Habitats Regulations Assessment (HRA) Screening Report

Worcestershire Local Flood Risk Management Strategy (LFRMS)

Worcestershire County Council
June 2015

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Executive Summary

It has been concluded that the Draft Worcestershire LFRMS is **unlikely to cause a LSE on European Sites either Alone or In Combination.**

Acceptance that this Strategy is consistent, so far as can be ascertained, with the Habitats Regulations does not guarantee that any plan or project derived from the Strategy will also be found consistent. Therefore this conclusion does not remove the need for later Habitats Regulations Assessment of any other plans, projects, or permissions associated with, or arising out of, the measures identified in the Strategy.

Recommendations for mitigation are proposed, which include: securing control measures to identify risks arising to Natura2000k and other designated sites of nature conservation interest as future flood intervention operations arise via the LFRMS and its sub-ordinate documents the SWMP, Action Plan and operations arising through engagement with stakeholders as facilitated by objectives within the LFRMS.

Important Note:

Should it not prove feasible to agree on implementation of appropriate mitigation measures then a full stage two ("Appropriate Assessment") of the Habitat Regulations Assessment process will be required in compliance with Article 6(4) Regulation 62(1) and/or Article 6(4) Regulation 61(2) of the Habitats Directive

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Glossary of Terms and Acronyms

CFMP	Catchment Flood Management Plan
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
WCC	Worcestershire County Council
HRA	Habitat Regulations Assessment
JNCC	Joint Nature Conservancy Council
Natura 2000/ European sites/ International sites	Includes Special Area of Conservation and Special Protection Areas and Ramsar Sites for the purposes of this report.
NPPF	National Planning Policy Framework (2012)
LFRMS	Local Flood Risk Management Strategy
FRM	Flood Risk Management
LLFA	Lead Local Flood Authority
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
SSS	Site of Specific Scientific Interest
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
WFD	Water Framework Directive

1. Introduction

1.1 Background

This Habitat Regulations Assessment (HRA) Screening Report has been produced by Business, Environment and Communities (BEC) Directorate, on behalf of Worcestershire County Council for the emerging Local Flood Risk Management Strategy (LFRMS) and is informed by the draft Surface Water Management Plan (SWMP). Further descriptions of the HRA process are provided in Sections **Error! Reference source not found.**.
Initial consultation with statutory consultees (based on the July 2013 HRA Screening Report) was received in November 2013. Consultation responses can be found in Appendix 2, and are briefly summarised as follows:

Natural England response:

"We are satisfied that the conclusion that there will be no likely significant effects on European sites, alone or in combination with other plans or projects, provided that is appropriate mitigation is built into the LFRMS, is appropriate".

"…*recommendations*" [as pertains HRA screening of projects/proposals etc as arising from the SWMP; and the inclusion within the FRMS of an overarching aim to protect European sites] "*do not seem to have been incorporated into the LFRMS yet. We anticipate their inclusion in the next draft*".

Environment Agency response:

"No issues with conclusion of HRA. Sites within County are unlikely to be significantly or directly affected by FRM activities" … "The one exception may be Lyppards Grange, which could be subject to inappropriate development around the site that could affect water quality or quantity on the site. Measures are needed to ensure that inappropriate activities do not occur".

1.2 Habitats Regulation Assessments and the LFRMS

HRAs and Appropriate Assessments (AA) are required under the Habitats Directive (Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora) and the Birds Directive (Directive 79/409/EC on the Conservation of Wild Birds), which apply to proposed plans or projects that may have a significant effect on a Natura2000 site, also known as 'international' sites due to their international legislative protection (which extends beyond Europe).

Article 6 (3) of the Habitats Directive gives the following guidance on when HRA should be undertaken: 'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives'.

Article 6(4) of the Habitats Directive goes on to discuss alternative solutions, the Imperative Reasons of Overriding Public Interest (IROPI) test and compensatory measures:

'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura2000 is protected. It shall inform the Commission of the compensatory measures adopted.'

The Habitats Directive applies to "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon" (Article 6(3)) for this reason, the LFRMS will require HRA appraisal.

In England and Wales, SACs on land or freshwater areas are underpinned by notification as Sites of Special Scientific Interest (SSSI). HRA relates specifically and exclusively to the qualifying interests of international sites and not to the broader conservation interests or requirements under other SSSIs. However, if the latter are factored into plan-making this will aid the planning authority's duty under section 28G of the Wildlife and Countryside Act 1981 (as amended) to conserve and enhance SSSIs in carrying out their functions. The condition status of SSSIs can also help to understand the ecological status of the international sites of which they may form a part.

It should be noted that the LFRMS may have the potential to help maintain or enhance the conservation status of some international sites, for example, by helping to restore water levels that the international sites require to achieve the conservation objectives that relate to the site's qualifying interest features. However, positive impacts of the LFRMS on international sites (and other environmental aspects) must be reported in detail within the SEA. This is because only negative effects are considered in HRAs, as the European Court of Justice has ruled that only effects that could undermine the conservation objectives of an international site are considered likely to have significant effects.

The aim of this screening report is therefore to assess the Worcestershire LFRMS and attempt to identify any potential effects on international sites. The Habitats Directive states that the priority is to avoid impacts, and mitigation and compensation should only be considered successively if avoidance is not possible.

Worcestershire County Council, as the Competent Authority under the Habitats Regulations, may be able to introduce counter-acting measures to avoid the possibility of a significant effect on an international site during the screening stage. This would speed up the assessment process in the early stages, enabling the assessment to concentrate on those aspects of the LFRMS that could have significant effects on an international site that are not easily eliminated.

BEC are effectively acting as consultants for this work, therefore the content of the HRA should not be interpreted or otherwise represented as the formal view of Worcestershire County Council.

1.3 Strategic Environmental Assessments and the LFRMS

The LFRMS is also subject to a Strategic Environmental Assessment (SEA), which will take a wider approach to broader sustainability and environmental impacts, rather than the narrow approach that HRA/AA takes by focusing on the predicted impacts of plans on international sites. Further, SEA follows the requirements of the Strategic Environmental Assessment Directive (2001/42/EC) whereas HRA/AA follows the requirements of the Habitats and Birds Directives.

1.4 HRA stages and Purpose of a Screening Assessment

Table 1 - Habitats Regulations Assessment: Key Stages

Stage 1 Screening for likely significant effect	a. Identify international sites in and around the plan/ strategy area in search area/ buffer zone agreed with the Statutory Body Natural England. b. Examine conservation objectives of the interest feature(s)(where available) c. Review policies and proposals and consider potential effects on European sites (magnitude, duration, location, extent) d. Examine other plans and programmes that could contribute to 'in combination' effects. e. Produce Screening Assessment

	f. If no effects likely – report no significant effect (taking advice from NE as necessary). g. If effects are judged likely or uncertainty exists - the precautionary principle applies proceed to **Stage 2**
Stage 2 Appropriate Assessment	a) Complete additional scoping work including the collation of further information on sites as necessary to evaluate impact in light of conservation objectives b) Agree scope and method of AA with NE c) Consider how plan 'in combination' with other plans and programmes will interact when implemented (the Appropriate Assessment) d) Consider how effect on integrity of site could be avoided by changes to plan and the consideration of alternatives e) Develop mitigation measures (including f) timescale and mechanisms) g) Report outcomes of AA including mitigation measures, obtain guidance from statutory consultees and wider [public] stakeholders as necessary h) If plan will not significantly affect European site proceed without further reference to Habitats Regulations If effects or uncertainty remain following the consideration of alternatives and development of mitigations proceed to **Stage 3**
Stage 3 Procedures where significant effect on integrity of international site remains	a) Consider alternative solutions, delete from LFRMS or modify, b) Consider if priority species/ habitats affected c) Identify 'imperative reasons of overriding public interest' (IROPI) economic, social, d) environmental, human health, public safety e) Notify Natural England f) Develop and secure compensatory measures

The 'screening' stage is a filter intended to identify which proposed plans or projects require further assessment. Section 4 of the SNH HRA Guidance describes the process of screening, which is a term that is used for convenience to describe the initial stages of the Habitats Regulations Appraisal (determining likely significant effects) and is distinct from the subsequent 'Appropriate Assessment' of adverse effect on integrity. The following text is from the SNH HRA Guidance:

"The purpose of the screening stage is to:

a. Identify all aspects of the plan which would have no effect on a European site, so that that they can be eliminated from further consideration in respect of this and other plans;
b. identify all aspects of the plan which would not be likely to have a significant effect on a European site (i.e. would have some effect, but minor residual), either alone or in combination with other aspects of the same plan or other plans or projects, which therefore do not require 'appropriate assessment'; and
c. identify those aspects of the plan where it is not possible to rule out the risk of significant effects on a European site, either alone or in combination with other plans or projects. This provides a clear scope for the parts of the plan that will require appropriate assessment."

A likely effect is one that cannot be ruled out on the basis of objective information. The test is a 'likelihood' of effects rather than a 'certainty' of effects. In the Waddenzee case the European Court of Justice ruled that a project should be subject to appropriate assessment "if it cannot be excluded, on

the basis of objective information, that it will have a significant effect on the site, either individually or in combination with other plans and projects". Therefore, 'likely', in this context, should not simply be interpreted as 'probable' or 'more likely than not', but rather whether a significant effect can objectively be ruled out.

An effect that could undermine the conservation objectives would be a significant effect and the likelihood of it occurring is a case-by-case judgment, taking account of the precautionary principle and the local circumstances of the site. The judgment of 'likelihood' is in turn conducted in a very *precautionary* manner, taking account of the ecological circumstances of the European site. This does, however, exclude trivial or inconsequential effects.

This Screening report therefore represents Steps "A" to "G" of Stage 1 as described within the table above.

1.5 HRA screening guidance

The methodology developed for the HRA screening is based upon the following regulations and guidance documents:

Regulations:

- Conservation of Habitats and Species (Amendment) Regulations 2012 (the 'Conservation Regulations').
- Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, (the 'Habitats Directive').

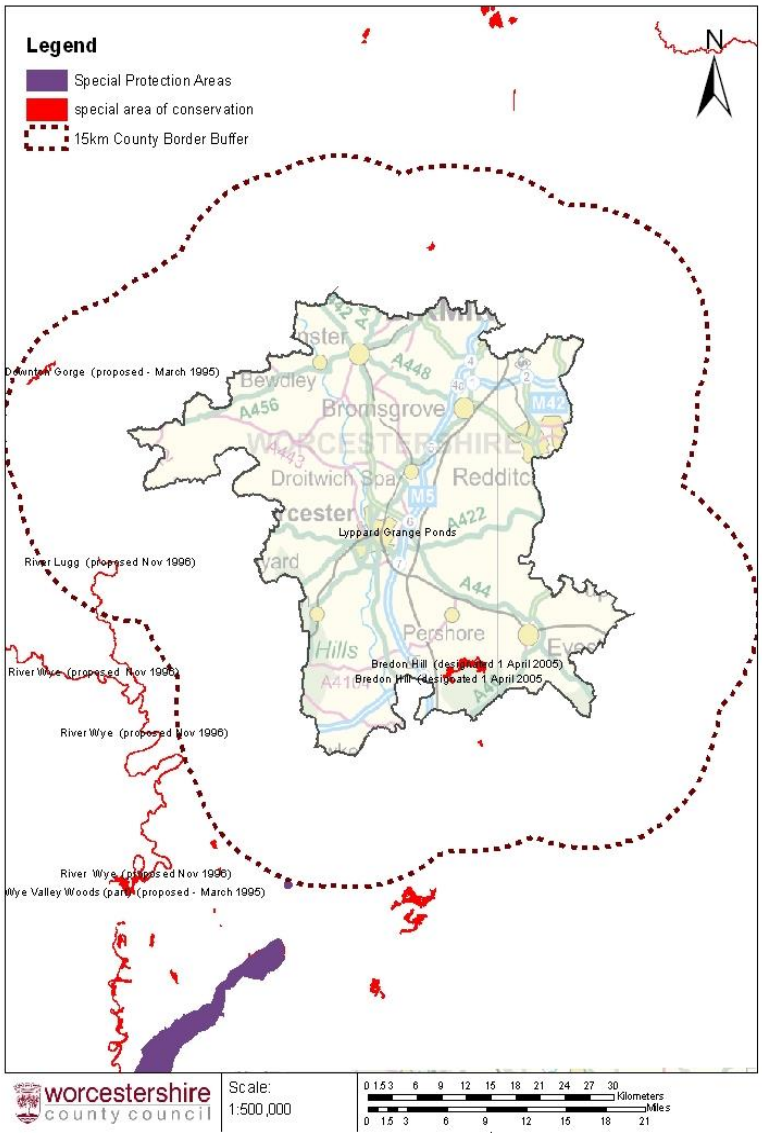
Guidance:

- Assessment of plans and projects significantly affecting Natura 2000 sites. European Commission (2001).
- Department for Communities and Local Government (2006). Planning for the Protection of European Sites: Guidance for Regional Spatial Strategies and Local Development Documents.
- The Habitats Regulations Assessment of Local Development Documents. Final Draft Guidance by David Tyldesley and Associates for Natural England, January 2009 (hereafter referred to as NE 2009).
- 'Habitats Regulations Appraisal Of Plans - Guidance For Plan-Making Bodies In Scotland, Version 2.0, August 2012. This can be found at http://www.snh.gov.uk/docs/B1116296.pdf.
- Generic hazard matrices (CatCode: LIT 7384) Habitats Directive Risks, Environment Agency October, 2012. Found at: https://www.gov.uk/government/publications/habitats-directive-risks-matrix
- Planning Inspectorate's Guidance Note 10, Version 5 (August 2013).
- "The Habitats Regulations Assessment Handbook" DTA Publications Limited, September 2013 (and as subsequently amended).

2. Stage 1 A - Identify international sites in and around the plan/ strategy area in search area/ buffer zone.

The Flood Risk Management Strategy is a high-level and county-wide document and parallels can be drawn with the emerging Worcestershire Minerals local Plan. It is therefore thought appropriate that the county-wide approaches agreed through consultation with Natural England on the Minerals Local Plan HRA Screening Assessment will be relevant to the Worcestershire FRMS HRA Screening Assessment. Consultation with Natural England in November 2013 indicated this approach would be supported.

The scope will encompass all of the European sites in Worcestershire (2 sites: Lyppard Grange Ponds SAC and Bredon Hill SAC) and those identified within a 15 km buffer of the County (4 sites: Fens Pools SAC, Dixton Woods SAC, Downton Gorge SAC and River Wye/Afon Gwy SAC). A 15km buffer is commonly used in county-wide strategic plan assessments and follows Environment Agency Guidance under the Habitats Regulations[1] as the upper limit for dry deposition of pollutants (e.g. dispersal of dust from groundworks and other invasive operations).



