Calderdale Local Plan

Regulation 19 Publication Version 2018

Habitats Regulations Assessment (HRA) – Appropriate Assessment Report

June 2018

CALDERDALE LOCAL PLAN

Calderdale Council

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Background: Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) known as "the birds directive" was transcribed into UK law in 1981. As part of the directive the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species was established (JNCC, 2014a). Following this Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, (Habitats Directive) was adopted in 1992. Part of the directive created protected sites by designating Special Areas of Conservation (SACs) for habitats listed on Annex I and for species listed on Annex II (JNCC, 2014b). Together SACs and SPAs sites are legally protected to ensure conditions for the long-term conservation of habitats and species, based on the presence of selected habitats and species. Together, they form the core of the European Ecological Network Natura 2000. The Habitats and Species Regulations 2010 (as amended) ('the Habitats Regulations') were created transcribing the amended Habitats Directives into UK law which following a legal challenge by the European counts of justice ruled in 2006 that land use plans were subject to assessment. Regulation 102 "*Assessment of implications for European sites and European Offshore marine site*" of the Habitats Regulation states that where a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) the plan-making authority for that plan must, before the plan is given likely effect, make an appropriate assessment of the implications for the site in view of that sites conservation objective. However in order to establish if an appropriate assessment is needed a screening assessment should to be undertaken (Defra, 2012a).

Abbreviations and Acronyms

HRA	Habitats Regulations Assessment
AA	Appropriate Assessment
SPA	Special Protected Area
SAC	Special Area of Conservation
JNCC	Joint Nature Conservation Committee
NE	Natural England
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
RSPB	Royal Society for the Protection of Birds
EC	European Commission
EU	European Union
BAP	Biodiversity Action Plan
BTO	British Trust for Ornithology
NO_X	Nitrous Oxides
SO_2	Sulphur Dioxide
NH_3	Hydrogen nitride (ammonia)
AQMA	Air Quality Management Area
NPPF	National Planning Policy Framework
GIS	Geographical Information Systems
IPOPI	Imperative reasons of overriding public interest
AA	Appropriate Assessment
SIPs	Site Improvement Plans
IPENS	Improvement Programme for England's Natura 2000 Sites
APIS	Air Pollution Information Systems

1 The Habitat Regulations Assessment (HRA) process

1.1 Based on the guidance from European Commission (2001), Defra (2012a), Dodd et al (2007) and European Commission (2000), the following assessment structure has been adopted in order to carry out the assessments required under Article 6(3) and (4) of the Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora and regulation 105 ("*Assessment of implications for European sites and European Offshore marine site*") of the Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations')[1].

1.2 Whereas as there is no accepted methodology for carrying out a HRA, the general consensus is that the assessment adopts up to four stages (if necessary) in order for a plan to establish its legal compliance and obligations under the Habitats Directive and Regulation. These four stages are:

- *Stage One: Screening* — the process identifies the likely impacts of a project or plan on Natura 2000 sites, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

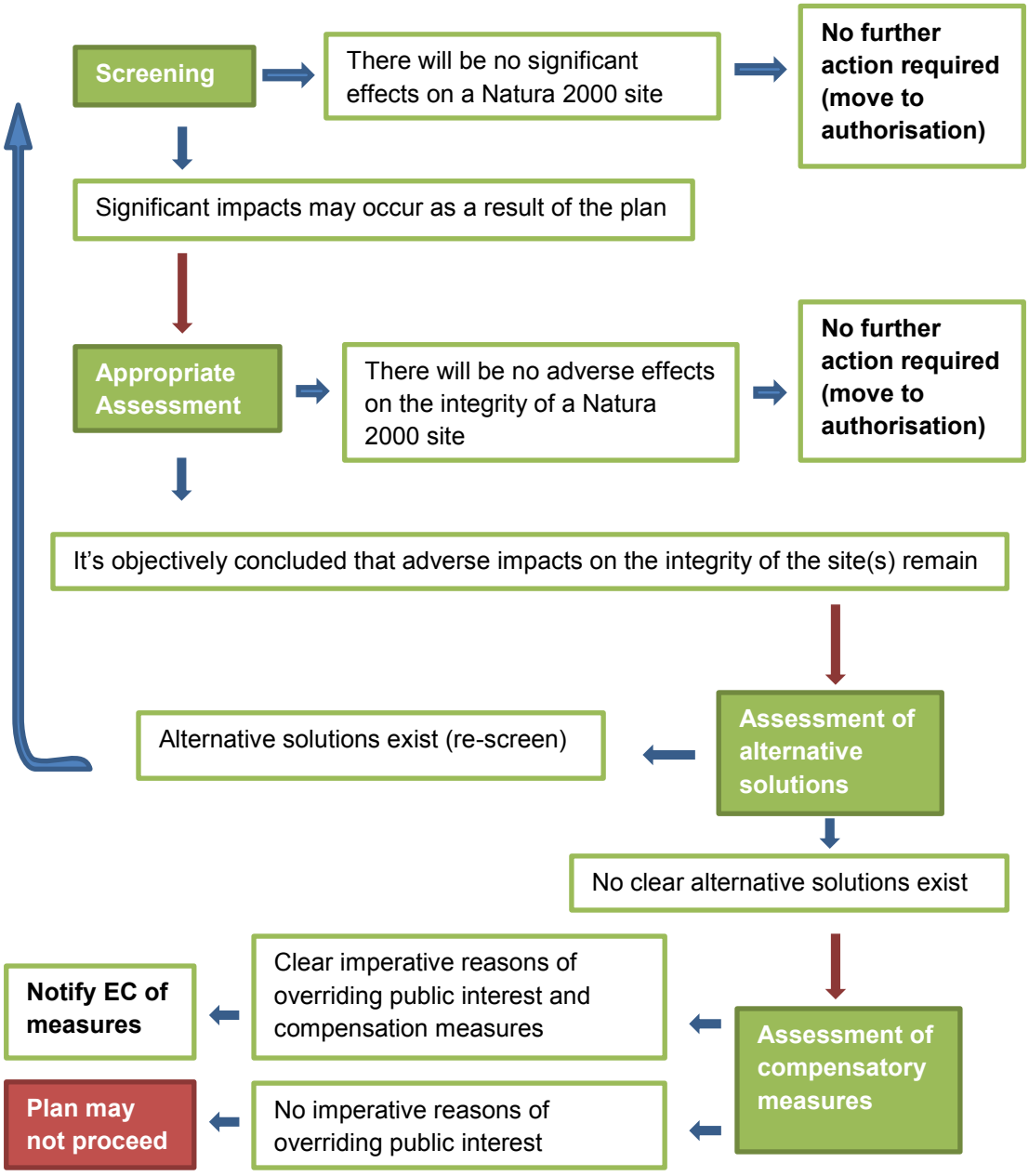
- Stage Two*: Appropriate Assessment* — the process assesses the identified impacts of the project or plan, either alone or in combination with other projects or plans with respect to the integrity of the Natura 2000 sites, i.e. site's function and conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

