

**SOLIHULL METROPOLITAN BOROUGH
LOCAL PLAN REVIEW**

**UPDATED HABITAT REGULATIONS
ASSESSMENT
STAGE 1: SCREENING**

A Report to: Solihull Metropolitan Borough Council

Report No: RT-MME-152313 Rev B

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

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The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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NON-TECHNICAL SUMMARY

In March 2020, Solihull Metropolitan Borough Council instructed Middlemarch Environmental Ltd to undertake an updated Habitats Regulations Assessment (Stage 1 Screening) as part of the evidence base for the Submission Draft of the Solihull Local Plan Review. Middlemarch Environmental Ltd previously completed a Screening Assessment of the Draft Solihull Metropolitan Borough Council Local Plan Review, in April 2018. This update to the previous Habitats Regulations Assessment takes account of all the changes to the policies and proposals within the Submission Draft of the Local Plan Review which have occurred since April 2018.

The purpose of this Habitats Regulations Assessment (Stage 1 Screening) is to consider whether the proposals and policies detailed in the Local Plan Review could adversely affect a Natura 2000 site, either individually or in combination with other plans and projects, and to determine subsequently if Stage 2 of the Habitats Regulation Assessment process (Appropriate Assessment) is required as per Article 6 of the European Council Directive 92/43/EEC, transcribed into English law under regulation 63 & 64 of the Conservation of Habitats and Species Regulations (2017).

Solihull Metropolitan Borough Council commenced work on the Solihull Local Plan Review in 2015 to establish an up-to-date planning framework for the future growth of the Borough. The Local Plan Review was originally intended to consider the 2014-2033 period but this has since been amended to 2020 to 2036. Consultations on the Scope, Issues and Options document and the Draft Local Plan Review were carried out and completed in 2015 in parallel with a 'call for sites' invitation. Consultation on the Draft Local Plan Review commenced in 2016 and concluded in 2017 with a supplementary consultation on the Draft Local Plan Review commencing and concluding in 2019. Further consultation on the Submission Draft of the Local Plan Review is planned for Summer 2020, after which it is intended that the finalised version of the Local Plan Review would be submitted to the Secretary of State, prior to the end of 2020.

The Submission Draft of the Solihull Local Plan Review updates the existing Solihull Local Plan which was adopted by Solihull Metropolitan Borough Council in December 2013. It includes ten chapters outlining the future vision for the borough, its spatial strategy and 28 policies and sub-policies designed to achieve sustainable growth and to address the evolving planning challenges facing Solihull which are derived from both national and local pressures.

Previous Habitat Regulations Assessment Screening exercises were carried out for the 2013 Solihull Local Plan in 2008 and 2012 by Warwickshire Wildlife Trust and by Middlemarch Environmental Ltd, and on the Draft Local Plan Review in 2018 by Middlemarch Environmental Ltd. During these screening exercises, no significant adverse effects were identified on any Natura 2000 sites, either alone or in combination with other plans or projects.

This Habitats Regulations Assessment (Stage 1 Screening) report is an update of the previous 2018 assessment, as the policies and proposals in the Submission Draft of the Solihull Local Plan Review have received material amendments since the previous HRA Screening Assessment was conducted. This report provides an up-to-date and comprehensive assessment of whether the policies and proposals of the Submission Draft of Local Plan Review will have a likely significant effect on a Natura 2000 site.

The screening exercise identified 12 European Sites with potential linkages to the Solihull Metropolitan Borough area. These are as follows:

- Ensor's Pool SAC;
- Cannock Extension Canal SAC;
- Cannock Chase SAC;
- River Wye SAC;
- Elan Valley Woodlands SAC;
- Elenydd-Mallaen SPA;
- Elenydd SAC;
- Humber Estuary SAC;
- Humber Estuary SPA; and,
- Humber Estuary Ramsar.
- Fens Pool SAC
- River Mease SAC

Policies and proposals of the Submission Draft of the Solihull Local Plan were screened to determine if they could result in environmental impacts that could in turn lead to a likely significant effect on any Natura 2000 sites with linkages to the Metropolitan Borough Area. Any impacts identified were assessed in accordance with the known vulnerabilities of each site, including determining the likelihood of potential connective impact pathways.

Based on a review of the available evidence it was concluded that none of the policies and proposals of the Submission Draft of the Solihull Local Plan Review will result in a significant effect on the Natura 2000 sites; their qualifying features; habitats or species critical to the function of the qualifying feature; or the delivery of their conservation objectives, either alone or in combination with other plans and projects.

Solihull Metropolitan Borough Council, as the Competent Authority, are therefore advised that it will not be necessary for the Submission Draft of the Local Plan Review to be taken forward to Stage 2 of Habitats Regulations Assessment (Appropriate Assessment).

However, the following recommendations are made:

- R1** In accordance with best practice guidance, the findings of this Stage 1 (Screening) Habitats Regulations Assessment should be provided to Natural England, as the statutory nature conservation body, to allow further comment and consideration as required.¹
- R2** All future material revisions of the Submission Draft of the Solihull Local Plan Review should be subject to additional screening to determine if changes to the policies and proposals of the plan could give rise to a likely significant effect on a Natura 2000 Site whether alone or in-combination with other plans and projects.

¹ The completed updated HRA was provided to Natural England for their consideration in September 2020. Natural England responded to Solihull MBC approving both the scope and conclusions of the assessment

CONTENTS

1. INTRODUCTION	5
1.1 PROJECT BACKGROUND	5
1.2 PREVIOUS HABITATS REGULATIONS ASSESSMENTS IN SOLIHULL	5
1.3 CONSULTATION	7
2. METHODOLOGY	8
2.1 INTRODUCTION	8
2.2 THE 'PRECAUTIONARY PRINCIPLE'	9
3. RELEVANT NATURA 2000 SITES	10
3.1 IDENTIFICATION OF NATURA 2000 SITES	10
4. DESCRIPTION OF NATURA 2000 SITES	11
4.1 ENSOR'S POOL SAC	11
4.2 CANNOCK EXTENSION CANAL SAC	12
4.3 CANNOCK CHASE SAC	13
4.4 RIVER WYE SAC	15
4.5 ELAN VALLEY WOODLANDS SAC	18
4.6 ELENYDD-MALLAEN SPA	20
4.7 ELENYDD SAC	21
4.8 HUMBER ESTUARY SAC	23
4.9 HUMBER ESTUARY SPA	26
4.10 HUMBER ESTUARY RAMSAR	29
4.11 FENS POOL SAC	31
4.12 RIVER MEASE SAC	33
5. THE SUBMISSION DRAFT OF THE SOLIHULL LOCAL PLAN REVIEW	35
5.1 PROPOSALS SCREENING	35
5.2 POLICY SCREENING	36
5.2 POLICY SUMMARY AND POTENTIAL EFFECTS	37
6. DETERMINATION OF LIKELY SIGNIFICANT EFFECTS	40
6.1 ENSORS'S POOL	40
6.2 CANNOCK EXTENSION CANAL SAC	41
6.3 CANNOCK CHASE SAC	43
6.4 RIVER WYE SAC	46
6.5 ELAN VALLEY WOODLANDS SAC	49
6.6 ELENYDD-MALLAEN SPA	50
6.7 ELENYDD SAC	51
6.8 HUMBER ESTUARY SAC	53
6.9 HUMBER ESTUARY SPA	56
6.10 HUMBER ESTUARY RAMSAR	57
6.11 FENS POOL SAC	60
6.12 RIVER MEASE SAC	62
6.13 SUMMARY OF DETERMINATION OF LIKELY SIGNIFICANT EFFECT	64
7. CONCLUSIONS AND RECOMMENDATIONS	65
REFERENCES AND BIBLIOGRAPHY	66
APPENDICES	69

1. INTRODUCTION

1.1 PROJECT BACKGROUND

In March 2020 Solihull Metropolitan Borough Council (hereafter Solihull MBC) commissioned Middlemarch Environmental Ltd to update an earlier version of the Habitats Regulations Assessment (Stage 1 Screening) report (see Report RT-MME-126281) which was completed in April 2018 as part of the evidence base for the Draft Solihull Local Plan Review. The purpose of this update is to consider if amendments to the site allocations (housing numbers, site locations) and policies within the Submission Draft of the Solihull Local Plan Review have a material effect upon the conclusions of the 2018 report. This HRA Stage 1 (Screening) update will also take account of:

- The relevant determinations by the Court of Justice the European Union (CJEU);
- Updates to relevant legislation (including via statutory instruments);
- The updated 2019 National Planning Policy Framework (NPPF);
- Updates to best practice guidance; and,
- Any additional in-combination impacts which have occurred since the previous April 2018 HRA Screening report was completed.

The need for projects with the potential to impact upon Natura 2000 sites to be assessed is stated in Article 6 of the European Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (hereafter 'the Habitats Directive'). Articles 6(3) and 6(4) of this Directive states that an Appropriate Assessment is required for any plan or project that is considered likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects. Natura 2000 sites are those sites designated under the Habitats Directive to ensure the protection of European important habitats, plants or animals, and include Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Ramsar sites are treated, for planning purposes, as Natura 2000 sites.

The Habitats Directive is transposed into UK legislation through the Conservation of Habitats and Species Regulations 2017 (The Habitats Regulations 2017). Regulations 63 and 64 of the Habitats Regulations incorporate the requirements of Articles 6(3) and 6(4) of the Habitats Directive.

Under the Habitats Regulations, the competent authority (Solihull MBC/The Secretary of State) may only agree to a project or plan (which has the potential to have a significant impact upon a Natura 2000 site) after having ascertained that it will not adversely affect the integrity of any Natura 2000 site alone or in-combination with other plans and projects. Where adverse impacts are anticipated, projects or plans may only be consented where there are no alternative solutions and the project or plan is considered to be of overriding public interest. In such instances appropriate compensatory measures are required to ensure that the overall coherence of the Natura 2000 site network is protected.

1.2 PREVIOUS HABITATS REGULATIONS ASSESSMENTS IN SOLIHULL

This assessment draws upon the findings of previous Habitats Regulations Assessment Screening exercises carried out for earlier iterations of both the current Solihull Local Plan and the ongoing Solihull Local Plan Review, the results of which are summarised below.

This review should be viewed as an update of the previous Habitats Regulations Assessment conducted by Middlemarch Environmental Ltd in 2018, taking into account: amendments to the planned housing growth at identified site allocations; new allocations which have emerged; amendments to policy; amendments to the chronological span of the plan; and changes to the methodology for undertaking Habitats Regulations Assessment since April 2018.

Whilst this report delivers an update only to the 2018 Habitats Regulations Assessment, the scope and conclusions of previous 'historic assessments' are also detailed below for the sake of completion and ease of reference.

2008

A Habitat Regulations Assessment Screening Assessment of the Solihull Core Strategy 'Issues and Options' document was carried out by Warwickshire Wildlife Trust in 2008. The screening assessment identified 12 sites which were subject to preliminary examination to determine likely significant effects that might result from the policies and proposals in the Core Strategy. These sites were:

- Ensor's Pool SAC;
- Cannock Extension Canal SAC;
- River Mease SAC;
- Fens Pool SAC;
- Lyppard Grange Ponds SAC;
- Cannock Chase SAC;
- Bredon Hill SAC;
- Pasturefields Salt Marsh SAC;
- Motte Meadows SAC;
- West Midlands Mosses SAC;
- Midlands Meres and Mosses Phase 1 Ramsar; and,
- Peak District Dales SAC.

This screening process concluded that:

- It is **unlikely** that core strategy policies will directly impact upon any sites.
- Possible impacts may arise as a result of growth and development policies that give rise to **recreational pressure**. Vehicular and aircraft emissions are likely to increase and thus affect local and regional **air quality**, potentially contributing to nitrogen and acid deposition issues at sites located downwind of the borough.
- Further screening is strongly recommended in line with the **precautionary principle** for those sites where impacts are unclear or uncertain.

2012

A further screening exercise of the Solihull Draft Local Plan was carried out by Middlemarch Environmental Ltd in 2012. The screening exercise expanded on the initial screening carried out by Warwickshire Wildlife Trust in 2008 and focused on four sites where further screening was recommended due to the lack of detail in the policies during the 2008 screening assessment. These were:

- Cannock Extension Canal SAC;
- Cannock Chase SAC;
- Bredon Hill SAC; and,
- Peak District Dales SAC.

The further screening exercise concluded the following:

- **Core Strategy policies will not directly impact upon any of the Natura 2000 sites** put forward for further screening. All sites are located well outside of the borough boundary.
- **No significant effects** are considered likely on any of the Natura 2000 sites put forward for further screening, either alone or in combination with other plans.
- **No further screening is recommended**. It is not considered necessary for the current iteration of the Core Strategy to proceed through any further stages of the Appropriate Assessment process.

In accordance with the precautionary principle, recommendations were made for further consideration of the effects of any individual large-scale developments that may be proposed within the borough during the plan period. Specifically, this relates to any further expansion of Birmingham Airport, and to individual residential developments resulting in a net increase of >100 dwellings.

2018

In 2018 Middlemarch Environmental Ltd undertook a Habitats Regulations Assessment Screening exercise as part of the evidence base for the Draft of the Solihull Local Plan Review. The Screening exercise considered the likely impacts of the emerging Local Plan upon 10 Natura 2000 sites. These were as follows:

- Ensor's Pool SAC;
- Cannock Extension Canal SAC;
- Cannock Chase SAC;
- River Wye SAC;
- Elan Valley Woodlands SAC;
- Elenydd-Mallaen SPA;
- Elenydd SAC;
- Humber Estuary SAC;
- Humber Estuary SPA; and,
- Humber Estuary Ramsar.

Policies and proposals of the Solihull Local Plan were screened to determine if they could result in environmental impacts that could lead to a likely significant effect on a European Site within linkages to the Metropolitan Borough Area. Any impacts identified were assessed in accordance with the vulnerabilities of each European Site included in the assessment to determine potential connective impact pathways.

Based on a review of the available evidence base it was concluded that none of the policies and proposals of the Solihull Local Plan Review will result in a significant effect on the Natura 2000 network, either alone or in combination with other plans and projects. Solihull Metropolitan Borough Council, as the Competent Authority, were therefore advised that it would not be necessary for the Solihull Local Plan Review to be taken forward to a Stage 2 Appropriate Assessment. The following recommendations were made:

- R1** In accordance with best practice guidance, the findings of this Habitat Regulations Assessment – Screening exercise should be provided to Natural England, as the statutory nature conservation body, to allow further comment and consideration as required.
- R2** All future revisions of the Solihull Local Plan Review should be subject to additional screening to determine if there are any material changes to the policies and proposals of the plan that could give rise to a likely significant effect on a European Site whether alone or in-combination with other plans and projects.

1.3 CONSULTATION

Consultation with on the updated-HRA was sought with the Appropriate Authority (Natural England) and was concluded in September 2020. The Appropriate Authority responded to Solihull MBC approving both the scope of the updated HRA and the conclusions of the assessment.

2. METHODOLOGY

2.1 INTRODUCTION

This Habitats Regulations Assessment adheres to the best practice process for Habitats Regulations Assessment as outlined in The Habitats Regulations Handbook (DTA Publications, 2013 and subsequent updates). This document expands upon previous guidance published by the Impacts Assessment Unit at Oxford Brookes University (2001) and the Department for Communities and Local Government (2006).

Best practice guidance identifies that the Habitats Regulations Assessment process is broadly divisible into four stages, with the need to complete each stage determined by the results of the previous stage. In summary, these stages are:

Stage 1: Evidence Gathering and Screening

This stage is associated with collecting evidence regarding those parts of the Natura 2000 network that have the potential to be impacted by the project or plan in consideration, either alone or in combination with other projects or plans. Where no significant effects are perceived, sites may be screened out of the need for further assessment during Stage 2.

The April 2018 decision by the Court of Justice of the European Union (**CJEU**) in the case of *People Over Wind and Sweetman v Coillte Teoranta* (C-323/17) means that measures intended to avoid or reduce the harmful effects of a proposed project on a European site may no longer be taken into account by competent authorities at the Habitats Regulations Assessment 'screening stage' when judging whether a proposed plan or project is likely to have a significant effect on the integrity of a European designated site stating:

“Taking account of such measures at the screening stage would be liable to compromise the practical effect of the Habitats Directive in general, and the assessment stage in particular, as the latter stage would be deprived of its purpose and there would be a risk of circumvention of that stage, which constitutes, however, an essential safeguard provided for by the directive.”

This approach is a reversal of a previously settled principle in English and Welsh law. As such, where a proposed development is proximate to a SAC or SPA and could give rise to significant effects, even if these effects can be mitigated for, an Appropriate Assessment (Stage 2) is required.

Stage 2: Appropriate Assessment of Significant Impacts

Where it is considered a Natura 2000 site may experience significant effects from a project or plan, either alone or in combination, a detailed assessment of likelihood and severity of the perceived impact on the integrity of the Natura 2000 network is undertaken. This assessment is based on a detailed review of the project or plan in conjunction with the structure, function and conservation objectives of the Natura 2000 site. This stage may also include a preliminary assessment regarding the potential for the identified impacts to be mitigated. In light of the determination of the CJEU C-323/17 a Planning Inspectorate (PINS) guidance note was circulated to Inspectors in May 2018 (PINS Note 05/2018) to provide interpretation on the ruling and draw distinctions between what can be deemed as integrated mitigation measures, as opposed to additional avoidance or mitigation measures, stating:

“If a measure is being introduced to avoid or reduce an effect on a European site, then it can be viewed as mitigation. It may be helpful to consider whether a proposal could be considered integral to a plan or whether it is a measure introduced to avoid harm.”

Further expansion on what can be considered as integral to a project, plan or scheme as opposed to a mitigation measure is also provided in July 2019 Planning Policy Guidance (Ref: 65-007-20190722):

“Whether or not something is integral to the project and not a mitigation measure will have to be determined on a case by case basis on its particular characteristics at the screening stage. Some features of a plan or project may be the product of other considerations, irrespective of any nature conservation issues, for example safety considerations.”

However, determination of what constitutes mitigation proportional to the scale of impact of a given proposed plan, project or development (alone or in combination with other plans and projects) is still largely considered to remain a 'grey area', especially if the mitigation represents a bespoke scheme as opposed to part of a

tested Strategic Mitigation Scheme. Where a bespoke scheme of mitigation is required Natural England's opinion should be sought at the soonest possible opportunity.

Stage 3: Assessment of Alternative Solutions

Where impacts on the integrity of the Natura 2000 network are perceived, this stage examines alternative ways of achieving the objectives of the project or plan in order to avoid these impacts.

Stage 4: Imperative Reasons of Overriding Public Interest and Compensation Measures

Where the potential for adverse impacts remains, and where it is deemed that a project or plan should proceed for Imperative Reasons of Overriding Public Interest (IROPI), an investigation of appropriate compensatory measures is undertaken.

This report focuses on Stage 1 of the Habitats Regulations Assessment process.

2.2 THE 'PRECAUTIONARY PRINCIPLE'

Implicit in the Habitats Directive is the application of the **precautionary principle**, which requires that the conservation objectives of a Natura 2000 site should prevail where there is uncertainty whether there will be an impact or not (Oxford Brookes, 2001). The European Commission's Final Communication from the Commission on the Precautionary Principle (European Commission, 2000a) states that the use of the precautionary principle presupposes:

- Identification of potentially negative effects resulting from a phenomenon, product or procedure;
- A scientific evaluation of the risks which because of the insufficiency of the data, their inconclusive or imprecise nature, makes it impossible to determine with sufficient certainty the risk in question (CEC, 2000).

According to best practice guidance, this means that the emphasis for assessment should be on objectively demonstrating, with supporting evidence, that there will be no significant effects on a Natura 2000 site. The publication 'Managing Natura 2000 Sites: The Provision of Article 6 of the 'Habitats' Directive 92/43/EEC' (European Commission, 2000b) provides explanatory guidance regarding this point, which is paraphrased below.

It is clear from the context and from the purpose of the directive that the 'integrity of the site' relates to the site's conservation objectives. For example, it is possible that a plan or project will adversely affect the integrity of a site only in a visual sense or only habitat types or species other than those listed in Annex I or Annex II. In such cases, the effects do not amount to an adverse effect for the purposes of Article 6(3), provided that the coherence of the network is not affected.

The expression 'integrity of the site' shows that focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will anyway remain favourable within the European territory of the Member State.

As regards the connotation or meaning of 'integrity', this can be considered as a quality or condition of being whole or complete. In a dynamic ecological context, it can also be considered as having the sense of resilience and ability to evolve in ways that are favourable to conservation. The 'integrity of the site' has been usefully defined as 'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or levels of populations of the species for which it was classified' (IEEM, 2006).

The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives.

Conservation objectives for the Natura 2000 sites considered in this assessment are presented in Chapter 4.

3. RELEVANT NATURA 2000 SITES

3.1 IDENTIFICATION OF NATURA 2000 SITES

In March 2018 Natural England's Urban Planning Lead Advisor (Susan Murray) confirmed the scope of the 2018 Stage 1 Habitats Regulations Assessment, requiring consideration of the impact of the Draft Solihull MBC Local Plan review on the following sites:

- Ensor's Pool SAC;
- Cannock Extension Canal SAC;
- Cannock Chase SAC;
- River Wye SAC;
- Elan Valley Woodlands SAC;
- Elenydd SAC;
- Elenydd - Mallean SPA;
- Humber Estuary SAC;
- Humber Flats, Marshes and Coast SPA; and,
- Humber Estuary Ramsar.

This 2020 Updated Habitats Regulations Assessment assesses the potential of the Submission Draft of the Solihull Local Plan Review to impact upon two additional Natura 2000:

- Fens Pool SAC; and,
- River Mease SAC.

The relevant distances of all sites considered within this updated Habitats Regulations Assessment from the administrative boundary of Solihull MBC are summarised in Table 3.1.

Natura 2000 Site	Distance from Solihull MBC Boundary (km)
Ensors Pool SAC	9
Cannock Extension Canal SAC	18.8
Cannock Chase SAC	28.3
River Wye SAC	81
Elan Valley Woodlands SAC	116.4
Elenydd SAC	128
Elenydd - Mallean SPA	111
Humber Estuary SAC	137
Humber Flats, Marshes and Coast SPA	143
Humber Estuary Ramsar	166
Fens Pool SAC	19.6
River Mease SAC	25.6

Table 3.1: Distance of Considered Natura 2000 site from the Boundary of Solihull MBC

The locations of these sites in relation to the boundary of Solihull MBC are illustrated on Drawing C152313-02 in Appendix 2. Individual maps showing the designation boundary of each Natura Site considered within this updated Habitats Regulations Assessment are provided in Appendix 2. The designation criteria, conservation objectives and known vulnerabilities of each of the Nature 2000 sites are listed in Chapter 4.

4. DESCRIPTION OF NATURA 2000 SITES

4.1 ENSOR'S POOL SAC

4.1.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012646> and accompanying site citation document,

Country:	England
Unitary Authority:	Warwickshire
Centroid:	SP348903
Latitude:	52.3425 N
Longitude:	-1.486388889 W
SAC EU Code:	UK0012646
Status:	Designated Special Area of Conservation (SAC)

Ensor's Pool SAC comprises an abandoned ground-water fed clay pit situated on the western edge of Nuneaton. The SAC is 3.86 ha and comprises Inland water bodies (standing water) habitat (70%), but also includes areas of mesophilic grassland (30%).

Qualifying Habitats

The site does not support any Annex I habitat types. Annex I habitats are neither a primary reason for selection or present as qualifying criteria.

Qualifying Species

The site qualifies under Habitats Directive (92/43/EEC) as it supports a species of importance listed on Annex II of the Directive. This species is white-clawed crayfish *Austropotamobius pallipes*, for which Ensor's Pool is deemed to be one of the best lake populations of the species in England

The JNCC site description states that "*This lowland site in central England represents **white-clawed crayfish Austropotamobius pallipes** in standing water. This 1 ha marl pit holds a very large population, estimated at 50,000. Although crayfish plague outbreaks have occurred in the Midlands, this waterbody is isolated from river systems and is a good example of a 'refuge' site in an important part of the species' former range*".

4.1.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for Ensor's Pool SAC are provided in Table 4.1 below. The conservation objectives were taken from the Conservation Objectives and Supplementary Advice for Ensor's Pool SAC document (Natural England, 2018a). The conservation status and condition assessment was determined through the UK's third Article 17 Habitats Directive Report from 2013 (JNCC, 2013) and Natural England's online Site of Special Scientific Interest Condition Assessment tool.

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
1092: White-clawed crayfish <i>Austropotamobius pallipes</i>	Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining: <ul style="list-style-type: none"> - The extent and distribution of the habitats of qualifying species; - The structure and function of habitats of qualifying species; and, - The supporting processes on which the habitat of qualifying species rely. 	Bad (Declining) – Due to declining population size and range of species.	Unfavourable – Declining – due to the recorded absence of white-clawed crayfish in surveys carried out in 2014 and 2015. It is considered unlikely that white-clawed crayfish remain present in Ensor's Pool. The current reason for decline is unknown.

Table 4.1: Conservation Objectives and Baseline Conditions – Ensor's Pool SAC

4.1.3 Vulnerability of the SAC

The issues to which the SAC is vulnerable are highlighted in Table 4.2. This information has been collated from the Ensor's Pool SAC Site Improvement Plan (Natural England, 2014a).

Issue	Detail	Source of Data
Changes in species distributions	The site was formerly a stronghold for native white-clawed crayfish with a population estimated at around 50,000 animals. However, no crayfish were found during two survey visits in 2014 and 2015. The cause of this decline is currently unclear.	Site Improvement Plan

Table 4.2: Summary of Vulnerability of Ensor's Pool SAC

4.1.4 Site Improvement Plan

The Site Improvement Plan for Ensor's Pool SAC identify a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the SAC.

4.2 CANNOCK EXTENSION CANAL SAC

4.2.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012672>.

Country:	England
Unitary Authority:	Staffordshire; Walsall
Centroid:	SK 020 058
Latitude:	52 38 59 N
Longitude:	01 58 14 W
SAC EU Code:	UK0012672
Status:	Designated Special Area of Conservation (SAC)

Cannock Extension Canal extends for a distance of 2.9 km and runs from Pelsall Junction on the Wyrley and Essington Canal to Norton Canes Docks. The SAC is dominated by standing water habitat, but also includes areas of mesophilic grassland, broadleaved woodland and the built environment.

Qualifying Habitats

The site does not support any Annex I habitat types. Annex 1 habitats are neither a primary reason for selection or present as qualifying criteria.

Qualifying Species

The site qualifies under the Habitats Directive (92/43/EEC) as it supports a species of importance listed on Annex II of the Directive. This species is floating water plantain *Luronium natans*, for which Cannock Extension Canal SAC is identified in the site citation as being one of the best areas in the United Kingdom.

The JNCC site description states that "*Cannock Extension Canal in central England is an example of anthropogenic, lowland habitat supporting floating water-plantain **Luronium natans** at the eastern limit of the plant's natural distribution in England. A very large population of the species occurs in the Canal, which has a diverse aquatic flora and rich dragonfly fauna, indicative of good water quality. The low volume of boat traffic on this terminal branch of the Wyrley and Essington Canal has allowed open-water plants, including floating water-plantain, to flourish, while depressing the growth of emergents*".

4.2.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for Cannock Extension Canal SAC are provided in Table 4.3 below. The conservation objectives were taken from the Conservation Objectives and Supplementary Advice for Cannock Extension Canal SAC document (Natural England, 2016a). The conservation status and condition assessment was determined through the UK's third Article 17 Habitats Directive Report (JNCC, 2013) and Natural England's online Site of Special Scientific Interest Condition Assessment tool.