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

[1] Environment Agency (2010) Horizontal Guidance Note H1- annex F "Air Emissions"

Table 2 - European Sites to be Considered within the HRA Screening Assessment

European Site	Location in relation to Worcestershire County	Qualifying Feature
Lyppard Grange Ponds SAC (1.09 ha)	Central	Great Crested Newt population.
Bredon Hill SAC (359.86 ha)	South central	Violet Click Beetle population
Dixton Wood SAC (13.14 ha)	2 km from the central southern boundary	Violet Click Beetle population
Fens Pools SAC (20.4 ha)	7 km from the central northern boundary	Great Crested Newt population
River Wye / Afon Gwy SAC (2234.89 ha)	10 km from western boundary	Habitats: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; Rivers with floating vegetation often dominated by water-crowfoot. Transition mires and quaking bogs; very wet mires often identified by an unstable 'quaking' surface. Species: White-clawed crayfish (Austropotamobius pallipes) Sea lamprey (Petromyzon marinus) Brook lamprey (*Lampetra planeri*) River lamprey (Lampetra fluviatilis) Twaite shad (*Alosa fallax*) Allis shad (Alosa alosa) Atlantic salmon (*Salmo salar*) Bullhead (Cottus gobio) Otter (Lutra lutra)
Downton Gorge SAC (69.3 ha)	12km from northwest boundary	Habitats: Tilio-Acerion forests of slopes, screes and ravines; mixed woodland on base-rich soils associated with rocky slopes.
Walmore Common SPA (52.85 ha)	15 km from southern boundary	Supports overwintering (non-breeding) population of Bewick's swan (*Cygnus columbianus bewickii*)
Walmore Common Ramsar (52.85 ha)	As above	Internationally important population of overwintering (non-breeding) *Cygnus columbianus bewickii*
Severn Estuary SAC (73,715.4 ha)	20 km from the southern boundary	Habitats: Estuaries Mudflats and sandflats Saltmarsh Species: Sea lamprey (Petromyzon marinus) River lamprey (Lampetra fluviatilis) Twaite shad (*Alosa fallax*)
Severn Estuary SPA (24,700.01 ha)	As above	Supports overwinter populations of: Cygnus columbianus bewickii Curlew (Numenius arquata) Dunlin (Calidris alpina alpina) Pintail (*Anas acuta*) Redshank (Tringa totanus) Shelduck (Tadorna tadorna)

		Supports Ringed plover (*Charadrius hiaticula*) on passage.
Severn Estuary Ramsar (24,662.98 ha)	As above	Regularly supports an assemblage of at least 20,000 waterfowl

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

The River Clun SAC is located just outside the 15km buffer (at approximately 16km from the northwest border of Worcestershire) however as the site is upstream (joining the Teme in north Herefordshire before entering Worcestershire) and has no obvious pathways to impact via works specified in county by the LFRMS; we have therefore excluded this site from the assessment process.

Although the Severn Estuary is also located beyond the 15km radius of focus, we have initially screened this site in both for its clear hydrological link to Worcestershire's riverine terraces and also for the Estuary's importance in both a local and regional context.

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

3. Stage 1 B – Examine Conservation Objectives of Interest Features (where available)

Conservation objectives of European sites are set by Natural England[2] to ensure that the obligations of the Habitats Directive are met, particularly to ensure that there should be no deterioration or significant disturbance of the qualifying features from their condition at the time the status of the site was formally identified.

The conservation objectives are also essential in determining whether the effects of a plan or project are likely to have a significant effect (Article 6.2 of the Habitats Directive).

Table 2 - Conservation Objectives for the European sites

European Site	Conservation Objectives
Lyppard Grange Ponds SAC	To maintain the designated habitats in favourable condition for great crested newts, which is defined in part in relation to a balance of habitat extent (extent attribute). • Habitat Types represented (Biodiversity Action Plan categories) • Lowland ponds and neutral grassland/ parkland
Bredon Hill SAC	To maintain the presence of dead ash wood and pollards for Violet click beetle (*Limoniscus violaceus*). The Conservation Objectives (COs) for Bredon Hill SAC are focussed on the component Site of Special Scientific Interest (SSSI): Bredon Hill. The COs for the European interest on the SSSI are: • to maintain, in favourable condition, the habitats for *Limoniscus violoceus*, with particular reference to the wood-pasture and ancient ash woodland.
Dixton Wood SAC	The Violet click beetle (*Limoniscus violaceus*) was discovered at Dixton Wood in 1998 and it has been found at the site on a single occasion subsequently. It is a small site with large number of ancient ash *Fraxinus excelsior* pollards, and supports a rich fauna of scarce invertebrate species associated with decaying timber on ancient trees. The Conservation Objectives (COs) for Dixton Wood SAC are focussed on: • maintaining, in favourable condition, the habitats for the population of violet click beetle; • principal risks to the site's integrity are lack of future replacement pollards (age-class skewed to older generation) and game management practices. • These are issues addressed through provision for the creation of new pollards as well as management of existing resource to prevent loss through senescence and wind-blow.
Fens Pools SAC	To maintain the extent of the amphibian habitat (terrestrial and aquatics). • No loss of area or fragmentation of site (through significant barriers to amphibian dispersal) compared with status at designation.

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

River Wye / Afon Gwy SAC	The Conservation Objectives for the River Wye SAC are focussed on the component SSSIs: • River Lugg • Lower Wye The COs for the European interest on the SSSIs are to maintain, in favourable condition, the: • floating formations of water crowfoot (*Ranunculus*) of plain and sub-mountainous rivers and populations of: • Atlantic salmon (*Salmo salar*) • Allis shad (*Alosa alosa*) • Twaite shad (*Alosa fallax*) • Bullhead (*Cottus gobio*) • Brook lamprey (*Lampetra planeri*) • River lamprey (Lampetra fluviatilis) • Sea lamprey (Petromyzon marinus) • White-clawed crayfish (*Austropotamobius pallipes*) and the river and adjoining land as habitat for populations • Otter (Lutra lutra)
Downton Gorge SAC	The site is potentially vulnerable to the effects of air- and water-borne pollution, particularly in respect of its significant lichenological interest. However these effects are not related to the management of the site. • ensure no loss of ancient semi-natural stands, no loss of ancient woodland or wood-pasture and no reduction in the number of veteran trees.
Walmore Common SPA	Internationally important bird assemblage of *Cygnus columbianus bewickii* • no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline • significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure; • relevant attribute: disturbance in feeding or roosting areas; • measure: reduction or displacement of wintering birds.
Walmore Common Ramsar	Internationally important bird assemblage of *Cygnus columbianus bewickii* • no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. • maintain no less than 43 individuals, representing an average of 0.5% of the GB population (i.e. the 5 year peak mean 1998/9- 2002/3)
Severn Estuary SAC	The COs for the European interest are to maintain, in favourable condition, the: • estuaries • mudflats and sandflats not covered by seawater at low tide • atlantic salt meadows
Severn Estuary SPA	• no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline • significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure; • relevant attribute: disturbance in feeding or roosting areas; • measure: reduction or displacement of wintering birds. “Supporting habitats” are identified which describe the key habitats within the European marine site necessary to support the interest features i.e. the qualifying bird species. The “favourable condition table” contains further

	detail on habitat conditions. • subject to natural change, maintain in favourable condition the habitats for the internationally important populations of the Annex 1 and migratory species • intertidal mudflats and sandflats (Annex 1 species, migratory species and waterfowl assemblages); • saltmarsh communities (Annex 1 species, migratory species and waterfowl assemblages); and • shingle and rocky shore (migratory species and waterfowl assemblages).
Severn Estuary Ramsar	No less than 68,026 individuals in the assemblage (i.e. the 5 year peak mean between 1988/9 – 1992/3). • Relevant attribute which may cause deterioration: Nonphysical disturbance, noise (e.g. coastal development); visual (coastal development). Non-toxic contamination: changes in nutrient loading and changes in organic loading (industrial outfalls). • No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. Target number of Annex II species: • Dunlin >41,683; • Shelduck >2,892; • Redshank >2,013; (i.e. the 5 year peak mean between 1988/9 – 1992/3). Maintain in a favourable condition the habitats for the internationally important assemblages of waterfowl listed, in particular: • saltmarsh - Upper and lower saltmarsh provide important feeding and roosting areas. The European white-fronted geese graze on a range of saltmarsh grasses and herbs. The birds feed on the saltmarsh and the transition to coastal grazing marsh in front of the sea defences in the upper estuary. • mudflats and sandflats; and • coastal lagoons.

Analysis of European Sites and Sensitivities

In summarising the key sensitivities of the Natura2000 sites scoped into further assessment within this report, we have drawn on the Conservation Objectives (CO) of the individual site, together with the associated features which support these Conservation Objectives as identified within both the CO and underlying SSSI Condition Assessments, Views About Management and Operations Likely to Damage the Special Interest of the Site' (OLDSIS) guidance. In addition and to further refine in scope the breadth of remit addressing likely operations facilitated by the LFMS, we have used this data in the context of the Environment Agency's "Habitats Directive Risk Matrix" to identify which habitats and species are identified as sensitive to LFRMS operations.

Specifically, we have focused on the following categories of operations as established by the Environment Agency within their guidance; however in practicality not all these sub-categories will be pertinent to the LFRMS:

Category: Flood defence

- Capital Schemes
- Emergency Activities
- Existing Routine Maintenance Operations
- Land Drainage Byelaws

- Land Drainage Consent
- New planned maintenance improvement works
- Operation of Pumping Stations
- Water Level Management Plans

Category: Water resources

- Abstraction Licence
- Capital Scheme (e.g Gauging Stations And Weirs)
- Drought Permits and Orders
- Impoundment Licence
- River Regulation Schemes
- S158 WRA91 (Operating Agreements)
- S20 WRA91 (Arrangements with Water Companies)
- S30 WRA91 (Conservation Notices)
- S32 WRA91 (Consents to Drill and Pump)

Table 4 – Key vulnerabilities and sensitivities to LFRMS operations of Natura2000 sites screened in for appraisal.

Site:	Location in relation to the County of Worcestershire	Principle reason for designation:	Other features supporting CO's or features associated with accompanying SSSI condition assessment:	Condition as of April 2015:	Analogous features within HRA hazard risk matrix	Key Vulnerabilities (summarised from Natura2k CO and SSSI 'VAM' & 'OLDSIS')		Identified sensitivities pertinent to LFRMS summarised from EA Habitats Directive "Hazard Risk Matrix":	
								Flood defence works:	Water resources:
Bredon Hill	South central	Violet click beetle - *Limoniscus violaceus*	Broadleaved mixed and yew woodland - lowland Calcareous grassland – lowland	17 units favourable, 1 unit unfavourable-recovering (calcareous grassland)	1.06 – dry woodlands and scrub 1.07 – dry grassland and scrublands on chalk or limestone 2.07 – violet click beetle	Terrestrial Modification	Land-take/developmental pressure Inappropriate grazing regime	No sensitivities/hazards predicted	• habitat loss
						Disturbance	Heavy recreational pressure Spread of non-native / invasive species Scrub encroachment		
						Water quality/flow	Groundwater and surface run-off pollution events, Changes in water table.		
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
Lyppard Grange	Central	Great Crested newt – *Triturus cristatus*	Broadleaved mixed and yew woodland Standing open water and canals	1 unit favourable 1 unit unfavourable-recovering (open water: insufficient egg laying strata for newts).	1.04 standing water (sensitive to acidification) 2.10 great crested newt	Terrestrial Modification & Disturbance	Land-take Physical damage, Disturbance Introduction of invasive species/scrub	• Changes in water chemistry • Changes in physical regime • Changes in surface water flooding • Changes in velocity or flow-regime • Habitat loss • Habitat/community simplification • Physical damage	• Changes in water chemistry • Changes in surface water flooding • Changes in water level or table • Habitat loss
						Water Quality/Flow	Increased siltation, turbidity or sedimentation, Eutrophication, Changes in water table.		
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
Dixton Wood	2 km from the central southern boundary at closest point	Violet click beetle - *Limoniscus violaceus*	BROADLEAVED, MIXED AND YEW WOODLAND Lowland	1 unit – unfavourable-recovering	1.06 – dry woodlands and scrub 2.07 – violet click beetle	Terrestrial Modification & Disturbance	Land-take/developmental pressure Inappropriate grazing regime	No sensitivities/hazards predicted	• Habitat loss
							Heavy recreational pressure Spread of non-native / invasive species Scrub encroachment		
						Water quality/flow	Groundwater and surface run-off pollution events, Changes in water table to preserve wet woodland		
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
Fens Pools	7 km from the central northern boundary	Great Crested newt – *Triturus cristatus*	STANDING OPEN WATER AND CANALS	6 units - favourable	1.04 standing water (sensitive to acidification)	Terrestrial Modification & Disturbance	Development pressure Recreational pressure / disturbance Spread of introduced non-native species	• Changes in velocity or flow regime • Changed water	• Changes in water chemistry • Changes in surface

					2.10 great crested newt		Scrub or tree encroachment (leading to shading, nutrient and hydrological effects) Maintenance of appropriate grazing regime	chemistry • Changes in physical regime • Changes in surface water flooding • Changes in velocity or flow regime • Habitat loss • Habitat/community simplification • Physical damage	water flooding • Changes in velocity or flow regime • Changes in water levels or table • Habitat loss • Reduced dilution capacity
						Water quality/flow	Water levels, Siltation Eutrophication Increased sediment and turbidity Groundwater pollution events		
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
River Wye	10 km from western boundary at closest point	H3260. Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; Rivers with floating vegetation often dominated by water-crowfoot H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface S1092. *Austropotamobius pallipes*; White-clawed (or Atlantic stream) crayfish S1095. *Petromyzon marinus*; Sea lamprey S1096. *Lampetra planeri*; Brook lamprey S1099. *Lampetra fluviatilis*; River lamprey S1102. *Alosa alosa*; Allis shad S1103. *Alosa fallax*; Twaite shad S1106. *Salmo salar*; Atlantic salmon S1163. *Cottus*	Transition mires and quaking bogs Rivers & streams	6 units unfavourable-recovering 1 unit favouable	1.02 Bogs and wet habitats (sensitive to acidification) 1.03 Riverine habitats and running waters 2.06 Non-migratory fish and invertebrates of rivers 2.09 Mammals of riverine habitats	Water quality/flow	Water quality (particularly sensitive to pollution/eutrophication) Flow (flow regime should be characteristic of the river). Abstraction sensitive. Suspended sediments/siltation Inappropriate dredging Artificial barriers to fish migration Atmospheric pollution - deposition of oxides of nitrogen & sulphur, acidification of river water (deposition of nitrogen & ammonia)	• Changed water chemistry • Changes in physical regime • Changes in surface water flooding • Changes in velocity or flow regime • Competition from non-native species • Disturbance (e.g. visual, noise, gulls) • Habitat loss • Habitat/community simplification • Physical damage • Turbidity	• Changed water chemistry • Changes in salinity regime • Changes in surface water flooding • Changes in velocity or flow regimes • Changes in water levels or table • entrapment • Habitat loss • Reduced dilution capacity
						Disturbance	Recreational pressure and disturbance – can lead to disturbance, damage and increases in suspended sediment e.g. footpath erosion, water-based activities Illegal fish poaching Spread of introduced non-native species		

		gobio; Bullhead S1355. Lutra lutra; Otter							
Downton Gorge	12km from northwest boundary at closest point	H9180. *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes	BROADLEAVED, MIXED AND YEW WOODLAND – Upland	Four units unfavourable-no change	1.06 Dry woodlands and scrub	Terrestrial Modification & Disturbance	Development pressure Inappropriate woodland management regime Heavy recreational pressure Spread of non-natives Scrub encroachment to W8/W6 woodland communities	No sensitivities/hazards predicted	• Habitat loss
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
						Water Flow/Quality	Eutrophication Acidification Siltation/sedimentation/turbidity Groundwater pollution events Changes in water table		
Walmore Common SPA **Walmore Common RAMSAR**	15 km from southern boundary at closest point	A037 *Cygnus (columbianus bewickii)*; Bewick"s swan (Non-breeding)	Improved grassland Neutral Grassland	Three units unfavourable-no change	3.9 Birds of estuarine habitats	Terrestrial Modification & Disturbance	Development pressure Scrub encroachment (often due to undergrazing) Maintenance of appropriate grazing regime Spread of introduced non-native species Human disturbance (off-road vehicles, burning (vandalism))	• Changed water chemistry • Changes in physical regime • Changes in surface water flooding • Changes in velocity or flow regime • Disturbance (e.g. visual, noise, gulls) • Habitat loss • Habitat/community simplification • Physical damage • Turbidity	• Change in freshwater flow to estuary • Change in salinity regime • Changes in surface water flooding • Changes in velocity or flow regime • Changes in water table • Habitat loss • Recued dilution capacity
						Water quality/flow	Maintenance of quantity and base status of the groundwater. Water quality – nutrient enrichment from fertiliser run-off etc		
						Air Quality	Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		
Severn Estuary SAC	20 km from the southern boundary at its closest point	H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks H1130. Estuaries H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats H1170. Reefs	(the most hydrologically proximate feature is the Upper Severn Estuary SSSI) NEUTRAL GRASSLAND Lowland LITTORAL SEDIMENT Improved grassland	9 Units favourable 2 Units unfavourable recovering (littoral sediment units)	1.12 Estuarine and intertidal habitats 1.13 Submerged marine habitats 1.05Anadromous fish	Water quality/flow	Pollution events, for example through agricultural run-off or sewage, Flow regime should be characteristic of the river. Inappropriate dredging Erosion Siltation Over-fishing acidification of river water (deposition of nitrogen & ammonia) Maintenance of appropriate grazing	• Changed water chemistry • Changes in physical regime • Changes in velocity or flow regime • Competition from non-native species • Disturbance (e.g visual, noise, gulls) • Habitat loss • Habitat/community simplification • Physical damage • Turbidity	• Change in freshwater flow to estuary • Changes in salinity regime • Changed water chemistry • Changes in velocity or flow regime • Changes in water levels or table • entrapment • Habitat loss • Reduced dilution capacity