- Stage Three: *Assessment of alternative solutions* — the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

- Stage Four: *Assessment where no alternative solutions exist and where adverse impacts remain* — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed. It is unusual for a plan to get to this stage in the process.

[1] It is beyond the scope of this report to fully outline to the relevant guidance and best practice for carrying out the HRA/ Article 6(3) and (4) assessment. Therefore for further information as to the background and process it is advisable to relate to the referenced materials.

1.3 The process aims to objectively demonstrate the following (where applicable):



2 Identification of Natura 2000 sites which may be affected by the Local Plan

2.1 In order to establish any likely impact of the plan on designated Natura 2000 sites qualifying SPA/SAC which may be impacted need to be identified. This was done in GIS software by overlaying the Calderdale district boundary with the Natura 2000 site boundary data set provided by Natural England. This showed the Natura 2000 sites directly within the district and the sites most likely to be impacted by the Calderdale Local Plan. Two Natura 2000 sites fall directly within Calderdale the South Pennine Moors SAC and the South Pennine Moors SPA (Phase 2).

2.2 As well as sites directly within the plan area, neighbouring and surrounding Natura 2000 sites may be impacted by a plan (Dodd et al, 2007). Therefore a 15 km buffer was created in GIS around Calderdale to extend the area of search for Natura 2000 sites that may be impacted by the local plan. The 15 km area of search is generally considered reasonable in addressing impacts to surrounding protected sites[2]. It is recognised that sites beyond the 15 km buffer may potentially be impacted. These sites will be identified as a result of reviewing neighbouring authorities and organisations plans for possible in combination effects with the Calderdale Local Plan on Natura 2000 sites[3].

2.3 The sites identified from the search are shown below in figure 1. Five European designated Natura 2000 sites were identified as being able to be potentially impacted by the plan (1) South Pennine Moors SAC, (2) South Pennine Moors Phase 2 SPA, (3) Peak District Moors (South Pennine Moors Phase) SPA, (4) Rochdale Canal SAC and (5) Denby Grange Colliery Ponds SAC. Natural England have commented in their response to the Initial Draft of the Local Plan consultation that consideration should also be given to the long distance downstream effects on the Humber Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar.

[2] From a review of other districts local plan HRA as well as the latest guidance material available at the time of writing a 15 km buffer distance as well as a 10 km distance has been applied by other local authorities in their HRA. Therival (2009) analysis of HRA in England also showed the average distances used is 15 km. In line with the precautionary principle the larger buffer distance (15km) is to be applied for the HRA of the Calderdale Local Plan.

[3] In combination effects are discussed in section 8 and reviewed in appendix 4.