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
S1831: Floating water-plantain <i>Luronium natans</i>	Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: <ul style="list-style-type: none"> - The extent and distribution of the habitats of qualifying species; - The structure and function of habitats of qualifying species; - The supporting processes on which the habitat of qualifying species rely. - The populations of qualifying species; and, - The distribution of qualifying species within the site. 	Inadequate (Stable) – Due to viable but declining population and habitat quality	Unfavourable – recovering – Unit 001 was subject to historic silt build up which has now been removed but sources of low level silt in the inflows during high rainfall events are still present. Unit 002 – Standing open water and canal is assessed as favourable

Table 4.3: Conservation Objectives and Baseline Conditions – Cannock Extension Canal SAC

4.2.3 Vulnerability of the SAC

The issues to which Cannock Extension Canal SAC is vulnerable are highlighted in Table 4.4. This information has been collated from the Cannock Extension Canal SAC Site Improvement Plan (Natural England, 2014b).

Issue	Detail	Source of Data
Water pollution	Potential sediment build-up as a result of input and diffuse pollution may affect status and distribution of <i>Luronium natans</i> within SAC.	Site Improvement Plan
Overgrazing	Large groups of Canada geese are grazing on the water plants in the canal which could affect the vegetation community including <i>Luronium natans</i>	Site Improvement Plan
Invasive Species	Invasive species including water fern <i>Azolla filiculoides</i> and water pennywort <i>Hydrocotyle ranunculoides</i> have been present and eliminated but could pose future damage to native vegetation communities including <i>Luronium natans</i> .	Site Improvement Plan
Air Pollution	Nitrogen deposition currently exceeds site relevant critical load due to effects from major roads, industrial estates and farming in the vicinity.	Site Improvement Plan

Table 4.4: Summary of Vulnerability of Cannock Extension Canal SAC

4.2.4 Site Improvement Plan

The Site Improvement Plan for Cannock Extension Canal SAC identifies a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the SAC.

4.3 CANNOCK CHASE SAC

4.3.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030107>

Country:	England
Unitary Authority:	Staffordshire
Centroid:	SJ982188
Latitude:	52 45 59 N
Longitude:	02 01 36 W
SAC EU Code:	UK0030107
Status:	Designated Special Area of Conservation (SAC)
Area (ha):	1236.93

Cannock Chase SAC is an extensive area of lowland heath habitat. Other habitats present with the SAC include standing and running water, coniferous woodland, non-forest areas cultivated with woody plants (e.g. orchards) and the built environment.

Qualifying Habitats

The site qualifies under Article 4.1 of the Habitats Directive (92/43/EEC) as it supports two habitats of European importance listed on Annex I of the Directive. European Dry Heaths are listed as a primary reason for selection, and Northern Atlantic Wet Heaths with *Erica tetralix* are listed as a qualifying feature but are not a primary reason for site selection.

The JNCC site description states that “the area of lowland heathland at Cannock Chase is the most extensive in the Midlands, although there have been losses due to fragmentation and scrub/woodland encroachment. The character of the vegetation is intermediate between the upland or northern heaths of England and Wales and those of southern counties. Dry heathland communities belong to NVC types H8 *Calluna vulgaris* – *Ulex gallii* and H9 *Calluna vulgaris* – *Deschampsia flexuosa* heaths. Within the heathland, species of northern latitudes occur, such as cowberry *Vaccinium vitis-idaea* and crowberry *Empetrum nigrum*. Cannock Chase has the main British population of the hybrid bilberry *Vaccinium intermedium*, a plant of restricted occurrence. There are important populations of butterflies and beetles, as well as European nightjar *Caprimulgus europaeus* and five species of bats”.

The quality and importance of the qualifying habitats, as detailed in the site citation, are summarised in Table 4.5.

Qualifying Habitat	Site Coverage (%)	Quality and Importance
European Dry Heaths	75%	Cannock Chase is considered to be one of the best areas in the United Kingdom.
North Atlantic Wet Heaths with <i>Erica Tetralix</i>	1.3%	Cannock Chase is considered to support a significant presence.

Table 4.5: Quality and Importance of Qualifying Habitats for Cannock Chase SAC

Qualifying Species

The JNCC site description for the Cannock Chase SAC does not identify any Annex II species that are either a primary reason for a selection or are present as a qualifying criterion. The SAC citation does, however, indicate the presence of Annex II species within the site. These are:

- White-clawed crayfish *Austropotamobius pallipes*, identified as being present; and,
- Great crested newt *Triturus cristatus*, identified as being present with a population size of between 11 and 50 animals.

4.3.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for Cannock Extension Canal SAC are provided in Table 4.6 below. The conservation objectives were taken from the Conservation Objectives and Supplementary Advice for Cannock Chase SAC document (Natural England, 2018b). The conservation status and condition assessment was determined through the UK’s third Article 17 Habitats Directive Report (JNCC, 2013) and Natural England’s Site of Special Scientific Interest Condition Assessment tool.

Qualifying feature	Conservation Objectives	Conservation status (UK)	Condition assessment
H4010 Northern Atlantic wet heaths <i>Erica tetralix</i> ; Wet heathland with cross-leaved heath.	Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: <ul style="list-style-type: none"> - The extent and distribution of the habitats of qualifying natural habitats; - The structure and function (including typical species) of qualifying natural habitats; and, - The supporting processes on which the qualifying natural habitats rely. 	Bad (Stable) – Due to unfavourable and declining condition of heathland although short-term trends are stable.	Condition assessment does not distinguish between habitat types. 5.40% of SSSI in favourable condition.
H4030 European dry heaths		Bad (Stable) - Due to unfavourable and declining condition of heathland although short-term trends are stable.	91.84% in unfavourable (recovering) condition. 23.76% in unfavourable (no change) condition.

Table 4.6: Conservation Objectives and Baseline Conditions – Cannock Chase SAC

4.3.3 Vulnerability of the SAC

The issues to which Cannock Chase SAC is vulnerable are highlighted in Table 4.7. This information has been collated from sources including JNCC SAC citation and the Site Improvement Plan for Cannock Chase SAC (Natural England, 2014c).

Issue	Detail	Source of Data
Recreational Pressure	Much of the SAC falls within the well-used country park, therefore visitor pressure is a key issue. Activities including dog walking, horse riding, mountain biking and off-track activities such as orienteering can all cause disturbance and result in erosion, new track creation and vegetation damage.	JNCC SAC Standard Data Form
Undergrazing	Grazing is a necessary management tool to diversify the physical structure of the heathland habitats by creating habitat mosaic that support its special fauna. Grazing has been restricted latterly due to the presence of plant fungal disease <i>Phytophthora pseudosyringae</i> on bilberry and the need to control this throughout the site	Site Improvement Plan
Drainage	The water supply and historic drainage of the site may be impacting on the distribution and extent of qualifying wetland vegetation.	Site Improvement Plan
Hydrological changes	The reduction in valley mire towards a drier vegetation type suggests an as yet unknown source of hydrological change.	Site Improvement Plan
Disease	The plant fungal disease <i>Phytophthora pseudosyringae</i> is widespread on the main body of Cannock Chase on a major part on the heathland vegetation. The outbreak is considered to be the worst in the country.	Site Improvement Plan
Air pollution/ impact of atmospheric nitrogen deposition	Nitrogen deposition on Cannock Chase SAC currently exceeds the relevant critical loads for the site leading to a potential increase in bramble and a shorter <i>Calluna vulgaris</i> life cycle.	Site Improvement Plan
Wild fire/arson	Accidental and deliberate fires have previously caused major damage to Cannock Chase over the decades and may continue to be a threat to heathland vegetation and associated species.	Site Improvement Plan
Invasive species	A range of invasive species are present on site and in the surrounding land which could, if left unmanaged, damage the dry and wet heath communities.	Site Improvement Plan

Table 4.7: Summary of Vulnerability of Cannock Chase SAC

4.3.4 Site Improvement Plan

The Site Improvement Plan for Cannock Chase SAC identify a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the SAC.

4.4 RIVER WYE SAC

4.4.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at

<http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0012642>

Country: England/Wales
Unitary Authority: East Wales, Gloucestershire, Wiltshire, and Bath/Bristol area, Herefordshire, Worcestershire, Warwickshire, West Wales and The Valleys
Centroid: SO 109369
Latitude: 52 01 23 N
Longitude: 03 17 58 W
SAC EU Code: UK0012642
Status: Designated Special Area of Conservation (SAC)
Area (ha): 2147.64

The River Wye SAC is a large river on the border of England and Wales with a large geographically mixed catchment and a clear vegetative transition between the upland and lower reaches. The SAC principally comprises Inland water bodies (52.5%) with tidal rivers, estuaries sand flats, lagoons (9.5%), salt marches, salt pastures and salt steppe (1.5%) Bogs, marshes water-fringed vegetation and fens (3.1%), heath and scrub (1%) dry grassland (5.3%) mesophile grassland (2.4%) improved grassland 10.4%) broad-leaved deciduous woodland (12.3%) inland rocks screes and sands (0.2%) and other land (1.8%).

Qualifying Habitats

The site qualifies under the Habitats Directive (92/43/EEC) as it supports two habitats of European importance listed on Annex I of the Directive. Watercourses of plain to montane levels with the *Ranuncion fluitantis* and *Callitricho-Batrachion* vegetation are listed as a primary reason for selection, and Transition mires and quaking bogs are listed as a qualifying feature but are not a primary reason for site selection.

The JNCC site description states that “*Water courses of plain to montane levels with the Ranuncion fluitantis and Callitricho-Batrachion vegetation for which this is considered to be one of the best areas in the United Kingdom. Transition mires and quaking bogs for which the area is considered to support a significant presence.*”.

Qualifying Species

The site qualifies under the Habitats Directive (92/43/EEC) as it supports the following species of importance listed on Annex II of the Directive

- White-clawed crayfish *Austropotamobius pallipes*, the welsh River Wye is the best know site for this species in Wales;
- Sea lamprey *Petromyzon marinus*, the site provides exceptionally good quality habitat for sea lamprey and supports a heathy population;
- Brook lamprey *Lampetra planeri* the site provides exceptionally good quality habitat for brook lamprey and supports a heathy population;
- River lamprey *Lampetra fluviatillis*, the site provides exceptionally good quality habitat for brook lamprey and supports a heathy population;
- Twaite shad *Alosa fallax*, the site has long abundant population of these species and provides suitable habitat in the form of good water quality, unobstructed main channel and depp pools for congregation before spawning;
- Atlantic salmon *Salmo salar*, the site constitutes the most famous and productive river in wales for the species and includes high quality spawning grounds and juvenile habitat in the main channel and tributaries;
- Bullhead *Cottus gobio*, the site is composed of a diverse river system representing the habitat conditions in which bullhead occurs in Britain;
- Otter *Lutra lutra*, the site holds the densest and most well-established otter population in Wales; and,
- Allis shad *Alosa alosa*.

4.4.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for River Wye SAC are provided in Table 4.8 below. The conservation objectives were taken from the Conservation Objectives and Supplementary Advice for River Wye SAC document (Natural England, 2016b) and the River Wye Core Management Plan (Countryside Council for Wales, 2008a). The conservation status and condition assessment was determined through the UK's third Article 17 Habitats Directive Report (JNCC, 2013), the River Wye Core Management Plan and Natural England's online Site of Special Scientific Interest Condition Assessment tool.

Conservation Objectives: Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute 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.

Qualifying feature	Conservation status in UK	Condition Assessment (Wales)	Condition Assessment (England)
H3260. Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche Batrachion vegetation; Rivers with floating vegetation often dominated by water-crowfoot	Bad (Improving) – Due to unfavourable but improving structure and functions of the watercourses in UK.	Unfavourable – due to water quality issues from diffuse pollution in the middle reaches of the river.	See Table 4.9 below
H7140. Transition mires and quaking bogs;	Bad (Declining) – Due to unfavourable structure and functions of between 5- 25% of qualifying habitat in UK.	Unfavourable - due to undergrazing.	See Table 4.9 below
S1092 White-caved crayfish Austropotamobius pallipes	Bad (Declining) – Due to declining population size and range of species.	Unfavourable (declining) – due to major decline of abundance and distribution of species.	See Table 4.9 below
S1095 Sea lamprey Petromyzon marinus	Unknown – Due to the population and habitat extent being currently unknown.	Favourable - due to density of ammocetes exceeding target density of 0.1m ² .	See Table 4.9 below
S1096 Brook lamprey Lampetra planeri	Favourable – As habitat range, habitat and future prospects are assessed as favourable.	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1099 River lamprey Lampetra fluviatilis	Inadequate (Improving) – due to poor population levels and future prospects but population is currently stable.	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1102 Allis shad Alosa alosa	Bad (Stable) – due to the low but stable populations levels	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1103 Twait shad Alosa fallax	Inadequate (Stable) – due to low range and low but stable population	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1106 Atlantic salmon Salmo salar	Inadequate (Stable) – Due to population being low but stable.	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1163 Bullhead Cottus gobio	Unknown – Due to unknown population size and future prospects.	Unfavourable (Unclassified) – Due to uncertainty regarding data for species.	See Table 4.9 below
S1355 Otter <i>Lutra lutra</i>	Favourable - As habitat range, habitat and future prospects are assessed as favourable.	Unfavourable – due to lack of suitable breeding opportunities in the middle reaches of the river.	See Table 4.9 below

Table 4.8: Conservation Objectives and Baseline Conditions – River Wye SAC

Condition Assessment (England)

Table 4.9 below details the three SSSIs that make up the River Wye SAC in England and the proportion of each SSSI in favourable or unfavourable condition.

SSSI	Condition Summary of SSSI (%)			
	Favourable	Unfavourable (Recovering)	Unfavourable (No change)	Unfavourable (Declining)
River Wye SSSI	12.69%	87.31%	0.00%	0.00%
River Lugg SSSI	0.00%	100.00%	0.00%	0.00%
Upper Wye Gorge SSSI	29.41%	70.59%	0.00%	0.00%

Table 4.9: Condition Summary of component SSSIs that make up River Wye SAC in England.

4.4.3 Vulnerability of the SAC

The issues to which the River Wye SAC is vulnerable are highlighted in Table 4.10. This information has been collated from the River Wye SAC Site Improvement Plan (Natural England, 2014d).

Issue	Detail	Source of Data
Water pollution	Sedimentation and diffuse pollution are key issues in the catchment including upland acidification and use of pesticides for agriculture.	Site Improvement Plan
Physical modification	Small scale development, such as public access improvements, is impacting on the hydromorphology and character of the river. An impedance of natural functions such as gravel and woody debris input also occur as a result of the Elan Valley reservoirs and low tree/shrub cover.	Site Improvement Plan
Invasive species	Himalayan balsam <i>Impatiens glandulifera</i> , Japanese knotweed <i>Fallopia japonica</i> , giant hogweed <i>Heracleum mantegazzianum</i> and hybrids are present throughout the catchment. Other invasive species such as the killer shrimp <i>Dikerogammarus villosus</i> are also a threat.	Site Improvement Plan
Hydrological changes	Urban drainage and new development can affect hydrology. Poor siting of infrastructure can also cause excessive run-off.	Site Improvement Plan
Forestry and Woodland management	There is a need to balance woodland management levels with fisheries, navigation and flood risk. Clearfell management of upland conifer plantations can lead to sediment and nitrate release into the watercourse.	Site Improvement Plan
Fisheries: freshwater	The management of the bank by river users is not always compatible with the SAC features (i.e. digging steps and mowing banks).	Site Improvement Plan
Fisheries: fish stocking	Fish stocking is continuing at present but is being phased out by Natural Resources Wales.	Site Improvement Plan
Water abstraction	There is a need to integrate environmental regulations with public water supply and agriculture. The Elan Valley reservoirs and dams do not allow natural patterns in water flow and work is underway to agree a revised set of reservoir release rules.	Site Improvement Plan
Public access/disturbance	The high usage of the river by canoeists, anglers navigation and dog walkers has the potential to cause disturbance to SAC species and habitats.	Site Improvement Plan
Air Pollution: impact of atmospheric nitrogen deposition	Nitrogen deposition exceeds site relevant critical loads with respect to the SAC's transition mire habitat in Wales.	Site Improvement Plan
Inappropriate scrub control	Increased scrub and woodland is affecting the structure and composition of the transitional mire and quaking bog at Colwyn Brook Marshes. This is due to changing change in hydrological processes and/or due to the change in grazing pressure.	Site Improvement Plan
Undergrazing	Undergrazing is affecting the structure and composition of the transitional mire and quaking bog at Colwyn Brook Marshes	Site Improvement Plan
Transportation and service corridors	Potential for impact on SAC features when undertaking work on Network Rail's assets.	Site Improvement Plan

Table 4.10: Summary of Vulnerability of River Wye SAC

4.4.4 Site Improvement Plan

The Site Improvement Plan for River Wye SAC identifies a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the SAC.

4.5 ELAN VALLEY WOODLANDS SAC

4.5.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUcode=UK0030145>.

Country: Wales
Unitary Authority: East Wales

Centroid: SN923638
Latitude: 52 15 43 N
Longitude: 03 34 44 W
SAC EU Code: UK0030145
Status: Designated Special Area of Conservation (SAC)
Area (ha): 438.74

The Elan Valley Woodlands/Coetiroedd Cwm Elan SAC principally comprises broad-leaved deciduous woodland (68.8%) with heath, scrub, maquis and phygrana (23.3%), dry grassland (6%), inland rocks, screes, sands, permanent snow and ice (1.9%)

Qualifying Habitats

The site qualifies under the Habitats Directive (92/43/EEC) as it supports three habitats of European importance listed on Annex I of the Habitats Directive. Old sessile oak woods with Ilex and Blechnum in the British Isles is listed as a primary reason for selection, and European dry heaths and Tilio-Acerion forests of slope, screes and ravines are listed as a qualifying feature but are not a primary reason for site selection. The Tilio-Acerion forests are listed as a priority feature.

Qualifying Species

The JNCC site description for the Elan Valley Woodlands SAC does not identify any Annex II species that are either a primary reason for a selection or are present as a qualifying criterion.

4.5.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for the Elan Valley Woodlands SAC are provided in Table 4.11 below. The conservation objectives and condition assessment are summarised from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC (Countryside Council for Wales, 2008b). This plan should be consulted for a full overview of the conservation objectives. The conservation status was determined through the UK's third Article 17 Habitats Directive Report from 2013 (JNCC, 2013).

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
91A0. Old sessile oak woods with Ilex and Blechnum in the British Isles	Old sessile oak woodland remains a significant and conspicuous feature of the upland valley sides and are particularly well developed and extensive. The woodlands have good structure, with a canopy dominated by sessile oak, a sparse understorey and areas of dead wood. Habitat conditions suitable for the sensitive bryophyte and lichen communities will be maintained.	Bad (Declining) – due to areas extent of unfavourable woodlands and impacts of nitrogen critical load exceedance.	Unfavourable - A condition assessment from 2004 indicates that's whilst three units may be favourable, inappropriate grazing is still thought to be a problem.
4030. European dry heaths;	The extent, quality and diversity of heath vegetation within the constituent sites is maintained and, where possible, degraded heath is restored to good condition. Heathland will have good structure and provide suitable habitats for uncommon plants and breeding birds. All factors affecting the achievement of these conditions are under control.	Bad (Stable) - Due to unfavourable and declining condition of heathland although short-term trends are stable.	Favourable – A condition assessment in 2004 identified that invasive rhododendron was maintained within acceptable limits and air pollution is not a significant problem in woodland fringe areas.
9180. Tilio-Acerion forests of slopes, screes and ravines	The extent and distribution of ash woodlands are maintained. Ash woodland plants are thriving and negative indicator plants of nutrient enrichment or non-native shrubs are not common. Deadwood is present. All factors affecting the achievement of these conditions are under control.	Bad (Declining) – due to 25% of habitat in unfavourable condition and ongoing threat of nitrogen critical load exceedance.	Favourable – The woodlands are on inaccessible cliffs and so are not threatened by grazing.

Table 4.11: Conservation Objectives and Baseline Conditions – Elan Valley Woodlands SAC

4.5.3 Vulnerability of the SAC

The issues to which the Elan Valley Woodlands SAC is vulnerable are highlighted in Table 4.12. This information has been collated from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC.

Issue	Detail	Source of Data
Invasive species	Invasive Rhododendron is under continuing management but may be a future threat.	Core Management Plan
Forestry and woodland management	Heathland is subject to encroachment by conifers and woodland is losing some structures in areas due to under management.	Core Management Plan
Inappropriate scrub control	The heathland areas are subject to bracken invasion and is losing some variation in structure due to potential lack of grazing.	Core Management Plan
Overgrazing	Overgrazing is identified as a potential ongoing issue associated with many of the woodland units.	Core Management Plan

Table 4.12: Summary of Vulnerability of Elan Valley Woodlands SAC

4.6 ELENYDD-MALLAEN SPA

4.6.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/default.aspx?page=2064>.

Country:	Wales
Unitary Authority:	Carmarthenshire, Ceredigion, Powys
Latitude:	52 16 08 N
Longitude:	03 43 43 W
SAC EU Code:	UK0030145
Status:	Classified Special Protection Area (SPA)
Area (ha):	30022.14

The JNCC website describes the SPA as:

“Elenydd-Mallaen is located in the uplands of central Wales. The extensive site includes heath and blanket mire dominated uplands (rising to about 460 m) and is intersected by valleys containing woodlands and grassland. It is one of the most important areas of hill land for nature conservation in Wales. Crags are frequent throughout the site. The site is especially important for a number of breeding raptors, some of which are resident throughout the year. The diversity and quality of upland habitats provide an abundance of suitable feeding and nesting sites.”

Qualifying Species

The site qualifies under Article 4.1 of the Birds Directive by supporting populations of European importance including the following species listed on Annex 1 of the Directive:

- Merlin *Falco columbarius* – 7 pairs representing 0.5% of breeding population in Great Britain;
- Peregrine *Falco peregrinus* – 15 pairs representing 1.3% of breeding population in Great Britain; and,
- Red kite *Milvus milvus* – 15 pairs representing 9.4% of breeding population in Great Britain.

4.6.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for the Elan Valley Woodlands SAC are provided in Table 4.13 below. The conservation objectives and condition assessment are summarised from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC (Countryside Council for Wales, 2008b). This plan should be consulted for a full overview of the conservation objectives. The conservation status was determined through the bird trends data available on the British Trust for Ornithology website (BTO, 2017).

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
A074. Breeding red kite <i>Milvus milvus</i>	The SPA will: <ul style="list-style-type: none"> - Support at least 15 pairs of breeding red kites or 0.5% of British population - Maintain the use of traditional nesting and roosting sites; - Maintain the extent of semi-natural feeding habitat and carrion; - Control all factors affecting the achievement of these conditions. 	Favourable – Population size was approaching 2,500 pairs in 2012 which amount to rapid increase in long-term trend.	Favourable – The extent of potential feeding habitat within the sites and carrion availability are deemed to support the breeding population in the long-term
A098. Breeding merlin <i>Falco columbarius</i>	The SPA will: <ul style="list-style-type: none"> - Continue to support at least 7 pairs of breeding merlin's or 0.5% of the British population - maintain the use of traditional nest sites; - maintain areas of suitable semi-natural feeding grounds; Control all factors affecting the achievement of these conditions.	Favourable – Population size was 1200 (900-1500) pairs in 2008 and probably increasing in the long-term	Favourable – A survey in 2011 identified 11 probable breeding pairs, indicating that feature condition was favourable maintained.
A103 Breeding peregrine <i>Falco peregrinus</i>	The SPA will: <ul style="list-style-type: none"> - Continue to support at least 15 pairs of breeding peregrines or 0.5% of British population - maintain the use of traditional nest sites; - maintain areas of suitable semi-natural feeding grounds; - Control all factors affecting the achievement of these conditions 	Stable – UK Population size was 1505 pairs in 2014. Population increase in England but decreasing in Wales	Favourable –The extent of potential feeding habitat within the site is believed to be sufficient to support the breeding population.

Table 4.13: Conservation Objectives and Baseline Conditions – Elenydd-Mallaen SPA

4.6.3 Vulnerability of the SAC

The issues to which the Elenydd-Mallaen SPA is vulnerable are highlighted in Table 4.14. This information has been collated from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC.

Issue	Detail	Source of Data
Habitat extent	Current habitat extent deemed appropriate for breeding pairs of classified species	Core Management Plan
Availability of carrion	Weather plays a major role in mortality and carcasses in remote areas for red kites.	Core Management Plan
Disturbance	Potential for nest abandonment as a result of public disturbance.	Core Management Plan
Roosting sites	Many kites gather to roost in the Hafod area.	Core Management Plan

Table 4.14: Summary of Vulnerability of Elenydd-Mallaen SPA

4.7 ELENYDD SAC

4.7.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUcode=UK0030145>.

Country: Wales
Unitary Authority: East Wales, West Wales and The Valleys
Centroid: SN824704
Latitude: 52 19 09 N
Longitude: 03 43 36 W
SAC EU Code: UK0012928
Status: Designated Special Area of Conservation (SAC)
Area (ha): 8609.1

The Elenydd SAC principally comprises bog, marshes, water-fringed vegetation and fens (58%), mesophile grassland (18.2%), dry grassland (16.1%) heath, scrub, maquis and garrigue, phygrana (6.2%), inland rocks, screes, sands, permanent snow and ice (0.5%) and other land (0.3%).

Qualifying Habitats

The site qualifies under the Habitats Directive (92/43/EEC) as it supports four habitats of European importance listed on Annex I of the Habitats Directive. Calaminarian grasslands of the *Violetalia calaminariae* and blanket bogs are listed as a primary reason for selection, and oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nonojuncetea* and European dry heaths are listed as a qualifying feature but are not a primary reason for site selection. The blanket bogs are listed as a priority feature.

Qualifying Species

The site qualifies under the Habitats Directive (92/43/EEC) as it supports a species of importance listed on Annex II of the Directive. This species is floating water plantain *Luronium natans*, for which Elenydd SAC is identified in the site citation as being one of the best upland oligotrophic lakes in Wales.

4.7.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for Elenydd SAC are provided in Table 4.15 below. The conservation objectives and condition assessment are summarised from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC (Countryside Council for Wales, 2008b). This plan should be consulted for a full overview of the conservation objectives. The conservation status was determined through the UK's third Article 17 Habitats Directive Report (JNCC, 2013).

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
6130. Calaminarian grassland of the <i>Violetalia calaminariae</i>	The habitat covers its current measures area and is expanding. Lichens dominate metal rich spoil from mine workings, tips, walls and other built structures. Lichens, mosses, ferns and a few higher plants are present on rock outcrops on cliffs, open cuts and shaft entrances. Heath, shrub and trees are scarce or absent, tall herbs are grazed and less than 10% of area comprise bare ground. Non-native species occupy less than 1% of cover. All factors affecting the achievement of these conditions are maintained.	Bad (Stable) – Due to the unfavourable structure and function of 25% of habitat but with some slight improvements in the short term.	Unfavourable – Based on condition assessment in 2005 which indicating declining status due to recreational disturbance and lack of remedial management.
7130. Blanket Bogs	The extent, quality, and diversity of the blanket bog vegetation with the constituent sites are maintained and degraded bog is restored to good condition. Populations of uncommon bog plants are stable or increasing. The bogs provide suitable habitat for breeding birds and invertebrates. Peat profiles with important pollen records are maintained. All factors affecting the achievement of these conditions are maintained.	Bad (Declining) – due to the unfavourable structure and function of more than 25% of blanket bogs and declining future prospects.	Unfavourable – Based on condition assessment in 2002 due to insufficient cover of positive indicator plants and continuing failure to meet targets for atmospheric pollutants.
3130. Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoeto-Nonojuncetea</i>	The area contains several upland lakes with mildly acidic, nutrient-poor water and stony bed with associated water plants. The extent and composition of vegetation in each lake in stable and increasing. The population of rare stoneworts is maintained, stable and increasing. Population of negative indicators are absent or maintained or below acceptable levels. Low nutrient and shade levels are maintained All factors affecting the achievement of these conditions are maintained.	Inadequate (improving) – due to unfavourable structure and functioning in 5-25% of area but with short term improvements.	Unfavourable – Surveys in 2003 and 2004 identified that the water quality of the lakes were in unfavourable condition possibly due to general atmospheric pollution.

