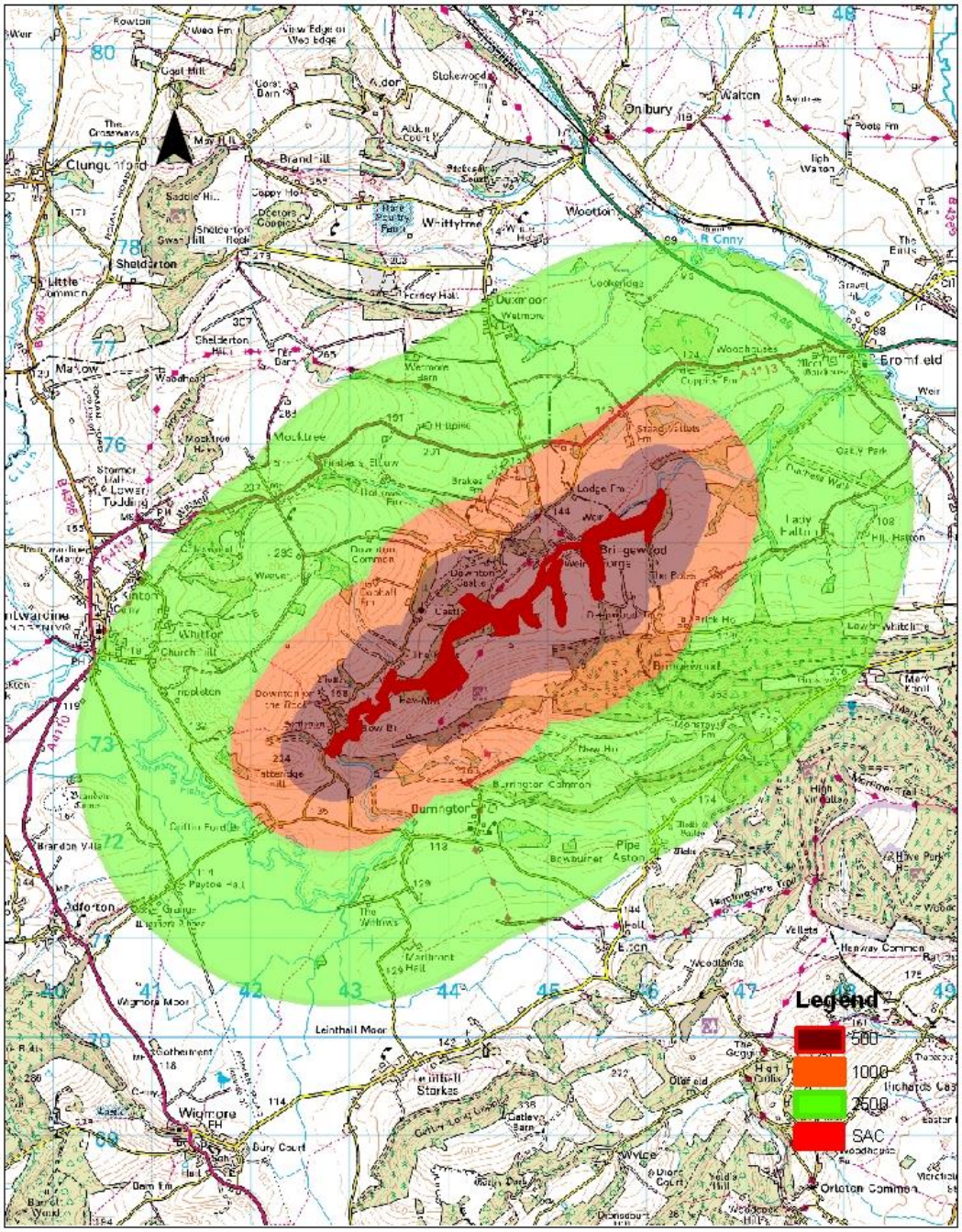

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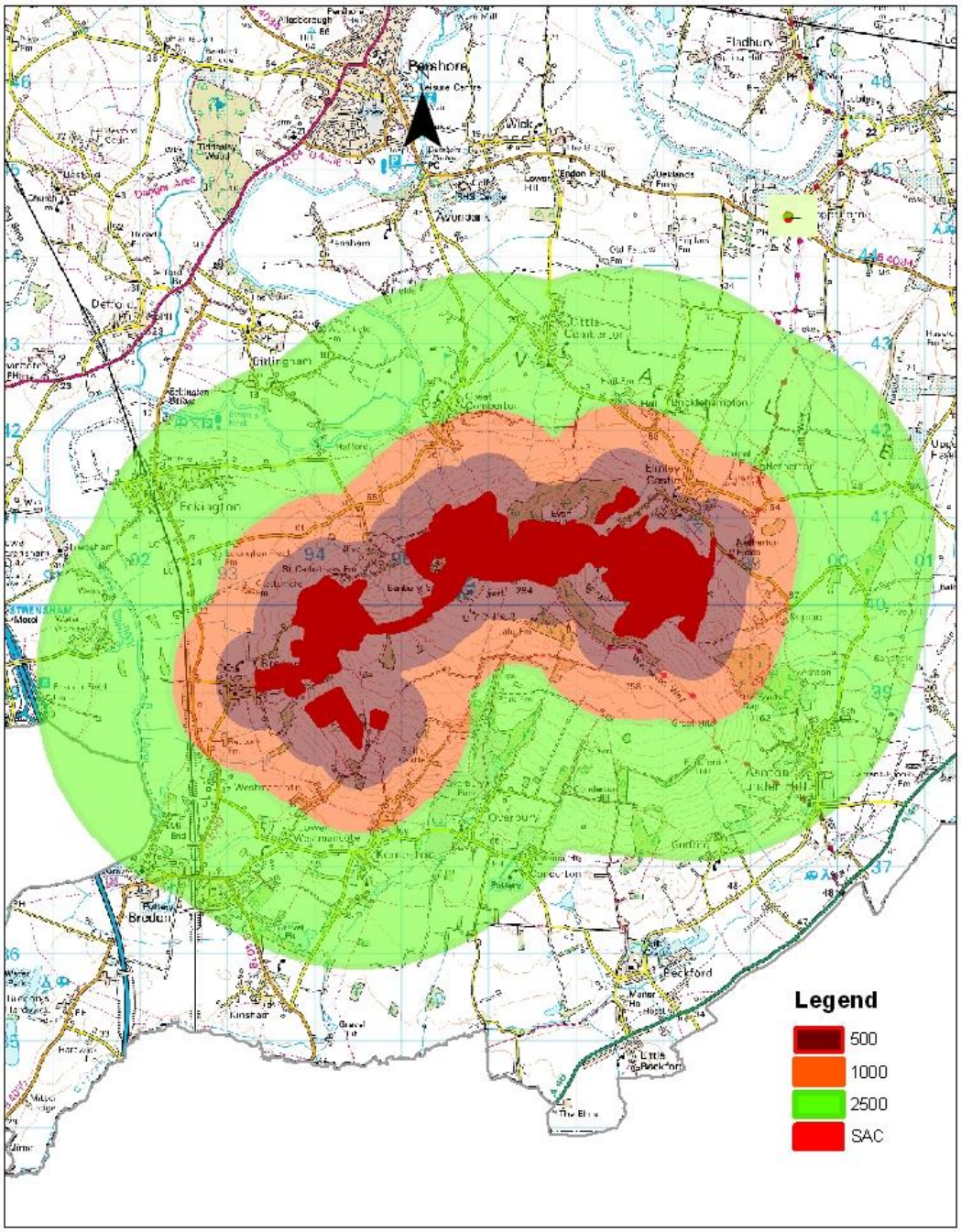
Figure 19: Downton Gorge SAC – showing site boundaries and proximity buffers.



worcestershire county council
County Hall
Spetchley Road
Worcester
WR5 2NP

0 0.25 0.5 1 1.5 2 2.5
Kilometers

Figure 20: Bredon Hill SAC – showing site boundaries and proximity buffers.