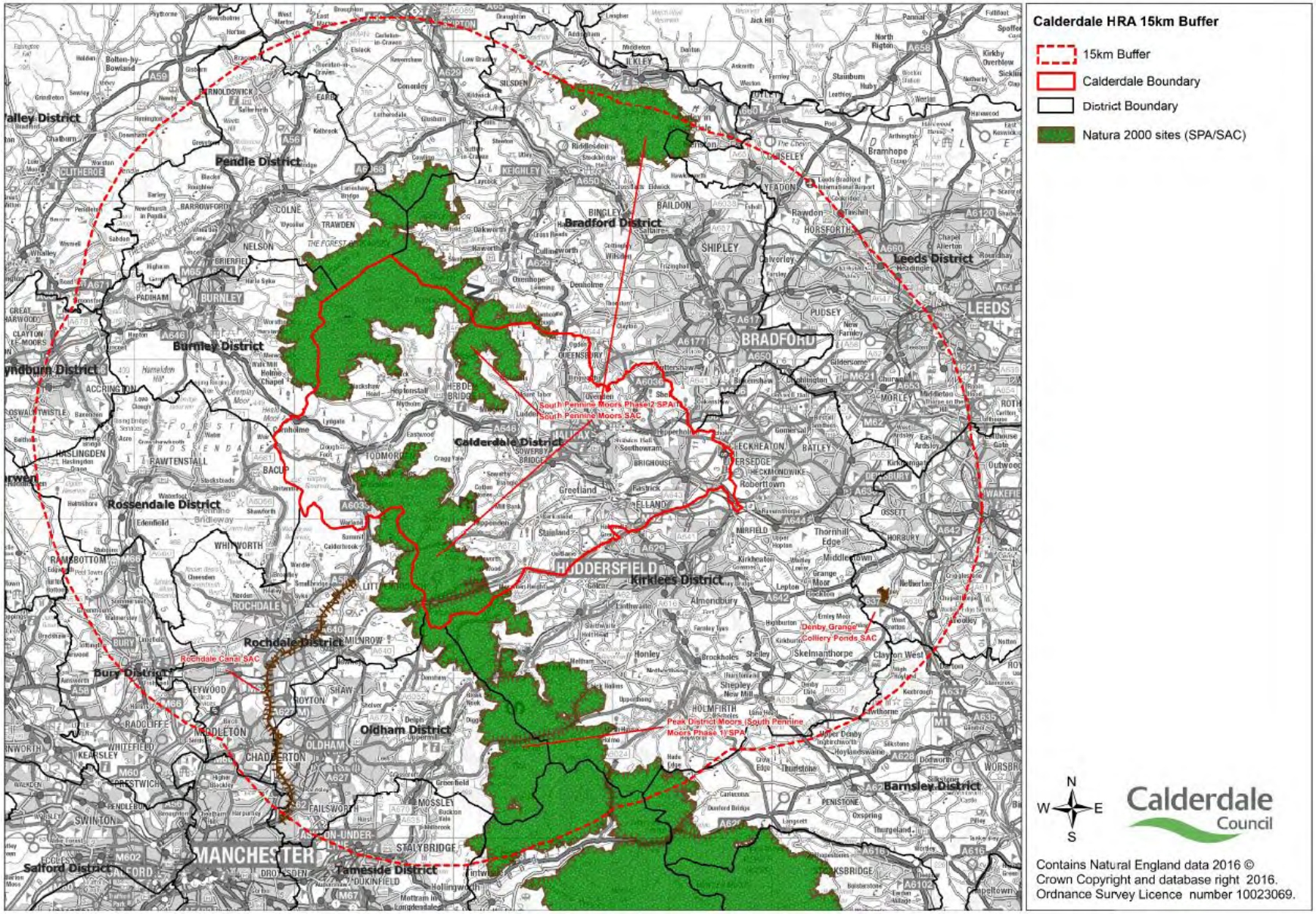


Figure 1: Calderdale HRA 15 km buffer showing surrounding Natura 2000 sites to be included in the Calderdale Local Plan HRA.

3 Natura 2000 sites attributes and characteristics

3.1 Natura 2000 sites are designated due to their attributes. These include certain species and habitats listed in the Habitats Directive and or the species listed in the Bird Directive, when in certain abundances. The attributes also contribute and define the integrity of the sites. The attributes of the identified sites for the HRA process are listed below in table 1[4].

Table 1: European site (within 15k buffer) qualifying features

South Pennine Moors SAC[1]	South Pennine Moors Phase 2 SPA[2]	Peak District Moors (South Pennine Moors Phase 1) SPA	Denby Grange Colliery Ponds SAC[4]	Rochdale Canal SAC[5]
Annex I habitats (primary selection reason) 4030 European dry heaths 7130 Blanket bogs (priority feature) 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles **Annex I habitats present as a qualifying feature (not a primary selection reason)** 4010 Northern Atlantic wet heaths with *Erica tetralix* (cross-leaved heath) 7140 Transition mires and quaking bogs	**Article 4.1: Annex I Birds (breeding)** A098 *Falco columbarius* (Merlin) A140 *Pluvialis apricaria* (Golden Plover) **Article 4.2: Regularly occurring migratory birds - internationally important assemblage of breeding birds** Common Sandpiper *Actitis hypoleucos* Short-eared Owl *Asio flammeus* Dunlin *Calidris alpina schinzii* Twite *Carduelis flavirostris* Common Snipe *Gallinago gallinago* Curlew *Numenius arquata* Northern Wheatear *Oenanthe oenanthe* Golden Plover *Pluvialis apricaria* Whinchat *Saxicola rubetra* Redshank *Tringa tetanus* Ring Ouzel *Turdus torquatus* Lapwing *Vanellus vanellus*	**Article 4.1: Annex I Birds (breeding)** A098 *Falco columbarius* (Merlin) A082 - *Circus cyaneus* (Hen Harrier) A140 *Pluvialis apricaria* (Golden Plover) A103 - *Falco Peregrinus* (Peregrine Falcon) **Article 4.2: Regularly occurring migratory birds - internationally important assemblage of breeding birds** No species are listed on the Peak District Moors SPA citation as qualifying under Article 4.2	**Annex II species (primary selection reason)** 1166 *Triturus cristatus* (Great crested newt)	**Annex II species (primary selection reason)** 1831 *Luronium natans* (Floating water-plantain)
[1]JNCC (2016a)	[2]SPA citation	[3]SPA citation	[4]JNCC (2016b)	[5]JNCC (2016c)

[4] It is important to note that information as to European site qualifying features for the South Pennine Moors are conflicting with different sources citing different species, most recently the 2015 standard data form. This issue was raised with Natural England during the early stages of the Calderdale HRA process who advised that the species listed on the original SPA citation should be used in the assessment. Natural England stressed that the original citations are the only citations to date and therefore hold the only legal stature. They did also advise however that a SPA review was currently being implemented.