Table 4.15: Conservation Objectives and Baseline Conditions – Elenydd SAC (continues)

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
4030. European dry heaths	The extent, quality and diversity of heath vegetation within the constituent sites is maintained and, where possible, degraded heath is restored to good condition. Heathland will have good structure and provide suitable habitats for uncommon plants and breeding birds. All factors affecting the achievement of these conditions are under control.	Bad (Stable) - Due to unfavourable and declining condition of heathland although short-term trends are stable.	Unfavourable – based on a subjective assessment in 2004 which indicated insufficient dwarf shrub cover and continuing failure to meet targets for deposition of atmospheric pollutants.
S1831: Floating water-plantain <i>Luronium natans</i>	The floating water plantain populations are viable throughout the plan area and growth, genetic exchange and reproductive cycle will be completed successfully. Near natural hydrological and geomorphological processes will be maintained in the lakes and non- native species will be absent. All factors affecting the achievement of these conditions are under control	Inadequate (Stable) – Due to viable but declining population and habitat quality	Unfavourable – Surveys of water plants from 2003 and 2004 recorded floating water plantain but acid neutralising capacity appeared to below limits and further information is needed before condition can be determined favourable.

Table 4.15 (continued): Conservation Objectives and Baseline Conditions – Elenydd SAC

4.7.3 Vulnerability of the SAC

The issues to which the Elenydd SAC is vulnerable are highlighted in Table 4.16. This information has been collated from the Core Management Plan for Elenydd-Mallaen SAC, Elenydd SPA, Elan Valley Woodlands SAC and Mynydd Mallaen SAC.

Issue	Detail	Source of Data
Water clarity	Floating water plantain can only thrive where there is good light penetration of the lake bed	Core Management Plan
Water quality	Oligotrophic lakes and associated plant communities are vulnerable to acidification from distant/diffuse sources and nutrients from adjacent catchment	Core Management Plan
Hydrology	Water fluctuations are being caused by the use of the SAC to support public abstraction at Foel requiring top up from Claerwen Reservoir.	Core Management Plan
Air quality	Air pollution may be a source of acidification in and nutrient loading in the lakes, bogs and heathland.	Core Management Plan
Disturbance	Vegetation may be vulnerable to excavations, vehicle and stock trampling.	Core Management Plan
Grazing pressure	A balance needs to be achieved to prevent over or under grazing on Calaminarian grassland	Core Management Plan
Burning	Burning is not appropriate management for heathland and bog habitats.	Core Management Plan
Erosion	Erosion generally caused by uncontrolled fires, vehicle use and heavy fires.	Core Management Plan
Peat erosion	Natural cycle of peat erosion and deposition can be disrupted by burning, heaving grazing pollution and vehicle damage.	Core Management Plan
Drainage	New drains within the bog could cause surface drying and peat erosion.	Core Management Plan

Table 4.16: Summary of Vulnerability of Elenydd SAC

4.8 HUMBER ESTUARY SAC

4.8.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030170>.

Country: England
Unitary Authority: East Yorkshire and northern Lincolnshire, Extra-Regio, Lincolnshire
Centroid: SO838110

Latitude: 53 35 21 N
Longitude: 00 44 04 W
SAC EU Code: UK00
Status: Designated Special Area of Conservation (SAC)
Area (ha): 36657.15

The Humber Estuary is the second-largest coastal plain estuary in the UK and the largest coastal plain estuary on the east coast of Britain. The SAC principally comprises estuaries sand flats, lagoons (94.9%), salt marches, salt pastures and salt steppe (4.4%), coastal sand dunes, sand beaches and Machair (0.4%) and Bogs, marshes water-fringed vegetation and fens (0.4%).

Qualifying Habitats

The site qualifies under the Habitats Directive (92/43/EEC) as it supports ten habitats of European importance listed on Annex I of the Directive. Estuaries and Mudflats and sandflats not covered by seawater at low tide are listed as a primary reason for selection. The following habitats are listed as a qualifying feature but are not a primary reason for site selection:

- Sandbanks which are slightly covered by sea water all the time;
- Coastal lagoons*;
- Salicornia and other annuals colonising mud and sand;
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*);
- Embryonic shifting dunes;
- Shifting dunes along the shoreline with *Ammophila arenaria* (White dunes);
- Fixed coastal dunes with herbaceous vegetation (Grey dunes)*; and,
- Dunes with *Hippophae rhamnoides*.

* Priority Feature

Qualifying Species

The site qualifies under Article 4.1 of the Habitats Directive (92/43/EEC) as it supports three species of importance listed on Annex II of the Directive. These species are:

- Sea lamprey *Petromyzon marinus*;
- River lamprey *Lampetra fluviatilis*; and,
- Grey seal *Halichoerus grypus*.

4.8.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for the Humber Estuary SAC are provided in Table 4.17 below. The conservation objectives were taken from the Conservation Objectives and Supplementary Advice for Humber Estuary SAC document (Natural England, 2014e). The conservation status and condition assessment was determined through the UK's third Article 17 Habitats Directive Report from 2013 (JNCC, 2013) and Natural England's online Site of Special Scientific Interest Condition Assessment tool.

Conservation Objectives

Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent of qualifying natural habitats and habitats of qualifying species;
- The structure and function of qualifying natural habitats;
- The structure and function of the habitats of qualifying species
- The supporting process 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.

Qualifying feature	Conservation status	Condition assessment
1130. Estuaries	Bad (Declining) – based on unfavourable structure and function in 40.6% of habitat	See Table 4.18 below
1140. Mudflats and sandflats not covered by seawater at low tide	Bad (Declining) – based on unfavourable structure and function in 26.7% of resource	See Table 4.18 below
1110. Sandbanks which are slightly covered by sea water all the time	Inadequate (Stable) – based on unfavourable structure and function in 10.9% of resource and stable short-term trends.	See Table 4.18 below

Table 4.17: Baseline Conditions – Humber Estuary SAC (continues)

Qualifying feature	Conservation status	Condition assessment
1150. Coastal lagoons	Inadequate (Stable) – based on unfavourable structure and function in 5.5% of resource and stable short-term trends.	See Table 4.18 below
1310. Salicornia and other annuals colonising mud and sand	Bad (Stable) – based unfavourable structure and function in over 25% of resource and stable short-term trends.	See Table 4.18 below
1330. Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Bad (Stable) – based unfavourable structure and function in over 25% of resource and stable short-term trends.	See Table 4.18 below
2110. Embryonic shifting dunes	Bad (Declining) - based unfavourable structure and function in over 25% of resource and potential decline due to Nitrogen critical load exceedance.	See Table 4.18 below
2120. Shifting dunes along the shoreline with Ammophila arenaria (White dunes);	Bad (Declining) - based unfavourable structure and function in over 25% of resource and potential decline due to Nitrogen critical load exceedance.	See Table 4.18 below
2130. Fixed dunes with herbaceous vegetation (Grey dunes)	Bad (Declining) - based unfavourable structure and function in over 25% of resource and potential decline due to Nitrogen critical load exceedance.	See Table 4.18 below
2160. Dunes with Hippopharhamoides	Bad (Improving) - based unfavourable structure and function in over 25% of resource but improving short-term trends.	See Table 4.18 below
S1095 Sea lamprey <i>Petromyzon marinus</i>	Unknown – Due to the population and habitat extent being currently unknown.	See Table 4.18 below
S1099 River lamprey <i>Lampetra fluviatilis</i>	Inadequate (Improving) – due to poor population levels and future prospects but population is currently stable.	See Table 4.18 below
1364. Grey Seal <i>Halichoerus grypus</i>	Favourable – due to continual increase in population size in long-term.	See Table 4.18 below

Table 4.17 (continued): Baseline Conditions – Humber Estuary SAC

Condition Assessment

Table 4.18 below details the four SSSIs that make up the Humber Estuary SAC designation and proportion of each SSSI in favourable or unfavourable condition.

SSSI	Condition Summary of SSSI (%)			
	Favourable	Unfavourable (Recovering)	Unfavourable (No change)	Unfavourable (Declining)
Humber Estuary SSSI	7.54%	91.21%	0.17%	1.09%
North Killingholme SSSI	0.00%	74.35%	25.65%	0.00%
Saltfleetby-Theddlethorpe Dunes SSSI	78.78%	21.22%	0.00%	0.00%
The Lagoons SSSI	0.00%	100.00%	0.00%	0.00%

Table 4.18: Condition Summary of component SSSIs that make up Humber Estuary SAC.

4.8.3 Vulnerability of the SAC

The issues to which the Humber Estuary SAC is vulnerable are highlighted in Table 4.19. This information has been collated from the Humber Estuary SAC Site Improvement Plan (Natural England, 2015).

Issue	Detail	Source of Data
Water pollution	A sag in the dissolved oxygen in the tidal River Ouse is below threshold and may cause barrier to sea lamprey when they are migrating through the area in summer months. Phosphates from a former Aluminium smelting plant and surrounding clay pits may also be an issue for water quality.	Site Improvement Plan
Coastal Squeeze	Loss of designated SAC features by sea level rise and presence of fixed defences affecting every salt marsh or mudflats where salt marsh is absent	Site Improvement Plan

Table 4.19: Summary of Vulnerability of Humber Estuary SAC (continues)

Issue	Detail	Source of Data
Changes in species distribution	Unknown spawning sites for river and sea lamprey. Further information is needed to prevent deterioration.	Site Improvement Plan
Undergrazing	Introduction of grazing for adjacent SPA birds needs to be investigated to determine potential impacts on saltmarsh and sand dune features	Site Improvement Plan
Invasive species	The presence of invasive plant species such as Himalayan balsam and Japanese knotweed is a catchment wide issue alongside the presence of marine invasive species such as the slipper limpet <i>Crepidula fornicata</i> and Chinese mitten crab <i>Eriocheir sinensis</i>	Site Improvement Plan
Natural changes to site conditions	Changes in topography and habitats in the inner estuary may be leading to a reduction of important habitats. Increasing sediment loads, storm events changes in water levels and sluice functioning and climate change are also likely to influence habitat conditions and need to be better understood.	Site Improvement Plan
Public access/disturbance	Recreational activities such as dog walking, birders and off-road vehicles could be contributing toward a decline in breeding birds.	Site Improvement Plan
Fisheries: commercial, marine and estuarine	The stocking of native and non-native freshwater fish is having an adverse impact on aquatic macrophytes and water quality.	Site Improvement Plan
Direct land take from development	An illegal flood defence has been created on the Hessle forshore where material has been dumped.	Site Improvement Plan
Air pollution: impact of atmospheric nitrogen deposition	Nitrogen deposition exceeds site relevant critical loads.	Site Improvement Plan
Direct impact from third party	Commercial scale collection of <i>Salicornia</i> occurs near Saltfleetby.	Site Improvement Plan

Table 4.19 (continued): Summary of Vulnerability of Humber Estuary SAC

4.8.4 Site Improvement Plan

The Site Improvement Plan for Humber Estuary SAC identifies a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the SAC.

4.9 HUMBER ESTUARY SPA

4.9.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/default.aspx?page=1996>.

Country:	England
Unitary Authority:	East Riding of Yorkshire, North Lincolnshire, North-east Lincolnshire.
Latitude:	53 37 58 N
Longitude:	00 00 39 W
SPA EU Code:	UK9006111
Status:	Designated Special Area of Conservation (SAC)
Area (ha):	15202.53

The JNCC website describes the Humber Estuary SPA as follows:

“The Humber Flats, Marshes and Coast is located on the east coast of England and comprises extensive wetland and coastal habitats within the Humber Estuary. The Estuary drains a catchment of some 24,240 square kilometres and provides the largest single point of freshwater from Britain into the North Sea. It has the second highest tidal range in Britain (7.2 m) and approximately one-third of the estuary is exposed as mud or sand-flats at low tide.”

Qualifying Species

The site qualifies under Article 4.1 of the Birds Directive by supporting populations of European importance or supporting including the following species listed on Annex 1 of the Directive:

- Great bittern *Botaurus stellaris* (non-breeding) – 4 individuals (4% of GB population);
- Great bittern *Botaurus stellaris* (breeding) – 2 booming males (10.5% of the GB population);
- Eurasian marsh harrier *Circus aeruginosus* (breeding) – 10 breeding females (6.3% of GB population);
- Hen harrier *Circus cyaneus* (non-breeding) – 8 individuals (1.1% of GB population);
- Pied avocet *Recurvirostra avosetta* (non-breeding) - 59 individuals (1.7% of GB population);
- Pied avocet *Recurvirostra avosetta* (breeding) – 64 pairs (8.6% of the GB population);
- European golden plover *Pluvialis apricaria* (non-breeding) – 30,709 individuals (12.3% of GB population);
- Ruff *Philomachus pugnax* (non-breeding) – 128 individuals (1.4% of GB population);
- Bar-tailed godwit *Limosa lapponica* (non-breeding) – 2752 individuals (4.4% of GB population); and,
- Little tern *Sterna albifrons* (breeding) – 51 pairs (2.1% of breeding population).

The site also qualifies under Article 4.2 of the Birds Directive for supporting populations of European importance of the following migratory species:

- Common shelduck *Tadorna tadorna* (non-breeding) – 4,464 individuals (1.5% of NW Europe breeding population);
- Red knot *Calidris canutus* (non-breeding) – 28,165 individuals (6.3% of *islandica* subspecies)
- Dunlin *Calidris alpina* (non-breeding) – 22,222 individuals (1.7% of NW non-breeding population of *alpina* subspecies)
- Black-tailed godwit *Limosa limosa islandica* (non-breeding) – 1,113 individuals (3.2% of wintering *islandica* subspecies)
- Common redshank *Tringa tetanus* (non-breeding) – 4,632 individuals (3.6% of *britannica* subspecies);
- Red knot *Calidris canutus* (non-breeding) – 18,500 passage individuals (4.1% of *islandica* subspecies);
- Dunlin *Calidris alpina* (non-breeding) – 20,269 passage individuals (1.5% of *alpina* subspecies)
- Black-tailed godwit *Limosa limosa islandica* (non-breeding) – 915 passage individuals (2.6% of *islandica* subspecies); and,
- Common redshank *Tringa tetanus* (non-breeding) – 7,462 passage individuals (5.7% of *britannica* subspecies).

The site is also qualifies under Article 4.2 of the Birds Directive for its water bird assemblage (c.154,000 birds during the winter and passage period).

4.9.2 Conservation Objectives and Baseline Conditions

The conservation objectives and baseline conditions for the Humber Estuary SAC are provided in Table 4.20 below. The conservation objectives were taken from the Conservation Objectives for Humber Estuary SPA document (Natural England, 2014e). The conservation status was determined through the bird trends data available on the British Trust for Ornithology website (BTO, 2017). The condition assessment was determined using Natural England’s online Site of Special Scientific Interest Condition Assessment tool.

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 and restoring:

- The extent and distribution of habitats of the qualifying features;
- The structure and function of the habitats of qualifying features;
- The supporting processes on which the habitats of qualifying features rely;
- The population of each of the qualifying features; and,
- The distribution of qualifying features within the site.

Qualifying feature	Conservation status	Condition assessment
A021. Great bittern <i>Botaurus stellaris</i> (non-breeding)	Unfavourable – Winter population is 600 males with identified winter range and population decline (1981 – 2007/2010)	See Table 4.21 below.
A021. Great bittern <i>Botaurus stellaris</i> (breeding)	Unfavourable – Due to small breeding population and recent breeding range decline (1981-2010)	See Table 4.21 below.
A048. Common shelduck <i>Tadorna tadorna</i> (non-breeding)	Unfavourable – Winter population 61,000 individuals but recent winter range and population decline (1981 – 2007/2010)	See Table 4.21 below.

Table 4.20: Baseline Conditions – Humber Estuary SPA (continues)

Qualifying feature	Conservation status	Condition assessment
A081. Eurasian marsh harrier <i>Circus aeruginosus</i> (breeding)	Unfavourable - due to small population size (400 pairs) and recent breeding population and range decline (1981 – 2007/2010)	See Table 4.21 below.
A082. Hen harrier <i>Circus cyaneus</i> (non-breeding)	Unfavourable – Population at 575 pairs in UK in 2016 showing slight decline since 2014 survey.	See Table 4.21 below.
A132. Pied avocet <i>Recurvirostra avosetta</i> (non-breeding)	Unfavourable – Winter population at 7500 individuals with recent winter population and range decline (1981-2007/2010)	See Table 4.21 below.
A132. Pied avocet <i>Recurvirostra avosetta</i> (non-breeding)	Unfavourable – breeding population at 1500 pairs with recent breeding population and range decline (1981 – 2007/2010)	See Table 4.21 below.
A140. European golden plover <i>Pluvialis apricaria</i> (non-breeding)	Favourable – UK winter population at 400,000 individuals having recovered from sharp decline in 2011.	See Table 4.21 below.
A143. Red knot <i>Calidris canutus</i> (non-breeding)	Unfavourable – Winter population at 320,000 individuals but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A149. Dunlin <i>Calidris alpina</i> (non-breeding)	Unfavourable – Winter population is 350,000 but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A151. Ruff <i>Philomachus pugnax</i> (non-breeding)	Unfavourable – Winter population at 800 individuals but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A156. Black-tailed godwit <i>Limosa limosa islandica</i> (non-breeding)	Unfavourable – winter population at 43,000 individuals but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A157. Bar-tailed godwit <i>Limosa lapponica</i> (non-breeding)	Unfavourable – Winter population at 38,000 individuals but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A162. Common redshank <i>Tringa tetanus</i> (non-breeding)	Unfavourable – Winter population at 120,000 individuals but with recent winter population and range decline (1981-2007/2010).	See Table 4.21 below.
A195. Little tern <i>Sterna albifrons</i> (breeding).	Unfavourable – Breeding population at 1900 pairs but with recent breeding population and range decline (1981-2007/2010).	See Table 4.21 below.

Table 4.20 (continued): Baseline Conditions – Humber Estuary SPA

Condition Assessment

Table 4.21 below details the four SSSIs that make up the Humber Estuary SPA designation and proportion of each SSSI in favourable or unfavourable condition.

SSSI	Condition Summary of SSSI (%)			
	Favourable	Unfavourable (Recovering)	Unfavourable (No change)	Unfavourable (Declining)
Humber Estuary SSSI	7.54%	91.21%	0.17%	1.09%
North Killingholme SSSI	0.00%	74.35%	25.65%	0.00%
Saltfleetby-Theddlethorpe Dunes SSSI	78.78%	21.22%	0.00%	0.00%
The Lagoons SSSI	0.00%	100.00%	0.00%	0.00%

Table 4.21: Condition Summary of component SSSIs that make up Humber Estuary SPA.

4.9.3 Vulnerability of the SPA

The issues to which the Humber Estuary SPA is vulnerable are highlighted in Table 4.22. This information has been collated from the Humber Estuary SAC Site Improvement Plan (Natural England, 2015)

Issue	Detail	Source of Data
Water pollution	Phosphates from a former Aluminium smelting plant and surrounding clay pits may also be an issue for water quality.	Site Improvement Plan
Coastal Squeeze	Loss of designated SAC features by sea level rise and presence of fixed defences affecting every salt marsh or mudflats where salt marsh is absent	Site Improvement Plan
Changes in species distribution	There are declines in populations of SPA bird features due to unknown factors	Site Improvement Plan
Undergrazing	Lack of grazing by livestock has resulted in suitable habitat no longer being maintained for roosting/loafing SPA birds.	Site Improvement Plan
Invasive species	The presence of invasive plant species such as Himalayan balsam and Japanese knotweed is a catchment wide issue alongside the presence of marine invasive species such as the slipper limpet <i>Crepidula fornicata</i> and Chinese mitten crab <i>Eriocheir sinensis</i>	Site Improvement Plan
Natural changes to site conditions	Changes in the topography and habitats in the inner estuary may lead to a reduction of important habitats such as mudflats. The causes are as yet unknown	Site Improvement Plan
Public access/disturbance	Recreational disturbance could be contributing to the declines of breeding and migratory birds populations at certain locations including Earl Halton, Skitter, Barton Pits Faxfeet and Welwick. Dog walkers, birds and other regularly occurring activities may be causing disturbance.	Site Improvement Plan
Fisheries: Fish stocking	Overstocking in the clay pits of the estuaries may be causing a decline in macrophytes and water quality which may negatively impact SPA water birds.	Site improvement plan
Fisheries: commercial, marine and estuarine	Commercial fishing activities are being assessed to determine if management and appropriate mitigation measures are required.	Site Improvement Plan
Direct land take from development	An illegal flood defence has been created on the Hessle forshore where material has been dumped.	Site Improvement Plan
Air pollution: impact of atmospheric nitrogen deposition	Nitrogen deposition exceeds site relevant critical loads.	Site Improvement Plan
Shooting/scaring	There is unauthorised wildfowling and game bird management in areas such as Haverfield Quarries. Implications for the PSA are unknown.	Site Improvement Plan
Direct Impact from third party	Commercial scale collection of Salicornia is occurring near Salfleetby.	Site Improvement Plan
Inappropriate scrub control	Successional scrub encroachment on grassland and reedbeds at Haverfield Quarries could reduce likelihood of breeding by marsh harrier	Site Improvement Plan

Table 4.22: Summary of Vulnerability of Humber Estuary SPA

4.9.4 Site Improvement Plan

The Site Improvement Plan for Humber Estuary SAC identifies a series of actions that are required to address the issues currently affect the conservation status of qualifying features in the Humber Estuary SPA.

4.10 HUMBER ESTUARY RAMSAR

4.10.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, both of which are available at <http://jncc.defra.gov.uk/default.aspx?page=1996>.

Country:	England
Unitary Authority:	City of Kingston upon Hull, East Riding of Yorkshire, Humberside, Lincolnshire, North East Lincolnshire and North Lincolnshire.
Latitude:	53 32 59 N
Longitude:	00 00 03 W
Ramsar Code:	UK11031
Status:	Designated Ramsar Site
Area (ha):	37987.8

The Humber Estuary Ramsar Information Sheet (JNCC, 2008) describes the site as follows:

“The Humber Estuary is the largest macro-tidal estuary on the British North Sea Coast. It drains a catchment of some 24,240 square kilometres and is the site of the largest single output of reshwater from Britain into the North Sea... The Estuary regularly supports internationally important numbers of waterfowl in winter and nationally important breeding populations in summer.”

Qualifying Features

The site qualifies under the following Ramsar criteria:

Ramsar Criteria 1 – the site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.

Ramsar Criteria 3 – the site supports a breeding colony of grey seals *Halichoerus grpus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast.

Ramsar Criteria 5 – the site supports an assemblage of non-breeding waterfowl deemed to be of international importance (153,934 individuals)

Ramsar Criteria 6 – the site supports the following species populations occurring at levels of international importance:

- European golden plover *Pluvialis apricaria* – representing 2.2% and 3.8% of the passing and wintering *altifrons* subspecies population (respectively);
- Red knot *Calidris canutus* – representing 4.1% and 6.3% of the passage and wintering *islandica* subspecies population (respectively);
- Dunlin *Calidris alpine* – representing 1.5% and 1.7% of the passage and wintering *alpina* subspecies population (respectively);
- Black-tailed godwit *Limosa limosa* – representing 2.6% and 3.2% of the passage and wintering *islandica* subspecies population (respectively);
- Bar-tailed godwit *Limosa lapponica* – representing 2.3% of the wintering *lapponica* subspecies population
- Common redshank *Tringa tetanus* – representing 1.5% and 3.6% of the passage and wintering *britannica* subspecies population (respectively); and,
- Common shelduck *Tadorna tadorna* – representing 1.5% of the breeding northwest European population.

Ramsar Criteria 8 – the site acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

4.10.2 Conservation Objectives and Baseline Conditions

There are no available conservation objectives and baseline conditions for the Humber Estuary Ramsar. However, as the criterion for listing of the Ramsar correspond with the qualifying habitat and species assemblages in the Humber Estuary SAC and SPA, the conservation objectives and conservation status are assumed to accord with those set out in the Humber Estuary SAC Conservation Objectives document (Natural England, 2014e). Condition assessment is based on the overall status of the four component Sites of Species Scientific Interest (SSSI) that make up the Ramsar designation using Natural England’s online Site of Special Scientific Interest Condition Assessment tool..

Conservation Objectives

Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent of qualifying natural habitats and habitats of qualifying species;
- The structure and function of qualifying natural habitats;
- The structure and function of the habitats of qualifying species
- The supporting process 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.

Condition Assessment

Table 4.23 below details the four SSSIs that make up the Humber Estuary Ramsar designation and proportion of each SSSI in favourable or unfavourable condition.

SSSI	Condition Summary of SSSI (%)			
	Favourable	Unfavourable (Recovering)	Unfavourable (No change)	Unfavourable (Declining)
Humber Estuary SSSI	7.54%	91.21%	0.17%	1.09%
North Killingholme SSSI	0.00%	74.35%	25.65%	0.00%
Saltfleetby-Theddlethorpe Dunes SSSI	78.78%	21.22%	0.00%	0.00%
The Lagoons SSSI	0.00%	100.00%	0.00%	0.00%

Table 4.23: Condition Summary of component SSSIs that make up Humber Estuary Ramsar

4.10.3 Vulnerability of the SAC

The issues to which the Humber Estuary SPA is vulnerable are highlighted in Table 4.24. This information has been collated from the Humber Estuary SAC Site Improvement Plan.

Issue	Detail	Source of Data
Disturbance to Vegetation through cutting/clearing	Reedbeds being cut and cleared on margins of pits associated with angling.	Ramsar Information Sheet
Vegetation / succession	Lack of reedbed management leading to scrub encroachment.	Ramsar Information Sheet
Water diversion for irrigation / domestic / industrial use	Abstraction causes reduced freshwater input.	Ramsar Information Sheet
Overfishing	Substantial lamprey by-catch in eel nets in River Ouse.	Ramsar Information Sheet
Pollution – domestic sewerage	Reduced dissolved oxygen in River Ouse is a barrier to fish migration.	Ramsar Information Sheet
Pollution – agricultural fertilisers	Reduced dissolved oxygen in River Ouse is a barrier to fish migration.	Ramsar Information Sheet
Recreational/tourism disturbance	Illegal access by motorised recreational vehicles and craft.	Ramsar Information Sheet
Other factor	Coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defenses	Ramsar Information Sheet

Table 4.24: Summary of Vulnerability of Humber Estuary SPA

4.11 FENS POOL SAC

4.11.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, which are available at <https://sac.jncc.gov.uk/site/UK0030150>

Country: England
Unitary Authority: West Midlands
Centroid: SO920888
Latitude: 52.49666667
Longitude: -2.117777778

SAC EU Code: UK0030150
Status: Designated Special Area of Conservation (SAC)
Area (ha): 20

This site comprises three canal feeder reservoirs and a series of smaller pools. They overlie Etruria marls and coal measures of the Carboniferous period. The site shows evidence of past industrial activities and includes a wide range of habitats from open water, swamp, fen and inundation communities to unimproved neutral and acidic grassland and scrub.