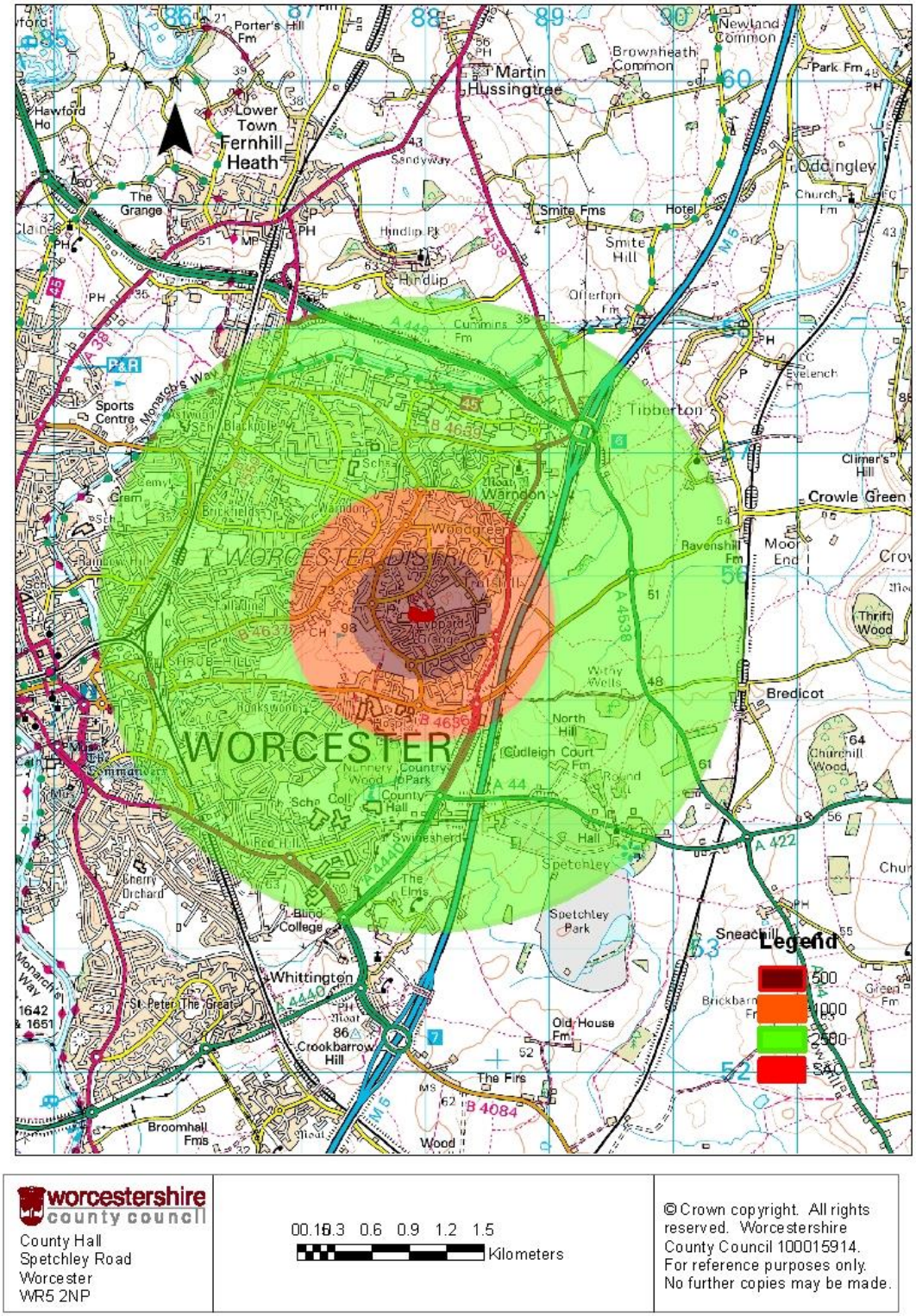


Figure 21: Lyppard Grange Ponds SAC – showing site boundaries and proximity buffers.

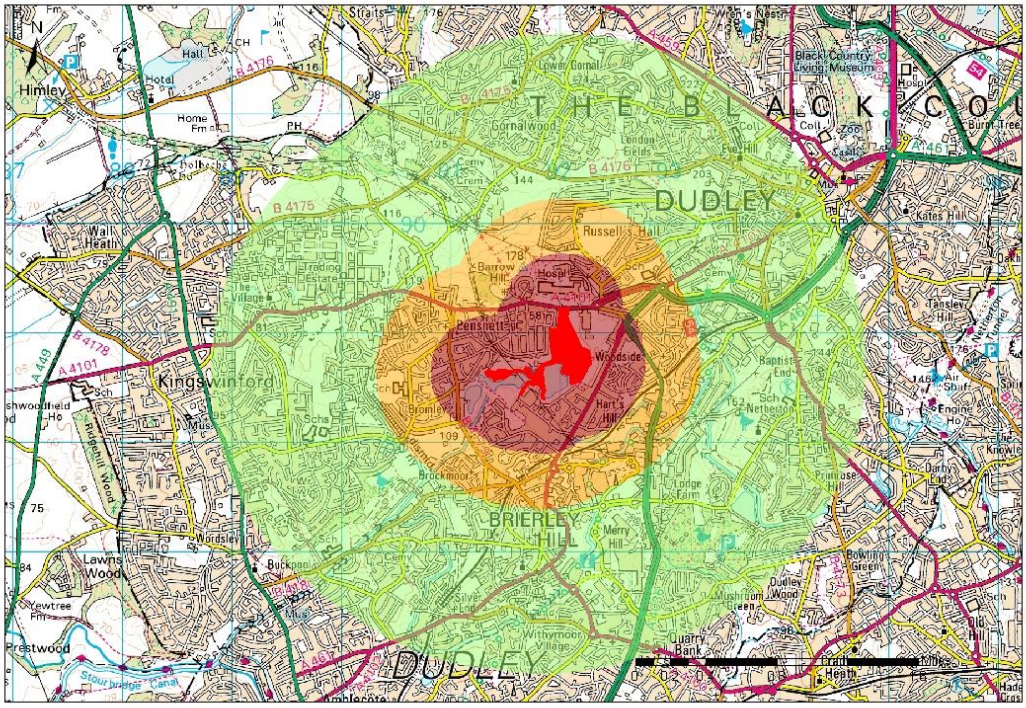


Figure 22: Fen Pools SAC – showing site boundaries and proximity buffers.