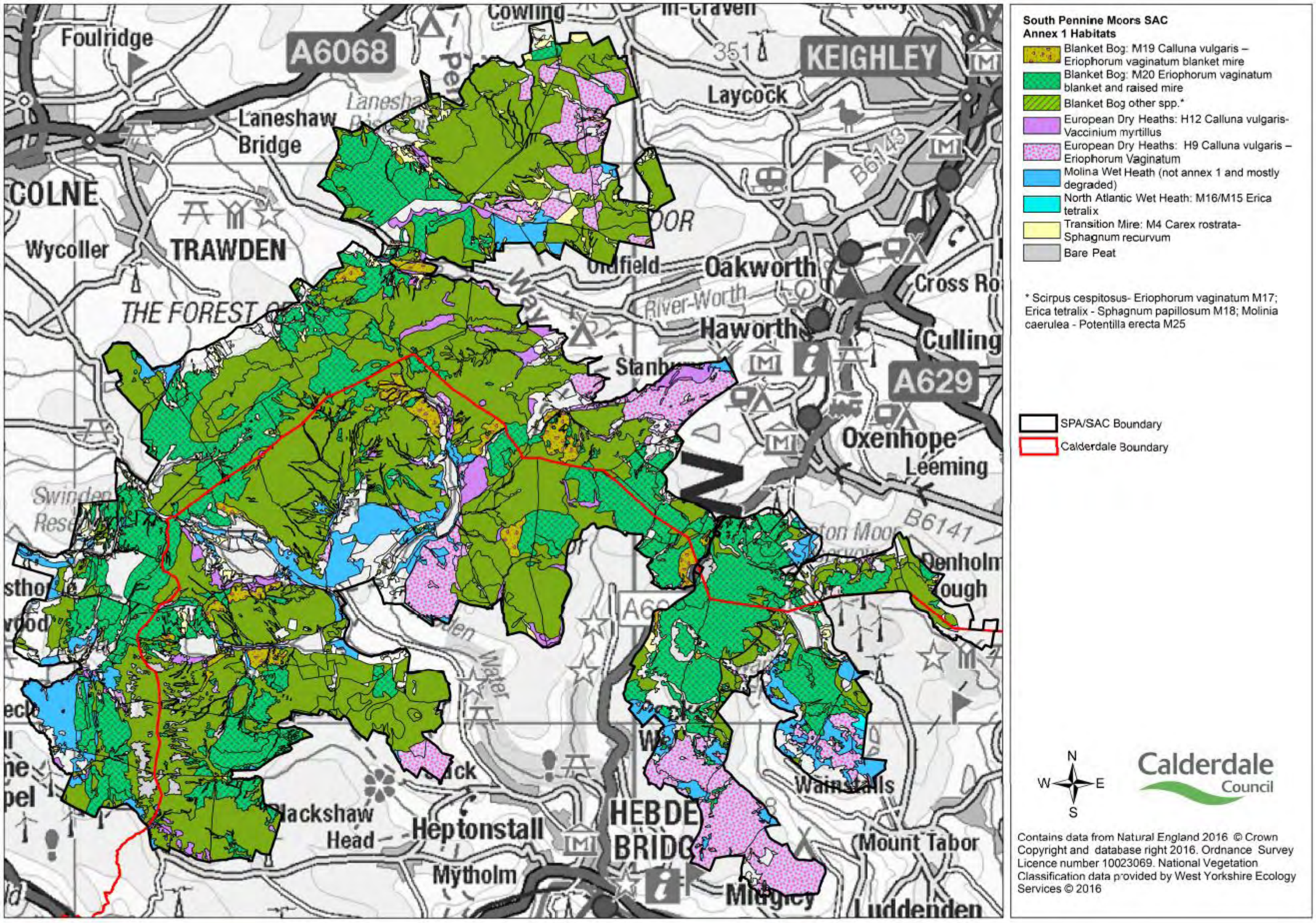


Figure 2a: Habitat and vegetation mapping of the South Pennine Moors SAC (upper) adapted from the National Vegetation Classification survey. **(*Data supplied by West Yorkshire Ecology Services)***

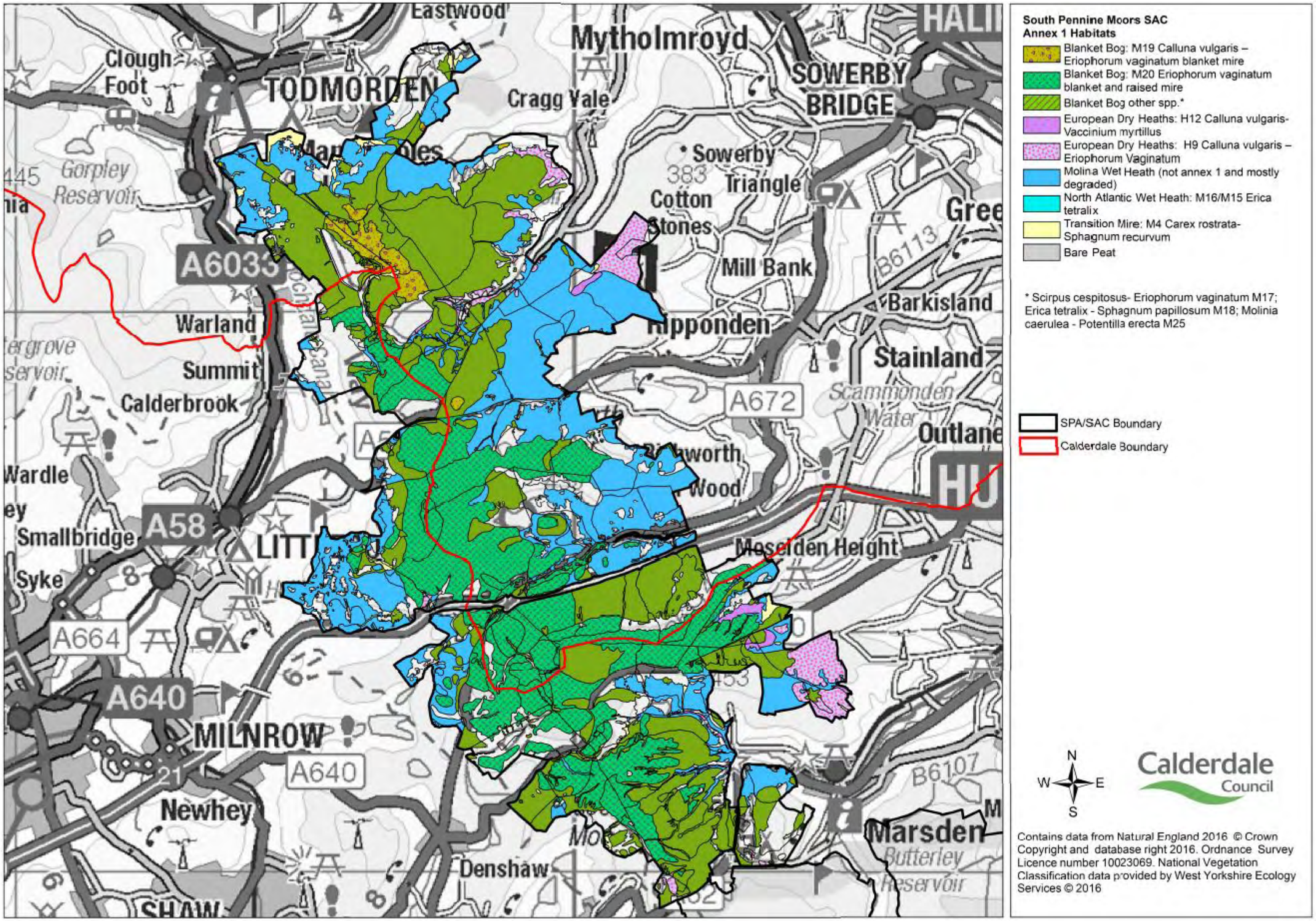


Figure 2b: Habitat and vegetation mapping of the South Pennine Moors SAC (lower) adapted from the National Vegetation Classification survey. ***(Data supplied by West Yorkshire Ecology Services)***

3.2 A detailed breakdown of the five identified Natura 2000 sites applicable to this HRA process are shown in Appendix 3. This identifies the site qualifications, habitat classification and coverage, current threat and pressures and the conservation objectives of the sites.