Qualifying Habitats

The site does not support any Annex I habitat types. Annex 1 habitats are neither a primary reason for selection or present as qualifying criteria.

Qualifying Species

The supports a population of great crested newts *Triturus cristatus* which occur as part of an important amphibian assemblage.

Qualifying feature	Conservation Objectives	Conservation status	Condition assessment
S1166: <i>Tritus cristatus</i> ; Great Crested Newt	<p>Ensure that the integrity of the site is maintained, and ensure that the site retains its ability to contribute to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:</p> <ul style="list-style-type: none"> - The extent and distribution of the habitats of qualifying species; - The structure and function of habitats of qualifying species; - The supporting processes on which the habitat of qualifying species rely. - The populations of qualifying species; and, - The distribution of qualifying species within the site. 	Declining – dramatic decline in recent years primarily driven by deterioration and fragmentation of habitat	Favourable – 100% of Fens Pools SSSI unit parcels (of which Fens Pools SAC covers 20ha) achieved favourable condition at last assessment by Natural England (January 2010)

Table 4.25: Conservation Objectives and Baseline Conditions – Fens Pool SAC

4.11.2 Vulnerability of the SAC

The issues to which Fens Pool SAC is vulnerable are highlighted in Table 4.26 This information has been collated from sources including JNCC SAC citation, the Site Improvement Plan for Fens Pools SAC (Natural England, 2014c) and the European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features (2017).

Issue	Detail	Source of Data
Overgrazing	Illegal stock of tethered horses resulting in overgrazing of surrounding grass sward leading to sediment run off into the breeding pool.	Site Improvement Plan
Inappropriate scrub control	Scrub management has not be carried out around the pool for a number of years	Site Improvement Plan
Disease	Infected alpine newts identified in 2009 with Chytrid fungus may pose a risk to the great crested newt population.	Site Improvement Plan
Water Pollution	Pollution occurs directly from off road vehicle/burnt out vehicles on site as well as indirectly via surface water run-off and air pollution	Site Improvement Plan
Habitat fragmentation	Site is isolated within a largely urban area. Connectivity/genetic interchange with other great crested newt populations is believed to be low or non-existent.	Site Improvement Plan

Table 4.26: Summary of Vulnerability of Fens Pool SAC

4.12 RIVER MEASE SAC

4.12.1 Qualifying Criteria

The following information is taken from the Joint Nature Conservation Committee (JNCC) site description and accompanying site citation document, which are available at: <https://sac.jncc.gov.uk/site/UK0030258> & <http://publications.naturalengland.org.uk/publication/6217720043405312>

Country:	England
Unitary Authority:	Derbyshire and Nottinghamshire, Leicestershire, Rutland and Northamptonshire, Shropshire and Staffordshire
Centroid:	SK260114
Latitude:	52.69972222
Longitude:	-1.615555556
SAC EU Code:	UK0030258
Status:	Designated Special Area of Conservation (SAC)
Area (ha):	23.03

The River Mease arises in North West Leicestershire and flows westwards through Derbyshire and Staffordshire for around 25 kilometres across a largely rural and agricultural landscape to its confluence with the Trent at Croxall. It is a small tributary of the River Trent system and represents a relatively unmodified lowland river with a diverse range of in-channel features, including riffles, pools, shoals, vegetated channel margins and bank side tree cover.

Qualifying Habitats

The site qualifies under the Habitats Directive (92/43/EEC) as it supports a habitat of European importance listed on Annex I of the Directive. Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation are listed as a qualifying feature but are not a primary reason for site selection.

Qualifying Species

The River Mease supports populations of the Annex II fish species, Spined loach (*Cobitis taenia*) and Bullhead (*Cottus gobio*), which constitute its primary reasons for selection.

Population of other Annex II species are White-clawed (or Atlantic stream) crayfish (*Austropotamobius pallipes*) and Otter (*Lutra lutra*) are also present but are not its primary reasons for selection.

4.12.2 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.

Qualifying feature	Conservation status	Condition assessment
3260: Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	Unfavourable-(Inadequate): a change in management or policy is required to return the habitat to favourable status but there is no danger of disappearance in the foreseeable future	Unfavourable-No Change
1149: Spined loach <i>Cobitis taenia</i>	Least Concern- The spined loach <i>Cobitis taenia</i> has an extremely wide distribution across Europe and Asia. However, it is generally regarded as threatened, if not rare, in Europe. In the UK however its distribution is restricted to just 5 East-flowing rivers	Unfavourable-No Change
1163: Bullhead <i>Cottus gobio</i>	Least Concern- The Bullhead <i>Cottus gobio</i> has an extremely wide distribution across Europe	Unfavourable-No Change

Table 4.27: Baseline Conditions – River Mease SAC (continues)

Qualifying feature	Conservation status	Condition assessment
1355: Otter <i>Lutra lutra</i>	Favourable: the Otter population in the UK is considered viable and able to maintain itself on a long-term basis, its natural range is not reduced, and it has a sufficient large habitat.	Unfavourable-No Change
1092: White-clawed crayfish <i>Austropotamobius pallipes</i>	Bad (Declining) – Due to declining population size and range of species.	Unfavourable-No Change

Table 4.27 (cotniued): Baseline Conditions – River Mease SAC

4.12.3 Vulnerability of the SAC

The issues to which River Mease SAC is vulnerable are highlighted in Table 4.28 This information has been collated from sources including JNCC SAC citation the Site Improvement Plan for River Mease SAC (Natural England, 2014)and the European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features (2016).

Issue	Detail	Source of Data
Water Pollution	Elevated levels of phosphate contribute to eutrophication leading to increased algal growth and the decline in abundance and/or diversity of characteristic plant and freshwater species and habitats of the SAC. A large proportion of phophate is associated with the high number of sewage treatment works (STWs) and more diffuse septic tank discharges.	Site Improvement Plan
Drainage	Cumulatively drains, field under drainage and other discharges within the catchment affect the naturalised flow pattern. As a consequence the river appears more 'flashy' with water levels rising and falling with increased rapidity.	Site Improvement Plan
Inappropriate weirs dams and other structures	The modified physical condition of the river, such as the presence of multiple weirs affects the condition of the SAC features and can restrict their population size and distribution.	Site Improvement Plan
Invasive species	Himalayan balsam and Japanese knotweed are found along the banks of the river. American signal crayfish have recently been found in the lower reaches of the river. Signal crayfish out compete native species for available food and habitat and carry the crayfish plague which our native crayfish has no resistance to	Site Improvement Plan
Siltation	High levels of siltation smother gravel beds which are the required spawning habitat of bullhead and can also cover areas of fine sand which are used as spawning habitat by spined loach.	Site Improvement Plan
Water abstraction	Water abstraction changes the naturalised flow pattern from low to high flows and all flow ranges are important for different life stages of the SAC species. There are a number of regulated agricultural related abstractions along the River Mease and a permitted transfer of ground water to the Ashby Canal. However there are 11 sewage treatment works with in the catchment providing a net surplus of water to the system overall. The water balance for the catchment and how this affects the flow pattern and ecology is still to be better understood.	Site Improvement Plan

Table 4.28: Summary of Vulnerability of River Mease SAC

5. THE SUBMISSION DRAFT OF THE SOLIHULL LOCAL PLAN REVIEW

In 2015, Solihull Metropolitan Borough Council commenced work on the Solihull Local Plan Review to establish an up-to-date planning framework for the future growth of the Borough to 2033. Consultations on the Scope, Issues and Options document and the Draft Local Plan Review were carried out and completed in 2015 and 2016-2017 respectively and a supplementary consultation on the Draft of the Local Plan Review occurred in January 2019. Further consultation of the Submission Draft of the Local Plan is planned for Summer 2020 with the intention that a Finalised Local Plan Review can be submitted to the Secretary of State before the end of 2020.

The Solihull Local Plan Review updates the existing Solihull Local Plan which was adopted by Solihull Borough Council in December 2013. Although the existing local plan is up to date in many respects, there are three reasons which have triggered the need for early review:

- The Solihull Local Plan was subject to a legal challenge which resulted in the housing figures in the plan being deleted and remitted back to the Council for reconsideration.
- The examination of the Birmingham Development Plan identified that the city was unable to address its housing requirements and that neighbouring authorities, including Solihull Metropolitan Borough, was required to review their housing requirements in order to accommodate some of the housing shortfall.
- The planning framework needed to recognise the arrival of HS2 in the Borough, with royal assent being granted in 2017 and construction of the proposed route to occur within the existing local plan period. This includes the construction of a new interchange station situated on green belt land adjacent to the M42 and NEC/Airport.

5.1 PROPOSALS SCREENING

Provision of Land for Housing

The Submission Draft of the Solihull Local Plan Review includes 20 site allocations for housing growth over the 2020-2036 period, as well as the redevelopment of a substantial area of brownfield land adjacent to the NEC Arena. The locations of these sites can be seen in drawing C152313-01 in appendix 2. The relative geographic locations of these sites are, at this time, deemed to be relatively fixed but, after consultation with Solihull MBC there remains potential for future flux in the total number of dwellings, the start dates for the development of individual site allocations and the annual build rate attributed to each specific site allocation. When conducting Habitats Regulations Assessment where variability within a range is an inherent part of the plan or project being considered, the required approach is outlined under the Precautionary Principle which is implicit within the Habitats Directive (see section 2.2.) and further clarified within the Habitats Regulations Handbook (DTA Publications, 2013 and subsequent updates) and the European Commission's Final Communication from the Commission on the Precautionary Principle (European Commission, 2000a).

Where such variability in a plan or project under consideration is unavoidable and cannot reasonably be addressed (or reduced) via the further collection of evidence the Precautionary Principle requires that the maximum likely level of harm be used when assessing its likely impacts upon Natura 2000 sites.

In this instance although the Submission Draft of the Solihull Local Plan details (in policy P5) a total minimum requirement of 6,522 net additional homes across the 20 site allocations (which in combination with previously adopted sites could result in a minimum total of 15,029 net-additional homes over the plan period 2020-2036) the maximum possible level of development within those sites has been used when determining the Submission Draft's likely significant effect on Natura 2000 sites (Chapter 6). This means, in practical terms, that an in-combination 'development ceiling' of 16,000 net-dwelling over the plan period 2020-2036 has been used when undertaking the updated Screening Assessment. This figure is representative of the highest level of likely net-dwelling creation over the chronological scope of the assessment.

Likewise, in compliance with the precautionary principle, it has been assumed that the start date for the development of all new Site Allocations will be the soonest possible date suggested by the landowner/agent and the annual build-out rate will always meet its likely maximum. In this manner this Screening Assessment can be considered a robust representation of 'worst case scenario' from the point of view of likelihood of significant impacts occurring to the Natura 2000 sites.

5.2 POLICY SCREENING

The Submission Draft of Solihull Local Plan Review includes ten chapters outlining a vision, spatial strategy and 29 policies and sub-policies designed to achieve sustainable growth within the Borough and address the planning challenges outlined above. Each chapter and policy of the Local Plan Review were subject to an initial screening to determine if they could give rise to ecological effects on the Natura 2000 network, alone or in combination with other policies or proposals within the plan. The findings of this initial policy screening are summarised in Table 5.1.

Chapter	Policies	Screened in/out
Chapter 1: Introduction	N/A	Screened out – Administrative text
Chapter 2: Borough Portrait	N/A	Screened out – Administrative text
Chapter 3: Challenges	N/A	Screened out – Administrative text
Chapter 4: Vision	N/A	Screened out – General statement of policy/general aspiration
Chapter 5: Spatial Strategy	N/A	Screened out - Policy listing general criteria for testing the acceptability/sustainability of proposals.
Chapter 6: Sustainable Economic Growth	Policy P1 – UK Central Hub	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.
	Policy P1A – Blythe Valley Business Park	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.
	Policy P2 – Maintain Strong, Competitive Town Centres	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.
	Policy P3 – Provision of Land for General Business and Premises	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at this stage.
Chapter 7: Providing Homes for All	Policy P4A-E – Meeting Housing Needs	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
	Policy P5 – Provision of Land for Housing	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at this stage.
	Policy P6 – Provision of Sites for Gypsies and Travellers	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.
Chapter 8: Improving Accessibility and Encouraging Sustainable Travel	Policy P7 – Accessibility and Ease of Access	Screened out – Policy listing general criteria for testing acceptability/sustainability of proposals
	Policy P8 – Managing Travel Demand and Reducing Congestion	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
	Policy P8A – Rapid Transit	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
Chapter 9: Protecting and Enhancing Our Environment	Policy P9 – Mitigating and Adapting to Climate Change	Screened out – Environmental Protection / Site safeguarding policy
	Policy P10 – Natural Environment	Screened out – Environmental Protection / Site safeguarding policy
	Policy P11 – Water & Flood Risk Management	Screened out – Environmental Protection / Site safeguarding policy
	Policy P12 – Resource Management	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.

Table 5.1: Summary of Initial Policy Screening (continues)

Chapter	Policies	Screened in/out
Chapter 9: Protecting and Enhancing Our Environment	Policy P13 – Minerals	Policy could potentially lead to type of change or variation in existing activity and so likelihood of significant effect on Natura 2000 network, alone or in combination, cannot be ruled out at Preliminary examination stage.
	Policy P14 – Amenity	Screened out – Environmental Protection / Site safeguarding policy
	Policy P14A – Digital Infrastructure	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
Chapter 10: Promoting Quality of Place	Policy P15 – Securing Design Quality	Screened out – Policy does not lead to development other change.
	Policy P16 – Conservation of Heritage Assets and Local Distinctiveness	Screened out – Environmental Protection / Site safeguarding policy
	Policy P17 – Countryside and Green Belt	Screened out – Environmental Protection / Site safeguarding policy
11. Health and Supporting Local Communities	Policy P18 – Health and Wellbeing	Screened out – Policy does not lead to development other change.
	Policy P19 Range and Quality of Local Services	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
	Policy P20 – Provision for Open Space Children’s Play, Sport, Recreation and Leisure	Screened out – Policy for which the effect cannot undermine the conservation objects of a European Site alone or in combination.
12. Delivery and Monitoring	Policy P21 – Developer Contributions and Infrastructure Provision	Screened out – Policy does not lead to development or other change.

Table 5.1 (continued): Summary of Initial Policy Screening

5.2 POLICY SUMMARY AND POTENTIAL EFFECTS

Table 5.2 summarises the potential environmental effects arising from the implementation of the policies and proposals detailed in the Solihull Local Plan that are to be considered in the Preliminary Assessment in Chapter 6.

Policy/ Proposal	Description	Potential Ecological Impacts			
		Air quality	Hydrology (Water Quantity)	Hydrology (Water Quality)	Recreational Pressures
Policy P1 – UK Central Hub	<ul style="list-style-type: none"> - Support for future commercial development of the UK central hub area including Arden Cross, the National Exhibition Centre (NEC), Birmingham Airport, Jaguar Landover, and Birmingham Business Park. - No specific proposals are detailed. 	Yes – Policy Supports future growth of UK Hub and so could be associated with increased commercial activity and subsequent increase in vehicle emissions.	Yes – An increase in commercial activity may result in increased demands for water abstraction for commercial uses.	Yes – An increase in commercial activity is may result in an increased demand for waste water treatment and management.	-
Policy P1A – Blythe Valley Business Park	<ul style="list-style-type: none"> - Support for development of the Blythe Valley Business Park for commercial and ancillary uses. - No specific proposals are detailed. 	Yes – Policy supports future growth of Blythe Valley Business Park and so could be associated with increase commercial activity and subsequent increases in vehicle emissions.	Yes – An increase in commercial activity may result in increased demands for water abstraction for commercial uses.	Yes – An increase commercial activity may result in increased demands waste water treatment and management for commercial uses.	-
Policy P2 – Maintaining Strong, Competitive Town Centres.	<ul style="list-style-type: none"> - Support for development of town centres in Solihull, Shirley and Chelmsley Wood. - Aspiration of up to 11,700sqm of commercial and leisure facilities, 74,620 sqm of new office, 1400 new homes and 100 new homes near the train station. - Site allocations are set out in the Town Centre Masterplan 2016-2036. 	Yes – Policy supports future growth of Solihull Town Centre and so could be associated with increase commercial activity and subsequent increases in vehicle emissions.	Yes – An increase in commercial activity may result in increased demands for water abstraction for commercial uses.	Yes – An increase commercial activity may result in increased demands waste water treatment and management for commercial uses.	-
Policy P3 – Provision of land for General Business and Premises	<ul style="list-style-type: none"> - Support for new land for general business premises across the borough. - Site allocations include eight site allocations comprising up to 35.5 ha (excluding potential site availability of strategic sites in Policies P1 and P1A. 	Yes – Policy allocates land for general business use and so could be associated with increase commercial activity and subsequent increases in vehicle emissions.	Yes – An increase in commercial activity may result in increased demands for water abstraction for commercial uses.	Yes – An increase commercial activity may result in increased demands waste water treatment and management for commercial uses.	-

Table 5.2: Summary of Potential Environmental Effects of Broad Policy Areas (continues)

Policy	Description	Potential Ecological Impacts			
		Air quality	Hydrology (Water Quantity)	Hydrology (Water Quality)	Recreational Pressures
Policy P5: Provision of Land for Housing	<ul style="list-style-type: none"> - Allocation for at least 6,522 net additional homes (a minimum total of 15,029 over plan period 2020-2036) - Identifies housing allocation sites required to meet housing targets. 	Yes – Policy allocates land for future residential development in the borough which will result in an increased population with subsequent increases in household and vehicle emissions.	Yes – Future housing allocations may increase demands for water abstraction for domestic use.	Yes – Future housing allocations may increase demands for waste water treatment and management for domestic use.	Yes – Future housing allocations will result in an increased population with potential recreational demands for accessible green spaces within or surrounding the borough.
Policy P6: Provision of Land for Gypsies and Travellers	<ul style="list-style-type: none"> - Criteria for determining the allocation of future gypsy/traveller sites - No specific allocations or proposals are given. 	-	Yes – Allocation of additional gypsy/traveller sites may increase demands for water abstraction alone or in combination with other policies in the plan.	-	
Policy P12: Resource Management	<ul style="list-style-type: none"> - Support for new waste management facilities. - Criteria for determining new waste management allocations. - No specific waste management allocations are given. 	Yes - Policy sets out criteria for determining location of future waste management facilities which could lead to an increase in commercial activity and subsequent vehicle/ industrial emissions.	-	Yes – Depending on future location, waste management facilities could result in increased demand for waste water treatment and management.	-
Policy P13: Minerals	<ul style="list-style-type: none"> - Minerals safeguarding area included on the proposals map. - Provision for sand and gravel extraction although no site allocations are given. 	Yes – Policy promotes and sets out criteria for future minerals proposals which may increase commercial activity and subsequent levels of vehicle emissions.	-	-	-

Table 5.2 (continued): Summary of Potential Environmental Effects of Broad Policy Areas

6. DETERMINATION OF LIKELY SIGNIFICANT EFFECTS

This section details the examination of whether the identified ecological impacts of the Solihull Local Plan Review will have any adverse effects on the 12 Natura 2000 sites that have potential connective links to the Metropolitan Borough area. The potential for likely significant effects in combination with other plans are summarised in Chapter 7.

6.1 ENSORS'S POOL

Section 4.1 highlights that Ensor's Pool SAC is vulnerable to the following key issues:

- Change in species composition.

6.1.1 Changes in Species Composition

According to the Site Improvement Plan for Ensor's Pool, the SAC comprises an abandoned clay pit on the western edge of Nuneaton in Warwickshire. The pool is 3.79 ha in size with an average depth of 8 m which is ground-water fed. The most recent survey of Ensor's Pool in September and October 2014 did not find any of the qualifying species - white-clawed crayfish. The Site Improvement Plan for Ensor's Pool SAC states that the cause of the apparent decline is unclear. One of the proposed actions detailed in the Site Improvement Plan for Ensor's Pool SAC is to investigate the possible cause of white-clawed crayfish decline. Therefore, consideration is given to the potential to impact on the investigative works being carried out and any other measures that may be required to address the issue.

Direct Effects

The SAC is located 9 km to the east of Solihull Metropolitan Borough and is surrounded by urban development associated with the town of Nuneaton and Bedworth. Given the proximity of the borough to the SAC, and the intervening land issues, no direct effects such as physical habitat loss or fragmentation leading to a change in species composition in the SAC are likely as a result of the policies and proposals detailed in the Solihull Local Plan Review.

Water Abstraction

Both Solihull Metropolitan Borough and Ensor's Pool are located within the Tame, Anker and Mease Catchment area. Water Abstractions in this catchment are managed through the Tame, Anker and Mease Catchment Abstraction Management Strategy (CAMS) (Environment Agency, 2013), which provides information about the water resources available and the environmental controls that will be employed when issuing or reviewing abstraction licences in the catchment. Ensor's Pool SAC is identified in CAMS as a site which affords very high protection and one for which the Environment Agency has a duty to maintain and improve the site in accordance with the Habitats Directive. The CAMS subsequently outlines that any water management strategy, or licence, determined by the Environment Agency should not result in the degradation of the SAC. In view of these abstraction licence controls issued by the Environment Agency, it is unlikely that there will be any water abstraction effects on species composition in Ensor's Pool SAC as a result of the policies and proposals detailed in the Solihull Local Plan Review.

Waste Water Management

As part of the Joint Warwickshire Partnership Water Cycle Study (Aecom, 2016), the effects of Waste Water Management were considered for designated sites within the Warwickshire Area. The study consulted Environment Agency about potential discharges into Ensor's Pool SAC. The Environment Agency stated that an investigation was carried out into the main inputs into the pool and that it was discovered that there are no permitted discharges into the SAC and that the SAC is predominantly fed via land drains from a farm. No connection between the SAC and waste water treatment in the Warwickshire study area was identified. Given the intervening distance of Solihull Metropolitan Borough from the SAC, the intervening land uses and the current restriction on discharges into the SAC, no waste water management effects leading to a change in species composition in the SAC are likely as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.2 CANNOCK EXTENSION CANAL SAC

Section 4.2 highlights that the SAC is vulnerable to the following key issues:

- Water pollution;
- Overgrazing;
- Invasive species; and,
- Air pollution.

6.2.1 Water Pollution

The Site Improvement Plan for Cannock Extension Canal SAC outlines that the SAC has previously been vulnerable to historic sediment loads, which have since been resolved. A consultation response from Natural England cited in the Habitat Regulations Assessment of the Black Country Joint Core Strategy Screening Report (UE associates, 2010) states that;

"It is now clear that any road drainage reaching the canal is only off a very short stretch of the B4154 and, as a consequence, any increase in road traffic along this road resulting from the proposal of either your own authorities or that of the Black Country Authorities.

Indeed, it is now clear that the polluted water originates off Wyrley Common and matters are now in hand to resolve that issue.

As a consequence, Natural England agrees that it is not necessary for you to proceed to the next stages of the HRA in terms of this particular issue."

However, the Site Improvement Plan (Natural England, 2014b), which post-dates the Natural England response, also identifies that heavy rainfall events still cause stained inflows in the SAC indicating a continuing, albeit low sediment loading. Further assessment work is proposed to investigate if the previous sediment control works are working and to understand the flow from other land surrounding the site and to assess all inflows from boats moorings and roads.

Cannock Extension Canal SAC is situated 18.8 km to the northwest of Solihull Metropolitan Borough and is separated by the urban areas of Birmingham and Walsall. All land uses, roads, and moorings within or adjacent to the SAC, which are likely to be subject to further investigation into sources of water pollution, are outside of the Solihull Metropolitan Borough. Furthermore, there are no identified historical linkages between sources of water pollution in the SAC and Solihull Metropolitan Borough. It is therefore concluded that the policies and the proposals of the Solihull Local Plan Review will have no effects with regards to water pollution in the SAC, or on any associated remedial actions proposed.

6.2.2 Overgrazing

There are no identified linkages between overgrazing pressure from geese in Cannock Extension Canal SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no contributing effects on overgrazing within the SAC or any effect associated remedial actions that are proposed.

6.2.3 Invasive Species

There are no identified linkages between the cause or spread of invasive non-native species in the Cannock Extension Canal SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no contributing effects on the spread of non-native invasive species in the SAC or on any associated remedial actions proposed.

6.2.4 Air Quality

The Site Improvement Plan for the Cannock Extension Canal SAC (Natural England, 2014b) identifies that the site exceeds its critical load with regards to nitrogen deposition and outlines that a Site Nitrogen Action Plan should be produced to control, reduce and ameliorate atmospheric nitrogen impacts. At the time of writing it is unknown whether this plan has been produced, however it is evident that any continued increase in nitrogen deposition has the potential to result in a deleterious effect on the sensitive species for which the SAC is designated. It is necessary, therefore, to consider the likelihood of the implementation of the Solihull Local Plan Review providing a measurable contribution to baseline nitrogen levels at the SAC. Atmospheric nitrogen can occur from both local sources and long-range sources (including pollution imported from Europe and further field), therefore this section considers the potential for policies from the Local Plan to contribute to both.

Local Sources

The potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to the large spatial distance between the SAC and the Solihull MBC boundary. The Site Improvement Plan for the Cannock Extension Canal SAC identifies that the main contributing sources to nitrogen accumulation are major roads, industrial estates and farming practices. The latter two categories are both described in Natural England's Atmospheric Nitrogen Theme Plan (IPENS) (Natural England, 2015c), which identifies two main forms of atmospheric nitrogen. These are oxides of nitrogen (NO_x), which are derived mostly from processes involving combustion (power stations, factories, vehicle engines) and ammonia (NH₃) which principally originates from agricultural sources. The contribution of these two sources to nitrogen deposition in Natura 2000 sites varies depending on the site and its relative location, in that sites closer to urban areas are likely to be more affected by combustion sources, such as industrial areas or motorway corridors whilst rural sites could be more affected by agricultural sources. Implementation of the Solihull Local Plan Review will, however, have no influence on agricultural emissions, and only limited influence on industry within the Solihull MBC boundary only (over 18 km from the SAC boundary), and will therefore have not contribute to nitrogen deposition from local sources.

Major roads are slightly more complex, because although the majority of additional traffic arising from the implementation of the Local Plan will be focused within the borough of Solihull, it is anticipated that the increases in housing, minerals sites and support for further development around key business areas such as UK Central and Blythe Valley Business Park will lead to an increase in vehicle movements outside of the borough boundary. Natural England state that transport is known to be the single largest source of NO_x emissions (NECR199) (Natural England, 2016c), with pollution relating to the road network generally accepted to be concentrated within a 200 m radius of a major road (Ricardo-AEA, 2016) cited in Natural England's NEA001 approach to advising competent authorities on the assessment of road traffic emissions under the Habitat Regulations (2018c). Reference to mapped sources indicates that the majority of the linear expanse of the SAC is located well away from major roads, with the exception of the northernmost tip which lies within 200 m of the A5. Given the large intervening distance between the SAC and the borough boundary it is anticipated that any increase in traffic along the A5 emanating from within the borough would be diffuse and minor, and would be highly unlikely to result in a measurable increase in NO_x deposition within the SAC.

Long-range Sources

Categorising the contribution to baseline nitrogen levels that could occur from long-range sources is more complex, as this effectively takes into account all potential NO_x emissions throughout the UK and beyond. It is outside the scope of the current screening study to define the extent to which the implementation of the Local Plan could contribute to NO_x deposition at such a large scale, however it is evident from the plan policies that it will not make a significant contribution to the level of air pollution arising from agricultural sources, either alone or in combination with other plans. Furthermore, applications for industrial sites would be subject to review and assessment against air pollution policy criteria detailed in Policy P14 of the Solihull Local Plan Review and therefore potential future sources of long-range diffuse air pollution can be mitigated or controlled to ensure that they do not make a significant contribution to diffuse air pollution over the plan period.