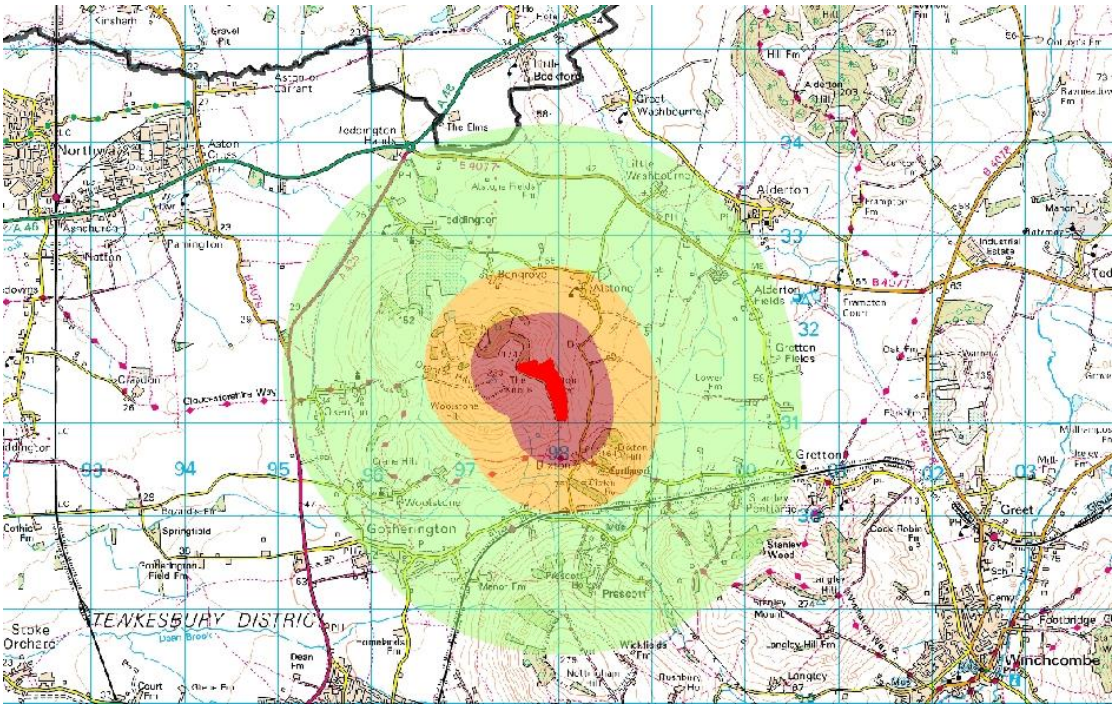


Figure 23: Dixton Woods SAC – showing site boundaries and proximity buffers.

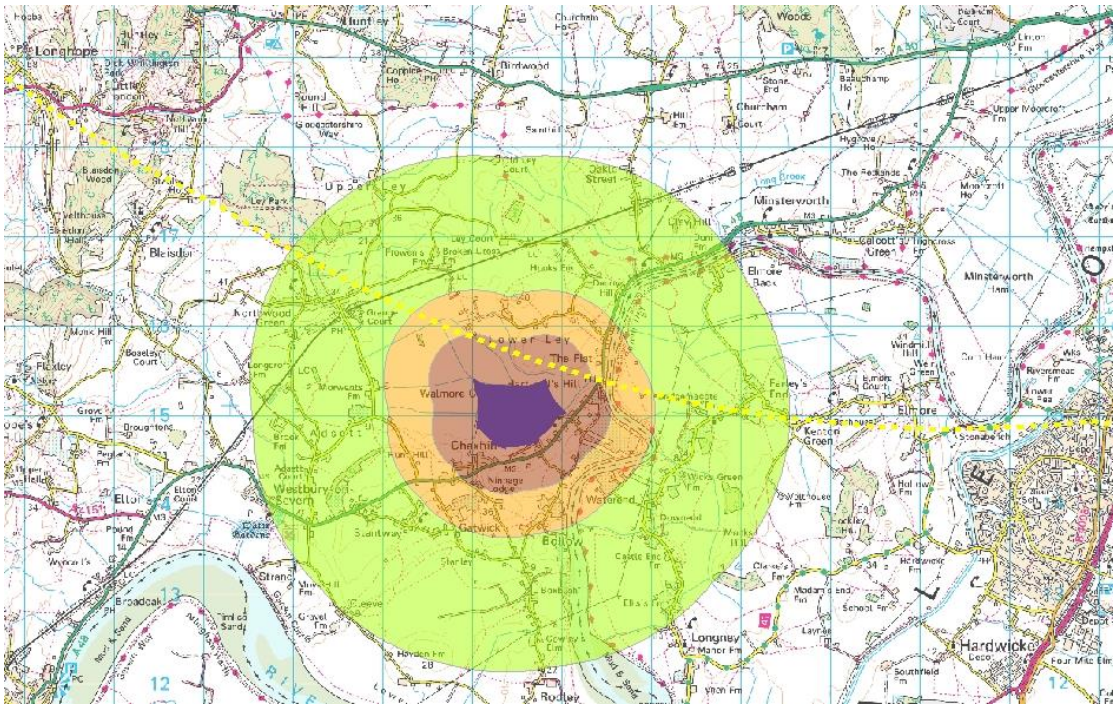


Figure 24: Walmore Common SPA – showing site boundaries and proximity buffers. The 15km Worcestershire county boundary buffer is highlighted in dotted yellow.