3.1 Habitat Communities

3.1.1 In terms of Habitats the Natura 2000 sites most likely to be impacted by the plan are those that fall directly within the Calderdale boundary. Figure 2 shows the detailed habitat vegetation mapping of the South Pennines SAC modified from the National Vegetation Classification survey data supplied by West Yorkshire Ecology. This is the most detailed habitat survey data available at the time of the HRA production. The mapping also shows a further breakdown of the habitats to species level. These key habitats are listed and described below[5]. It is important to note that whereas Old sessile oak woods with Ilex and Blechnum are features on the SAC citation, these habitats are not known to be found within the Calderdale SAC area.

A Blanket Bog (priority feature)

3.1.2 Blanket bog is the dominant habitat community found on the South Pennine Moors SAC. It is a peatland habitat restricted to cool, wet climates. In the UK it is one of the most extensive semi-natural habitats. Depths typically range from 0.3 – 5m but can often extend to greater than 5m. In terms of being defined as a EC Habitats Directive Priority Habitat, the habitats have to be defined as 'Active' and therefore supporting a significant area of vegetation that would be normally peat-forming (JNCC, 2001). Communities often occur alongside blanket bog flush, fen and swamp. The total coverage of blanket bog is not agreed, however it is estimated that England supports approximately 215,000 ha. Historical trends show that blanket bog has reduced by approximately 20 % during the last century, which is attributed to drainage and heavy grazing, peat cutting and atmospheric pollution in the Pennines. This habitat supports a high species richness including terrestrial and aquatic vertebrates and invertebrates. They are especially important for supporting Eurasian golden plover *Pluvialis apricaria,* which is listed as qualifying species for the South Pennine Moors Phase 2 SPA. Importantly, blanket bog is considered a significant carbon store acting as an important habitat for climate change mitigation.

B Northern Atlantic wet heaths (Upland Heathland)

3.1.3 Northern Atlantic wet heaths occur on acidic, nutrient-poor substrates, such as shallow peats or sandy soils with impeded drainage. The vegetation is typically dominated by mixtures of cross-leaved heath *Erica tetralix*, heather *Calluna vulgaris*, grasses, sedges and *Sphagnum* bog-mosses. This habitat supports an important assemblage of birds, in particular Merlin *Falco columbarius* which is listed as qualifying species for the South Pennine Moors Phase 2 SPA. In the uplands they occur most frequently in gradients between dry heath, or other dry acid habitats and Blanket bogs. This habitat type is estimated to cover an estimated 450,000 ha in Great Britain with the majority in Scotland. The habitat is recognised as being internationally important because they are largely confined within Europe. As with blanket bog there has been a considerable loss

[5] Information adapted from Maddock (2011) unless stated otherwise.

of this habitat in recent times, accounting for the loss of approximately 20% during the last century which is largely attributed to heavy grazing by sheep and afforestation.

C European dry heaths (grass moorland)[6]

3.1.4 This habitat type accounts for the second most abundant within the Natura 2000 sites found in Calderdale, especially in the south of the district. European dry heaths are usually found on freely-draining, acidic to circumneutral soils with generally low nutrient content. Ericaceous dwarf-shrubs dominate the vegetation, the most common of which is heather *Calluna vulgaris*. The majority of dry heaths are semi-natural, deriving from woodland through a long history of grazing and burning. Dry heaths in upland areas are often managed as grouse moors. This habitat is still widely distributed within its current range, and no evidence of substantive loss for the South Pennines is recorded. The main pressures on this habitat are a result of over-grazing, invasive species (namely the heather beetle *Lochmaea suturali*), burning and air pollution. Throughout the South Pennine Moors, its cover occurs mainly on the lower slopes of the moors on mineral soils or where peat is thin. They support a rich invertebrate fauna, especially moths, and important bird assemblages (designated under the SPA).

D Old sessile oak woods with Ilex and Blechnum[7]

3.1.5 Old sessile oak woods is a habitat type comprising predominantly of Oak (*Quercus robur* and/or *Q. petraea*) and birch (*Betula pendula* and/or *B. pubescens*). It is often found in areas of base-poor soils in areas of at least moderately high rainfall. The remaining examples of this habitat type in Great Britain are fragmentary, and have been substantially modified by human activity. Within the South Pennines, this habitat type is found around the fringes of the upland heath and bogs. It should be noted that this type of habitat is not found within the Natura 2000 sites that are within Calderdale's boundary.

E Transition mires and quaking bogs

3.1.6 This habitat type relates to vegetation that in floristic composition and general ecological characteristics is transitional between acid bog and Alkaline fens, in which the surface conditions range from markedly acidic to slightly base-rich.

3.2 Bird Communities[8]

3.2.1 In order to assess the impact of the local plan of the qualifying bird species it is important to investigate the current population status, trends and wider ecology of the SPA bird species[9].

[6] Information adapted from the JNCC accessed at: http://jncc.defra.gov.uk/ProtectedSites/SACselection/habitat.asp?FeatureIntCode=H4030
[7] Information adapted from the JNCC accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/habitat.asp?FeatureIntCode=H91A0
[8] All bird population estimates are for breeding pair numbers
[9] Information adapted from Stroud et al (2001) (JNCC The UK SPA network: its scope and content) as well as additionally cited research.

A Merlin

3.2.2 The Merlin is listed as an Annex 1 (breeding) species under the Birds Directive and qualifying features for the South Pennine Moors Phase 2 SPA designation. They are small, agile falcons, and have been of long-standing conservation concern in Britain (Ewing et al, 2008). In Britain they mostly breed in heather moorland areas, mainly in the uplands. Their range also extends to some lowland moorland. The estimated European breeding population of the species is approximately 10,166-16,612, however as shown in the table below the UK population accounts for less than 10% of this and is in moderate long-term decline. Ewing et al (2008) attributed most of this decline to northern England. In recent years habitat loss, related to the conversion of heather moorland to grass moorland, has been identified as the main reason for a reduction in breeding range. Almost half of the UK population is found within UK SPA, therefore highlighting their importance for the species. Ewing et al (2008) estimated 29 breeding pair are found within the Southern Pennines. However a recent survey by Natural England of the birds of the South Pennine Moors SPA only showed 13 sightings.