Seven policies in the Solihull Local Plan Review (Policies P1A, P1, P2, P3, P5 P12 and P13) promote forms of development that could contribute towards an increase in atmospheric nitrogen through the increase of vehicle movements; however, this will be alleviated by policies P8, P8A and P18 targeted towards improvements in sustainable public transport, as well as from national and local targets for reductions in greenhouse gas emissions. Therefore, the Solihull Local Plan Review is not considered to make a significant contribution to long-range air pollution from vehicle movements, either alone or in-combination, during the plan period.

6.3 CANNOCK CHASE SAC

Section 4.3 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Recreational pressure;
- Undergrazing;
- Drainage;
- Hydrological changes;
- Disease;
- Air pollution;
- Wildfire/arson; and,
- Invasive species.

6.3.1 Recreational Pressure

Recreational pressure is not identified as a key vulnerability in the Site Improvement Plan for Cannock Chase SAC. However, much of the SAC falls within the well used Cannock Chase Country Park, therefore the sensitive qualifying habitats in the SAC are potentially vulnerable to disturbance resulting from visitor pressure. These effects have been subject to a comprehensive study carried out by Footprint Ecology (2009). At that time this work informed the Core Strategies of the four neighbouring authorities around Cannock Chase, these being Cannock Chase District, South Staffordshire District, Lichfield District and Stafford Borough. The study identified that the Core Strategies combined could contribute to an approximate 20% increase in visits to the SAC by 2026 and that adverse effects relating to visitor pressure could not be avoided if development is undertaken within a 400 m radius of the SAC or where large development are undertaken within an easy travel distance. The study also calculated a theoretical 'zone of influence' for adverse effects arising from recreational pressure using data generated by a Staffordshire University study into the number and spatial distribution of visitors to the wider Cannock Chase Area of Outstanding Natural Beauty (AONB). The 'zone of influence' was determined at 12 miles (19.3 km) from the SAC boundary as this encompassed the area from which 75% of visits to the SAC occur. Although, the report caveats that developments greater than 100 dwellings outside the zone of influence may also contribute to visitor pressure.

The outcome of the assessment was that a Visitor Impact Mitigation Strategy was produced by Footprint Ecology (2010). The strategy focusses on promoting responsible access within Cannock Chase SAC and ensuring no net increase in visitor pressure by attracting people away from the sensitive habitats of the SAC or the site altogether. This includes measures grouped into four areas including Habitat Management, Access Management, Visitor Infrastructure – Publicity, Education and Awareness Raising; and Alternative Sites. The Visitor Impact Mitigation Strategy was adopted by Cannock Chase SAC Partnership which incorporates all local authorities within a revised Zone of Influence area of 15 km (Cannock Chase District Council, South Staffordshire District Council, Lichfield District Council, Staffordshire Borough Council, East Staffordshire Borough Council, and Wolverhampton City Council). The Visitor Mitigation Strategy led to the creation of Strategic Mitigation Scheme in 2016 (the Strategic Access Management and Monitoring Measure or SAMMM) to deliver mitigation of visitor impact to the site. This scheme is funded by developer contributions. The Visitor Impact Mitigation Strategy has since been reviewed by Cannock Chase SAC Partnership with the first stage being completed in 2017 by Footprint Ecology. An updated visitor survey confirming that the Zone of Influence remains at 15km was completed by Footprint Ecology in early 2019. Stage 2 of the review commenced in late 2019 and is still ongoing at this time. In early 2019 two Detailed Implementation Plans (DIPs) created by Footprint Ecology were published by the Cannock Chase SAC Partnership. These plans further detail how the SAMMM will be delivered and identify further mitigatory works that could be delivered if the scale of the strategic mitigation scheme needed to be expanded in the future. One DIP focused on amendments to car parking on Cannock Chase the other on improving site user infrastructure, education and engagement.

Solihull Metropolitan Borough is located 28.3 km from the edge of the Cannock Chase SAC, and as such is well outside the calculated zone of influence. The Solihull Local Plan Review includes policies that increase the number of housing, which may contribute towards visitor numbers at the SAC. However, there are other large recreational open spaces such as Sutton Park available within close proximity to the Metropolitan Borough, along with parks and natural accessible green space within the Metropolitan Borough itself which offer closer alternatives than those provided by Cannock Chase SAC. This is further supported by Policy P18 of the Solihull Local Plan Review which promotes access improvements to the green infrastructure network and the protection of open spaces to reduce the need to travel to access open space. Any residual visitor pressure on the SAC from Solihull is therefore unlikely to exceed that anticipated by the Footprint Ecology study and will be mitigated through the increase visitor carrying capacity delivered by the adopted Visitor

Impact Mitigation Strategy. The policies and proposals of the Solihull Local Plan Review are not therefore considered to have an adverse effect on Cannock Chase SAC with regards to an increase in visitor/recreational pressure.

6.3.2 Undergrazing

The Site Improvement Plan for Cannock Chase SAC identifies that conservation grazing actions needed to restore the dry and wet heathland habitats in the SAC have been impeded by the presence of the plant fungal disease *Phytophthora pseudosyringae* on bilberry. The SAC has been subject to five years of monitoring to better understand the disease and how it moves across the site and a grazing management plan is being produced that will ensure no greater risk of disease spread from grazing than from that posed by people, deer and dogs.

There are no identified linkages between the spread of the plant fungal disease *Phytophthora pseudosyringae* which has restricted grazing on Cannock Chase SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan will therefore have no effect on the current undergrazing issues or the remedial actions proposed for the SAC.

6.3.4 Drainage

The Site Improvement Plan for Cannock Chase SAC identifies that the water supply to wetland habitats needs further investigation. It further states that there are artificial and historic drainage structures in the Oldacre Valley that need to be assessed to establish their impact on the wetland vegetation.

There are no identified linkages between the artificial and historic drainage structures in the Oldacre Valley and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan will therefore have no effect on the current drainage issues or the remedial actions proposed for the SAC.

6.3.5 Hydrological Issues

The Site Improvement Plan for Solihull Local Plan identifies that there has been a reduction in the extent of Valley Mire and a change in the vegetation communities in the Sher Brook Valley that is indicating a drier wetland vegetation type. The plan states that further investigations will be required to assess the hydrology in the Sher Brook Catchment area in order to inform restoration proposals.

There are no identified hydrological linkages between the Sher Brook Valley and Solihull Metropolitan Borough as the Sher Brook Catchment forms part of the wider Trent Valley Catchment, whilst Solihull Metropolitan Borough is located in the Tame, Anker and Mease and the Avon Valley Catchment. The policies and proposals of the Solihull Local Plan will therefore have no effect on the current hydrological issues or the remedial actions proposed for the SAC.

6.3.6 Disease

There are current no identified linkages between the outbreak or spread of *Phytophthora pseudosyringae* in Cannock Chase SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will have no effect on the current disease issue or on the remedial actions proposed for the SAC.

6.3.7 Air Pollution

The Site Improvement Plan for the Cannock Chase SAC (Natural England, 2009c) identifies that the site exceeds its critical load with regards to nitrogen deposition and outlines that a Site Nitrogen Action Plan should be produced to control, reduce and ameliorate atmospheric nitrogen impacts. As detailed for Cannock Extension Canal SAC in Section 6.2.4, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to the large spatial distance between the SAC and the Solihull MBC boundary. The Site Improvement Plan for the Cannock Chase SAC does not identify specific contributing sources to nitrogen accumulation but major roads, industrial estates and farming practices are likely to be the primary sources for the two main forms of atmospheric nitrogen (NO_x and NH₃). Implementation of the Solihull Local Plan Review will, however, have no influence on agricultural emissions, and only limited influence on industry within the Solihull MBC boundary only (over 28 km from the SAC boundary), and will therefore not contribute to nitrogen deposition from local sources.

As detailed for Cannock Extension Canal SAC above, the majority of additional traffic arising from the implementation of the Local Plan will be focused within the Metropolitan Borough, although it is anticipated that increases in housing, minerals sites and support for further development around key business areas such as UK Central and Blythe Valley Business Park could lead to an increase in vehicle movements outside of the borough boundary. Natural England (2016c) state that transport is known to be the single largest source of NO_x emissions (NECR199, NEA001), with pollution relating to the road network generally accepted

to be concentrated within a 200 m radius of a major road (Ricardo-AEA, 2016, NEA001). Reference to mapped sources indicates that a proportion of the SAC is located well away from major roads, but northern and southern areas do lie within 200 m of the A513 and the A460. However, given the large intervening distance between the SAC and the borough boundary and that alternative routes on the strategic road network are available in the wider area, it is anticipated that any increase in traffic along these roads emanating from within the borough would be minor, and would be highly unlikely to result in a measurable increase in NO_x deposition within the SAC.

Cannock Chase SAC is outside of the West Midlands agglomeration zone and therefore it is beyond the scope of this report to examine or differentiate the potential contribution of the Solihull Local Plan Review to all long-range sources of air pollution potentially affecting the SAC. However, given the mitigating policies detailed in the Solihull Local Plan and the additional measures proposed within the Air Quality Plan for Tackling Roadside Nitrogen Dioxide Concentrations in the West Midlands, it is considered that such long-range air pollution would not make a significant contribution to long-range pollution from vehicle movements, either alone or in-combination, during the plan period.

6.3.8 Wildfire/Arson

Accidental and deliberate fires are identified in the Site Improvement Plan as historically causing major damage to Cannock Chase. Subsequently actions are identified to ensure that the fire break network is robust and that a restoration plan in the event of a fire are in place to aid recovery.

There are currently no identified linkages between accidental and deliberate fires in Cannock Chase SAC and Solihull Metropolitan Borough. The policies and proposals in the Solihull Local Plan Review will have no effect on wildfire issues or the remedial actions proposed for the SAC.

6.3.9 Invasive Species

A range of invasive species are currently present in the SAC and management objectives have focussed on monitoring and controlling certain aggressive species to prevent damage to the dry and wet heathland habitats. The Site Improvement Plan also sets out proposals to raise awareness with neighbouring landowners to help prevent the risk of spread of invasive species.

There are currently no identified linkages between the spread of invasive species within Cannock Chase SAC and Solihull Metropolitan Borough. The Policies and proposals of the Solihull Local Plan Review will therefore have no effect on the current invasive species issues or the remedial actions proposed for the SAC.

6.4 RIVER WYE SAC

Section 4.4 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Water pollution;
- Physical modification;
- Invasive species;
- Hydrological changes;
- Forestry and woodland management;
- Fisheries: freshwater;
- Fisheries: fish stocking;
- Water abstraction;
- Public access/disturbance;
- Air pollution;
- Inappropriate scrub control;
- Undergrazing; and
- Transportation and service corridors.

6.4.1 Water Pollution

Sedimentation and diffuse source pollution are identified as key issues associated with water quality in the SAC. The Site Improvement Plan for the River Wye (Natural England 2014d) identifies that sources of diffuse pollution include pesticide use along with cumulative effects associated with cropping patterns in the catchment such as planting of maize, siting of potato fields, irrigation needs and levels of poultry manure. Localised point sources also of concern include mining waste, raised metal concentrations and phosphates. The plan identifies the need for a Diffuse Water Pollution Plan and Nutrient Management Plan to manage water pollution issues.

The water pollution issues identified are principally associated with the Wye Catchment and so there are no identified linkages between the localised sources of water pollution and Solihull Metropolitan Borough which is located in the Tame, Anker and Mease Catchment. The policies and proposals will have no effect on the current water pollution issues or the remedial actions proposed for the SAC.

6.4.2 Physical Modification

The relatively near-natural river system in the SAC is vulnerable to small scale development along the river, localised erosion from riverbank easement works and the presence of a series of weirs along the River Lugg. The Site Improvement Plan identifies the need for a River Restoration Plan to address the existing modification issues.

There are no identified linkages between physical modifications of the River Wye SAC and Solihull Metropolitan Borough. The Policies and Proposals of the Solihull Local Plan Review will therefore have no effect on the current river modification issues identified and the remedial actions proposed for the SAC.

6.4.3 Invasive Species

There are no identified linkages between the presence or spread of invasive non-native species within the River Wye SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan will therefore have no effect on the current invasive species issues within the SAC or on any associated remedial actions proposed.

6.4.4 Hydrological Changes

Hydrological changes from urban drainage and new development are considered risks to the hydrology for the SAC. According the Site Improvement Plan for the River Wye SAC, the principal sources of concern are associated with forestry, land use and new transport infrastructure (roads, drainage) in the catchment. The lack of trees in the catchment is also considered to be a limiting factor in managing run off from steeper land.

Whilst the Solihull Local Plan will result in new urban development, the proposals will be situated entirely within Solihull Borough which is located principally within the Tame, Anker and Mease Catchment and therefore there are no identified linkages with the localised hydrological changes identified within the Site Improvement Plan. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on the current hydrological changes or the remedial action proposed for the SAC.

6.4.5 Forestry and Woodland Management

There are no identified linkages between the forestry and woodland management issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on the current forestry and woodland management issues and the remedial action proposed for the SAC.

6.4.6 Fisheries: Freshwater

There are no identified linkages between the freshwater fisheries issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated freshwater fisheries or the remedial action proposed for the SAC.

6.4.7 Fisheries: Fish Stocking

There are no identified linkages between the fish stocking issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated fish stocking or the remedial actions proposed for the SAC.

6.4.8 Water Abstraction

The Site Improvement Plan for the River Wye SAC (Natural England, 2014d) identifies that the flow of the river does not follow near natural patterns because of the effects of the Elan Reservoirs and the releases made from the dams. It states that work is underway to assess and agree a revised set of reservoir release rules that will require changes to the operating agreement so that impacts on hydro-morphology and ecology can be resolved. In addition, the plan outlines that changes will be made to both river regulation and abstraction licences to ensure the best use of water to balance public water supply and environmental needs.

Water Abstractions in this catchment are managed through the River Wye Catchment Abstraction Management Strategy (CAMS) (Natural Resources Wales and the Environment Agency, 2015), which provides information about the water resources available and the environmental controls that will be employed when issuing or reviewing abstraction licences in the catchment. The River Wye SAC is identified in the CAMS as a site which affords very high protection and one for which Natural Resources Wales and the Environment Agency, as the relevant licensing authorities, have a duty to maintain and improve the site in accordance with the Habitats Directive. Furthermore, as part of the Habitats Directive Review of Consents, the licensing authorities also considered the levels of existing protection for the River Wye SAC and used the findings to inform the principles of the 2015 CAMS. The CAMS states that:

“Under the Habitats Regulations we have assessed the effects of all existing licensed abstraction in the Wye CAMS area to make sure they do not have a likely significant effect on the River Wye SAC, the Wye SAC estuary and the River Severn Estuary SAC. A small number of licences were found to pose a risk, in combination, on River Wye SAC site integrity. These licences require modifications to remove this risk. Some licences have already been modified in agreement with the licence holders. We are working with the remaining licence holders to amend their licences.”

In view of these abstraction licence reviews and controls issued by Natural Resources Wales and the Environment Agency, it is unlikely that there will be any future water abstractions that will be permitted that would result in adverse effects on the River Wye SAC.

Water supply in the Solihull Metropolitan Borough is provided by Severn Trent Water whose Water Resource Management Area includes linkages with the Elan Valley Reservoirs and the River Wye SAC. However, as a result of the Habitats Directive Review of Consents, water supply availability for the plan area has been reduced by 75 Ml/d to address the issue of unsustainable abstractions. This reduction in capacity is included in the Severn Trent Habitat Resources Management Plan 2014, which will ensure that the loss of deployable output will be accommodated by 2020 (JBA Consulting, 2017).

The future increase in water supply demand facilitated by the policies and proposals of the Solihull Local Plan Review is subject of Severn Trent Water's Water Resource Management Plan 2019. It is understood that future housing projects proposed by the Solihull Local Plan Review have been fed into this process of the Water Resource Management Plans creation. The Habitat Resources Management Plan has been subject to a Habitat Regulations Assessment which assessed the potential effect on European Sites brought about by the proposed actions required to meet future water supply over the next 25 years. The HRA did not identify any adverse effects on the River Wye SAC with regards to abstraction over the plan period either alone or in combination (Ricardo Energy and Environment, 2019). It is therefore considered that the increased demand

in water supply to facilitate the policies and proposals of the Solihull Local Plan Review will have no effect on the River Wye SAC with regards to water abstraction either alone or combination with other plans.

6.4.9 Public Access/Disturbance

There are no identified linkages between the specific recreational activities that have been identified as potential sources of disturbance for the River Wye SAC and Solihull Metropolitan Borough. The plans and policies of the Solihull Local Plan Review will therefore have no disturbance effects on the River Wye SAC or on any associated remedial measures proposed.

6.4.10 Air Pollution

The Site Improvement Plan for the River Wye SAC identifies that the site exceeds its critical load with regards to nitrogen deposition and outlines that a Site Nitrogen Action Plan should be produced to control, reduce and ameliorate atmospheric nitrogen impacts. As detailed for Cannock Extension Canal and Cannock Chase SAC in Section 6.2.4 and 6.2.5, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to:

- the large spatial distance between the SAC and the Solihull Metropolitan Borough boundary;
- the influence of the Solihull Local Plan Review on industry in the Metropolitan Borough only;
- the absence of identified links between the local road network surrounding the River Wye SAC and the potential increase in traffic associated within increases in housing, minerals and business developments that are promoted by the Solihull Local Plan Review.

6.4.11 Inappropriate Scrub Control

There are no identified linkages between the inappropriate scrub control issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with inappropriate scrub control or the remedial actions proposed for the SAC.

6.4.12 Undergrazing

There are no identified linkages between the undergrazing issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with undergrazing or the remedial actions proposed for the SAC.

6.4.13 Transport and Service Corridors

The Site Improvement Plan identified that the key issues associated with transport corridors is the need for the SAC features to be taken into account when undertaking works on Network Rails assets. There are, subsequently no identified linkages between transport and service corridor issues identified in the River Wye SAC Site Improvement Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with transport and service corridors or the remedial actions proposed for the SAC.

6.5 ELAN VALLEY WOODLANDS SAC

Section 4.5 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Invasive Species;
- Forestry Management;
- Inappropriate scrub control; and,
- Overgrazing;

6.5.1 Invasive Species

There are no identified linkages between the invasive species issues identified in the Core Management Plan for Elan Valley Woodlands SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with invasive species or the remedial actions proposed for the SAC.

6.5.2 Forestry Management

There are no identified linkages between the forestry management issues identified in the Core Management Plan for Elan Valley Woodlands SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with invasive species or the remedial actions proposed for the SAC.

6.5.3 Inappropriate Scrub Control

There are no identified linkages between the inappropriate scrub control issues identified in the Core Management Plan for Elan Valley Woodlands SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with inappropriate scrub management or the remedial actions proposed for the SAC.

6.5.4 Overgrazing

There are no identified linkages between the overgrazing issues identified in the Core Management Plan for Elan Valley Woodlands SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on current issues associated with overgrazing or the remedial actions proposed for the SAC.

6.6 ELENYDD-MALLAEN SPA

Section 4.6 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Habitat extent;
- Availability of carrion;
- Disturbance; and,
- Roosting sites.

6.6.1 Habitat Extent

With an intervening distance of 111 km, there are no identified linkages between the habitat extent for qualifying bird species in Elenydd-Mallaen SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on habitat extent in the SPA or any remedial actions that may be proposed for the SPA.

6.6.2 Availability of Carrion

With an intervening distance of 111 km, there are no identified linkages between the availability of carrion for qualifying bird species in Elenydd-Mallaen SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on the availability of carrion in the SPA or any remedial actions that may be proposed for the SPA.

6.6.3 Disturbance

With an intervening distance of 111 km, there are no identified linkages between disturbance effects on qualifying bird species in Elenydd-Mallaen SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on habitat extent in the SPA or any remedial actions that may be proposed for the SPA.

6.6.4 Roosting Sites

With an intervening distance of 111 km, there are no identified linkages between the availability of roosting sites for qualifying bird species in Elenydd-Mallaen SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on roosting in the SPA or any remedial actions that may be proposed for the SPA.

6.7 ELENYDD SAC

Section 4.7 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Water clarity;
- Water quality;
- Hydrology;
- Air quality;
- Disturbance;
- Grazing pressure;
- Burning;
- Erosion;
- Peat erosion; and,
- Drainage.

6.7.1 Water Clarity

There are no identified linkages between water clarity issues within Elenydd SAC and the Solihull Metropolitan Borough area. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on Elenydd SAC with regards to water clarity or on any associated remedial measures proposed.

6.7.2 Water Quality

There are no identified linkages between water quality issues within Elenydd SAC and the Solihull Metropolitan Borough area. Current water quality issues are identified in the Core Management Plan (Natural Resources Wales, 2008b) as being from diffuse sources and nutrients in the catchment which is not connected to the Tame, Anker and Mease and the Avon Catchments where Solihull Metropolitan Borough is located. The policies and proposals of the Solihull Local Plan Review will therefore have no effect on Elenydd SAC with regards to water clarity or on any associated remedial measures proposed.

6.7.3 Hydrology

The Core Management Plan for Elenydd SAC identifies that the supply from Dolmynach Reservoir is used to support public supply abstraction at Foel but it is constantly topped up by compensation water from Claerwen Reservoir so that water levels are not optimal. The plan further states that no changes to the abstraction/compensation release regime that are likely to have negative impacts on Dolmynach Reservoir should be permitted.

Water Abstractions in this catchment are managed through the River Wye Catchment Abstraction Management Strategy (CAMS) (Natural Resources Wales and the Environment Agency, 2015), which provides information about the water resources available and the environmental controls that will be employed when issuing or reviewing abstraction licences in the catchment. Natural Resources Wales and the Environment Agency, as the relevant licensing authorities, have a duty to maintain and improve Elenydd SAC in accordance with the Habitats Directive. Therefore, in view of these abstraction licence controls issued by Natural Resources Wales and the Environment Agency, it is unlikely that there will be any future water abstractions that will be permitted that would result in adverse effects on the Elenydd SAC.

As detailed for the River Wye SAC in Section 6.4.8, water supply in Solihull Metropolitan Borough is provided by Severn Trent Water whose Water Resource Management Area includes linkages with the Elan Valley Reservoirs. However, as a result of the Habitats Directive Review of Consents, water supply availability for the plan area has been reduced by 75 Ml/d to address the issue of unsustainable abstractions. This reduction in capacity is included in the Severn Trent Habitat Resources Management Plan 2014, which will ensure that the loss of deployable output will be accommodated by 2020 (JBA Consulting, 2017).

The future increase in water supply demand facilitated by the policies and proposals of the Solihull Local Plan Review is the subject of Severn Trent Water's Water Resource Management Plan 2019. It is understood that future housing projects proposed by the Solihull Local Plan Review have been fed into the process of the Management Plans creation. The Habitat Resources Management Plan has been subject to a Habitat Regulations Assessment which assessed the potential effect on European Sites brought about by the proposed actions required to meet future water supply over the next 25 years. The HRA did not identify any adverse effects on the Elenydd SAC with regards to abstraction over the plan period either alone or in combination (Ricardo Energy and Environment, 2019). It is therefore considered that the increased demand in water supply to facilitate the policies and proposals of the Solihull Local Plan Review will have no effect on the River Wye SAC with regards to water abstraction either alone or in combination with other plans.

6.7.4 Air Quality

The Core Management Plan for Elenydd SAC identifies that the site exceeds its critical load with regards to nitrogen deposition. As detailed for Cannock Extension Canal and Cannock Chase SAC in Section 6.2.4 and 6.2.5, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to:

- the large spatial distance between the SAC and the Solihull Metropolitan Borough boundary;
- the limited influence of the Solihull Local Plan Review on industry in the Metropolitan Borough only;
- the absence of identified links between the local road network surrounding the Elenydd SAC and the potential increase in traffic associated within increases in housing, minerals and business developments that are promoted by the Solihull Local Plan Review.

6.7.5 Disturbance

There are no identified linkages between the current sources of on-site habitat disturbance within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no disturbance effects on habitats and species within the SAC or on any associated remedial actions that may be proposed for these features.

6.7.6 Grazing Pressure

There are no identified linkages between the current grazing pressures within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to grazing or on any associated remedial actions that may be proposed.

6.7.7 Burning

There are no identified linkages between the current burning activities within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to burning or on any associated remedial actions that may be proposed.

6.7.8 Erosion

There are no identified linkages between the current issues with erosion within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to erosion or on any associated remedial actions that may be proposed.

6.7.9 Peat Erosion

There are no identified linkages between the current issues with peat erosion within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to peat erosion or on any associated remedial actions that may be proposed.

6.7.10 Drainage

There are no identified linkages between the potential for new drains associated with bog habitats within Elenydd SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to bog drainage or on any associated remedial actions that may be proposed.

6.8 HUMBER ESTUARY SAC

Section 4.8 highlights that the favourable conservation status of the SAC is vulnerable to the following key issues:

- Water pollution;
- Coastal Squeeze;
- Changes in species distribution;
- Undergrazing;
- Invasive species;
- Natural changes to site conditions;
- Public access/disturbance;
- Fisheries: commercial, marine and estuarine;
- Direct land take from development;
- Air pollution; and,
- Direct impact from third party.

6.8.1 Water Pollution

The Site Improvement Plan for Humber Estuary SAC (Natural England, 2015b) identifies existing issues associated with water pollution in the Humber Estuary. These include a sag in annual dissolved oxygen in the tidal Ouse, which may be causing barrier to sea lamprey migration in the summer months, although the causes of this issue are not yet known. There is additional concerns about pollutants and leaching from a former aluminium smelting plant at the Capper Pass and the high levels of Phosphorus in several of the Barton and Barrow clay pits on the southern bank of the Estuary. There are currently no identified linkages between water pollution in the Estuary and Solihull Metropolitan Borough via the Tame, Anker and Mease Catchment detailed in the Site Improvement Plan.

The policies and proposals of the Solihull Local Plan Review is likely to result in an increase in demand for waste water management. Solihull Metropolitan Borough is currently served by five waste water treatment works (WwTW) each of which are located in the borough and discharge into the River Blythe which is connected to the Humber Estuary via the Rivers Tame and Trent. The capacity of the WwTW to accommodate the proposed growth in demand outlined in the Solihull Local Plan Review was assessed by JBA associates (2017) in the Solihull Water Cycle Study. The study concluded the following:

- WwTW at Balsall Common, Barston, Meriden and Norton Green are all operating above the Phosphorous Permit Conditions;
- The proposed growth is not predicted to lead to any class deteriorations, or deteriorations of water quality greater than 10% for any determinand; and
- Environmental capacity is not considered to be a constraint to growth at any of the WwTW plants assessed. However, it would be anticipated that Balsall Common, Barston, Meriden and Norton Green WwTW will need to be brought into compliance with their phosphorous permits before any significant growth is connected to these treatment works.

The findings of the assessment suggest that the potential for future growth proposed by the policies and proposals of the Solihull Local Plan Review is not constrained by environmental capacity and that the growth will not lead to any class deteriorations in water quality of the receiving water course. Therefore, it is considered that there will be no subsequent downstream effects on water quality associated within the Humber Estuary SAC.