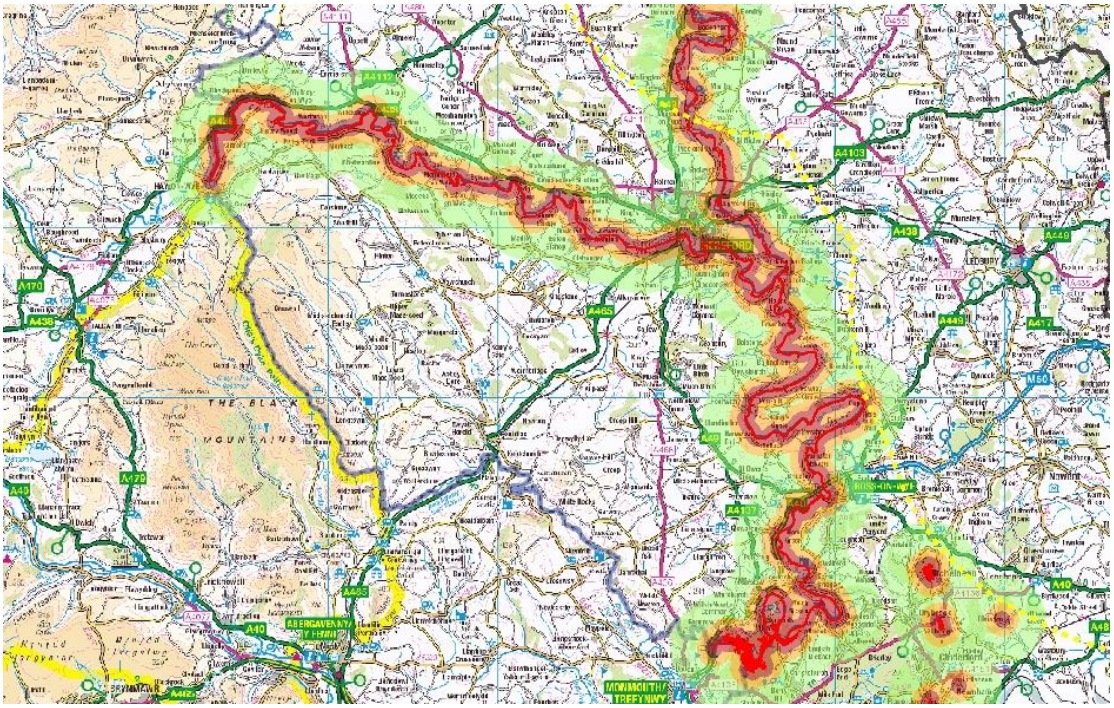


Figure 25: River Wye SAC – showing site boundaries and proximity buffers. 15km Worcestershire county border buffer (Western county border) is shown in dotted yellow, right of frame.

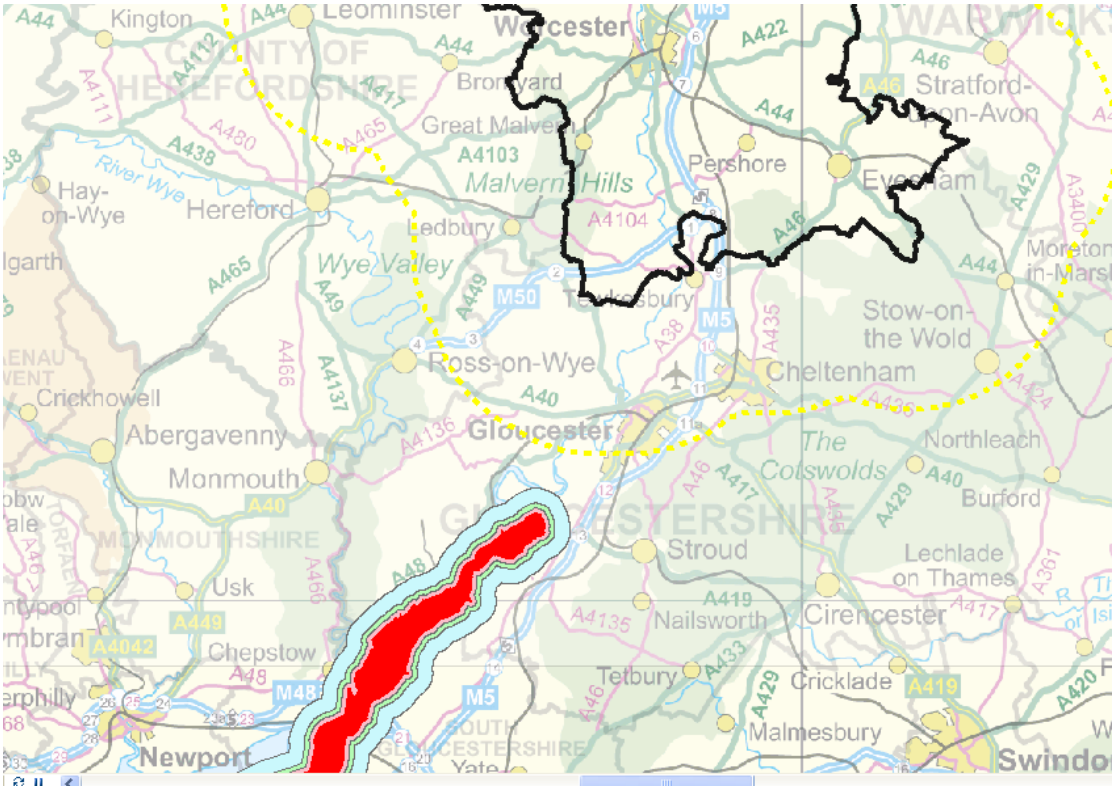


Figure 26: Plan showing upper reaches of the Severn Estuary SAC/SPA/RAMSAR and relationship with Worcestershire's county border. A 15km buffer around Worcestershire's county border is highlighted in yellow. Proximity buffers of 500, 1000 and 2500m around the Severn Estuary designated site boundary are highlighted.

Appendix 4. Showing Natura2000 sites within Worcestershire and their interaction with the most proximate Strategic Corridors.