Species	UK Population Estimate	Trend classification
Falco columbarius	1,100	Moderate long-term decrease
*Data taken from Hayhow et al (2014) (RSPB - The state of the UK's birds 2017)		

B Golden Plover

3.2.3 Golden plovers are listed as an annex 1 (breeding) species under the Birds Directive and qualifying features for the South Pennine Moors Phase 2 SPA designation. They are ground nesting birds which primarily breed on heather moorland, blanket bog and acidic grasslands. Individuals often fly about 1–4 km from the nest in order to forage (Pearce-Higgins & Yalden, 2003). Adjacent pastures with abundant earthworms and tipulid larvae are important for feeding adults. As shown in the table below the UK population is relatively high, however in recent years the number of breeding pairs has decreased. The UK's SPA site supports, on average, 5,907 pairs, which accounts for an estimated 26% of the UK breeding population. The South Pennines provide habitat for an estimated 3.2% of the UK Golden Plover population and is therefore significant for the conservation of the species (Pearce-Higgins & Yalden, 2003). A recent survey by Natural England of the birds of the South Pennine Moors SPA only showed 259 sightings. Reductions in the UK have been attributed to a reduction of moorland burning, resulting in the development of tall vegetation that is avoided by breeding birds, and reduced predator control.

Species	UK Population Estimate	Trend classification
Pluvialis apricaria	38,000-59,000 pairs	Moderate long-term decrease
*Data taken from Hayhow et al (2014) (RSPB - The state of the UK's birds 2017)		

C South Pennine Moors Internationally Important Assemblage of Birds

3.2.4 As well as the two listed Article 4.1: Annex I Birds (breeding) species listed in the SPA citation, twelve other species are also listed as components of the Internationally Important Assemblage of Birds within the South Pennine Moors (Phase 2) SPA citation. These can be sub-divided into the following groups;

D Breeding waders

3.2.5 Under article 4.2 of the Birds Directive the **Common Sandpiper, Dunlin, Common Snipe, Curlew, Golden Plover, Lapwing and Redshank** have been listed and identified within the internationally important assemblage of birds. The Dunlin is found in upland and moorland habitats, which marks the species UK distribution. The species has an estimated breeding population of 9150 pairs. Defra (2015) states the species status is in weak long term decline, but showing stable trends in recent years. Of the UK population 74% is found with SPA sites, with the South Pennine Moors accounting for approximately 140 breeding pairs.

3.2.6 The Curlew preferred breeding habitats are fens, peat-bogs, heathlands, coastal marshes, large swampy river valleys, and damp steppe, however it has also adapted well to agricultural grasslands and arable fields (EC – Environment, 2007). The estimated breeding population in the UK is 33,000. Defra (2015) states that the species is in a stable population trend with little to no long-term or short-term change in the UK. SPA's in the UK account for approximately 12% of the population. However there is not significant breeding abundances of the species in the South Pennine Moors.

3.2.7 Common Sandpiper, Snipe, Lapwing and Redshank are not found in high enough breeding abundances to UK SPA to meet the 1% population thresholds for their citation, however they are still categorised within the South Pennine Moors Internationally Important Assemblage of Birds for their reliance on the sites for foraging. Of these species Defra (2015) states that the common sandpiper, lapwing and redshank are in weak long term decline as well as strong short-term decline. Snipe is listed as being in strong long-term and short-term decline. Therefore the integrity of the SPA is important to help mitigate the decline of the species.

E Breeding passerines

3.2.8 Under article 4.2 of the Birds Directive the **Northern Wheatear, Ring Ouzel, Whinchat and Twite** have been listed and identified within the internationally important assemblage of birds. These four species have very different breeding requirements associated with the heathland, acid grassland and scrub habitats found within the SPA.

3.2.9 The estimated UK breeding population of Twite is 7,842 and has experienced major long-term decrease (Hayhow et al, 2014). McGhie et al (1994) produced a comprehensive study of breeding ecology of Twite commissioned by English Nature which focused on Twite nesting on the South Pennines in West Yorkshire. They found that nests were predominantly located in areas of bracken and heather moorland, but the birds travelled up to 4km from the nest site to forage on fields with un-ripened

dandelion seeds and sorrel seeds. Their long term population decrease is attributed to conversion to farmland and farming practices. Hayhow et al (2014) highlights the strong need to protect and sympathetically manage habitat for this vulnerable species.

3.2.10 The Northern Wheatear often nest in areas of short grazed grassland where there is grass root caterpillars to forage. Numbers of Wheatear have declined in the UK and it is an Amber listed species.

3.2.11 Whinchats are often found in low scrub, with low gorse scrub being the preferred nesting habitat. They feed in areas of short grass and regularly by roadside verges. Defra (2015) lists the Whinchat is in strong long-term decline and weak short-term decline.

3.2.12 The Ring Ouzel is considered a rare UK breeding bird often found in rock outcrops and steep valley sides. It has an estimated population of 5,332 and in major long-term population decrease by approximately 74% (Hayhow et al, 2014). Therefore it is important to protect the integrity of the SPA in relation to the conservation of the species.

F Breeding Owls

3.2.13 The Short-eared Owl is the only owl listed. It is important to note that whilst not originally being in high enough abundances to be listed as **Article 4.1** as a site qualifying feature, it has such been established that its abundance does qualify, and has since been listed on the JNCC site page for the South Pennine Moors (Phase 2) SPA[10].

3.2.14 The Short-eared owl is a small to medium sized owl which frequently occupies moor, heath, afforested hillsides, marsh and bog habitat. The species is an opportunistic feeder, heavily reliant upon vole and mice populations, upon which its distribution and nesting success tend to revolve. Short-eared Owls have a scattered breeding distribution in Western Europe, occurring in upland, moorland and heathland areas of Britain, the Low Countries, Denmark and Germany. The UK breeding population is estimated to be approximately 1,100, which is relatively low compared to the rest of Europe. Numbers and local distribution also fluctuate greatly in association with periodic cyclical changes in populations of prey species. The UK's SPA site for Short-eared Owls supports, on average about 13 pairs. This amounts to about 13% of the British breeding population.