The need to ensure that Balsall Common, Barston, Meriden and Norton Green WwTW are compliant with their phosphorous permits is an immediate constraint to future development in these locations. However, any extra pollution loading from new development will require a new Environmental Permit from the Environment Agency which will ensure that this will not lead to a deterioration in the water quality of the receiving watercourse. The Environment Agency have a duty under the Water Framework Directive to ensure that all waterbodies achieve Good Ecological Status and are also required under the Habitats Directive to have regard to the protection and restoration of European Sites. Therefore, new development proposals that may result in a deterioration in the status of the river will be subject to controls and measures through the Environmental Permit process which will restrict downstream effects on the SAC. Furthermore, additional safeguards to minimise the risk of water quality deterioration are included in Policy P11 of the draft Solihull Local Plan review which requires developers to provide appropriate modelling to ensure sufficient receiving capacity existing and that the Environment Agency are consulted if a main river is concerned. Opportunities to minimise waste water are also promoted in the policy.

6.8.2 Coastal Squeeze

There are no identified linkages between the causes of coastal squeeze within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to coastal squeeze or on any associated remedial actions that may be proposed.

6.8.3 Changes in Species Distribution

There are currently no identified linkages between the current changes in species distribution within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to changes in species distribution or on any associated remedial actions that may be proposed.

6.8.4 Undergrazing

There are no identified linkages between the issues of undergrazing within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to undergrazing or on any associated remedial actions that may be proposed.

6.8.5 Invasive Species

The Humber Estuary Site Improvement Plan (Natural England, 2015b) identifies that the presence of Himalayan Balsam is a catchment wide issue, which includes the Tame, Anker and Mease catchment where the majority of Solihull Metropolitan Borough is located. The policies and proposals within the Solihull Local Plan support development which could increase the potential mechanisms for spread of Himalayan balsam to watercourses throughout the Borough. However, as such mechanisms are a legal consideration under Section 9 of the Wildlife and Countryside Act 1981 (as amended), controls and measures will be applied through planning conditions to ensure that there are no further opportunities for the spread of invasive species. It is therefore considered that there will be no effect on invasive species within the Humber Estuary SAC, or on any associated remedial measures as a result of the policies and proposals of the Solihull Local Plan Review.

There are no further identified linkages between the cause or spread of invasive species within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to the spread of invasive species or on any associated remedial actions that may be proposed.

6.8.6 Natural Changes to Site Conditions

There are no identified linkages between the natural change of site conditions within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to natural changes in site conditions or on any associated remedial actions that may be proposed.

6.8.7 Public Access/Disturbance

There are no identified linkages between the public access and disturbance within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no public access/disturbance effects on the SAC or on any associated remedial actions that may be proposed.

6.8.8 Fisheries: Commercial, Marine, Estuarine

There are no identified linkages between fisheries management within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to fisheries management or on any associated remedial actions that may be proposed.

6.8.9 Direct land Take from Development

Located at an intervening distance of 137 km south of the Humber Estuary, there are no identified linkages between the direct land take in the SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to direct land take or on any associated remedial actions that may be proposed.

6.8.10 Air Pollution

The Site Improvement Plan for the Humber Estuary SAC identifies that the site exceeds its critical load with regards to nitrogen deposition. As detailed for Cannock Extension Canal and Cannock Chase SAC in Section

6.2.4 and 6.2.5, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to:

- the large spatial distance between the SAC and the Solihull Metropolitan Borough boundary;
- the limited influence of the Solihull Local Plan Review on industry in the Metropolitan Borough only; and,
- the absence of identified links between the local road network surrounding the Elenydd SAC and the potential increase in traffic associated within increases in housing, minerals and business developments that are promoted by the Solihull Local Plan Review.

6.8.11 Direct Impact from Third Party

There are no identified linkages between potential third party impacts within the Humber Estuary SAC and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to third party impacts or on any associated remedial actions that may be proposed.

6.9 HUMBER ESTUARY SPA

Section 4.9 highlights that the favourable conservation status of the SPA is vulnerable to the following key issues:

- Water pollution;
- Coastal Squeeze;
- Changes in species distribution;
- Undergrazing;
- Invasive species;
- Natural changes to site conditions;
- Public access/disturbance;
- Fisheries: Fish stocking;
- Fisheries: commercial, marine and estuarine;
- Direct land take from development;
- Air pollution;
- Shooting/scaring;
- Direct impact from third party; and,
- Inappropriate scrub control.

6.9.1 Water Pollution

The Site Improvement Plan for Humber Estuary SAC (Natural England, 2015b) identifies the same issues with regards to water pollution in the Humber Estuary SPA and SAC. Subsequently, the conclusions of the preliminary assessment for the Humber Estuary SAC in Section 6.8.1 are as detailed for the Humber Estuary SPA. This concludes that there will be no effect on the Humber Estuary with regards to water pollution as a result of the policies and proposals of the Solihull Local Plan Review. Furthermore, controls provided by the Environment Agency's Environmental Permits and Policy P11 of the Solihull Local Plan Review will provide adequate safeguards to prevent water quality degradation of a receiving watercourse should new development be proposed before existing water quality issues at the four identified WwTW are resolved.

6.9.2 Coastal Squeeze

There are no identified linkages between the causes of coastal squeeze within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to coastal squeeze or on any associated remedial actions that may be proposed.

6.9.3 Changes in Species Distribution

There are currently no identified linkages between the change in species distribution within the Humber Estuary SPA and the Solihull Metropolitan Borough area. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SAC with regards to changes in species distribution or on any associated remedial actions that may be proposed.

6.9.4 Undergrazing

There are no identified linkages between the issues of undergrazing within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to undergrazing or on any associated remedial actions that may be proposed.

6.9.5 Invasive Species

The Humber Estuary Site Improvement Plan (Natural England, 2015b) identifies that the presence of Himalayan Balsam is a catchment wide issue, which includes the Tame, Anker and Mease catchment where the majority of Solihull Metropolitan Borough is located. The policies and proposals within the Solihull Local Plan support development which could increase the potential mechanisms for spread of Himalayan balsam to watercourses throughout the Borough. However, as such mechanisms are a legal consideration under Section 9 of the Wildlife and Countryside Act 1981 (as amended), controls and measures will be applied through planning conditions to ensure that there are no further opportunities for the spread of invasive species. It is therefore considered that there will be no effect on invasive species within the Humber Estuary SPA, or on any associated remedial measures as a result of the policies and proposals of the Solihull Local Plan Review.

There are no further identified linkages between the cause or spread of invasive species within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review

will therefore have no effects on the SPA with regards to the spread of invasive species or on any associated remedial actions that may be proposed.

6.9.6 Natural Changes to Site Conditions

There are no identified linkages between the natural change of site conditions within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to natural changes in site conditions or on any associated remedial actions that may be proposed.

6.9.7 Public Access/Disturbance

There are no identified linkages between the public access and disturbance within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no public access/disturbance effects on the SPA or on any associated remedial actions that may be proposed.

6.9.8 Fisheries: Fish Stocking

There are no identified linkages between fish stocking activities within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to fish stocking activities or on any associated remedial actions that may be proposed.

6.9.9 Fisheries: Commercial, Marine, Estuarine

There are no identified linkages between fisheries management within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to fisheries management or on any associated remedial actions that may be proposed.

6.9.10 Direct land Take from Development

Located at a distance of 143 km north of Solihull Metropolitan Borough, there will be no direct land take in within the Humber Estuary SPA as a result of the policies and proposals of the Solihull Local Plan Review.

6.9.11 Air Pollution

The Site Improvement Plan for the Humber Estuary SPA identifies that the site exceeds its critical load with regards to nitrogen deposition. As detailed for Cannock Extension Canal and Cannock Chase SAC in Section 6.2.4 and 6.2.5, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to:

- the large spatial distance between the SPA and the Solihull Metropolitan Borough boundary;
- the limited influence of the Solihull Local Plan Review on industry in the Metropolitan Borough only;
- the absence of identified links between the local road network surrounding the Humber Estuary SPA and the potential increase in traffic associated within increases in housing, minerals and business developments that are promoted by the Solihull Local Plan Review.

6.9.12 Shooting/Scaring

There are no identified linkages between the issues of shooting or bird scaring within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to shooting or bird scaring or on any associated remedial actions that may be proposed.

6.9.13 Direct Impact from Third Party

There are no identified linkages between potential third party impacts within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to third party impacts or on any associated remedial actions that may be proposed.

6.9.14 Inappropriate Scrub Control

There are no identified linkages between the issues of inappropriate scrub control within the Humber Estuary SPA and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the SPA with regards to inappropriate scrub control or on any associated remedial actions that may be proposed.

6.10 HUMBER ESTUARY RAMSAR

Section 4.10 highlights that the favourable conservation status of the Ramsar is vulnerable to the following key issues:

- Disturbance to vegetation through cutting/clearing;
- Vegetation/succession;
- Water diversion for irrigation/domestic/industrial use;
- Overfishing;
- Pollution – domestic sewerage;
- Pollution – agricultural fertilisers;
- Recreational/tourism disturbance; and,
- Other factor.

6.10.1 Disturbance to vegetation

There are no identified linkages between the vegetation management activities within the Humber Estuary Ramsar and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the Ramsar with regards to vegetation management activities or on any associated remedial actions that may be proposed.

6.10.2 Vegetation/Succession

There are no identified linkages between the lack of vegetation management activities within the Humber Estuary Ramsar and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the Ramsar with regards to the lack of vegetation management activities or on any associated remedial actions that may be proposed.

6.10.3 Water Diversion of irrigation/domestic/industrial use

All water abstractions carried out in the Metropolitan Borough are carried out in compliance with the Tame, Anker and Mease Catchment Area Management Plan and the Avon Catchment Management, both of which are overseen by the Environment Agency as a licencing authority. The Environment Agency has a duty under the Habitats Directive to ensure that any new licence applications for abstraction do not adversely affect any European Sites. Therefore, with these licences and controls it is highly unlikely that abstraction within the Tame, Anker or Mease Catchment will result in water diversion effects in the Humber Estuary.

Water supply in the Solihull Metropolitan Borough is provided by Severn Trent Water whose Water Resource Management Area includes strategic water assets in the Humber Basin. Management of water supply within the Severn Trent area is set out in the Water Resources Management Plan, the latest 2019 draft of which will set out a strategy for water supply in the plan area over a 25 year period. The draft plan is accompanied by a Draft Habitat Regulations Assessment which identifies the potential effects on European Sites that might occur alone or in combination as a result of the operations and upgrades that will be required in order to deliver the objectives of the plan. The draft HRA did not identify any adverse effects on the Humber Estuary Ramsar with regards to abstraction over the plan period. It is therefore considered that the increased demand in water supply to facilitate the policies and proposals of the Solihull Local Plan Review will have no effect on the Humber Estuary Ramsar with regards to water diversion either alone or combination with other plans.

6.10.4 Overfishing

There are no identified linkages between overfishing within the Humber Estuary Ramsar and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the Ramsar with regards to overfishing or on any associated remedial actions that may be proposed.

6.10.5 Pollution – Domestic Sewerage

The Site Improvement Plan for Humber Estuary SAC (Natural England, 2015b) identifies the issues with regards to water pollution that are also likely to be relevant to the Humber Estuary Ramsar. Subsequently, the conclusions of the preliminary assessment for the Humber Estuary SAC in Section 6.8.1 are as detailed for the Humber Estuary Ramsar. This concludes that there will be no effect on the Humber Estuary with regards to water pollution as a result of the policies and proposals of the Solihull Local Plan Review. Furthermore, controls provided by the Environment Agency's Environmental Permits and Policy P11 of the Solihull Local Plan Review will provide adequate safeguards to prevent water quality degradation of a receiving watercourse should new development be proposed before existing water qualities issues at the four identified WwTW are resolved.

6.10.6 Pollution – Agricultural Fertilisers

There are no identified linkages between the use of agricultural fertilisers and the policies and proposals of the Solihull Local Plan Review and therefore the plan will have no effect on agricultural pollution within the Humber Estuary Ramsar.

6.10.7 Recreation/Tourism Disturbance

There are no identified linkages between the disturbance from recreation and tourism within the Humber Estuary Ramsar and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no disturbance effects on the Ramsar with regards to recreation and tourism or on any associated remedial actions that may be proposed.

6.10.8 Other – Coastal Squeeze

There are no identified linkages between coastal squeeze within the Humber Estuary Ramsar and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no effects on the Ramsar with regards to coastal squeeze or on any associated remedial actions that may be proposed.

6.11 FENS POOL SAC

Section 4.11 highlights that Fens Pool SAC is vulnerable to the following key issues:

- Overgrazing;
- Inappropriate scrub control;
- Disease;
- Water Pollution; and,
- Habitat fragmentation.

6.11.1 Overgrazing

Information from the Fens Pools 2014 Site Improvement Plan and 2017 Supplementary Advice on Conserving and Restoring Site Features state that continued high levels of illicit stocking with tethered horses (especially during the summer months) have resulted in the grass sward within the site being severely overgrazed. The presence of these horses being linked to both local residence and traveller communities. Current indicators display that this is having a harmful impact on the common amphibian populations (frog and toad) within the site due to reduced availability of invertebrate food prey within the overgrazed grasslands. There is concern that overgrazing is also impacting the great crested newt population in a similar way. When assessed in summer months the grass sward in is frequently less than 2 cm, which also results in increased levels of sediment run-off into the breeding pools of the sites reason for designation. Fens Pools 2014 Site Improvement Plan notes that removal of illegally present horses is a lengthy process meaning that the avoidance of damage is difficult. As such, even when horses can be removed often more appear within a short time period.

There are no identified linkages between the overgrazing of the grasslands within and surrounding Fens Pool SAC and individuals or groups originating from within the Solihull Metropolitan Borough. It is therefore concluded that the policies and the proposals of the Solihull Local Plan Review will have no effects on overgrazing within the site the structure and so the function of habitats of the SAC upon which the reason of designation is reliant.

6.11.2 Inappropriate scrub control

Historically the site has had issues with inappropriately low levels of scrub control within the site. This has led to unfavourable levels of habitat succession, drying of wetland habitats and infilling of pools upon which the great crested newt population are reliant upon.

The SAC is located 19.6 km West of the Solihull Metropolitan Borough and the Borough has no impact upon the chosen habitat management regimes within the site of the effectiveness of their delivery. It is therefore concluded that the policies and the proposals of the Solihull Local Plan Review will have no effect upon the enactment of appropriate scrub control within the site.

6.11.3 Disease

Invasive alpine newts *Ichthyosaura alpestris* infected with Chytrid fungus were identified as being present within the site in 2009. The 2014 Fens Pool's Site Improvement Plan identifies that the presence of infected alpine newts may pose a risk to great crested newts, but the effects of Chytrid fungus upon great crested newts remains, at this time, unknown. Surveys that have been undertaken since 2009 have not detected the fungus in the populations of smooth, alpine or great crested newts. The numbers of great crested newt have also remained constant since 2009 even though the alpine newt numbers have increased, indicating that the presents of alpine newts are not having a detrimental impact on the population of the qualifying feature.

At this time there remains uncertainty that the great crested newt population within Fens Pool is at risk of harm due to Chytrid fungus or, if an outbreak of this disease is a possible, that the presence of alpine newts acts as a reservoir for infection. However, there are no identified historical linkages between the introduction of potential infected alpine newts and actions originating within Solihull Metropolitan Borough. It is therefore concluded that the policies and the proposals of the Solihull Local Plan Review will have no effects on the likelihood of future disease event impacting upon the population of the qualifying species.

6.11.4 Water Pollution

The qualifying species of Fens Pool SAC are dependent on the wetland habitats within the site, especially at certain times of year. These habitats are in turn supported by rainwater and local surface water runoff. Maintaining the quality and quantity of this water supply is critical to the ability of this site to support a strong population of great crested newts with actions resulting in a reduction in water quality or inadequate quantities of water likely to adversely affect the structure and function of these habitat types. The main vector currently identified being the most like to result in direct pollution event comes from fly-tipping and the burning

of abandoned cars on-site. However, changes to the level of surface water run-off, water abstraction and increases in air pollution all have the potential to result in a reduction of water quality.

Solihull Metropolitan Borough is located within the Tame, Anker and Mease Catchment area and Fens Pool is situated within the adjacent Worcester Middle Severn Catchment area. Water Abstractions in both catchments are managed through their respective Catchment Abstraction Management Strategy (CAMS) (Environment Agency, 2013) which provides information about the water resources available and the environmental controls that will be employed when issuing or reviewing abstraction licences in the catchment. Fens Pool SAC is identified in the Worcester Middle Severn CAMS as a site which affords very high protection and one for which the Environment Agency has a duty to maintain and improve the site in accordance with the Habitats Directive. The CAMS subsequently outlines that any water management strategy, or licence, determined by the Environment Agency should not result in the degradation of the SAC. In view of these abstraction licence controls issued by the Environment Agency and that the site sits outside of Solihull MBC catchment area, it is unlikely that there will be any water quality or quantity impacts upon the habitats within Fens Pool SAC as a result of the policies and proposals detailed in the Solihull Local Plan Review.

The Supplementary Advice on Conserving and Restoring Site Features (NE 2017) confirms that the supporting habitats of this site are sensitive to changes in air quality and exceedance in its Nitrogen critical Level via increased atmospheric deposition (Nitrogen Oxide, Nitrite, Nitrate (collectively NO_x) and Ammonia, NH₃) would likely lead to a decrease in the population of the qualifying species. As detailed for Cannock Extension Canal and Cannock Chase SAC in Section 6.2.4 and 6.2.5, the potential for the Local Plan Review to contribute to an increase in nitrogen deposition from local sources is considered to be negligible due to:

- the large spatial distance between the SAC and the Solihull Metropolitan Borough boundary;
- the influence of the Solihull Local Plan Review on industry in the Metropolitan Borough only;
- the absence of identified links between the local road network surrounding the Fen Pool SAC and the potential increase in traffic associated within increases in housing, minerals and business developments that are promoted by the Solihull Local Plan Review.

Any potential for impact via emissions arising from increased vehicular usage is further reduced by the site lying beyond 200 m from a major road. Based upon the HRA screening guidelines detailed with NE001 2018 Nitrogen deposition beyond 200 m of a major road reduces to such nominal scales of deposition as to be below a level practical to assess.

As such, the policies and proposals in the Solihull Local Plan Review will have no effect on air quality around or the deposition of gaseous nitrogen upon Fens Pools SAC.

6.11.5 Habitat Fragmentation

The Fens Pool site is 20 ha in size and is located in the heart of the Dudley. It is surrounded on all sides by substantial areas of high-density residential and employment development. The site shows evidence of past industrial activities and includes a wide range of habitats from open water, swamp, fen and inundation communities to unimproved neutral and acidic grassland and scrub.

The SAC is located 19.6 km to the West of Solihull Metropolitan Borough and the site is already surrounded by the urban development of Dudley. Given the proximity of the borough to the SAC, no direct effects such as physical habitat loss or increased habitat fragmentation leading to a change in the extent and distribution of the habitats of the qualifying species of the SAC are likely as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.12 RIVER MEASE SAC

Section 4.12 highlights that the River Mease SAC is vulnerable to the following key issues:

- Water Pollution;
- Drainage;
- Inappropriate weirs dams and other structures;
- Invasive species;
- Siltation; and,
- Water abstraction.

6.12.1 Water Pollution

The Site Improvement Plan for the River Mease SAC details that elevated levels of phosphate contribute to eutrophication leading to increased algal growth and the decline in abundance and/or diversity of characteristic plant and freshwater species and habitats of the SAC. A large proportion of phosphate is associated with the high number of sewage treatment works (STWs) and more diffuse septic tank discharges. Whilst phosphate stripping has been undertaken at several STWs through the water industry Asset Management Plan process further reductions are desirable and are being sought. Severn Trent Water are trialling five new techniques for phosphate stripping at Packington STW. Further investigation is still required to understand the cumulative impact of small discharges such as from the high number of septic tanks. The River Mease is included in NE's Septic tank Risk Project. In the headwaters of the river high levels of ammonia are a concern and it is considered that they may be having an impact on juvenile recruitment of spined loach and bullhead. However, the sources of these elevated levels remain to be fully understood.

The River Mease Water Catchment Area (Environment Agency, 2012) details the area which has been determined as the source of pollution discharge into the site (either via surface water run-off, drainage discharge or STW). New development within this area (especially those delivering net-residential units) has been determined to be likely to result in a significant impact upon the site due to their in-combination affects. These negative impacts are deemed to occur both to the sites qualifying habitats (their structure and function) and critical ecological functions of other habitats which the qualifying species are reliant upon. The River Mease Water Catchment Area is broken down into 5 sub-areas: River Mease from Hooborough Brook-Trent; Hooborough Brook from source-River Mease; River Mease from Gilwiskaw Bk-Hooborough Brook; Gilwiskaw Brook from source-River Mease; River Mease from source-Gilwiskaw-Brook. The closest sub-area to the Solihull MBC boundary is River Mease from source-Gilwiskaw-Brook area. The boundary of this sub-area is over 21 km in distance from the Solihull MBC boundary with the intervening distance including the M6 corridor and land usage being broadly split between agricultural and areas of substantial urbanisation (including the settlements of Colehill, Atherstone and Polesworth). There is no known relationship between Solihull MBD and the water catchment area of the River Mease and it is deemed highly unlikely that there will be any change upon water pollution into the site as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.12.2 Drainage

The Site Improvement Plan for the River Mease SAC details how the cumulatively drains, field under drainage and other discharges (eg.11 sewage treatment works, and roads as a conduit) within the water catchment area for the feed into the site. These additional discharges affect the naturalised flow pattern of the site along its length and as a consequence the river appears more 'flashy', with water levels rising and falling with increased rapidity. This has negative impacts to both the qualifying habitats and critical ecological functions of other habitats which the qualifying species are reliant upon. The River Mease Water Catchment Area (Environment Agency 2012) is broken down into five sub-areas: River Mease from Hooborough Brook-Trent; Hooborough Brook from source-River Mease; River Mease from Gilwiskaw Bk-Hooborough Brook; Gilwiskaw Brook from source-River Mease; River Mease from source-Gilwiskaw-Brook. The closest sub-area to the Solihull MBC boundary is River Mease from source-Gilwiskaw-Brook area. The boundary of this sub-area is over 21 km in distance from the Solihull MBC boundary with the intervening distance including the M6 corridor and land usage being broadly split between agricultural and areas of substantial urbanisation (including the settlements of Colehill, Atherstone and Polesworth).

There is no known relationship between Solihull MBD and the water catchment area of the River Mease and it is deemed highly unlikely that there will be any change upon drainage into the site as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.12.3 Inappropriate Weirs, Dams and Other Structures

The Site Improvement Plan and Natural England's Supplementary Advice for Restoring Site Features for River Mease SAC detail that the modified physical condition of the river, such as the presence of multiple

weirs affects the condition of the SAC features and can restrict their population size and distribution. Several actions are identified in the River Mease River Restoration Plan for the River Mease in order to restore the site to its necessary condition. This includes removal of structures which are preventing fish movement and the attainment of the required hydrological conditions. Other issues include poor planform and connection to the flood plain. There are no identified linkages between the creation of further inappropriate structures which would impact upon physical condition of the site, is qualifying habitats and qualifying species and Solihull Metropolitan Borough.

There are no identified linkages between the prevention of delivery of the measures detailed within the River Mease Restoration Plan and Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore have no harmful effects on the extent and distribution of qualifying natural habitats and habitats of qualifying species via affecting change upon the creation or removal of an inappropriate structures.

6.12.4 Invasive Species

The River Mease SAC 2014 Site Improvement Plan and the 2016 Supplementary Advice on Conserving and Restoring Site Features detail that non-native species constitute a major threat to many river systems. Impacts may be on the river habitat itself (e.g. damage to banks and consequent siltation) or directly on characteristic wildlife (through predation, competition and disease), or a combination of these. For example, species such as signal crayfish are responsible for much of the decline of native crayfish through competition, habitat damage and the introduction of crayfish plague. Other high impact species that have been found in and along the River Mease include Japanese knotweed and Himalayan balsam.

There are no identified linkages between the introduction or spread of invasive species into or along the River Mease SAC and any group, organisation or process originating within the Solihull Metropolitan Borough. The policies and proposals of the Solihull Local Plan Review will therefore not result harm to the River Mease SAC via the proliferation of invasive species.

6.12.5 Siltation

High levels of siltation smother the gravel beds which are the spawning habitat of Bullhead and can also cover areas of fine sand which are used as spawning habitat by Spined Loach. Excessive phosphate-rich fine sediment is currently being supplied to the River Mease SAC from within its water catchment area, primarily from diffuse sources from both agricultural and urban use. Modelled detailed with the 2016 Supplementary Advice on Conserving and Restoring Site Features confirmed that the sub-catchments to the west of the SAC are at higher risk of delivering fine sediment to the system; although results of a wet weather walkover survey (completed during 2014) showed that incidents of diffuse pollution can occur from across the catchment.

The River Mease Water Catchment Area (Environment Agency 2012) is broken down into five sub-areas: River Mease from Hooborough Brook-Trent; Hooborough Brook from source-River Mease; River Mease from Gilwiskaw Bk-Hooborough Brook; Gilwiskaw Brook from source-River Mease; River Mease from source-Gilwiskaw-Brook. The closest sub-area to the Solihull MBC boundary is River Mease from source-Gilwiskaw-Brook area. The boundary of this sub-area is over 21 km in distance from the Solihull MBC boundary.

There is no known relationship between Solihull MBD and the water catchment area of the River Mease and so it is deemed highly unlikely that there will be any increase in the levels of siltation into the site as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.12.6 Water Abstraction

Both Solihull Metropolitan Borough and River Mease SAC are located within the Tame, Anker and Mease Catchment area. Water Abstractions in this catchment are managed through the Tame, Anker and Mease Catchment Abstraction Management Strategy (CAMS) (Environment Agency, 2013) , which provides information about the water resources available and the environmental controls that will be employed when issuing or reviewing abstraction licences in the catchment. River Mease SAC is identified in CAMS as a site which affords very high protection and one for which the Environment Agency has a duty to maintain and improve the site in accordance with the Habitats Directive. The CAMS subsequently outlines that any water management strategy, or licence, determined by the Environment Agency should not result in the degradation of the SAC. In view of these abstraction licence controls issued by the Environment Agency, it is unlikely that there will be any water abstraction effects on the extent and distribution of qualifying natural habitats and habitats of qualifying species as a result of the policies and proposals detailed in the Solihull Local Plan Review.

6.13 SUMMARY OF DETERMINATION OF LIKELY SIGNIFICANT EFFECT

Table 6.1 below summarises the findings of the examination to determine if any of the policies and proposals of the Solihull Local Plan Review will result in a likely significant effect on a European site alone.

Site	Solihull Local Plan Review – Potential Environmental Impacts			
	Air quality	Water quantity	Water quality	Recreational pressure
Ensor's Pool SAC	No effect	No effect	No effect	No effect
Cannock Extension Canal SAC	No effect	No effect	No effect	No effect
Cannock Chase SAC	No effect	No effect	No effect	No effect
River Wye SAC	No effect	No effect	No effect	No effect
Elan Valley Woodlands SAC	No effect	No effect	No effect	No effect
Elenydd-Mallaen SPA	No effect	No effect	No effect	No effect
Elenydd SAC	No effect	No effect	No effect	No effect
Humber Estuary SAC	No effect	No effect	No effect	No effect
Humber Estuary SPA	No effect	No effect	No effect	No effect
Humber Estuary Ramsar	No effect	No effect	No effect	No effect
Fens Pool SAC	No effect	No effect	No effect	No effect
River Mease SAC	No effect	No effect	No effect	No effect

Table 6.1 – Summary of the preliminary examination of likely significant effects alone for the potential environmental impacts from the Solihull Local Plan Review

The examination did not identify any potential effects on European Sites arising from the policies and proposals of the Solihull Local Plan Review. In accordance with the Habitat Regulations Assessment Handbook, plans that do not have any adverse effect at all on a European Site, cannot reasonably contribute to an adverse effect in combination with other plans and projects and therefore are screened out of any further assessment as part of the Habitat Regulations Assessment process. Subsequently, no in-combination assessment of likely significant effects must be undertaken at this time.