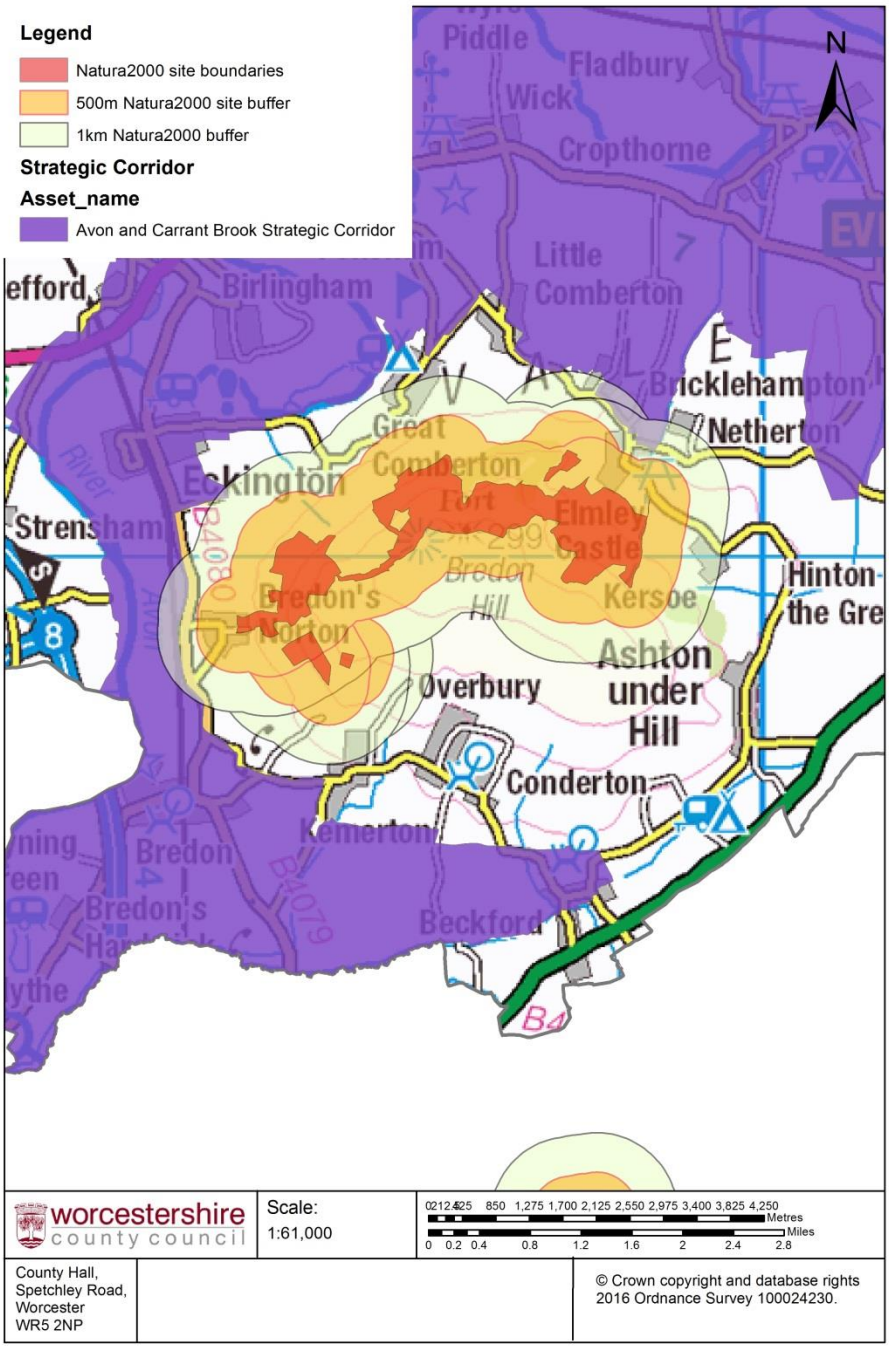


Figure 27a: Showing Bredon Hill and Dixton Wood SACs with pertinent 0.5, 1 & 2.5km proximity buffers so as to illustrate the interface with nearby Avon and Carrant Brook Strategic Corridor.