[10] http://jncc.defra.gov.uk/page-2001

4 Assessment of 'likely significant effects' of the Local Plan

4.1 Due to the uncertainty in the impact of the various aspects of the Calderdale Local Plan on Natura 2000 sites, a screening exercise was undertaken. In order to do this a screening matrix was constructed which is shown in Appendix 5. A previous matrix was constructed for the preparation of the Calderdale Core Strategy, however following the decision to move to a single local plan, this matrix was modified in order to screen both policies and site allocations more easily.

4.3 The principle of sustainable development is a golden thread that runs through the NPPF and should be an overriding principle of a Local Plan and its formation. However, paragraph 119 of the NPPF states that: "*The presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined*". Therefore the HRA has the ability to prevent development which may otherwise be acceptable under the principle of sustainable development where appropriate and necessary.

4.5 In line with the guidance Defra (2012b) and EC (2000)[11] on the assessment of impacts of Natura 2000 sites, the precautionary principle will be used to assess likely impacts. It is highlighted with respect to the impacts of plan proposals; the precautionary principle should be applied under Article 6(4) of the EC Habitats Directive 92/43/EEC. Therefore an outcome of 'no significant effect' will only be applied, if it was considered very unlikely based on best available knowledge that the proposal would have a significant effect on a Natura 2000 site.

4.6 In order to record the likely impacts of the policies and sites within the Calderdale Local Plan on Natura 2000 sites, a simple "traffic light" approach has been adopted using the colours shown below:

Red	Proposal will likely have significant effects (**Appropriate Assessment required**)
Amber	Proposal may have significant effects, but this is currently uncertain (**Appropriate Assessment required**)
Green	There are unlikely to be significant effects (**Appropriate Assessment not required**)

4.7 Natural England's response to the Initial Draft Local Plan consultation commented that "Recent European Court judgment (Sweetman 2013) confirmed the threshold of the LSE test is a low one i.e. its purpose is to initially screen for the risk or the possibility of an effect, not to precisely establish the full extent of the effect (which is the role of the next stage of appropriate assessment. This stage is intended to ensure that all relevant plans and projects likely to have a material effect on a European site are subject to the further steps of Habitats Regulations Assessment by the competent authority.

[11] The EC states that and appropriate assessment should not be only triggered by a certainty but also a likelihood of significant effects and likelihood alone ('*could be')* is enough to justify such measure. This is therefore consistent with the precautionary principle.

If a plan or project is not connected with or necessary to the management of the site and is likely to have a significant effect, or the likelihood of significant effects is uncertain, the competent authority must carry out an Appropriate Assessment (AA) to assess the implications for the site and whether it can be ascertained that the project will not have an adverse effect on site integrity.

5 Screening assumptions and evidence base used to establish likely significant effects

5.1 In order to establish if and what part of the Local Plan may have significant effects on the identified Natura 2000 sites, the HRA has screened each Local Plan policy. The site allocations have been screened both with respect to type e.g. housing, employment etc and their proximity to the identified Natura 2000 sites. Where proximity factors need to be accounted for, GIS software has been used. In order to assess the sites in this way, the following evidence has been drawn upon in order to establish set distances and likely effects.

5.2 EU case law currently demands certainty provided by science, however it is argued that science can never rule out uncertainty (Opdam et al, 2009). In order to screen the plan, a wide evidence base has been reviewed for the most up-to-date information relating to the impacts of development and land-use planning on both European Natura 2000 sites and the identified sites within the scope of the Plan. As well as this, primary data has been commissioned and collected to further inform the evidence base of the HRA. This information has been used to establish the screening assumptions presented in this section. Importantly, the information also seeks to establish the baseline information for the assessment process. The collected evidence base has also been used to inform this Appropriate Assessment report.

Table 2 below show a range of potential impacts that development and their related activities can have on Natura 2000 sites.

Table 2: Potential impacts and activities adversely affecting Natura 2000 sites	
Broad Categories and examples of potential impacts of Natura 2000 sites	**Examples of activities responsible for Impacts**
Physical loss • Removal (including offsite effects, e.g. foraging habitat) • Mine collapse • Smothering • Habitat degradation	• Development (e.g. housing, employment infrastructure, tourism) • Infilling (e.g. of mines, water bodies) • Alterations or works to disused quarries • Structural alterations to buildings (bat roosts) • Afforestation • Tipping • Cessation of or inappropriate management for nature conservation
Physical damage • Sedimentation / silting • Prevention of natural processes • Habitat degradation • Erosion • Trampling • Fragmentation • Severance / barrier effect • Urban edge effects • Fire	• Flood defences • Dredging • Mineral extraction • Recreation (e.g. motor cycling, cycling, walking, horse riding, water sports, caving) • Development (e.g. infrastructure, tourism, adjacent housing etc.) • Vandalism • Arson • Cessation of or inappropriate management for nature conservation
Non-physical disturbance • Noise • Vibration • Visual presence • Human presence • Light pollution	• Development (e.g. housing, industrial) • Recreation (e.g. dog walking, water sports) • Industrial activity • Mineral extraction • Navigation • Vehicular traffic • Artificial lighting (e.g. street lighting)
Water table/availability • Drying • Flooding / stormwater • Water level and stability • Water flow (e.g. reduction in • velocity of surface water • Barrier effect (on migratory species)	• Water abstraction • Drainage interception (e.g. reservoir, dam, infrastructure and other development) • Increased discharge (e.g. drainage, runoff)
Toxic contamination • Water pollution • Soil contamination • Air pollution	• Agrochemical application and runoff • Navigation • Oil / chemical spills • Tipping • Landfill • Vehicular traffic • Industrial waste / emissions
Non-toxic contamination • Nutrient enrichment (e.g. of soilsand water) • Algal blooms • Changes in salinity • Changes in thermal regime • Changes in turbidity • Air pollution (dust)	• Agricultural runoff • Sewage discharge • Water abstraction • Industrial activity • Flood defences • Navigation • Construction
Biological disturbance • Direct mortality • Out-competition by non-native species • Selective extraction of species • Introduction of disease • Rapid population fluctuations • Natural succession	• Development • Predation by domestic pets • Introduction of non-native species • Hunting • Agriculture • Changes in management practices • Collision and displacement as a result of wind turbine development