Severn Estuary SPA **Severn Estuary RAMSAR**		H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Atlantic salt meadows S1095. *Petromyzon marinus*; Sea lamprey S1099. *Lampetra fluviatilis*; River lamprey S1103. Alosa fallax; Twaite shad A037 Cygnus (*columbianus bewickii*); Bewick's swan (Non-breeding) A048 *Tadorna tadorna*; Common shelduck (Non-breeding) A051 *Anas strepera*; Gadwall (Non-breeding) A149 *Calidris alpina alpina*; Dunlin (Non-breeding) A162 *Tringa totanus*; Common redshank (Non-breeding) A394 *Anser albifrons albifrons*; Greater white-fronted goose (Non-breeding) Waterbird assemblage			3.4 Birds of lowland wet grasslands 3.6 Birds of lowland freshwaters and their margins 3.7 Birds of farmland 3.8 B irds of coastal habitats 3.9 Birds of estuarine habitats	Terrestrial Modification/Disturbance Air Quality	regime, Recreational/tourism disturbance Development e.g. dock/harbour creation, coastal defence works Illegal fish poaching Spread of introduced non-native species Artificial barriers to fish migration Disturbance to bird feeding and roosting habitat (noise / visual) Breaching critical air pollution thresholds for vegetation, e.g. by increased oxides of sulphur, nitrogen compounds and/or ozone.		

Conclusion

1. It has <u>not</u> been possible to screen out any of the Natura2000 sites which were scoped into assessment on the basis of their sensitivities alone (to possible effects of LFRMS associated operations).

2. However, it has been possible to narrow the focus of assessment to identified key sensitivities for each site in question in light of the range of likely operations which it is anticipated the LFRMS will facilitate.

3.1 Screening of Natura2000 site possible pathways to impact from LFRMS activities

The LFMS states (at Paragraph 5.5) that as Lead Local Flood Authority, WCC is responsible for "overseeing the management of local flood risk, associated with surface-water runoff, from ordinary watercourses (such as streams and ditches) and from groundwater".

In addition (Paragraph 5.7) the LFRMS states that WCC, as a "Highway Authority, under the Highways Act (1980), has a duty to maintain the highway, this includes ensuring that highway drainage systems are clear and that blockages on the highway are removed. As part of this duty, roads are regularly inspected and maintained".

- Flooding from main rivers and reservoirs is the responsibility of the Environment Agency
- Flooding from motorways and trunk roads is the responsibility of the Highways Authority
- Sewer flooding is the responsibility of Seven Trent Water.

The LFRMS draws on the Worcestershire Surface Water Management plan which captures the following floodspot observations:

Groundwater flooding - Occurs when water levels in the ground rise above the natural surface. Low-lying areas underlain by permeable strata are particularly susceptible.

Surface water flooding - Flooding from rainwater (including snow and other precipitation) which has not entered a watercourse, drainage system or public sewer.

In addition, and for sake of clarity, the following definitions are adopted:

OWC flooding: when an ordinary watercourse (not designated as a 'main river') is unable to accommodate the volume of water flow or the channel becomes blocked, causing water to exceed the channel and flood surrounding land. Similarly, surcharges within subsurface drainage systems or the blockage of such structures (e.g. culverts, gullies, outfalls or bridges) can lead to OWC flooding.

Highways flooding (excluding motorway and trunk roads) can be caused by heavy rainfall or overflow from blocked drains and gullies causing water to pond locally. WCC is responsible for approximately 11,000 gullies and blockage of both gullies and culverts is reported to be commonplace, inevitably leading to localised problems routinely addressed through reactive maintenance regimes.

In addition, predictions on implications for schemes likely to arise in subsequent updates of the Worcestershire SWMP and LFRMS can be extrapolated using the EA updated Surface Map for Flood Water (uFMfSW). The uFMfSW builds predicative data based, in part, on identified flood risk zone boundaries. The Environment Agency flood risk zones are defined as follows (CLG March 2012):

Table 5 – Definitions of Flood Risk Zone

Zone	Name	Definition (as per CLG March 2012)
Zone 1	Low probability	Land assessed as having less than 1 in 1000 annual probability of river or sea flooding (<0.1%)
Zone 2	Medium probability	Land assessed as having between 1 in 100 and 1 in 1000 annual probability of river flooding (1% to 0.1%)
Zone 3a	High probability	Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%)
Zone 3b	The functional flood plain	Land where water has to flow or be stored in times of flood. Area is agreed between local planning authorities and the Environment Agency although land which would flood with an annual probability of 1 in 20 (5%) or greater in a year, or is designed to flood in extreme (0.1%) flood, should provide a starting point for discussions to identify the functional floodplain

The Natura2000 sites for consideration as part of this HRA have been further scoped and refined by an assessment exercise that has identified if there could be any causal connection or link between the types of flooding that are covered by the LFRMS (and underlying SWMP) and any potential (however hypothetical at this stage) impact to the qualifying features of each Natura2000 site.

The results of this assessment are provided in Table 6 (below) and the series of associated maps extracted from a GIS project produced for the HRA help to demonstrate the rationale behind this screening process.

Table 6 – Summary of screening process based on forecast works within LFRMS (deriving from SWMP dataset as of June 2015).

Site	OWC flooding	Ground Water Flooding	Surface water flooding	Highways flooding	Summary of potential impacts and screening result
Bredon Hill SAC	Reported flood incident within 25m of site. Refer to Tables 8 and 9 below for further information.	Screened out: no Ground Water Flooding incidents reported in proximity or with obvious hydrological connectivity of the site. In addition and with due consideration to the current EA uFMfSW map there are no obvious or forseeable likely pathways for future Ground Water Flooding to impact this site.	Reported flood incident within 25m of site. Refer to Tables 8 and 9 below for further information.	Reported flood incident within 350m of site. Refer to table Tables 8 and 9 below for further information.	**Screened in (in the absence of appropriate mitigation).** Floodspots have been identified in the locality. There is a pathway to impact (as per generic sensitivities established on Table 4); possible but unlikely impact would occur due to both the distance from site and the nature of works likely to be proposed. Note that LFRMS operations can potentially be **screened out if appropriate mitigation** (i.e. sufficient control measures which prevent effects such as modification of water flow-rates leaving SAC boundaries or the spread of invasive species) can be secured.
Lyppard Grange SAC	Screened out: no OWC flooding incidents reported in proximity or with obvious hydrological connectivity of the site. In addition and with due consideration to the current EA uFMfSW map there is no obvious or forseeable likely pathway for future	Screened out: no Ground Water Flooding incidents reported in proximity or with obvious hydrological connectivity of the site. In addition and with due consideration to the current EA uFMfSW map there are no obvious or forseeable likely pathways for future Ground Water Flooding to impact this site.	Reported flood incident within 250m of site. Refer to table 7 below for further information.	Screened out: no highways flooding incidents reported and no obvious or likely forseeable pathway for future highways flooding to impact this site.	Screened out Although floodspots identified in locality, no likely pathway to impact the SAC receptor was identified.

	OWC flooding to impact this site.	
Dixton Wood SAC	Screened out: the site appears hydrologically unconnected to Worcestershire	Screened out – No impacts foreseen
Fens Pools SAC	Screened out, site is upstream of county and not subject to any operations within the foreseeable remit of the FRMS.	Screened out – No impacts foreseen
River Wye SAC	Screened out: although hydrologically linked to the Severn, the Wye joins the Severn considerably downstream (near Chepstow) and as such is beyond any foreseeable influence of operations within the County.	Screened out – No impacts foreseen
Downton Gorge SAC	Screened out: the site appears hydrologically unconnected to Worcestershire	Screened out – No impacts foreseen
Walmore Common SPA/RAMSAR	Screened out: the site appears hydrologically unconnected to Worcestershire	Screened out – No impacts foreseen
Severn Estuary SAC/SPA/ RAMSAR	Although hydrologically linked to the LFRMS area, examining the nature and scope of works proposed within the remit of the LFRMS, it is not possible to objectively anticipate any significant adverse effects being caused to the downstream site complex through the favourable management of flood incidents at a considerable distance upstream of these designations.	Screened out – No impacts foreseen

3.2 Lyppard Grange: forecast works within LFRMS (deriving from SWMP dataset as of June 2015).

The ponds at Lyppard Grange appear to be non-reliant on local OWC network to recharge. The SAC has limited highway boundaries with no reported highways, surface water or ground water flooding reported. Table 7 sets out further detail.

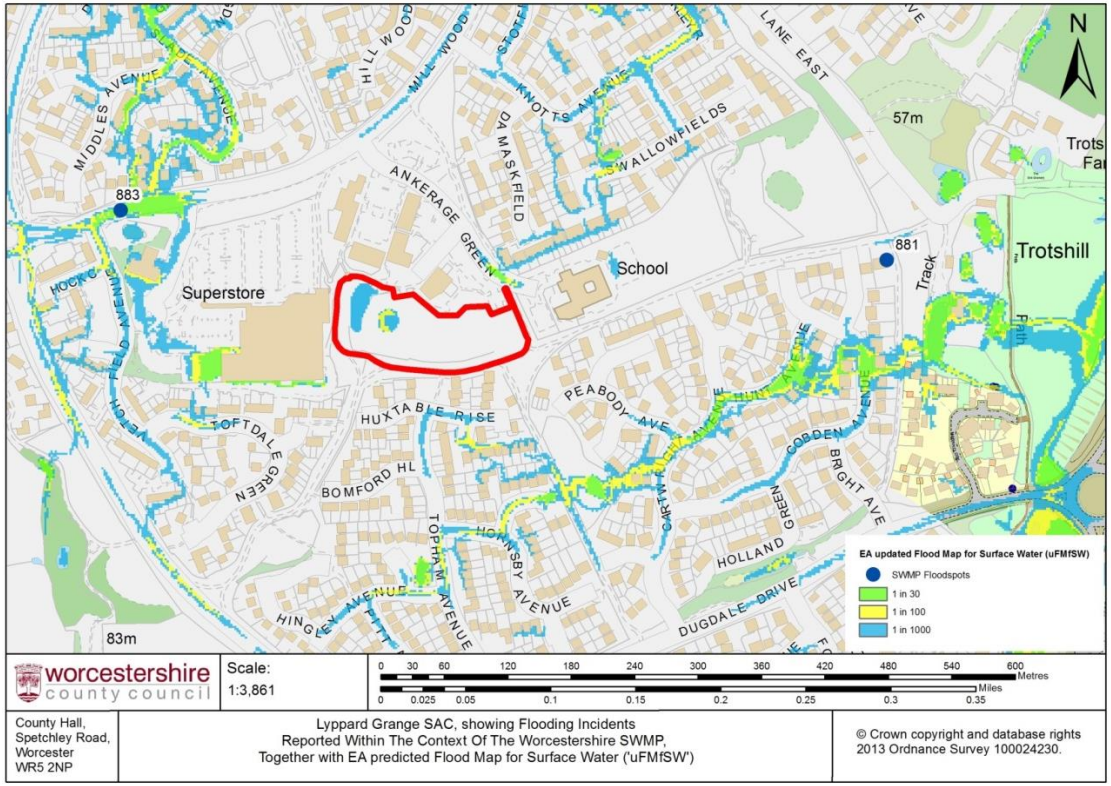


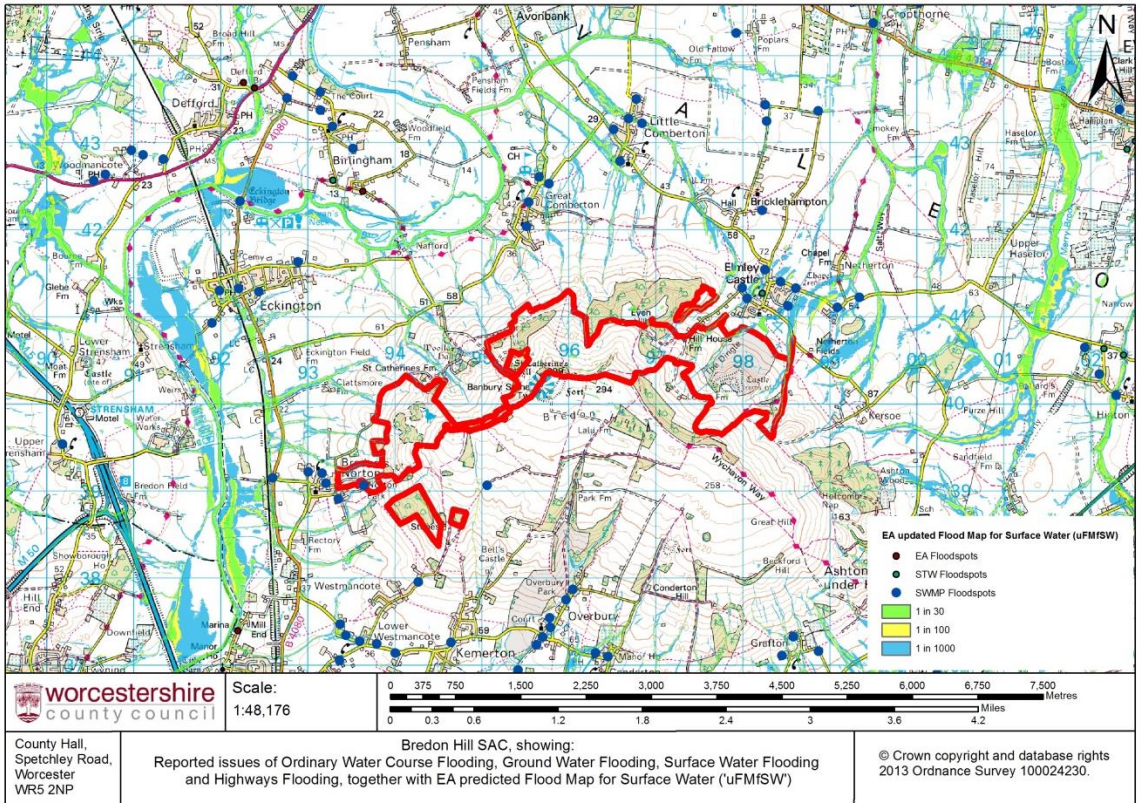
Table 7 - Lyppard Grange SAC: floodspot and SWMP data held within proximity of SAC borders (as of June 2015).