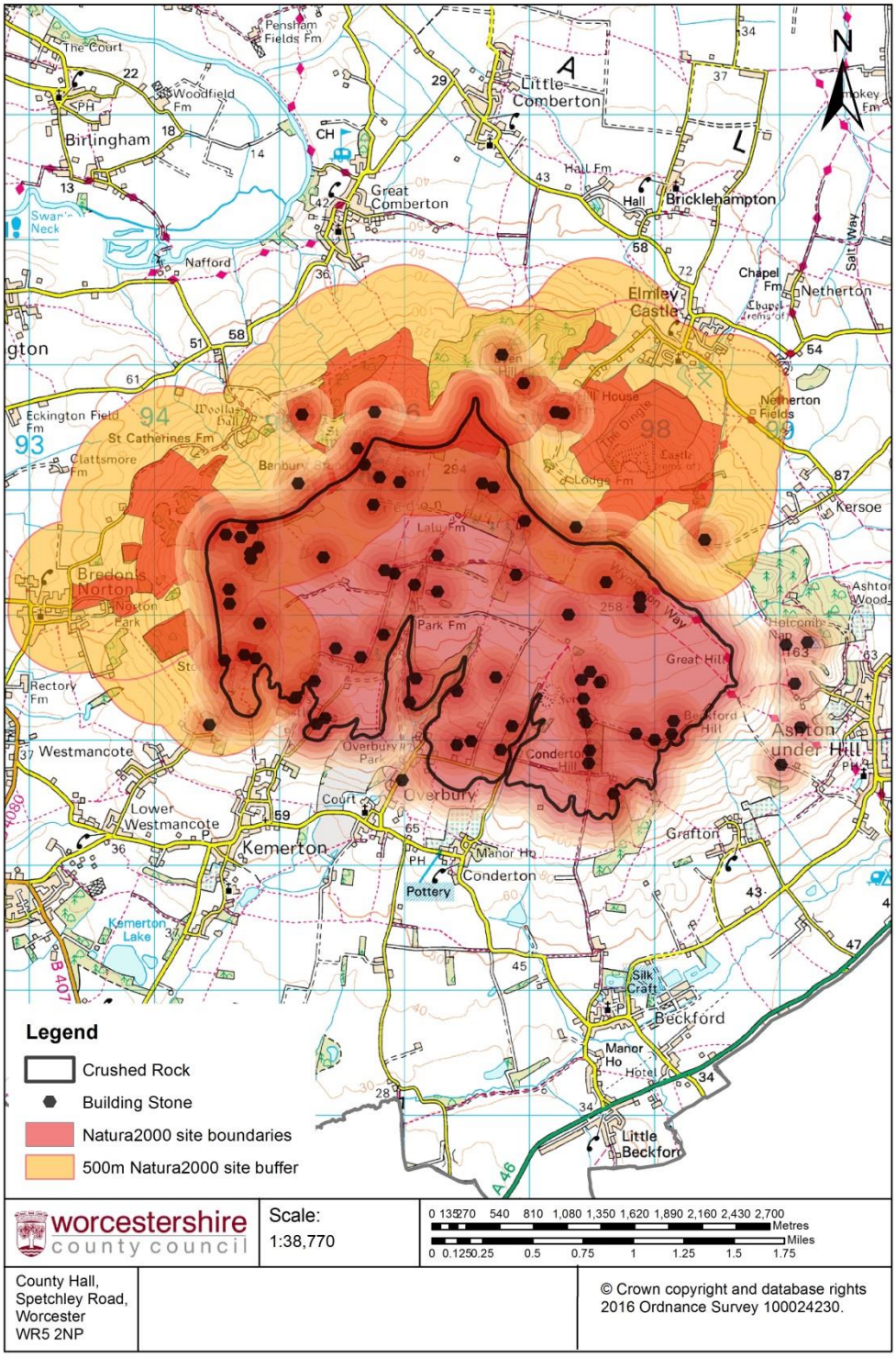


Figure 27b: Showing Bredon Hill SAC and the overlaying Mineral Resource Safeguarding Area illustrating the solid and crushed rock mineral resources to be protected from sterilisation by non-mineral development within the SAC borders. The black point-data indicate recorded historic evidence of solid rock extraction as provided by Earth Heritage Trust.