7. CONCLUSIONS AND RECOMMENDATIONS

In accordance with best practice guidance, Stage 1 (Screening) of a Habitats Regulations Assessment has been undertaken to determine whether the future implementation of the Submission Draft of the Solihull Local Plan Review is likely to result in significant effects on the following Natura 2000 sites:

- Ensor's Pool SAC;
- Cannock Extension Canal SAC;
- Cannock Chase SAC;
- River Wye SAC;
- Elan Valley Woodlands SAC;
- Elenydd-Mallaen SPA;
- Elenydd SAC;
- Humber Estuary SAC;
- Humber Estuary SPA;
- Humber Estuary Ramsar;
- Fens Pool SAC; and,
- River Mease SAC

Based on a review of the available evidence base it is concluded that none of the policies and proposals of the Solihull Local Plan Review will result in a significant effect on the Natura 2000 network, either alone or in combination with other plans and projects. Solihull Metropolitan Borough Council, as the Competent Authority, are therefore advised that it will not be necessary for the Submission Draft of the Solihull Local Plan Review to be taken forward to Stage 2 of Habitats Regulations Assessment, Appropriate Assessment.

In accordance with best practice guidance, the findings of the assessment should be provided to Natural England, as the statutory nature conservation body to provide further opportunity for comment as required. A recommendation to this effect is provided below.

This Updated Stage 1 (Screening) Habitats Regulations Assessment has been carried out for the policies and proposals of the Submission Draft of the Solihull Local Plan Review. Any future material revisions of the Submission Draft should be subject to additional screening to determine if changes to the policies and proposals that could result in a likely significant effect on a Natura 2000 Site either alone or in-combination. A recommendation to this effect is also provided below.

Recommendations

- R1** In accordance with best practice guidance, the findings of this Stage 1 (Screening) Habitats Regulations Assessment should be provided to Natural England, as the statutory nature conservation body, to allow further comment and consideration as required²; and
- R2** All future material revisions of the Submission Draft of the Solihull Local Plan Review should be subject to additional screening to determine if changes to the policies and proposals of the plan could give rise to a likely significant effect on a Natura 2000 Site whether alone or in-combination with other plans and projects.

² The completed updated HRA was provided to Natural England for their consideration in September 2020. Natural England responded to Solihull MBC approving both the scope and conclusions of the assessment.

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APPENDICES

Appendix 1 – Natural England Correspondence received 7th and 9th March 2018

From: Murray, Susan (NE) [redacted]

Sent: 09 March 2018 13:10

To: Richard Wheat <[redacted]>

Cc: [redacted]

Subject: RE: HRA Solihull Local Plan Review

Hi Richard

Good to speak with you yesterday.

I confirm that Natural England has no concerns with the approach discussed and as outlined in your email below.

I reiterate that whilst we generally support an assessment of Natura 2000 sites within a 15-20km radius it is more important to consider the catchment relationship, that is likely impact pathways associated with a development or Plan, and that sites outside of this radial area may, therefore, be required for assessment.

Further to our recent correspondence, and given the location, and connectivity to the River Blythe, I confirm that Natural England would expect the Humber Estuary SAC, SPA and Ramsar site to be considered at screening stage. Natural England would also expect the inclusion of Ensors Pool SAC as part of the assessment, a site which appears to have been excluded from the 2012 assessment for reasons unexplained. As discussed, we are concerned with any adverse impacts upon the site's integrity which includes functional habitat. For information, we have very recently produced and published an updated version of the Conservation Objectives for the SAC which we advise you access as these provide all the details you should need. In summary, the Conservation objectives now ensure that the 'supporting habitats' for the White clawed crayfish are safeguarded as part of any HRA even in the absence of the species

I further confirm that Natural England welcomes the precautionary approach proposed, as required by the Directive, and assessment of the future higher growth scenario.

I hope that this correspondence enables you to progress with your assessment.

I am happy to clarify any details of this correspondence further with you, however, should you require any further assistance I would recommend you to our discretionary advice service.

<https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals>

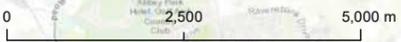
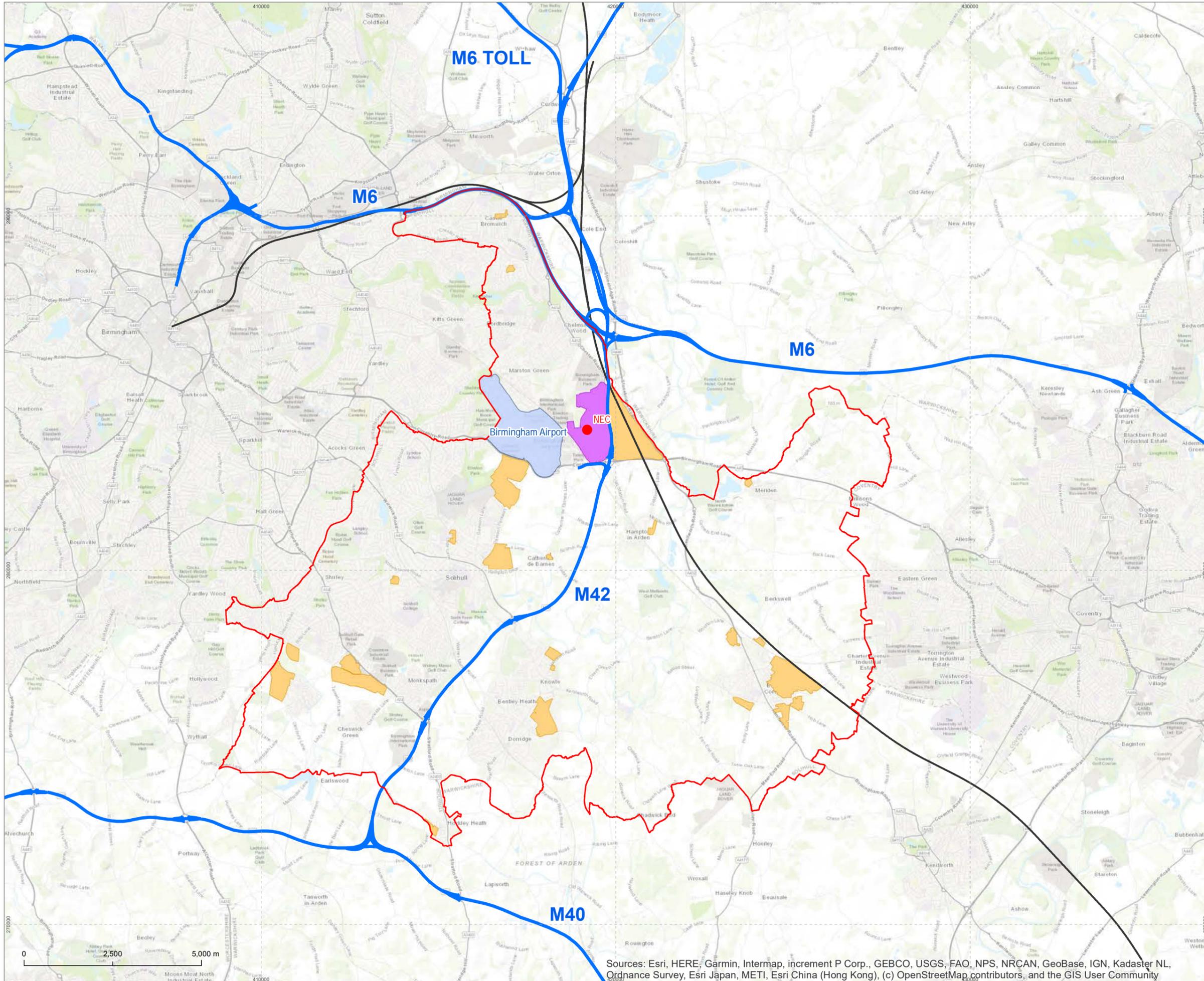
Kind regards

Susie Murray
West Midlands Area Team (East) Urban Planning Lead Adviser
Planning for a Better Environment Team
Natural England

Appendix 2 – Locations and Outlines of the Natura 2000 Sites Considered

Legend

- Solihull MBC Boundary
- NEC Masterplan Areas
- Site Allocations
- NEC
- HS2 Alignment
- Motorway
- Birmingham Airport



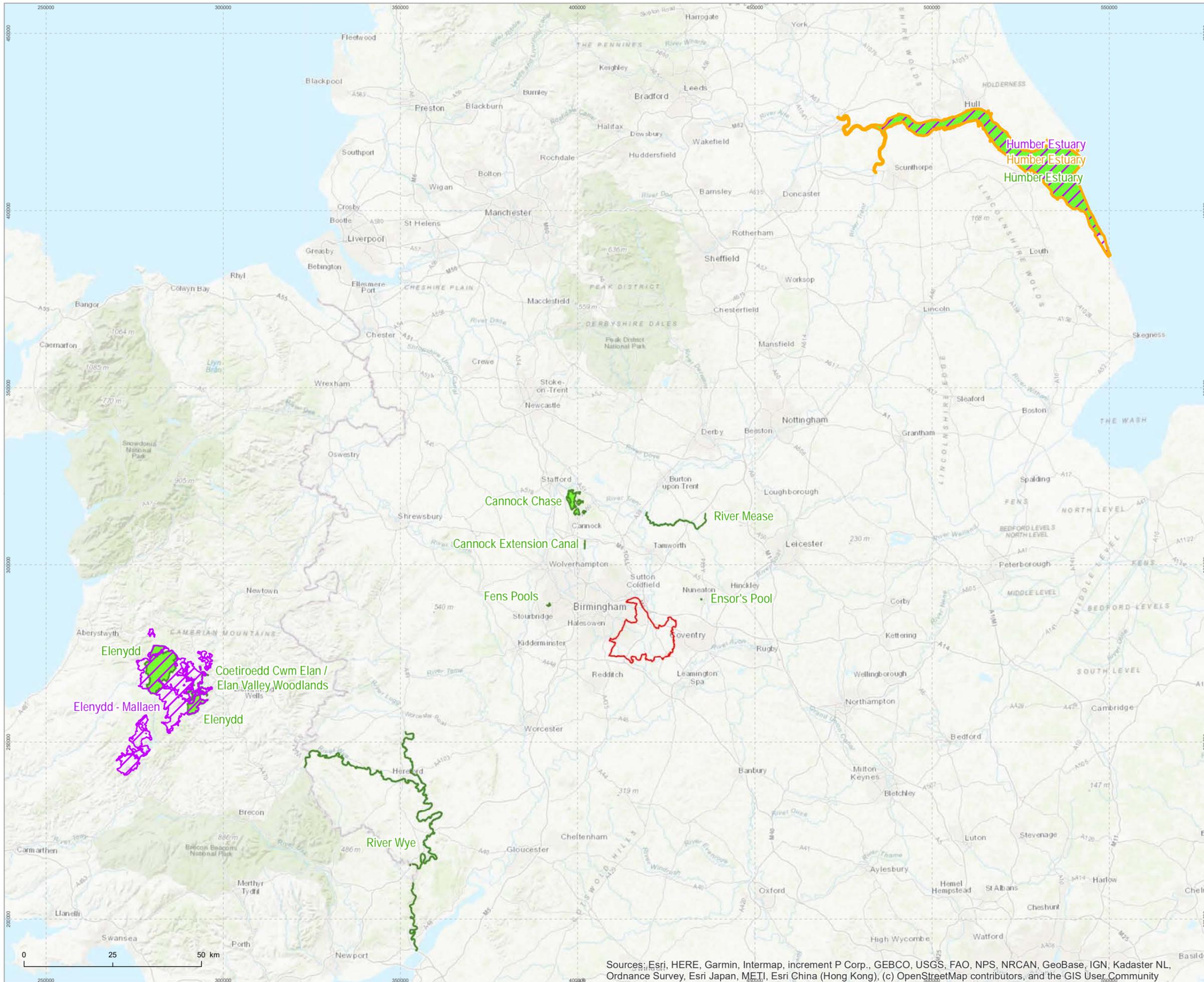
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Solihull Metropolitan Borough Local Plan Review	
Drawing Solihull MBC, Local Plan Site Allocations, 2020-2036	
Client Solihull Metropolitan Borough Council	
Drawing Number	Revision
C152313-01	00
Scale @ A3	Date
1:100,000	July 2020
Approved By	Drawn By
CW	RP



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C152313-02

Legend

- Solihull MBC Boundary
- Ramsar
- SPA
- SAC

Project
Solihull Metropolitan Borough Local Plan Review
Drawing
Location of
Natura 2000 sites relative to Solihull MBC

Client
Solihull Metropolitan Borough Council

Drawing Number C152313-02	Revision 00
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Scale @ A3 1:999,959	Date July 2020
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Legend

- Solihull MBC Boundary
- SAC



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Ensor's Pool

Arbury

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Project
Solihull Metropolitan Borough Local Plan Review

Drawing
Outline of Natura 2000 Site - Ensors Pool SAC

Client
Solihull Metropolitan Borough Council

Drawing Number C152313-03	Revision 00
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Scale @ A3 1:4,000	Date July 2020
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Approved By CW	Drawn By RP
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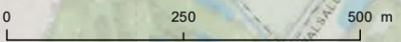
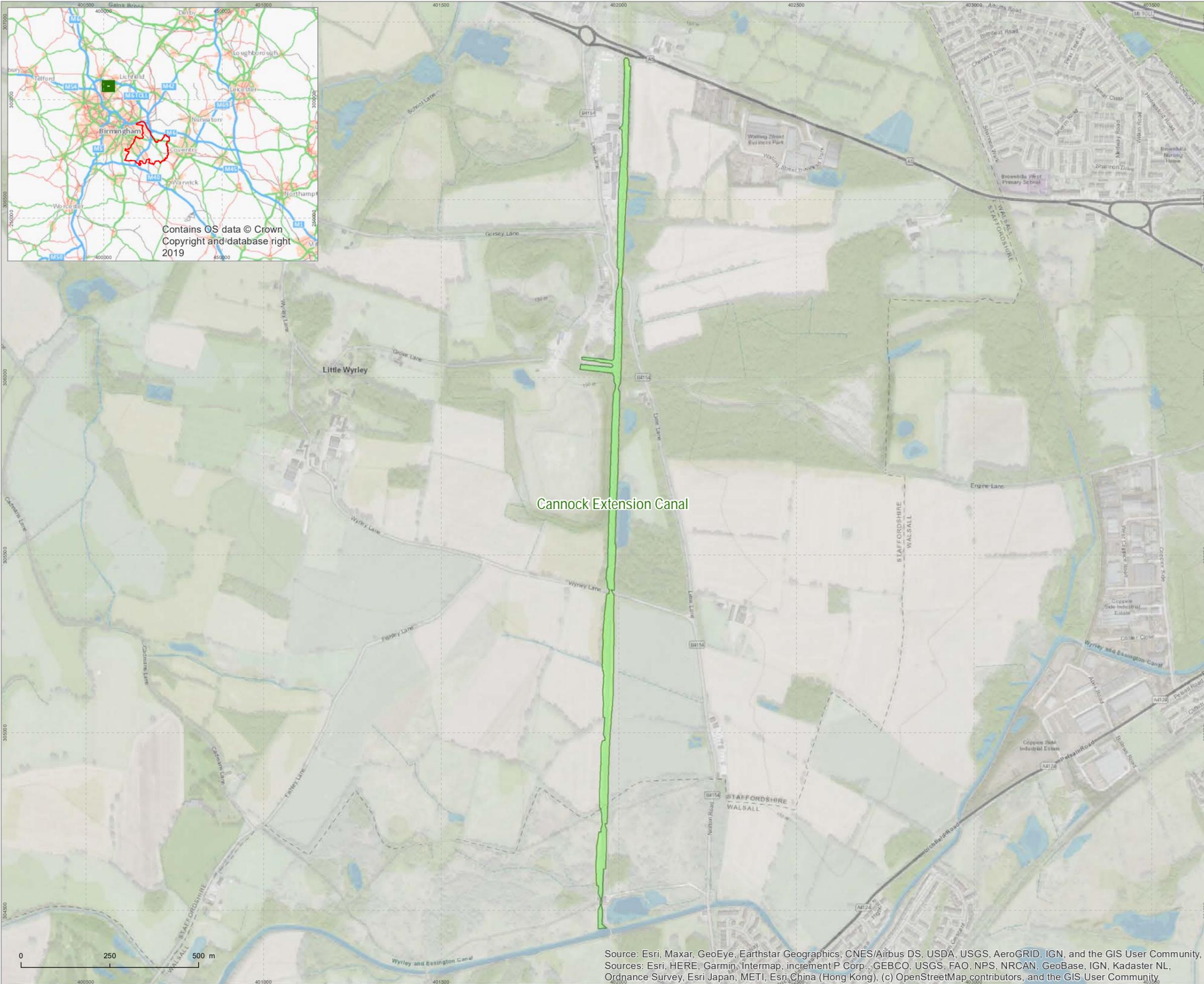
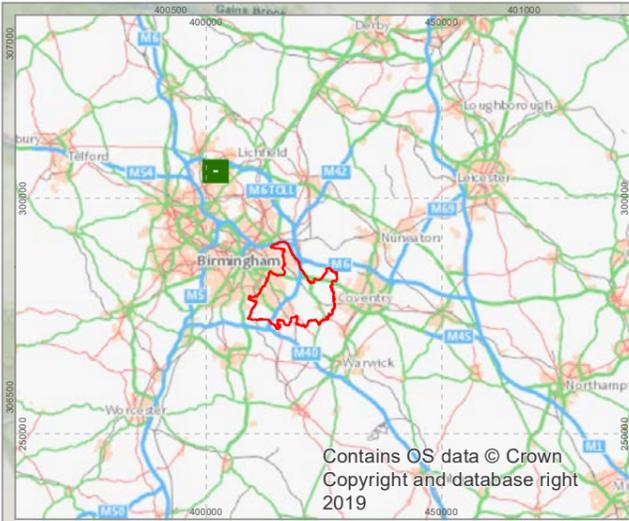


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Legend

- Solihull MBC Boundary
- SAC



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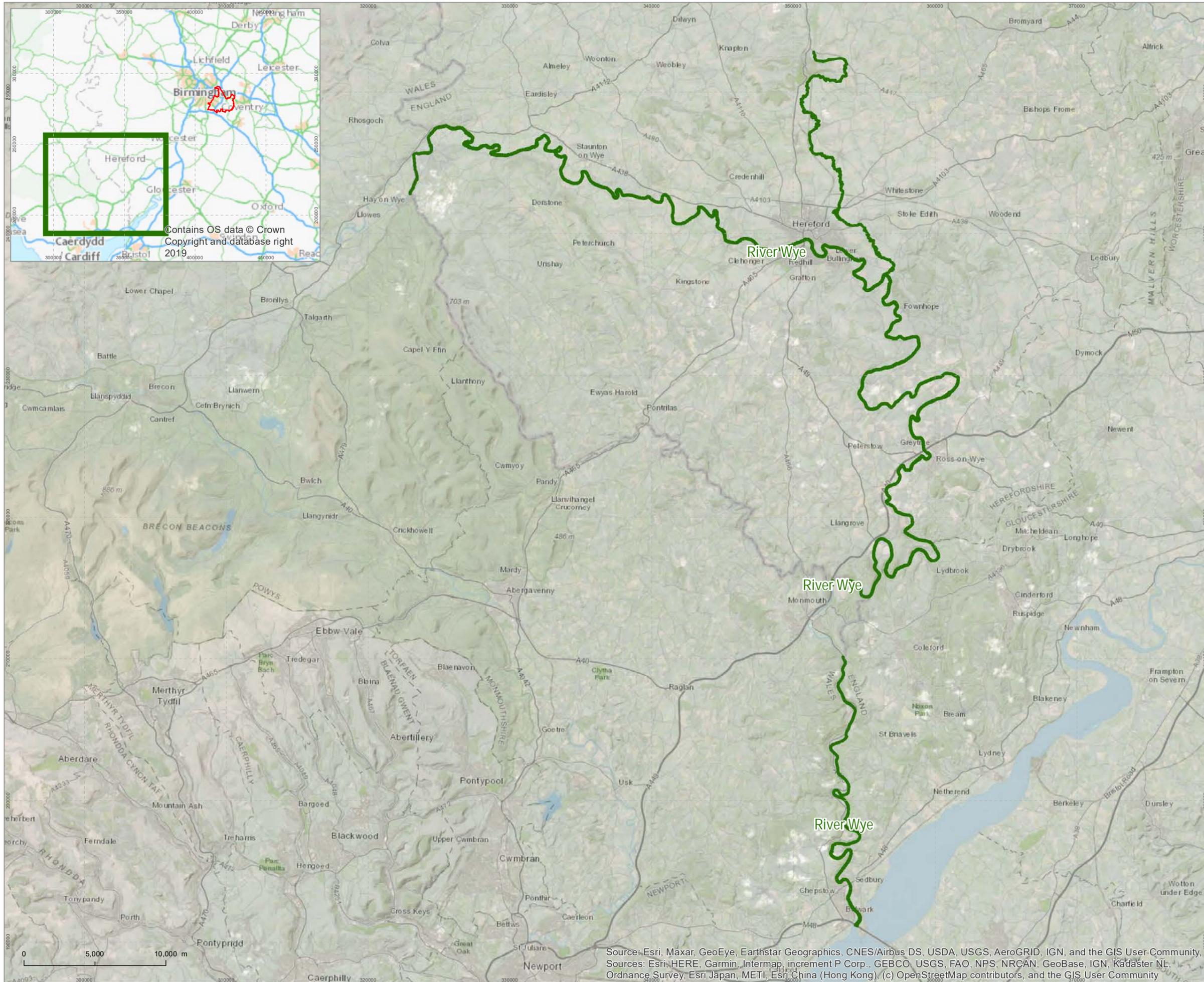


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Legend

- Solihull MBC Boundary
- SAC



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Solihull Metropolitan Borough Local Plan Review	
Drawing	
Outline of Natura 2000 Site - River Wye SAC	
Client	
Solihull Metropolitan Borough Council	
Drawing Number	Revision
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Approved By	Drawn By
CW	RP

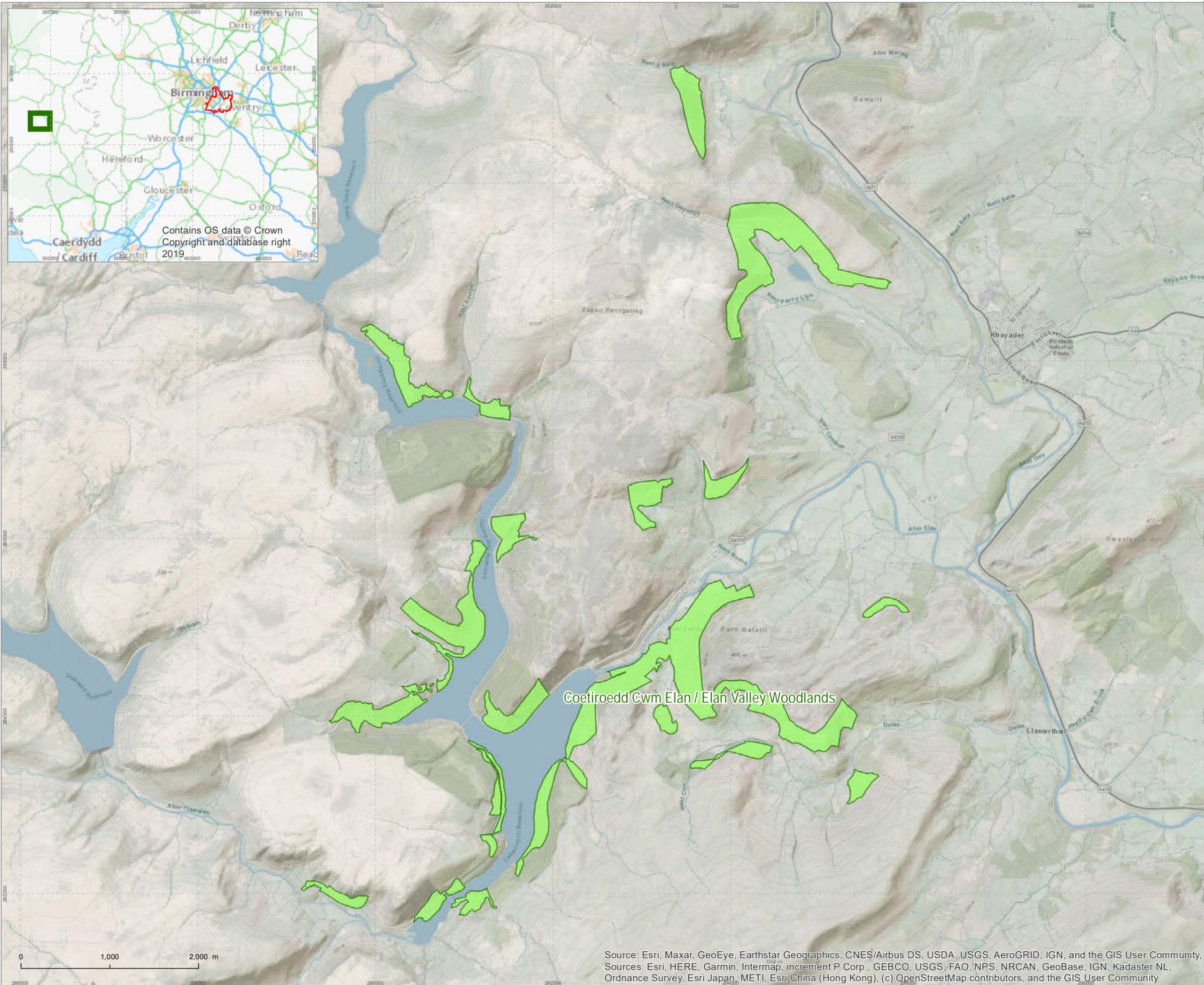


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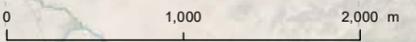
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Legend

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Project	
Solihull Metropolitan Borough Local Plan Review	
Drawing	
Outline of Natura 2000 Site - Elan Valley Woodlands SAC	
Client	
Solihull Metropolitan Borough Council	
Drawing Number	Revision
C152313-07	00
Scale @ A3	Date
1:40,000	July 2020
Approved By	Drawn By
CW	RP