Floodsite number	Flood type	Maintenance Required	Property Protection required	Flood Frequency	Lead Organisation	Distance to SAC (approx. meters to closest point)	Other Notes:
883	Surface	Nil Field	Nil Field	0	SWLDP	215m	No obvious hydrological

Water	Returned	Returned	connection to SAC

3.3 Bredon Hill SAC: forecast works within LFRMS (deriving from SWMP dataset as of June 2015).

The boundaries of the Bredon Hill SAC follow the general topography so that designated species and the features and habitats which support them appear non-reliant on the subservient watercourses arising from the flanks of the hill. Nonetheless, there remains limited potential for hydrological interaction such as modification of surface water flow rates and spread of invasive non-native species (sensitivities generically identified for the designation features of this SAC at Table 4) through operations both within the SAC boundaries and also in its locality. Further consideration is paid here to the floodspots currently recorded in the SWMP which are roughly clustered on the western and eastern flanks of Bredon Hill, as per Tables 8 and 9.



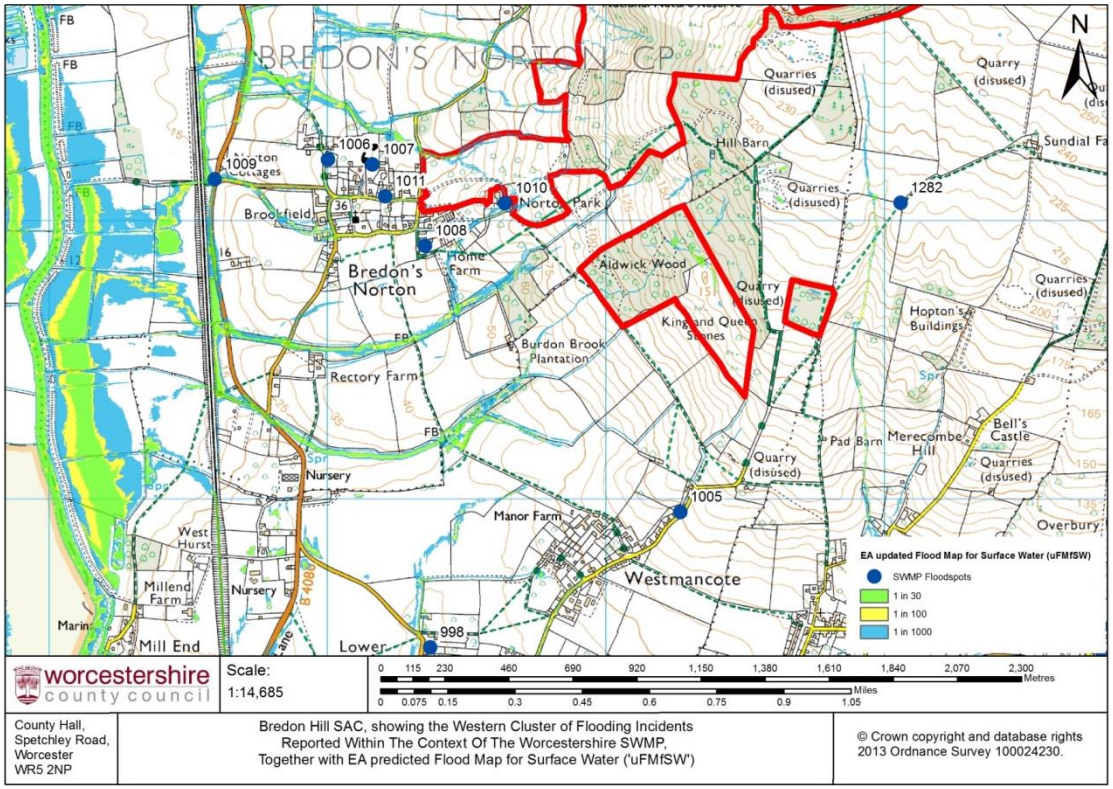


Table 8 - Bredon Hill SAC: floodspot and SWMP data held within proximity of SAC borders (as of June 2015).

Floodsite number	Flood type	Maintenance Required	Property Protection required	Flood Frequency	Lead Organisation	Distance to SAC (approx. meters to closest point)	Other Notes (including any feedback from WCC Projects Engineer for Capital Drainage Schemes (as per email dated 16th April 2015)
1010	OWC &	No	No	0	WCC	22m	IDENTIFIED AS A KNOWN FLOOD ROUTE

	Surface Water				Highways		FROM THE REAR OF THE PROPERTY TOWARDS NORTON PARK. NO CAPITAL SCHEME – WOULD PRESUME ITS LAND DRAINAGE? No maintenance reported as required: no impact predicted at this point in time. Further screening assessment of any potential for project impact should be required as part of any feasibility studies for future intervention operations. Especial regard should be paid to the vulnerabilities and sensitivities established in Table 4
1008	Surface Water	No	No	0	WCC Highways	124m	No maintenance reported as required: no impact predicted at this point in time. **Further screening assessment of any potential for project impacts may be required if/when feasibility studies for any intervention operations are triggered.**
1011	Surface Water	Nil field returned	Nil field returned	0	LLFA	140m	NO INFORMATION EITHER CAPITAL OR MAINTENANCE See notes as per '1007' below.
1007	Surface Water	Yes	Nil Field Returned	0	WCC Highways	183m	This flood spot appears is reported as affecting the curtilage of one property by dint of highway flooding on an unnamed lane which links Lampitt and Lower Lanes. It is likely that both 1007 and 1011 are results of the same flooding cause and are in excess of 100m of the closest watercourse, which is downstream of the SAC boundary. As such, there are no foreesable likely impacts should surface water or highways flooding intervention become scheduled.

1006	Surface Water	Nil field returned	Nil field returned	0	LLFA	345m	Surface water flooding has reportedly affected the interior of two properties and would appear likely (from uFMfSW data) to be caused by localised flooding along Lower Lane. Local landform slopes away to the northwest and the floodspot appears to be more than 250m away from the nearest watercourse. As such no likely pathway for impact can be predicted on the nearby SAC should a flood intervention become scheduled.
1009	OWC, Surface Water, Highway	Yes	Yes	0	WCC Highways	745m	Impact to highway identified and maintenance required. SWMP data indicates an Action Plan has neither been costed nor funding identified as of June 2015. The floodsite is downstream of the SAC boundary and intervention unlikely to modify hydrological conditions upstream as uFMfSW indicates flooding along the adjacent watercourse does not extend to SAC boundaries.
1005	Surface Water	Nil field returned	Nil field returned	0	WCC Highways	490m	HILL LANE WESTMANCOTE IS A SCHEME IN PROGRESS. SOME PIPE REPAIRS ETC WERE CARRIED OUT EARLIER THIS YEAR AT THE BOTTOM OF THE VILLAGE. DITCHING PLANNED TO BE CARRIED OUT THIS YEAR 'WITHOUT PREJUDICE' TOWARDS THE TOP END OF THE VILLAGE ONCE SITE MEETING HAS BEEN ARRANGED WITH WYCHAVON LAND DRAINAGE. IDENTIFIED AS A KNOWN FLOOD ROUTE AT THE REAR AND TO THE C'WAY AT THE FRONT OF THE PROPERTY
1282	Surface Water, Highway	Nil field returned	Nil field returned	0	WCC Highways	422m	No properties reported affected by this floodspot; as of June 2015, no Action Plan

	costing or funding was reported within the SWMP dataset. The uFMfSW dataset indicates that the watercourse associated with floodspot 1282 starts directly beneath (c150m south) of the SAC boundary. It is therefore unlikely that any highway or surface water interventions (should any become scheduled) would modify the upstream hydrological conditions of the SAC

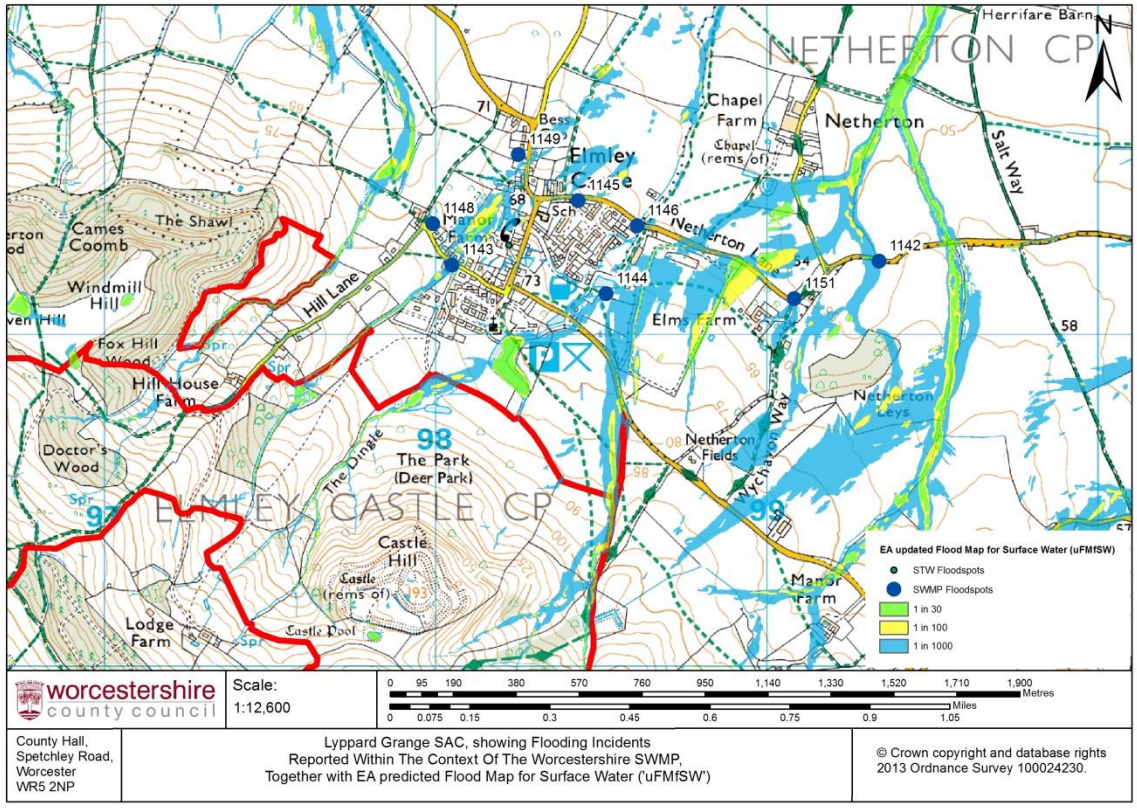


Table 9 - Bredon Hill SAC: floodspot and SWMP data held within proximity of SAC borders (as of June 2015).

Floodsite number	Flood type	Maintenance Required	Property Protection required	Flood Frequency	Lead Organisation	Distance to SAC (approx. meters to closest point)	Other Notes:
1148	Surface Water	Nil Field Returned	Nil Field Returned	0	WCC Highways	310m	This complex of floodspots are clustered in association with residential properties and highway associated with the village of Elmley Castle; as such they appear to be directly associated with the local topography of the village as it slopes away to the northeast of Bredon Hill. The flood incidents themselves are therefore highly localised and not dependant nor appear to interact with any watercourses higher on the hill. Therefore it is not anticipated that any likely flood interventions within Elmley Castle could hold potential to modify hydrological conditions within the SAC above.
1143	Surface Water, Highways	Nil Field Returned	Nil Field Returned	0	WCC Highways	315m	
1149	Surface Water	Nil Field Returned	Nil Field Returned	0	WCC Highways	655m	
1145	Surface Water	Nil Field Returned	Nil Field Returned	0	WCC Highways	660m	
1146	OWC, Surface Water, Highway	Nil Field Returned	Nil Field Returned	0	WCC Highways	570m	
1144	Surface Water	Nil Field Returned	Nil Field Returned	0	WCC Highways	400m	This floodspot gathers the outfall from two watercourses in turn draining Castle Hill (within the SAC boundary) and the deer park beneath. 1144 appears to affect one dwelling, although it is unclear whether this is internal or curtilage flooding; the SWMP dataset identifies neither an Action Plan nor funding to address the floodspot. Although clearly downstream of the SAC boundaries, there is clear hydrological connection to habitats on site. **Further screening assessment of any potential for project impact should be required as part of any feasibility studies for future intervention operations.** **Especial regard should be paid to the**

							vulnerabilities and sensitivities established in Table 4
1151	OWC, Surface Water, Highway	Yes	Nil Field Returned	0	WCC Highways	620m	This floodspot has reportedly impacted the interior of one property. While maintenance has been identified as required, the SWMP dataset identified neither costing nor funding to do so as of June 2015.the uFMfSW indicates no obvious hydrological connection to the nearby SAC, the floodspot most likely draining waters from the immediate slopes of the south-western agricultural and residential properties.

Conclusion

No likely pathways for LFRMS operations to cause any Likely Significant Effect (with due regard to this sites vulnerabilities and sensitivities) Alone has been identified.

However, as the LFRMS and subservient plans are 'living document' this appraisal is mindful that environmental conditions may change over time and that further mitigation, in the form of a project screening mechanism, will be required to ensure that subsequent projects arising from future iterations of the SWMP (and facilitated by the LFRMS) could create such a pathway to the receptor.

Bredon Hill SAC has been screened in for further detailed consideration at this stage.

Although pathways for LFRMS operations to potentially cause detrimental effect to the SAC have been identified, these are thought to be unlikely to occur if appropriate mitigation is implemented and secured. The nature of such mitigation must take the form of screening of operations including HRA appraisal is undertaken if appropriate, and is further discussed is Section 7.

4. Stage 1 C – Review Policies and Proposals and Consider Effects on European Sites

4.1 Local Flood Risk Management Strategies

Lead Local Flood Authorities (LLFA's) are required by the Flood and Water Management Act (FWMA) 2010 to produce a Local Flood Risk Management Strategy (LFRMS) which must be maintained, applied and monitored. Local flood risk is defined by the Act as meaning flood risk derived from surface runoff, groundwater and ordinary watercourses. Ordinary watercourses are defined as those which do not form part of a main river. Flood risk from the sea, main rivers and reservoirs are therefore not defined as local flood risk and are the concern of the Environment Agency. Such sources of flood risk do however need to be considered insofar as their potential interaction with those flood risks defined as local to ensure that all joint risks of flooding are assessed at the local scale.

LFRMS's are statutorily required to include the following:

- The risk management authorities in the LLFA area and what flood and coastal erosion risk management functions they may exercise in relation to the area. If functions normally carried out by one body will be carried out by another, this also has to be specified.
- The objectives for managing local flood risk. These will be relevant to the local area and reflect the level of local risk.
- The measures proposed to achieve the objectives. This could include a wide range of measures such as sustainable drainage systems, designation of features, improvements to the sewage network and application of the planning system.
- How and when measures are expected to be implemented.
- The costs and benefits of these measures and how they are paid for.
- The assessment of local flood risk for the purpose of the strategy. The strategy may identify gaps in the understanding of local flood risk and specify the actions which could close these gaps.
- How and when the strategy is to be reviewed. The review period is not specified at the national level and it is therefore up to the LLFA to decide what is appropriate.
- How the strategy contributes to the achievement of wider environmental objectives.

4.2 Worcestershire County Council Local Flood Risk Management Strategy as of April 2015

Worcestershire County Council is the Lead Local Flood Authority (LLFA) for Worcestershire and is currently consulting on the Worcestershire LFRMS and its associated Action Plan. Together, these documents will be important tools to help understand and manage flood risk within the County.