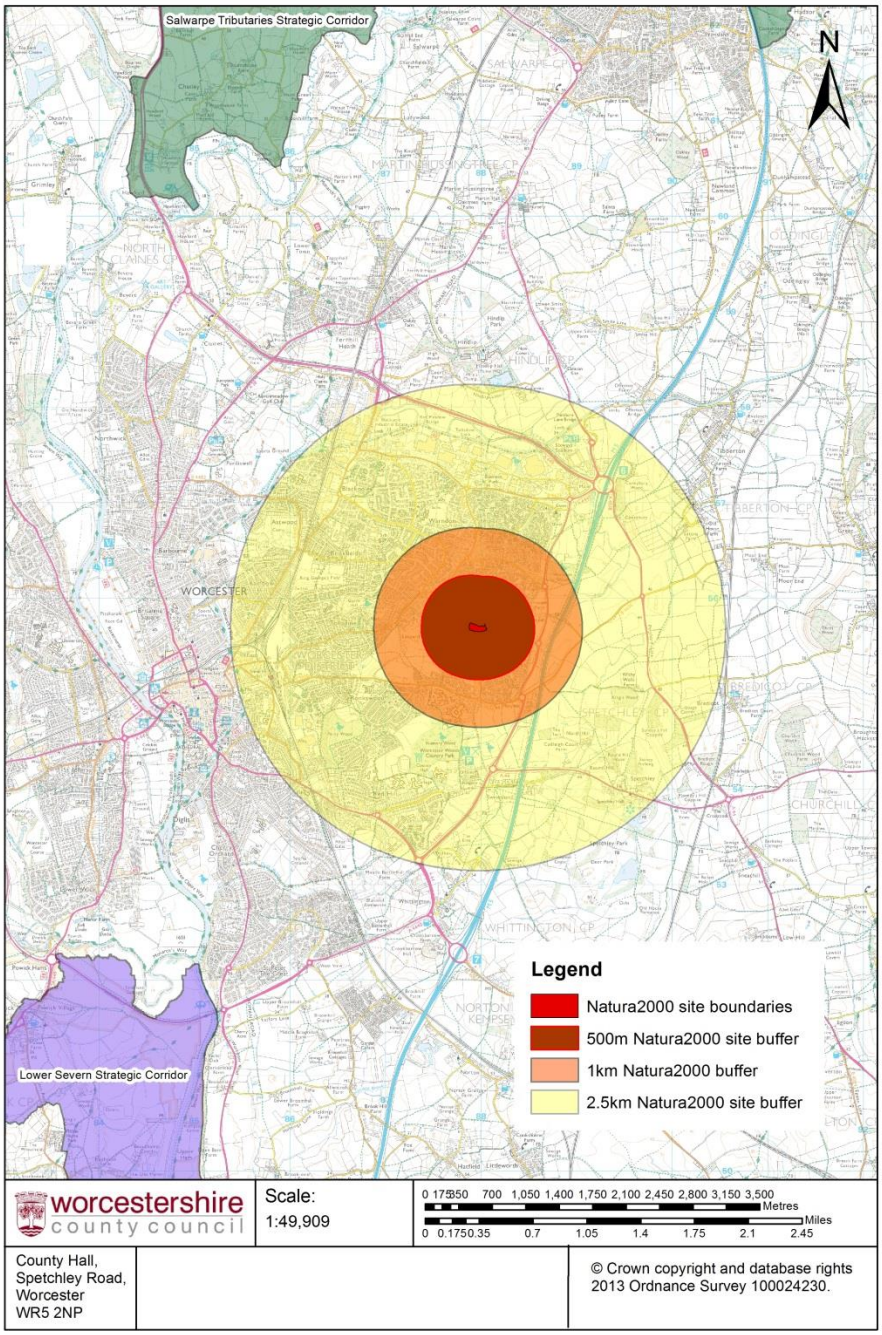


Figure 28: Showing Lyppard Grange Ponds SAC and proximity buffers indicating significant terrestrial isolation from nearest Strategic Corridors .

Appendix 5. Natural England Comments on the HRA Screening Assessment of the Second Stage Minerals Local Plan Consultation, 2013.

Comment	**Response**
Natural England does not support the application of a 15km buffer *alone* to rule European sites in/out of consideration within the HRA. Whilst buffers can be a useful starting point, it should be recognised that impacts can occur over this distance. We therefore welcome the decision to scope in Walmore Common SPA/Ramsar site and the Severn Estuary SAC/SPA/Ramsar site.	Noted.
For your information, Natural England is mid-way through a project to make finalised Conservation Objectives for all European sites available online. This is a phased process, with the first phase providing broad Conservation Objectives only and the second phase adding further site specific detail. At the present time, the Conservation Objectives provide broad information only. We recognise that these Conservation Objectives will be of limited use to Local Authorities completing their Habitats Regulations Assessment's. Therefore in the meantime we recommend referring to the SSSI Favourable Condition Table's to provide an additional level of detail required to inform the scope and nature of the HRA process. Care should be taken to ensure the correct referencing of both the Conservation Objectives and the Favourable Condition Tables within the HRA report. The Conservation Objectives are available on our website here (as already noted in your report). [http://publications.naturalengland.org.uk/category/5134123047845888] SSSI FCT's are available here. [https://designatedsites.naturalengland.org.uk/] We welcome the through consideration of site sensitivities and likely impact pathways.	Noted. Where available at time of preparation, SAC Supplemental Advice Documents have been referenced within this report.
Soil compaction should be recognised as an environmental impact, and presumably could occur as a result of the extraction of any of the materials.	Noted Discussed as a potential impact within context of Table 5
The initial HRA has highlighted instances where further HRA may be required at the project stage (e.g. for sites hydrologically linked to	Noted

European sites). We advise that this requirement is written into the MLP.	The MLP requires an appropriate technical assessment of any projects with potential adverse impact to the environment and Policy MLP18 specifies this may include requirement for HRA.

Appendix 6. Template for recording the conclusion of the Habitat Regulations Assessment

Extract from the HRA Handbook 2013

RECORD FOR A PLAN WHICH WOULD NOT BE LIKELY TO HAVE A SIGNIFICANT EFFECT ON ANY EUROPEAN SITE, EITHER ALONE OR IN COMBINATION WITH ANY OTHER PLAN OR PROJECT