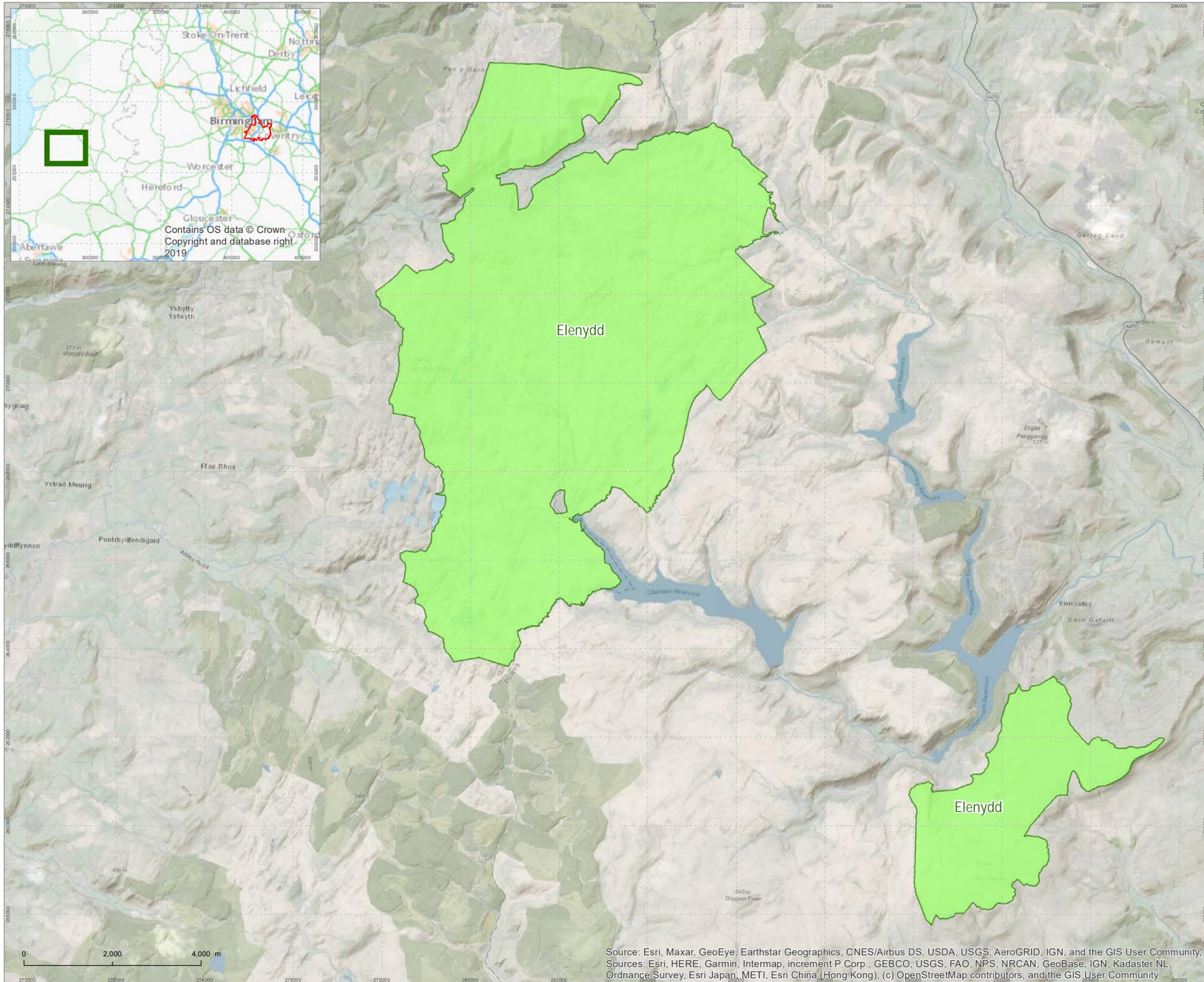


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Project	
Solihull Metropolitan Borough Local Plan Review	
Drawing	
Outline of Natura 2000 Site - Elenydd SAC	
Client	
Solihull Metropolitan Borough Council	
Drawing Number	Revision
C152313-08	00
Scale @ A3	Date
1:80,000	July 2020
Approved By	Drawn By
CW	RP

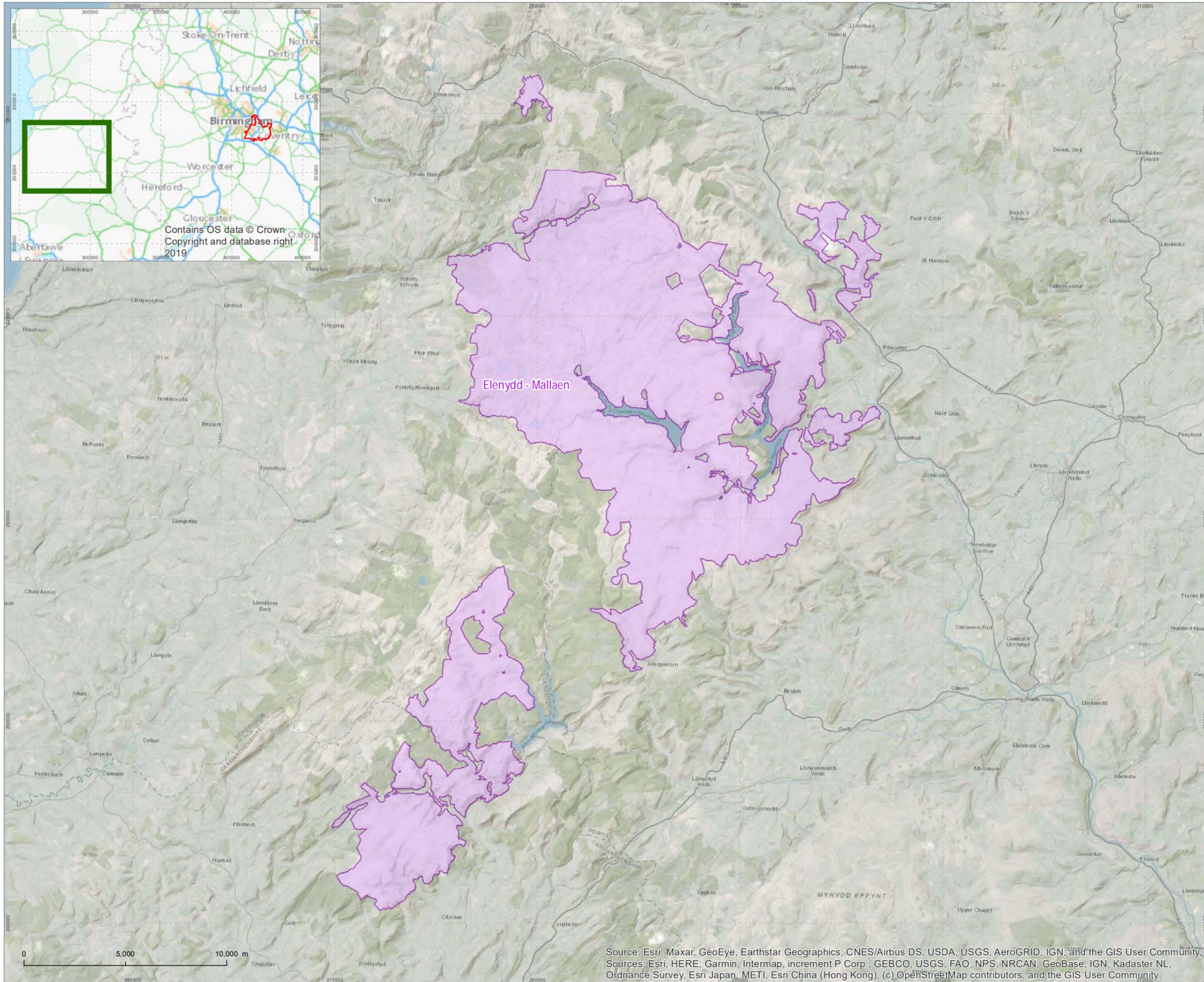


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Project
Solihull Metropolitan Borough Local Plan Review
 Drawing
Outline of Natura 2000 Site - Elenydd-Mallean SPA

Client Solihull Metropolitan Borough Council	
Drawing Number C152313-09	Revision 00
Scale @ A3 1:175,000	Date July 2020
Approved By CW	Drawn By RP

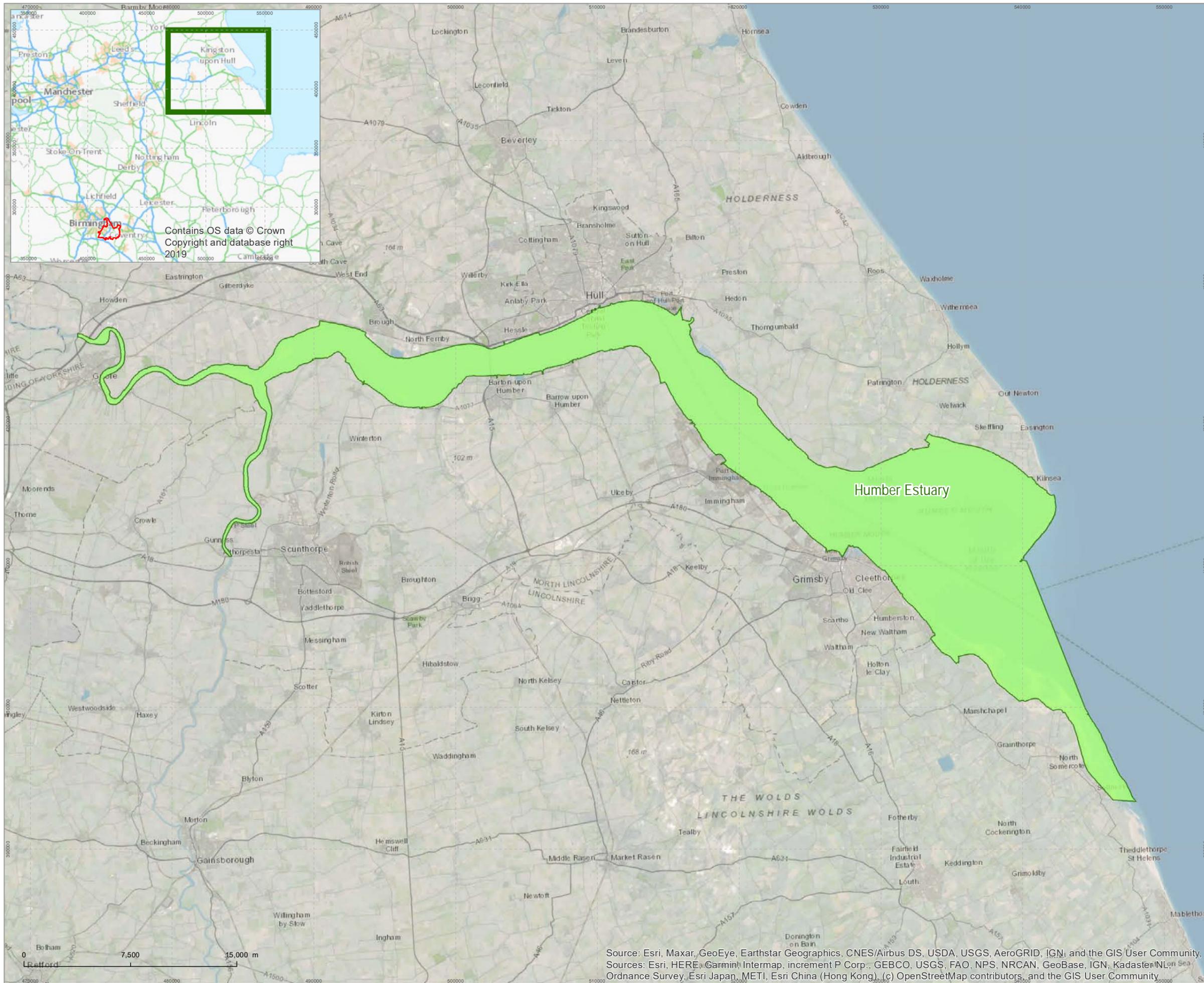


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Project		Solihull Metropolitan Borough Local Plan Review	
Drawing		Outline of Natura 2000 Site - Humber Estuary SAC	
Client		Solihull Metropolitan Borough Council	
Drawing Number	C152313-10	Revision	00
Scale @ A3	1:250,000	Date	July 2020
Approved By	CW	Drawn By	RP

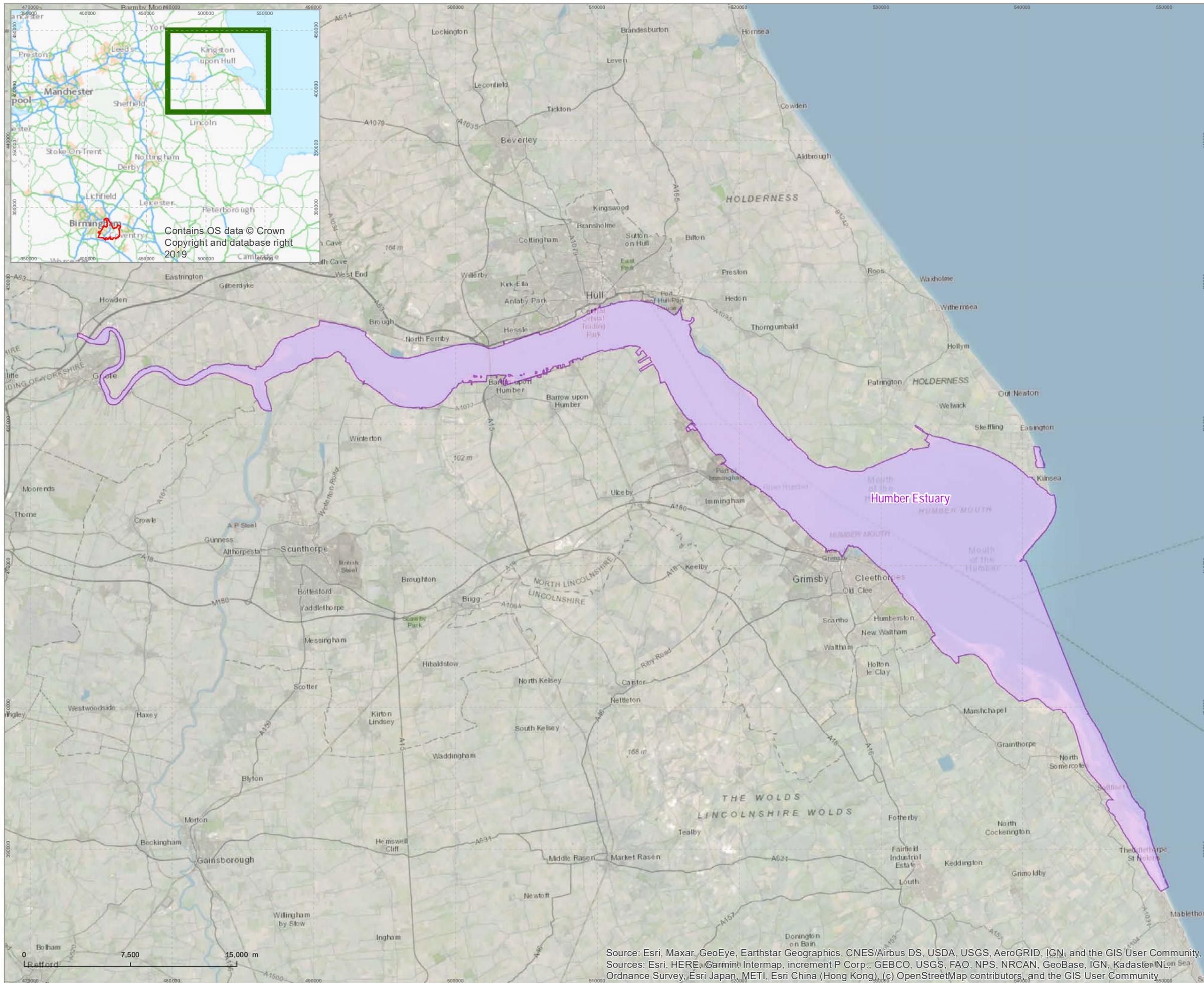


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Project		Solihull Metropolitan Borough Local Plan Review	
Drawing		Outline of Natura 2000 Site - Humber Estuary SPA	
Client		Solihull Metropolitan Borough Council	
Drawing Number	C152313-11	Revision	00
Scale @ A3	1:250,000	Date	July 2020
Approved By	CW	Drawn By	RP

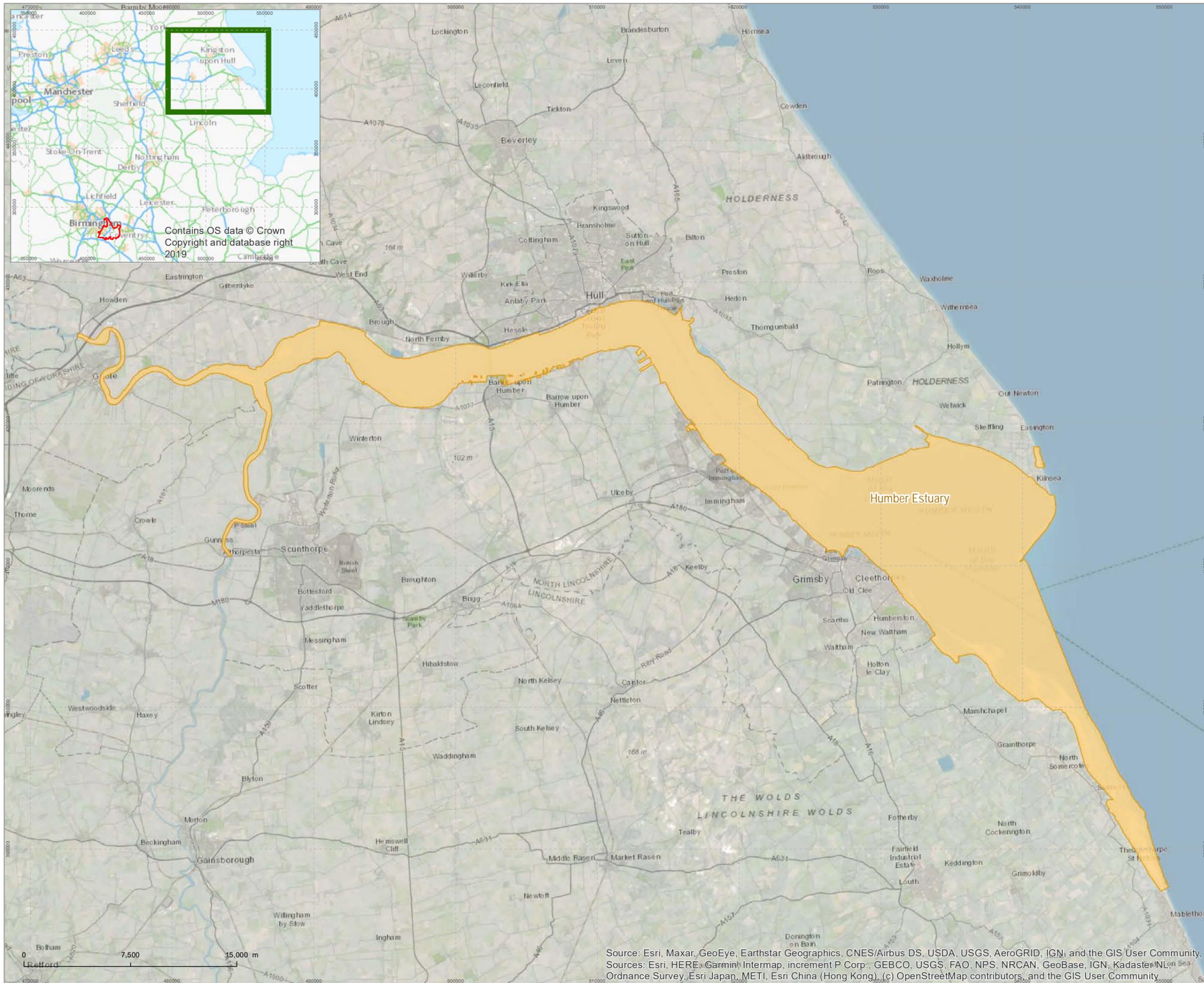


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Project
Solihull Metropolitan Borough Local Plan Review
Drawing
Outline of Natura 2000 Site -
Humber Estuary Ramsar

Client
Solihull Metropolitan Borough Council

Drawing Number	C152313-12	Revision	00
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Scale @ A3	1:250,000	Date	July 2020
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Approved By	CW	Drawn By	RP
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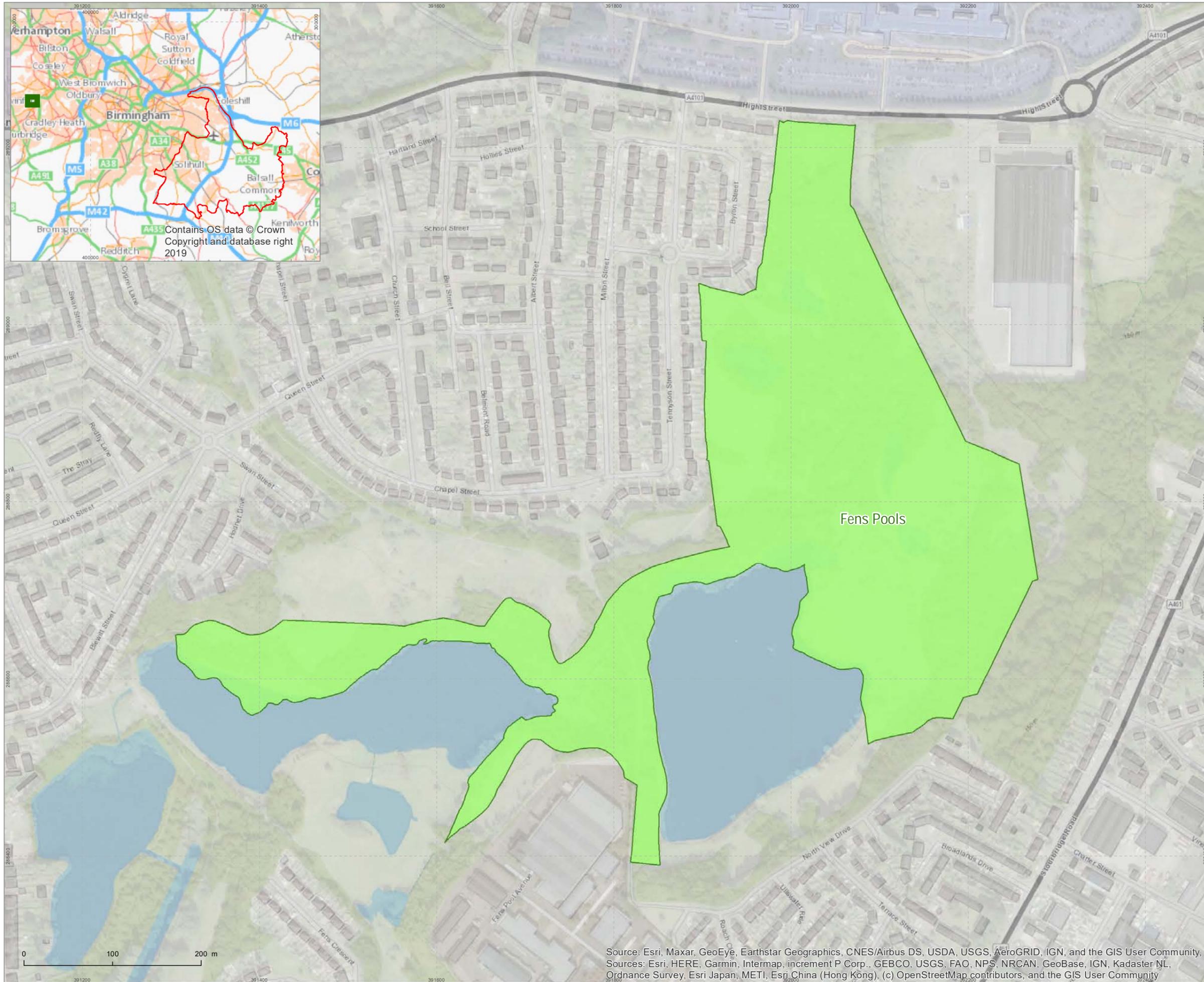


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Legend

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- SAC



Project
Solihull Metropolitan Borough Local Plan Review

Drawing
Outline of Natura 2000 Site - Fens Pools SAC

Client
Solihull Metropolitan Borough Council

Drawing Number C152313-13	Revision 00
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Scale @ A3 1:4,000	Date July 2020
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Approved By CW	Drawn By RP
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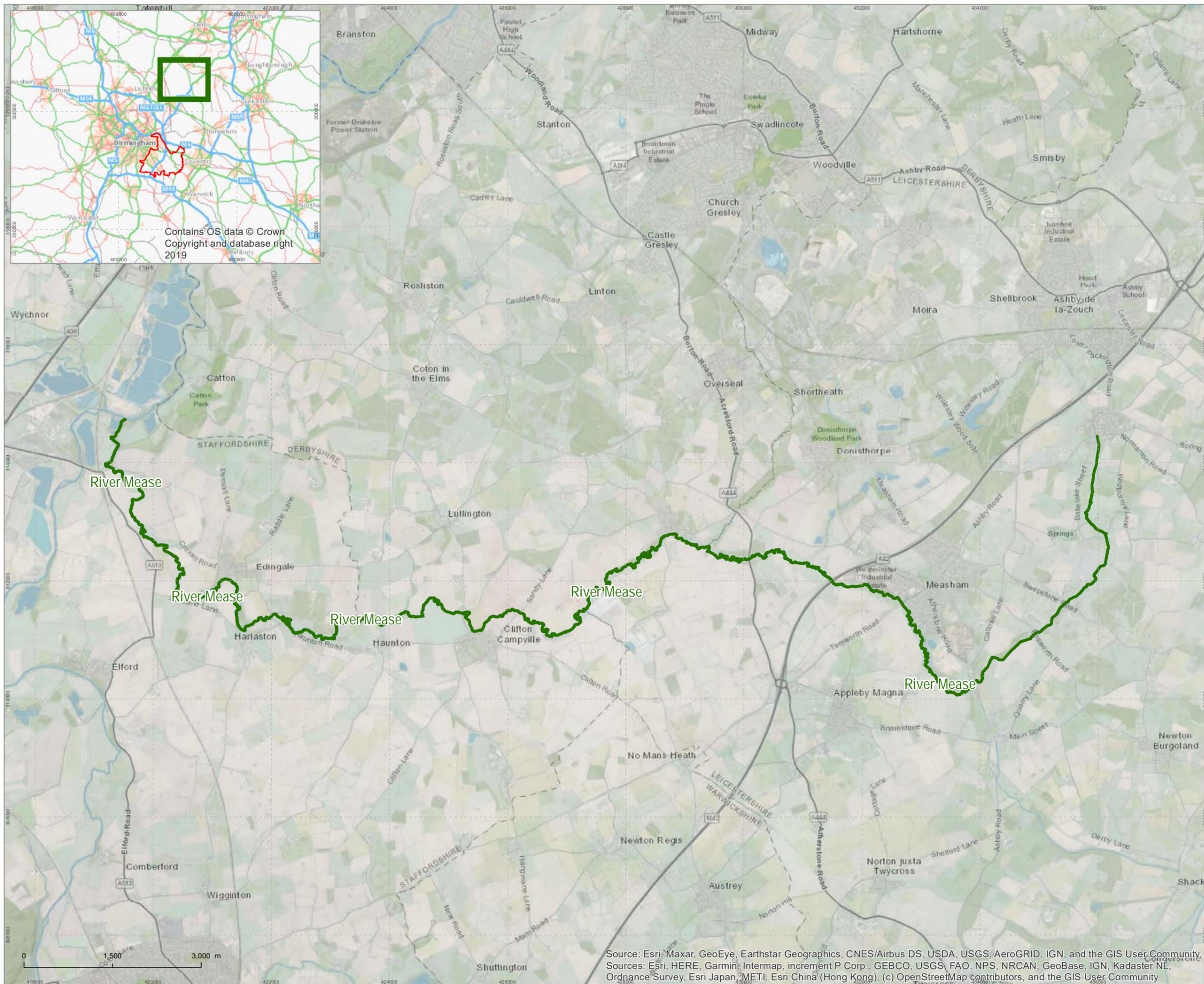
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Project	
Solihull Metropolitan Borough Local Plan Review	
Drawing	
Outline of Natura 2000 Site - River Mease SAC	
Client	
Solihull Metropolitan Borough Council	
Drawing Number	Revision
C152313-14	00
Scale @ A3	Date
1:60,000	July 2020
Approved By	Drawn By
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