The Worcestershire LFRMS is defined by the administrative boundary of Worcestershire County Council. This includes Wyre Forest, Wychavon, Bromsgrove, Malvern Hills and Redditch District Councils and Worcester City Council.

The Worcestershire LFRMS principally looks to tackle 'local flood risk', i.e. flooding from surface water, groundwater and ordinary watercourses such as ditches and streams. The Strategy will look to co-ordinate work to address these forms of risk. It will explain the powers and responsibilities of all the major organisations involved in flood risk and provide advice on what householders and businesses need to do. It will highlight and summarise the information available on flooding in Worcestershire so that this information is more easily accessible for those trying to understand more about flood risk in Worcestershire.

The Strategy will be supported by the evidence base emerging from both the Preliminary Flood Risk Assessment (in preparation), the Worcestershire Surface Water Management Plan and higher level plans such as the Severn Catchment Flood Management Plan, River Basin Management Plan and will in turn support the development of Local Authorities Strategic Flood Risk Assessments.

The LFRMS will produce county-wide aims with lower-tier objectives to enable the delivery of these aims. In turn, each objective may have geographically localised actions which will be co-ordinated

through an Action Plan; this should be treated as a 'live-document' subsequent to regular revision through the Flood Risk Management Strategic Co-ordinating Group, or working group thereof.

Please note: at this stage (Version 6: February 2015) the Surface Water Management Plan is considered too generic in nature for a full HRA; the environmental screening mechanisms and protocols to agree the roster of floodspots and interventions between partner agencies remains in preparation and as such a further Habitats Regulations Assessment of the plan will be required in due course.

4.3 Aims, Objectives and Actions

The emerging Worcestershire LFRMS is likely to contain a number of high level aims which will be further defined by clear objectives, each in turn delivered by key actions. While these have yet to be refined, a number of draft aims and objectives have been shared and, for the purposes of this Screening Report, are listed below:

Table 10: Draft Local Strategy Aims

No.	Local Strategy Aim
1	Understand and appropriately prioritise flood risk
2	Manage and minimise the likelihood and impact of flooding
3	Develop and manage effective partnerships
4	Inform, develop and implement relevant plans, policies and strategies
5	Secure, maximise and prioritise the appropriate allocation of funding and other resources
6	Deliver sustainable environmental and economic benefits and contribute to the wellbeing of Worcestershire's communities and residents
7	Develop, maintain and implement the LFRMS action plan

The Aims detailed above will be delivered through a series of Objectives (listed below) which will be delivered through the Action Plan.

The table below provides a summary of the County Wide Aims and targeted Objectives that will be undertaken by Worcestershire County Council to deliver the objectives detailed above.

Table 11: LFRMS Objectives

Aim No.	Objective No.	Task
1	**Understand and appropriately prioritise flood risk**	
	1.1	Develop a County wide flood risk management strategy
	1.2	Develop a County wide surface water management plan
	1.3	Review and record relevant Risk Management Authority data in a register and make available to the public and partners subject to data sharing and confidentiality agreements.
	1.4	Develop a County wide protocol and ongoing performance milestones to populate the register and record of flood assets
	1.5	Develop a protocol for undertaking the duty to investigate
	1.6	Develop a County wide protocol and implementation plan for the designation of flood risk assets
2	**Manage and minimise the likelihood and impact of flooding**	

	2.1	Ensure that FRM is fully taken into account by those planning new infrastructure and developments
	2.2	Develop flood alleviation schemes
	2.3	Work with residents and businesses to install appropriate Property Level Protection (PLP) measures
	2.4	Work with landowners, NGOs and other public bodies to reduce surface water run-off
	2.5	Manage Ordinary Watercourses

3	**Develop and manage effective partnerships**	
	3.1	Identify and communicate FRM roles and responsibilities to stakeholders
	3.2	Work in close partnership with the other RMAs in Worcestershire
	3.3	Work in close partnership with neighbouring and other LLFAs
	3.4	Engage and work in partnership with Worcestershire's communities

4	**Inform, develop and implement relevant plans, policies and strategies**	
	4.1	Take into consideration relevant plans, policies and strategies in the development of the LFRMS
	4.2	Work in partnership to influence the development of other relevant plans, policies and strategies to ensure the consideration of FRM

5	**Secure, maximise and prioritise the appropriate allocation of funding and other resources**	
	5.1	Identify and maintain awareness of potential sources of FRM funding
	5.2	Maximise opportunities for funding
	5.3	Utilise the Defra capacity grant to deliver the LFRMS and other statutory responsibilities
	5.4	Review and appropriately develop skills and knowledge amongst FRM staff

6	**Deliver sustainable environmental and economic benefits and contribute to the wellbeing of Worcestershire's communities and residents**	
	6.1	Protect and enhance Worcestershire's natural environment.
	6.2	Adapt to future projected climate change
	6.3	Work with the Worcestershire and Birmingham and Solihull LEPs to maximise the benefits to Worcestershire's economy and infrastructure from FRM
	6.4	Reduce the negative impact of flooding on health and wellbeing

7	**Develop, maintain and implement the LFRMS action plan**	
	7.1	Ensure that all owners of actions within the plan and listed partners are

		aware of their role in delivery of the strategy
	7.2	Regularly monitor progress with delivery of the action plan and update the status column accordingly
	7.3	Review and update the action plan every 12 months

4.4 Screening LFRMS Policies Against potential Effects on European Sites

The integrity of a site relies on the maintenance of an environment which will sustain its qualifying features and ensure their continuing viability. Legally the focus of HRA is on the site's qualifying features and associated conservation objectives, but these rely fundamentally on ecological processes and functions for their maintenance in a favourable condition, and cannot be appraised in isolation from them.

Essential to the maintenance of interest features and the integrity of the site are those environmental conditions which enable key ecological processes and functions to persist. These might include the quantity of water reaching a site, the quality of air, the stability of the climate, or a low level of disturbance. The connectivity of dispersed sites under a single international designation also needs to be taken into account.

Following a review of the Aims and Objectives of the LFRMS it was concluded that the LFRMS is not directly connected with the direct management of any international sites within Worcestershire or adjoining areas and therefore the emerging policies will require HRA assessment.

4.5 Potential impacts of LFRMS on international sites

The screening of the LFRMS has been undertaken following guidance and specific 'screening categories' provided in the HRA Handbook 2014, listed in Table 12.

The results of the screening for the LFRMS are provided in Table 13 below. This table includes justification as to why these have been screened in or out of any further assessment. For clarity, the specific wording of the LFRMS objectives and measures are also outlined in Table 13.

Table 12 – The HRA Handbook (DTA 2014) Screening Categories

Category	Rationale	Screened In or Out
	Administrative Text – introductory text about the plan	Screened out
	The plan makers 'vision' or 'general aspiration'	Screened out
	General Statements of overall goals	Screened out
	General Statements of broad objectives (implications are assessed separately)	Screened out
A	General statement of policy / general aspiration	Screened out
B	Policy listing general criteria for testing the acceptability / sustainability of proposals	Screened out
C	Proposal referred to but not proposed by the plan	Screened out
D	Environmental protection / site safeguard policy	Screened out
E	Policies or proposals which steer change in such a way as to protect	Screened out

	European sites from adverse effects	
F	Policy that cannot lead to development or other change	Screened out
G	Policy or proposal that could not have any conceivable effect on a site	Screened out
H	Policy or proposal the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects)	Screened out
I	Policy or proposal with a likely significant effect on a site alone	Screened in
J	Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination	
K	Policy or proposal not likely to have a significant effect either alone or in combination	Screened out after in-combination test
L	Policy or proposal likely to have significant effect in combination	Screened in after the in-combination effect

Table 13 –LFRMS Objectives (as of Version 6: February 2015) Likely Significant Effect Category

Objective No.		Task	Screening conclusion	Rationale
1	1.1	Develop a County wide flood risk management strategy	*Subject of this appraisal*	
	1.2	Develop a County wide surface water management plan	Screened out **Subject to: appropriate mitigation and screening of sub-ordinate plans or projects.**	(C) Proposal referred to but not proposed by the plan *Noting that*: it is more appropriate that the lower tier plan is subject to assessment
	1.3	Review and record relevant Risk Management Authority data in a register and make available to the public and partners subject to data sharing and confidentiality agreements.	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	1.4	Develop a County wide protocol and ongoing performance milestones to populate the register and record of flood assets	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	1.5	Develop a protocol for undertaking the duty to investigate	Screened out	General Statements of overall goals (no negative effect)

	1.6	Develop a County wide protocol and implementation plan for the designation of flood risk assets	Screened out	(B) Policy listing general criteria for testing the acceptability / sustainability of proposals (no negative effect)
2	2.1	Ensure that FRM is fully taken into account by those planning new infrastructure and developments	Screened out **Subject to: appropriate mitigation and screening of sub-ordinate plans or projects.**	(E) Policies or proposals which steer change in such a way as to protect European sites from adverse effects Noting that: guidance must include appropriate consideration of designated site protection
	2.2	Develop flood alleviation schemes	Screened out **Subject to: appropriate mitigation and screening of sub-ordinate plans or projects.**	(H) Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination
	2.3	Work with residents and businesses to install appropriate Property Level Protection (PLP) measures	Screened out	(B) Policy listing general criteria for testing the acceptability / sustainability of proposals (no negative effect)
	2.4	Work with landowners, NGOs and other public bodies to reduce surface water run-off	Screened out	(D) Environmental protection / site safeguard policy (no negative effect)
	2.5	Manage Ordinary Watercourses	Screened out **Subject to: appropriate mitigation and screening of sub-ordinate plans or projects.**	(D) Environmental protection / site safeguard policy (no negative effect) Noting that: any guidance arising to support management operations must include appropriate consideration of designated site protection
3	3.1	Identify and communicate FRM roles and responsibilities to stakeholders	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	3.2	Work in close partnership with the other RMAs in Worcestershire	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	3.3	Work in close partnership with neighbouring and other LLFAs	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site

	3.4	Engage and work in partnership with Worcestershire's communities	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
4	4.1	Take into consideration relevant plans, policies and strategies in the development of the LFRMS	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	4.2	Work in partnership to influence the development of other relevant plans, policies and strategies to ensure the consideration of FRM	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
5	5.1	Identify and maintain awareness of potential sources of FRM funding	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	5.2	Maximise opportunities for funding	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	5.3	Utilise the Defra capacity grant to deliver the LFRMS and other statutory responsibilities	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	5.4	Review and appropriately develop skills and knowledge amongst FRM staff	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
6	6.1	Protect and enhance Worcestershire's natural environment.	Screened out	(D) Environmental protection/site safeguard policy
	6.2	Adapt to future projected climate change	Screened out	(E) Policies or proposals which steer change in such a way as to protect European sites from adverse effects
	6.3	Work with the Worcestershire and Birmingham and Solihull LEPs to maximise the benefits to Worcestershire's economy and infrastructure from FRM	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	6.4	Reduce the negative impact of flooding on health and wellbeing	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
7	7.1	Ensure that all owners of actions within the plan and listed partners are aware of their role in delivery of the strategy	Screened out **Subject to: appropriate mitigation.**	(E) Policies or proposals which steer change in such a way as to protect European sites from adverse effects Noting that: any guidance arising to support management operations must include appropriate consideration of designated site protection

	7.2	Regularly monitor progress with delivery of the action plan and update the status column accordingly	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site
	7.3	Review and update the action plan every 12 months	Screened out	(G) Policy or proposal that could not have any conceivable effect on a site

4.6 Potential Effects of Action Plan Implementation Arising From Worcestershire's LFWMS

For most policies, even at the strategic level, it will be clear if adverse effects are likely, and in the instances the policy should not be included within the plan since plans should not include proposals which would be likely to fail the Habitats Regulations tests at the project application stage. For other options however, the effects may be uncertain and it is therefore important that this uncertainty is addressed either through additional investigation or (if this is not possible) appropriate mitigation measures. This scenario is self-evidently applicable to the process of flood intervention operations arising in the future through the SWMP as facilitated by the Worcestershire LFRMS.

It is usually possible to incorporate caveats or 'avoidance measures' within policy text that are sufficient to ensure that significant adverse effects will not occur. However, for other policies this may not be possible because there is insufficient information available about the nature of the development that is being proposed through the policy to enable a robust conclusion to be reached about whether there will be any Likely Significant Effects. In these instances, current guidance indicates that it may be appropriate and acceptable for assessment to be undertaken 'down the line' at a lower tier. For this to be acceptable, the following conditions must be met:

- *The higher tier plan assessment cannot reasonably assess the effects on a European site in a meaningful way; whereas*
- *The Habitats Regulations Assessment of the lower tier plan, which will identify more precisely the nature, scale or location of development, and thus its potential effects, will be able to change the proposal if an adverse effect on site integrity cannot be ruled out, because the lower tier plan is free to change the nature and/or scale and/or location of the proposal in order to avoid adverse effects on the integrity of any European site (e.g it is not constrained by location specific policies in a higher tier plan); and*
- *The Habitats Regulations Assessment of the plan or project at the lower tier is required as a matter of law or Government policy*[3]".

This is not to suggest that the issue of future operations facilitated by the LFRMS (or its subservient plans) should be screened out, but that the appropriate course of action would be to highlight potential effects of the plan or strategy, and then assess in further detail the lower tier plans/strategies/operations in an appropriate and robust manner as they arise (for example within the context of the Surface Water Management Plan or project-level assessment).

Such procedures have yet to be determined and secured within the SWMP or associated Action Plan, but (from other LFRMS) operations may include: source control, managing overland flows or maintenance works which could in turn cause:

- Disturbance (noise, visual) during winter months (October to March);
- Changes to water quality (e.g. increased concentration of pollutants to aquatic habitats through reduced water flows); changes to water chemistry, nutrient enrichment; change to balance of saline and non-saline conditions;

[3] SNH (2012) Habitats Regulations Appraisal of Plans: Guidance for plan-making bodies in Scotland. Scottish Natural Heritage/DTA

- Changes to water table levels (e.g. increased concentration of pollutants to aquatic habitats through reduced flow levels);
- Habitat fragmentation, deterioration or loss;
- Increased risk of spread of non-native species through changes to water flows or conveyance routes.

As such, it is self-evident that further assessment of such operations 'down the line' will be required in order to ensure legal compliance.

The following Objectives and potential actions arising from the implementation of the LFRMS have been SCREENED OUT subject to further measures to ensure they are not capable of causing a Likely Significant Effect to a Natura2000 site. The rationale of the potential for the operations to cause an effect, the significance of such an effect and appropriate mitigation or rationale is further outlined below in Table 14.