Introduction and conclusion of the assessment

The [*enter title of plan*] was considered in light of the assessment requirements of regulation 61 of the Conservation of Habitats and Species Regulations 2010 by [*enter name of plan-making body*] which is the competent authority responsible for adopting the plan and any assessment of it required by the Regulations.

Having carried out a 'screening' assessment of the plan, the competent authority has concluded that the plan would not be likely to have a significant effect on any European site, either alone or in combination with any other plans or projects (in light of the definition of these terms in the 'Waddenzee' ruling of the European Court of Justice Case C –127/02) and an appropriate assessment is not therefore required.

[*Enter name of SNCB*] was consulted on this conclusion and has [*agreed / disagreed*]. Any relevant written responses are appended and referred to below.

Information used for the assessment

A copy of the list used to scan for and select European sites potentially affected by the plan is appended as [*Enter an appropriate reference to a scanning and site selection list based on that given as an example in Figure F.4.4 in the Handbook*]

A summary of the information gathered for the assessment is presented in the Information Required for Assessment table, which is appended as [*Enter an appropriate reference to a table or schedule based on that given as an example in Figure D.1.1 in the Handbook*].

The screening of the plan

A summary of the outcomes of the screening process is given in the screening schedule below (and re-screening schedule where relevant), which is appended as [*Enter appropriate reference to a schedule based on those given as examples in F.6 of the Handbook*]

Mitigation measures

In reaching the conclusion of the assessment the competent authority took the following mitigation measures into account:
[*Enter list which could be based on F.7 of the Handbook, or refer to appended document*]

Assumptions and limitations

The screening conclusion necessarily relies on some assumptions and it was inevitably subject to some limitations. Most of the assumptions and limitations would not affect the conclusion but the following points are recorded in order to ensure that the basis of the assessment is clear.

[Enter list of assumptions and limitations that have the potential to affect the assessment conclusions if circumstances materially change]

References and reports

In reaching the conclusion of the assessment the competent authority took the following documents into account:
[*Enter list of references and / or links to any supporting documentation or reports with dates as appropriate*]

Further supplementary information [*is not required / is appended*]

Dated: [*enter a date*]

Copy sent to [*select appropriate body*] on [*enter a date*]