Table 14 – Summary of Screening Assessment for Components of the LFRMS

Aim	Objective	Preliminary HRA assessment	Rationale
1.2	Develop a County wide surface water management plan	*Any other proposal that may have an adverse effect on a European site, which might try to pass the tests of the Habitats Regulations at project assessment stage by arguing that the plan provides the imperative reasons of overriding public interest to justify its consent despite a negative assessment* HRA more appropriate for lower tier plans or projects, but risk of LSE can be avoided through appropriate mitigation measures implemented within the LFRMS	Depends on implementation. Possibility of Likely Significant Effect Alone in the absence of any mitigation, for instance if the SWMP develops inappropriate interventions within the boundaries of a SAC (modifying water flow or quality, introducing invasive species etc). Given the SWMP and uFMfSW data currently available, it is not deemed likely this situation would arise, however to ensure beyond reasonable doubt that the possibility of LSE is removed, mitigation in the form of a due diligence and screening protocol is required to flag any such schemes as they arise. This could be further bolstered by an over-arching environmental protection objective which cascades to subordinate Objectives operational due environmental diligence.
2.1	Ensure that FRM is fully taken into account by those planning new infrastructure and developments	*The option, policy or proposal could directly affect a European site because it provides for, or steers, a quantity or type of development onto a European site, or adjacent to it* HRA more appropriate for lower tier plans or projects, but risk of LSE can be avoided through appropriate mitigation measures implemented within the LFRMS	Failure to communicate the nature of the designation and protection of the SACs could mean new infrastructure and development otherwise facilitated by the LFRMS advances in a manner which could pose a Likely Significant Effect to a Natura2000 site. To safeguard beyond reasonable doubt against the possibility of the LFRMS causing such an effect, appropriate mitigation is required as outlined further in Section 5.
2.2	Develop flood alleviation schemes	*The option, policy or proposal could indirectly affect a European site e.g. because it provides for, or steers, a quantity or type of development that may be very close to it, or ecologically, hydrologically or physically connected to it or it may increase disturbance as a result*	Possibility of Likely Significant Effect Alone in the absence of any mitigation, for instance if a flood alleviation scheme was developed within the boundaries of a SAC (causing habitat loss, modifying water flow or quality, introducing invasive species etc). Given the SWMP and uFMfSW data currently available, it is not deemed likely this situation would arise, however to ensure beyond reasonable doubt that the possibility of LSE is removed, mitigation in the form of a

		of increased recreational pressures LSE could be eliminated if operational due diligence mitigation measures are secured.	due diligence and screening protocol is required to flag any such schemes as they arise.
2.5	Manage Ordinary Watercourses	*The option, policy or proposal could indirectly affect a European site e.g. because it provides for, or steers, a quantity or type of development that may be very close to it, or ecologically, hydrologically or physically connected to it or it may increase disturbance as a result of increased recreational pressures* LSE could be eliminated if operational due diligence mitigation measures are secured	Possibility of Likely Significant Effect Alone in the absence of any mitigation, for instance if a watercourses within the SAC were managed inappropriately (modifying water flow or quality, introducing invasive species etc). Given the SWMP and uFMfSW data currently available, it is not foreseen that OWC within the SAC will be targeted by the LLFA or SWLDP for management operations, however to ensure beyond reasonable doubt that future OWC management operations would otherwise cause a LSE, it will be necessary to implement and secure appropriate mitigation measures, as outlined further in Section 5.

4.7 Screening remaining LFRMS documentation

At this stage the SNH HRA Guidance advises that mitigation measures should be considered for the remaining aspects of the plan so that the likelihood of them having a significant effect on a European site can be ruled out on the basis of objective information and they too can be screened out. All aspects of the plan whose effects cannot be so mitigated at this stage will need to be 'screened in' to the 'appropriate assessment'.

The Scottish Government has provided a 'Habitats Regulations Appraisal (HRA) Advice Sheet' entitled, "*Screening general policies and applying simple mitigation measures*" which can be found at http://www.scotland.gov.uk/Resource/0039/00397511.pdf. The conclusion of this Advice is applicable to this Strategy and is therefore set out in the box below:

Conclusion

14. It is not necessary or always possible to identify all potential effects of a policy, in order to conclude there are likely to be significant effects on a European site. If one or more likely significant effects are identified, the policy or proposal should be screened in for Appropriate Assessment. However, consideration can be given as to whether it is possible to incorporate into the plan any straightforward mitigation measures, in accordance with Stage 6 of the SNH Guidance to rule out likely significant effects on any European site.

15. In addition, guidance in this advice sheet and in Stage 9 of the SNH (HRA) guidance demonstrates how simple mitigation measures may also be applied within the Appropriate Assessment to very quickly demonstrate 'no adverse effect on the integrity of any European site'. It is likely to be more efficient and effective to use policy caveats as mitigation measures at the earliest stage possible, rather than to attempt to gather information to undertake a detailed appraisal of a general or strategic proposal, the detailed implementation of which may not be known.

5. Mitigation proposals

Section 10.4 (Sustainable Development) of the LFRMS recognises the potential impact of flood risk management operations on designated sites (presumably including those designated for their nature conservation interest), together with the fact that a number of designated sites are 'water sensitive' and that impact can occur at considerable distance downstream of operations. Section 10.4 sets out those environmental impacts should be:

10.4.4 "…*assessed at an early stage of the design of schemes and appropriate consultation should be undertaken with relevant stakeholders to scope any potential effects*"

It is proposed that the following caveats should also be **clearly set out in within the Worcestershire LFRMS/SWMP**.

"*Any schemes proposed in Surface Water Management Plans, Action Plans or projects arising from the LFRMS must not have an adverse effect on the integrity of a European site*".

The Worcestershire LFRMS and SWMP should clearly state that the Objectives are **overarching objectives** and the document should provide a separate overarching Aim to protect Natura2000 sites capable of being communicated easily to stakeholders including land-managers.

It would be appropriate if other sites designated for their nature conservation interest were also given suitable consideration by such a mechanism. This would contribute in demonstrating compliance with the LLFA's duties as per the Natural Environment and Rural Communities Act (2006) which states: "*Every Public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*".

For example:

"*Proposals / schemes likely to have a significant effect on a* European *site will only be approved if it can be ascertained,* for example by means of an Appropriate Assessment*, that the integrity* of the European *site will not be adversely affected*"

OR

"*Ensure there would be no adverse effect on the integrity of a* European *site*"

The SNH HRA Guidance provides examples of straightforward possible mitigation measures and these should be considered, where appropriate, when plans such as SWMPs or schemes or projects arising from the LFRMS Action Plan are produced:

d. Deletion of the policy or proposal that may cause the likely significant effect;
e. Changing the nature or type of a potentially damaging proposal;
f. Reduction in the scale of the potentially damaging provision, whether it be an overall level of growth across all or part of the plan area, or a single proposal of a specific scale or size;
g. Relocation or alteration of the spatial distribution of the potentially damaging provision;
h. Phasing or timing of a proposal so that its possible effects can be adequately managed over time;
i. Programming a proposal so that it is dependent on key infrastructure provision or upgrading, such as water supply or waste water treatment, being in place before it could proceed;
j. Requiring buffer zones to be put in place.

It is proposed that if these mitigation measures are implemented within the LFRMS, implementing the Objectives listed in Table 13 are unlikely to cause a LSE Alone or have any residual impact.

6. Stage 1 D – Examine other Plans and Policies Which Could Have An In-Combination Effect.

Elements of the plan that have individually been identified as having a residual impact to European should also be assessed In Combination to consider any possible cumulative effect. These elements of the LFRMS should be considered In Combination with any other element of the Strategy screened out as well as with other plans and projects.

No Objectives or Actions of the Worcestershire LFRMS were categorised as having a Residual Impact and therefore none will be taken forward for assessment In Combination.

6.1 Screening Assessment Conclusions.

It is concluded that, with the mitigation measures proposed, the Worcestershire Local Flood Risk Management Strategy is not likely to have any significant negative effects on any European sites, Alone or In Combination with other plans or projects.

Given this conclusion, there is no requirement to progress to the next stage of the Habitats Regulations Assessment.

However, due to the strategic nature of the LFRMS, the detail of where and how the flood intervention measures will be implemented has not yet been developed; this will be the remit of the underlying SWMP and Action Plan. Therefore, it is not possible at this stage to say that plans and projects arising from this Strategy will not have a Likely Significant Effect.

The Worcestershire the SWMPs, LFRMS, its Action Plan and arising projects and schemes must all demonstrate clear intentions to protect the integrity of European sites. Any impacts on European sites will not result directly from the Worcestershire LFRMS Strategy itself but it is recognised that this Strategy will set the direction for managing flood risk in Worcestershire.

Subsequent plans and projects arising from the Strategy will need to be subject to further Habitats Regulations Assessment. Direct, indirect and in-combination impacts caused by LFRMS activities upon designated European sites will need to be carefully screened and assessed as part of the implementation of the SWMP and Action Plan. These area or site-specific issues are best addressed by Habitats Regulations Assessment alongside the development of lower-tier strategies, plans or projects. Each HRA should make its own assessment of the relevant effects.

It should be noted that the Worcestershire LFRMS may be unlikely to constrain the nature and/or scale and/or specific location of the measures, so it is likely that, through the imposition of objectives to protect European sites and the iterative process of Habitats Regulations Assessment, that future plans and schemes can be developed in a way that will avoid the likelihood of any significant negative effects on European sites.

The organisations responsible for the schemes and their related investigations will have to agree to necessary measures through consultation with Natural England. There is also a requirement to obtain Natural England consent before any operations are undertaken, or permitted, that are likely to damage these sites or Sites of Special Scientific Interest (under duties placed by the Wildlife and Countryside Act (1981) as amended).

This is a precautionary approach. It should also be noted that LFRMS measures are unlikely to be of the same spatial scale, with as far reaching impacts as, for example, Catchment Flood Management Plan or Shoreline Management Plan measures. In many cases they may involve small scale measures in urban areas.

7. Next Steps

This Screening Assessment report will be subject to consultation with Natural England and be placed on the County Council's website. After a consultation period of five weeks, a revised report will re-screen any new information as arising from the developing SWMP and LFRMS; to be treated as an iterative process through to the development of subsequent Action Plans.

- Further HRAs will also be required to support the development of lower tier documents and to support the pre-design/feasibility of schemes in key areas.
- In addition to the proposed measures above, it is recommended that there should be a policy which identifies Natural England as a critical partner in any scheme or project arising from the LFRMS within proximity or with hydrological linkage to a European Site or SSSI. This would ensure that any concerns raised by Natural England in relation to impacts on any European sites will be taken into consideration at the earliest stage possible.
- Formulation of appropriate 'due environmental diligence' mechanisms should commence to support implementation of SWMP and Action Plan operations and to demonstrate compliance with LFRMS aspirations for sustainable development and environmental protection.
- Formulation of appropriate nature conservation guidance should commence to support communication and engagement with stakeholders as per LFRMS objectives.

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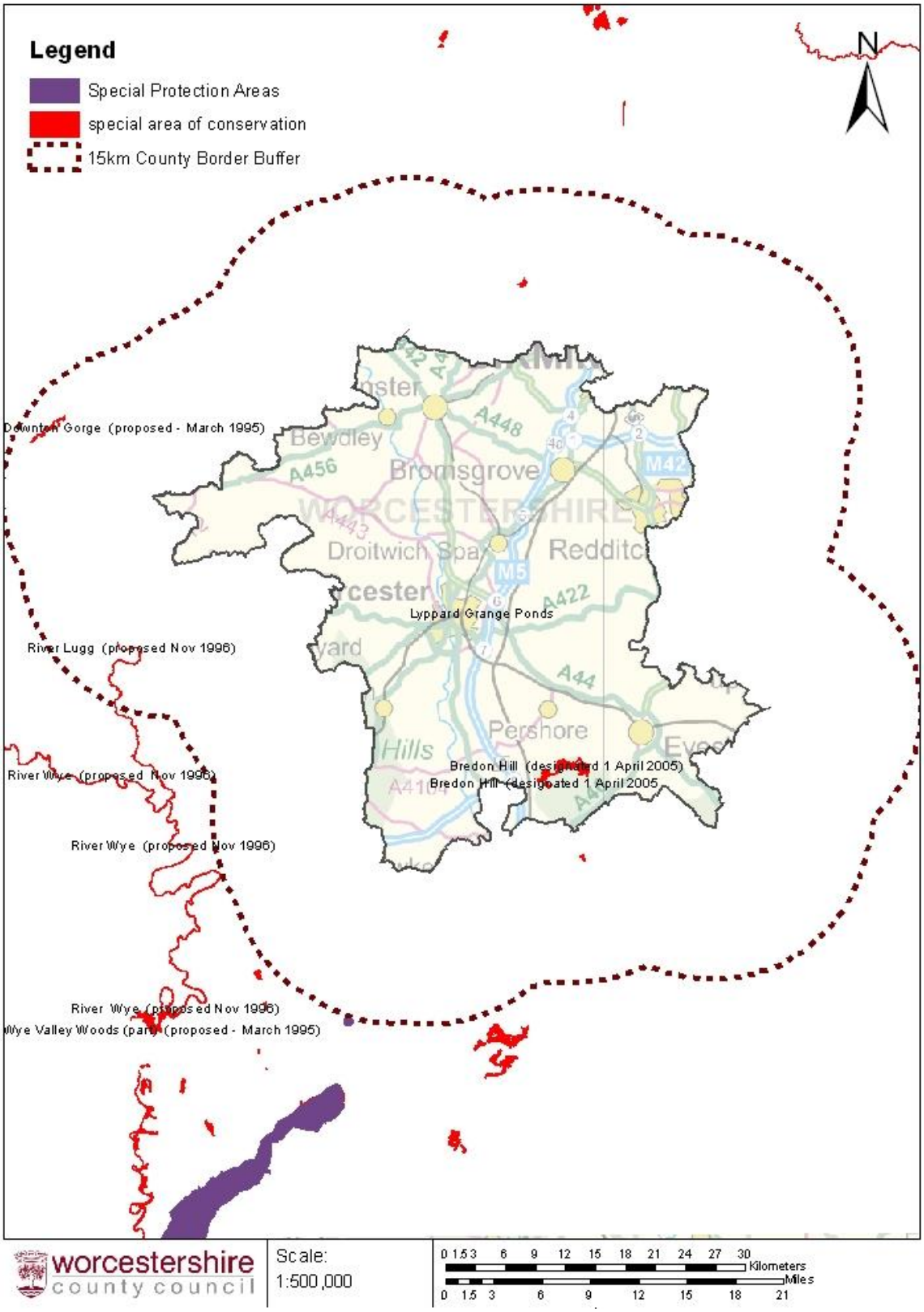
Important Note:

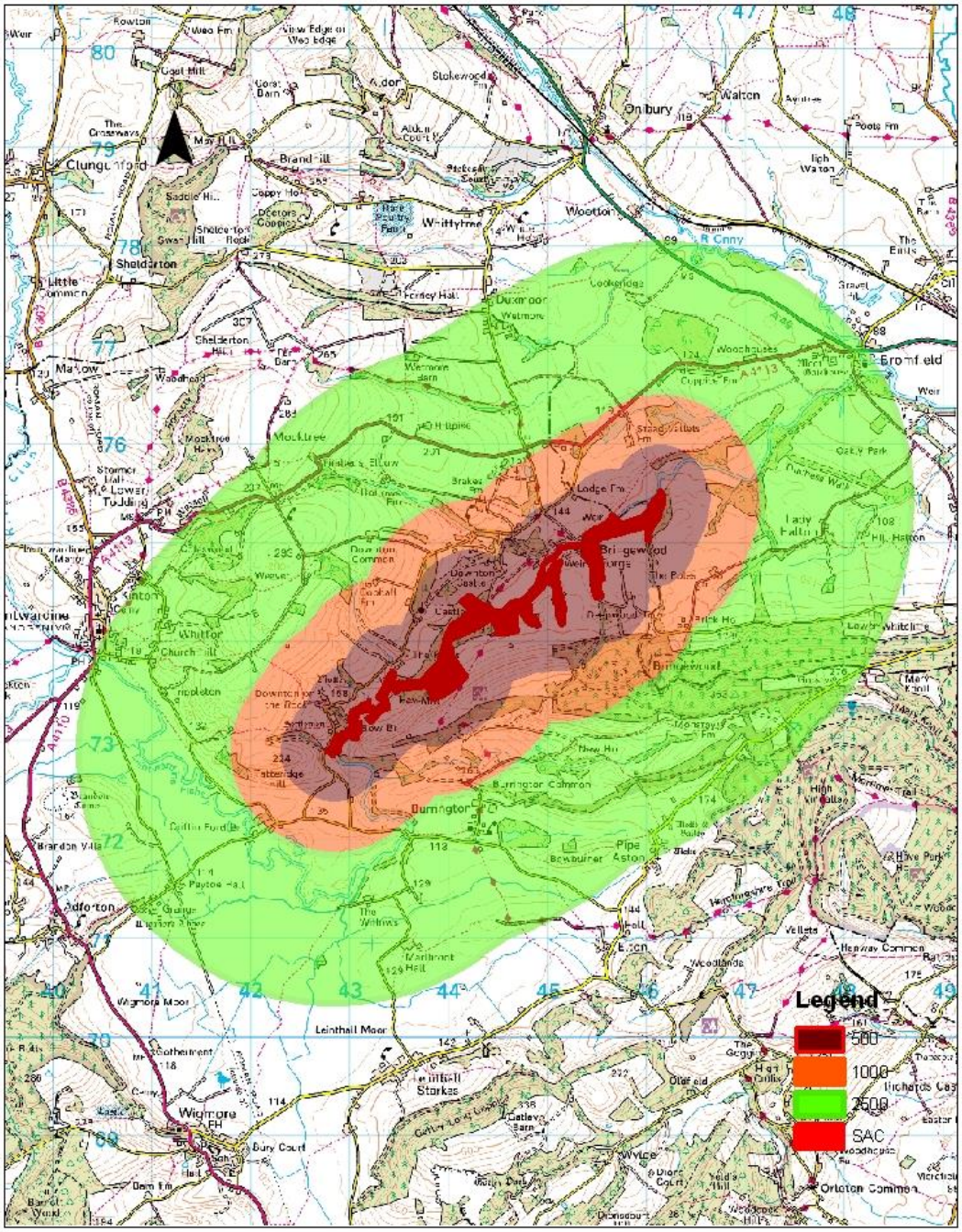
Should it not prove feasible to agree on implementation of appropriate mitigation measures then a full stage two ("Appropriate Assessment") of the Habitat Regulations Assessment process will be required in compliance with Article 6(4) Regulation 62(1) and/or Article 6(4) Regulation 61(2) of the Habitats Directive

Appendix 1

Designated Natura2000 sites subject to this assessment

Map 1: Worcestershire countywide important flood risk areas, main rivers and location of European sites.

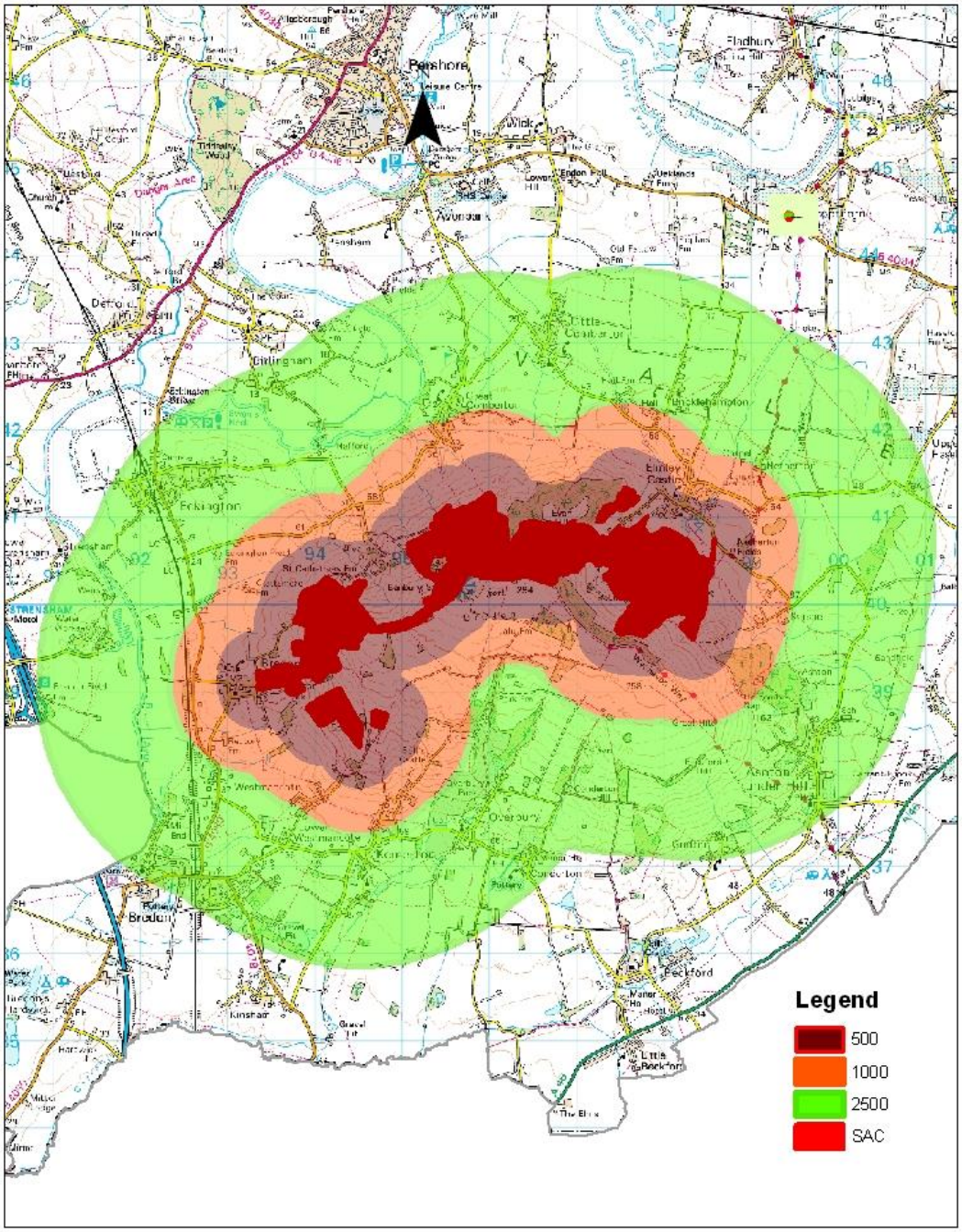




worcestershire county council
County Hall
Spetchley Road
Worcester
WR5 2NP

0 0.25 0.5 1 1.5 2 2.5 Kilometers

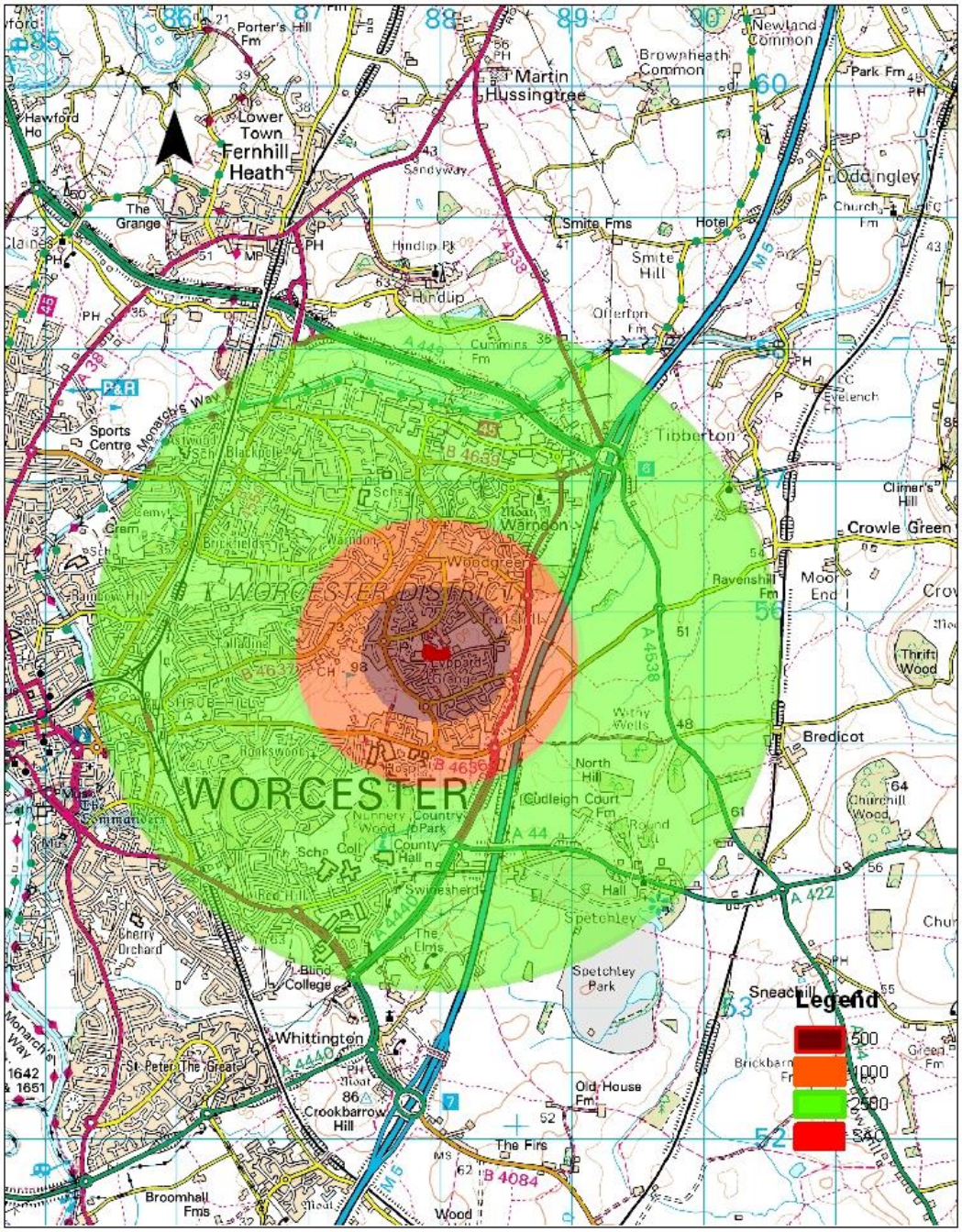
Map 2: Downton Gorge SAC – showing site boundaries and proximity buffers.



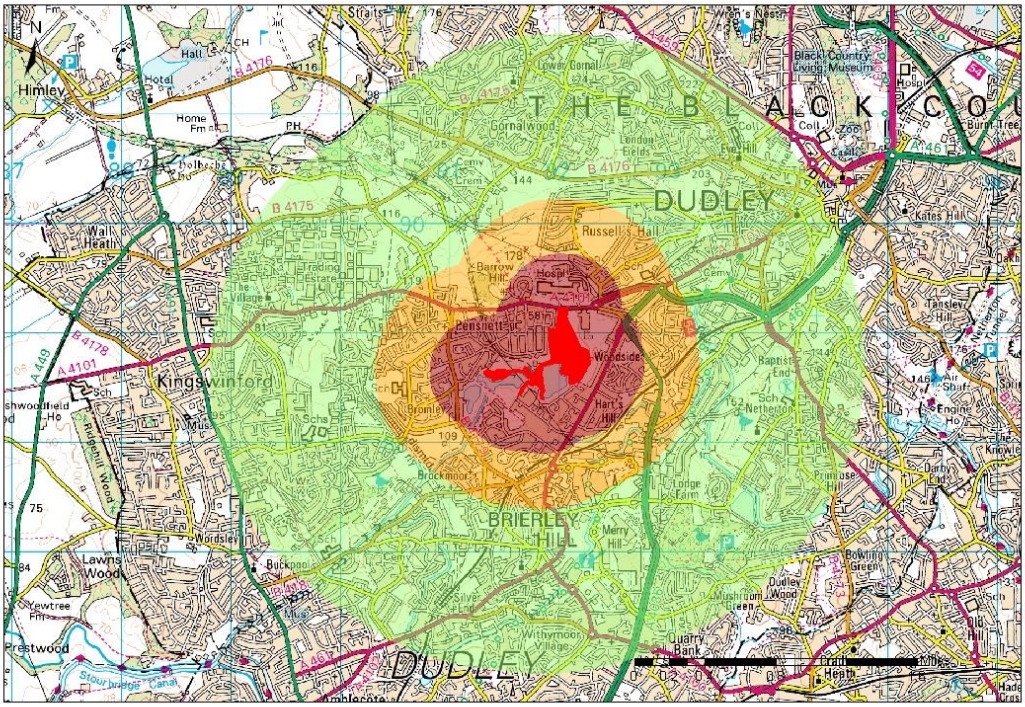
worcestershire county council
County Hall
Spetchley Road
Worcester
WR5 2NP

0 0.25 0.5 1 1.5 2 2.5
Kilometers

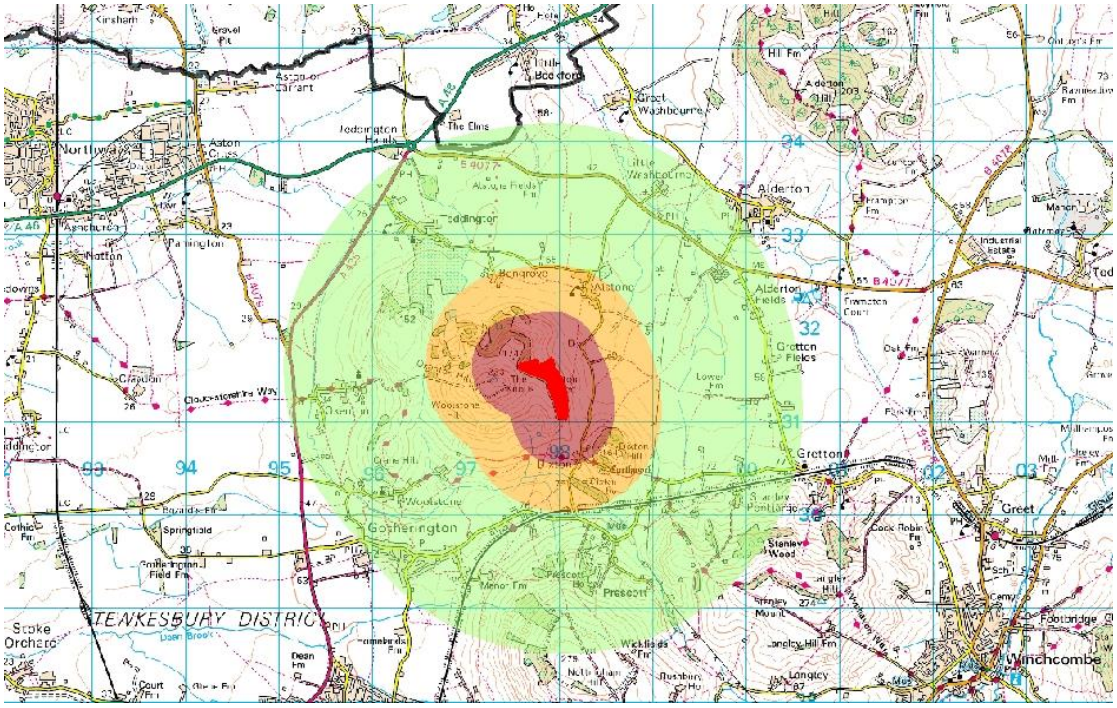
Map 3: Bredon Hill SAC – showing site boundaries and proximity buffers.



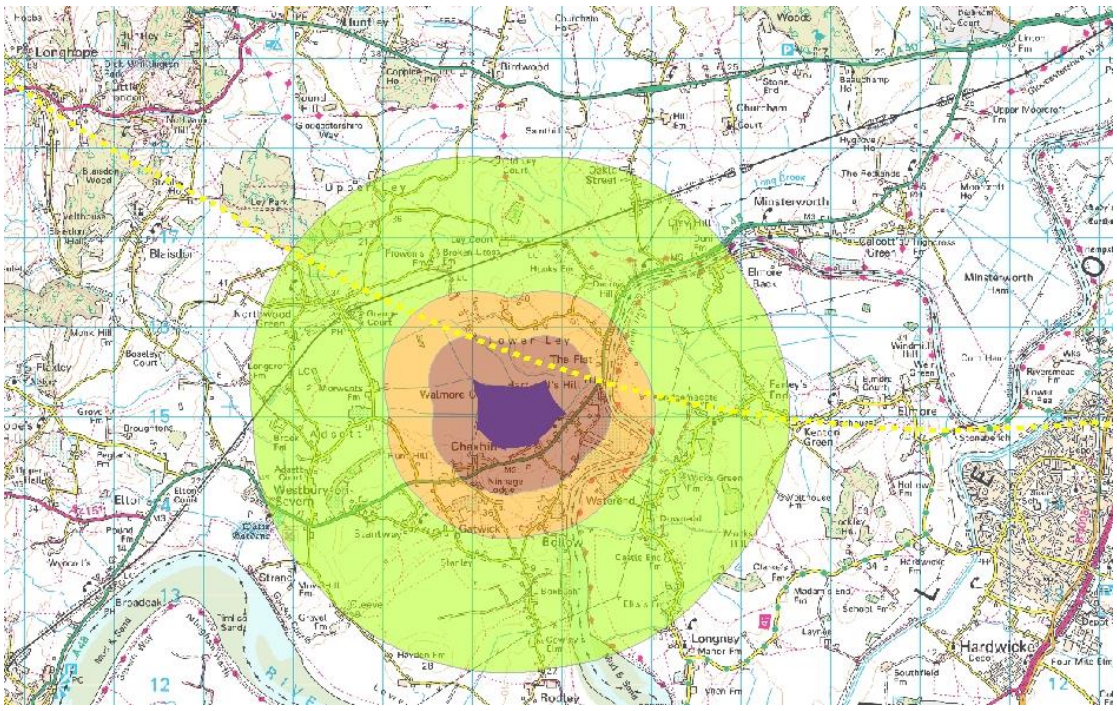
Map 4: Lyppard Grange Ponds SAC – showing site boundaries and proximity buffers.



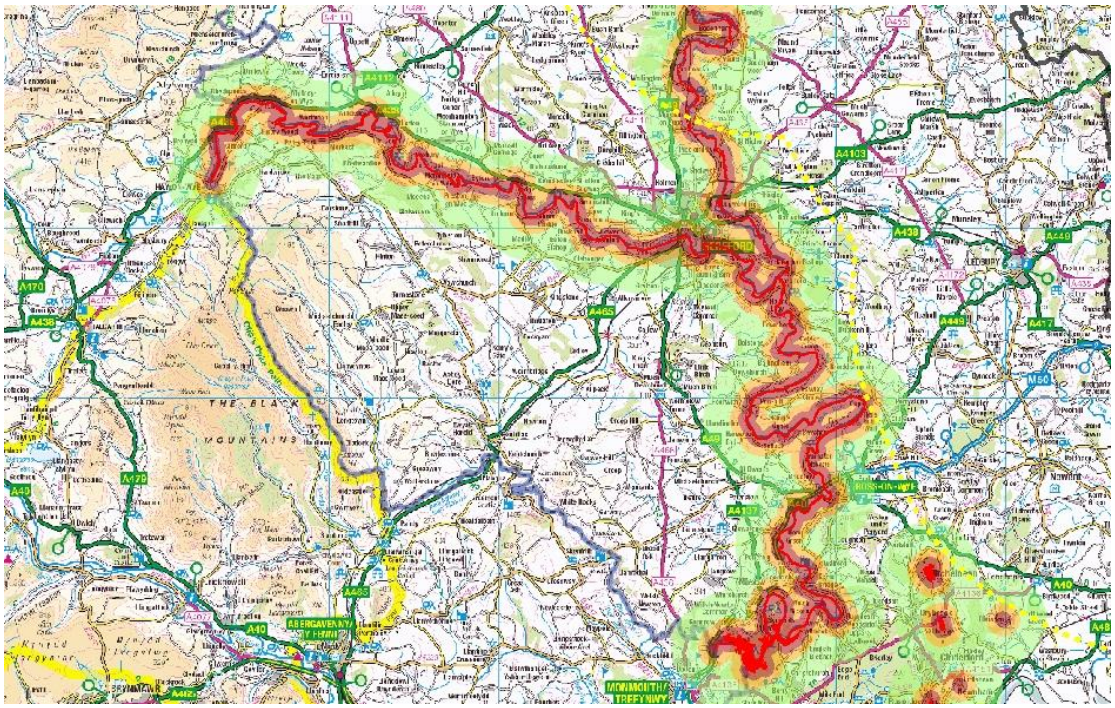
Map 5: Fen Pools SAC – showing site boundaries and proximity buffers.



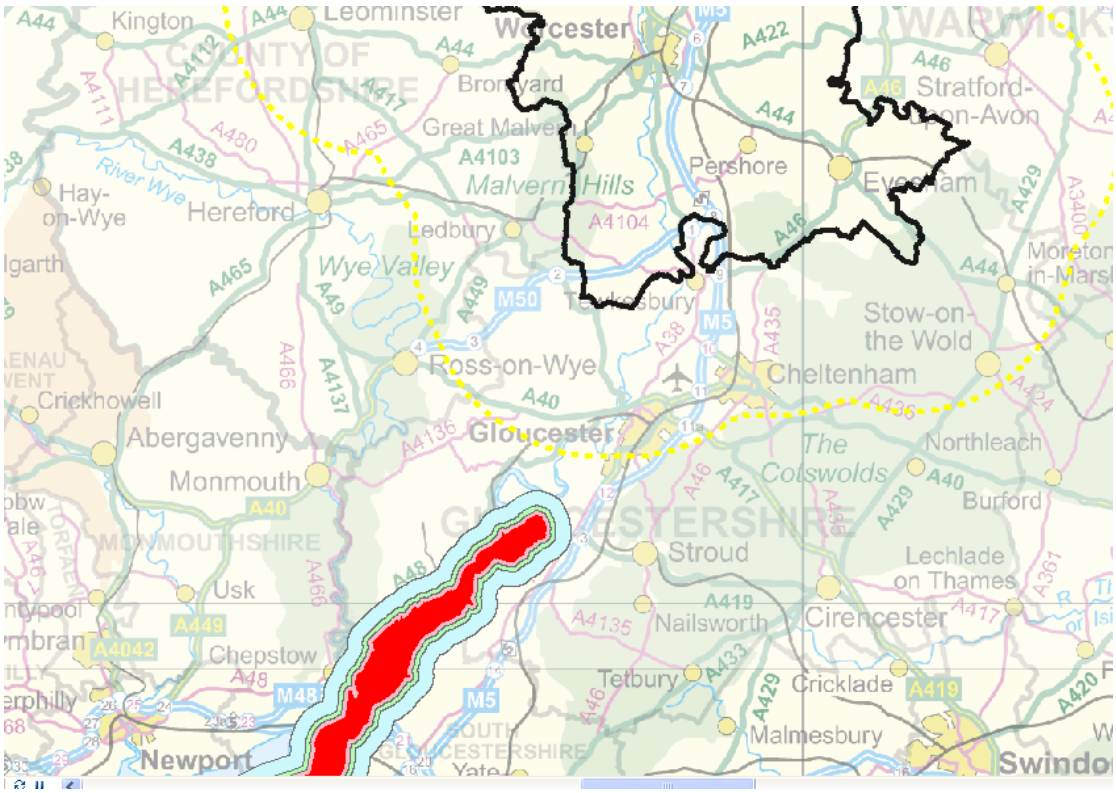
Map 6: Dixton Woods SAC – showing site boundaries and proximity buffers.



Map 7: Walmore Common SPA – showing site boundaries and proximity buffers. The 15km Worcestershire county boundary buffer is highlighted in dotted yellow.



Map 8: River Wye SAC – showing site boundaries and proximity buffers. 15km Worcestershire county border buffer (Western county border) is shown in dotted yellow, right of frame.



Map 9: Plan showing upper reaches of the Severn Estuary SAC/SPA/RAMSAR and relationship with Worcestershire's county border. A 15km buffer around Worcestershire's county border is highlighted in yellow. Proximity buffers of 500, 1000 and 2500m around the Severn Estuary designated site boundary are highlighted.

Appendix 2
Natural England Consultation Response

Date: 14 November 2013
Our ref: 98778
Your ref: None

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Martin Wilson
Flood Risk Management Strategy
BEC J1
Worcestershire County Council
County Hall
Spetchley Road
Worcester
WR5 2NP

BY EMAIL ONLY

Dear Mr Wilson

Draft Worcestershire Local Flood Risk Management Strategy
Issues and Options Paper

Thank you for your consultation on the above dated 25 September 2013 which was received by Natural England on the same date.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England welcomes this positive first draft of the Local Flood Risk Management Strategy. Our detailed comments are as follows.

Draft Worcestershire Local Flood Risk Management Strategy

Natural England welcomes the inclusion of green infrastructure and biodiversity enhancement throughout the Draft Local Flood Risk Management Strategy (LFRMS). We welcome the recognition of the value that soft Sustainable Drainage Solutions (SuDS) can have for biodiversity, for example in paragraphs 4.1 and 5.2.3, and the recognition of the multifunctional value of SuDS in 5.2.4. We welcome the references to the Worcestershire GI Strategy and the Worcestershire Biodiversity Action Plan in section 6.1.

In paragraph 3.6.1 there is a small typing error, The Conservation of Habitats and Species Regulations (2001) should be 2010.

Habitat Regulations Assessment Screening

Natural England welcomes the prompt undertaking of this HRA Screening. We are satisfied that the conclusion that there will be no likely significant effects on European sites, alone or in combination with other plans or projects, provided that is appropriate mitigation is built into the LFRMS, is appropriate.

We welcome the inclusion of a requirement to carry out appropriate environmental assessments when planning Flood Risk Management schemes in Draft Objective 6.

Section 4.4.1 of the HRA Screening Report makes the following additional recommendations:

It is proposed by this Screening Assessment that the following caveats should also be clearly set out in within the Worcestershire LFWMS/SWMP.

"Any schemes proposed in Surface Water Management Plans, Action Plans or projects arising from the LFRMS must not have an adverse effect on the integrity of a European site".

The Worcestershire LFWMS and SWMP should clearly state that the Objectives are overarching objectives and the document should provide a separate overarching Aim to protect European sites.

For example:

"Proposals / schemes likely to have a significant effect on a European site will only be approved if it can be ascertained, by means of an Appropriate Assessment, that the integrity of the European site will not be adversely affected"

OR

"Ensure there would be no adverse effect on the integrity of a European site"

These recommendations do not seem to have been incorporated into the LFRMS yet. We anticipate their inclusion in the next draft.

We welcome the intention to re-visit the HRA Screening as the draft LFRMS is progressed. The following additional comments are intended to assist with this.

Relying on lower tier assessments 'down the line'

The HRA Screening Report discusses the situations in which it might be more appropriate to undertake HRA at a lower tier plan or project level. Natural England's draft guidance *The Habitats Regulations Assessment of Local Development Documents* (which your HRA refers to) provides the following guidance:

The protective regime of the Directive is intended to operate at differing levels. In some circumstances assessment 'down the line' will be more effective in assessing the potential effects of a proposal on a particular site and protecting its integrity. However, three tests should be applied to determine when this is appropriate. It will be appropriate to consider relying on the HRA of lower tier plans (e.g. planning applications), in order for a LPA to ascertain a higher tier plan would not have an adverse effect on the integrity of a European site, only where:

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

(Section 4: Dealing with Uncertainty; DTA, 2009)

Conservation objectives

For your information, Natural England is mid-way through a project to make finalised Conservation Objectives for all European sites available online. This is a phased process, with the first phase providing broad Conservation Objectives only and the second phase adding further site specific detail. At the present time, the Conservation Objectives provide broad information only.

We recognise that these Conservation Objectives will be of limited use to Local Authorities completing their Habitats Regulations Assessment's. Therefore in the meantime we recommend referring to the SSSI Favourable Condition Table's to provide an additional level of detail required to inform the scope and nature of the HRA process. Care should be taken to ensure the correct referencing of both the Conservation Objectives and the Favourable Condition Tables within the HRA report.

The Conservation Objectives are available on our website here.

SSSI FCT's are available here.

Strategic Environmental Assessment

Q1. Have there been any significant omission of plans, programmes or environmental protection objectives relevant to the scoping of this report?

No.

Q2. Do you agree with the selection of key environmental issues for Worcestershire?

Yes.

Q3. Do you agree that the baseline data that have been, or will be collected, are relevant and of sufficient detail to support the assessment?

Natural England welcomes the breadth of information being collated.

Under 'biodiversity, geodiversity, flora and fauna', we would welcome the inclusion of baseline data on flora and fauna outside of designated sites. Data on Priority habitats should be readily available from the county's Habitat Inventory. Data on protected species is available from the Local Records Centre.

Under 'natural resources' we would recommend giving further consideration to soil quality. Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society; for instance as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. It is therefore important that the soil resources are protected and used sustainably.

The Natural Environment White Paper (NEWP) *'The Natural Choice: securing the value of nature'* (Defra, June 2011), emphasises the importance of natural resource protection, including the conservation and sustainable management of soils, for example:

- A Vision for Nature: 'We must protect the essentials of life: our air, biodiversity, soils and water, so that they can continue to provide us with the services on which we rely' (paragraph 2.5).

- Safeguarding our Soils: 'Soil is essential for achieving a range of important ecosystem services and functions, including food production, carbon storage and climate regulation, water filtration, flood management and support for biodiversity and wildlife' (paragraph 2.60).

The conservation and sustainable management of soils also is reflected in the National Planning Policy Framework (NPPF), particularly in paragraphs 109 and112.

Steps should be taken to:

- Avoid development that would disturb or damage other soils of high environmental value (e.g. wetland and other specific soils contributing to ecological connectivity , carbon stores such as peatlands etc.).
- Ensure soil resources are conserved and managed in a sustainable way.

General mapped information on soil types is available as 'Soilscapes' on the www.magic.gov.uk and also from the LandIS website http://www.landis.org.uk/index.cfm which contains more information about obtaining soil data.

Some of the most significant impacts on soils occur as a result of activities associated with construction activity. A Code of Practice has been developed by Defra to assist anyone involved in the construction sector to better protect the soil resources with which they work and in doing so minimise the risk of environmental harm such as excessive run-off and flooding. The aim is to achieve positive outcomes such as cost savings, successful landscaping and enhanced amenity whilst maintaining a healthy natural environment. We advise that this code is used as part of addressing soils in development plan policies. For further information see http://www.defra.gov.uk/publications/2011/03/27/construction-cop-soil-pb13298/.

Q4. Are there any key baseline data available that are or could be used in support of the issues that have not been identified? Are you aware of any appropriate targets that the report should cite?

See our response to question 3.

Q5. Do the SEA objectives provide a sound framework against which to assess the environmental credentials of the emerging LFRMS?

Yes.

Q6. Do you agree with the decision-making criteria?

Yes.

I hope this response is of assistance.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact Hayley Fleming on 0300 060 1594. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

We really value your feedback to help us improve the service we offer. We have attached a feedback form to this letter and welcome any comments you might have about our service.

Yours sincerely

Hayley Fleming
Land Use Operations (Worcester)