5.1 Physical loss of habitat (site and functionally connected habitat)

5.1.1 All development resulting from the Local Plan will occur within Calderdale, and therefore physical loss of habitat to Natura 2000 sites beyond the boundaries of Calderdale can be ruled out in the screening stages. Development will not occur as a result of the Local Plan within any Natura 2000 site, however, there may be potential for the integrity of the South Pennines Moors (phase 2) SPA to be impacted from off-site development. The classifying bird populations of the SPA breed within the SPA boundary, however these populations often forage and roost on land beyond that of the SPA. Areas in which this occurs are termed 'functionally connected land' meaning the SPA is functionally dependent on the integrity of this surrounding land. Dallimer et al (2012) showed the importance of offsite habitat in supporting moorland breeding waders from surveying 37 paired sites comprising an area of moorland and an area of farmland in the Peak District. The average distance between the sites was 2.03km (0.65-4.95). Whittingham et al (2000) showed that Golden Plover use multiple upland habitat types travelling 1.1-3.7 km from their moorland nests, spending less than 5% of their foraging time on moorland.

5.1.2 Chapman & Tyldesley (2016a)[12] recently highlighted the importance of acknowledging 'functionally linked land' in assessing the integrity of Natura 2000 sites following a review of EU and UK case law. Based on the evidence it is therefore important that the HRA considers the extent of the South Pennine Moors (phase 2) SPA potential off-site functional connected land within the boundaries of Calderdale.

5.1.3 The moorland fringes of Calderdale are characterised by a rolling patchwork of small fields enclosed by walls, and larger rectangular fields representing a later phase of moorland enclosure. Sambrooks (2015) investigated the use of fringe land surrounding the South Pennine Moors (phase 2) SPA by the SPA bird populations. The study employed the use of vantage point surveys to establish an understanding of the land use by these populations up to 3km from the boundary; three of out five of these points were within Calderdale. The study concluded that the moorland fringe habitat was regularly used by Curlew, Lapwing and Golden Plover for singing, foraging and feeding. The Calderdale South Pennines Bird Project (Murison, unpublished) was undertaken in 2011 by West Yorkshire Ecology with an aim to look at the extent that SPA bird species used land adjacent to the SPA, the potential impact of development on these important areas and to shape future work into further research throughout West Yorkshire. The study produced extensive preliminary findings that target bird species avoided fields surrounding housing areas, and preferred fields located further from roads. It also showed that each species favoured different habitat and field selection criteria. Importantly the study provided strong evidence of SPA bird use of land up to 2.5km as well as land being heavily used by the SPA species. The study does however highlight the complexity of identifying specific areas functionally connected land, and the requirement for consistent long term survey data around the fringes to establish this.

5.1.4 Two bird surveys were commissioned by Calderdale Council and undertaken by West Yorkshire Ecology targeting the fringes around the South Pennine Moors (phase 2) SPA

[12] The report presents case law which highlights the acknowledgment that 'functional connected land' does not hold the same legal level however is often merited the same legal protection due to its importance to Natura 2000 sites.

in Calderdale to establish potentially functionally connect land and the extent of the use by SPA bird communities. The first survey was undertaken in 2012 to inform the then Calderdale Core Strategy HRA, and the second in 2015, in order to reinforce the evidence base for the Calderdale Local Plan HRA. The two surveys used a modified version of the BTO/JNCC/RSPB Breeding Bird Survey (BBS) and Common Bird Census (CBC) methodologies. The map in Appendix 1 shows the target coverage of the two surveys. Surveys were conducted between 06:00-18:00 during suitable weather conditions. Within each target area (*c.* 1-km^2), a minimum of two 1-km transects were walked, following public footpaths, bridleways and using open assess land. Each transect was surveyed slowly, a minimum of 1-hr/ transect (approximately 1-km/ hour), to record all the target bird species heard and seen. Where possible morning surveys began with transects starting on the SPA boundary in order to track the movements of birds breeding on the SPA using feeding grounds in the fringe area. This was facilitated by vantage point surveys, carried out during the first hour of the survey period. All bird records and associated activities were recorded on transect maps, so exact locations could be digitised. The surveys targeted both the SPA designated bird species as well as the breeding bird assemblage.

5.1.5 The spatial results of the two surveys are presented in Figure 3 below and show the spatial coverage of the species outside the SPA boundary. There is variation in the distances travelled from the SPA between both species and individual within the bird populations. As shown in the figures below the majority of the birds travelled within 1.5 - 2.5km from the SPA with a gradual decrease in density away from the site in most cases. Among the data there are variations particularly around North East Hebden Bridge in which the majority of the survey records indicated that the bird populations stayed within approximately 1.5km from the SPA with some individuals travelling further to the built up area[13] . The surveys also show that many of the bird's ranges extend up to 2.5km of the SPA to forage around Todmorden (and in some isolated examples - beyond); however this is away from areas of development. There is also variation in the distance travelled by different species with Curlews and Golden Plover frequently recorded at greater distances from the SPA. The Merlin was recorded very close to the SPA fringe; however Golden Plovers are shown to travel up to 2.5km of the SPA fringe in some cases. As well as the spatial range of the SPA, bird communities and their activity was recorded Importantly the bird surveys show that the functionally connected land ranges from shrub land to grasslands to agricultural grazing fields. It also shows that their usage of this land is often in high concentrations when compared to the Natural England South Pennine Moors Bird survey undertaken in 2014. The results of this survey and the Calderdale South Pennine Moors fringe surveys show higher concentrations than on the moorland themselves. It is therefore logical to suggest that the SPA bird communities are highly reliant on the surrounding land and therefore the SPA integrity.

5.1.6 As part of the HRA process; similar bird surveys were undertaken by City of Bradford Metropolitan District Council for their Core Strategy HRA, the results of which were shared with Calderdale as part of the HRA process. The surveys show that the distances travelled by the SPA bird's communities around Bradford range from 1.5 km

[13] Such differences in distribution are likely to be a result of the proximity of existing conurbations to the SPA boundary.

up to 3 km which is mostly consistent with the Calderdale surveys and therefore further validates the identified distances travelled by the SPA birds.

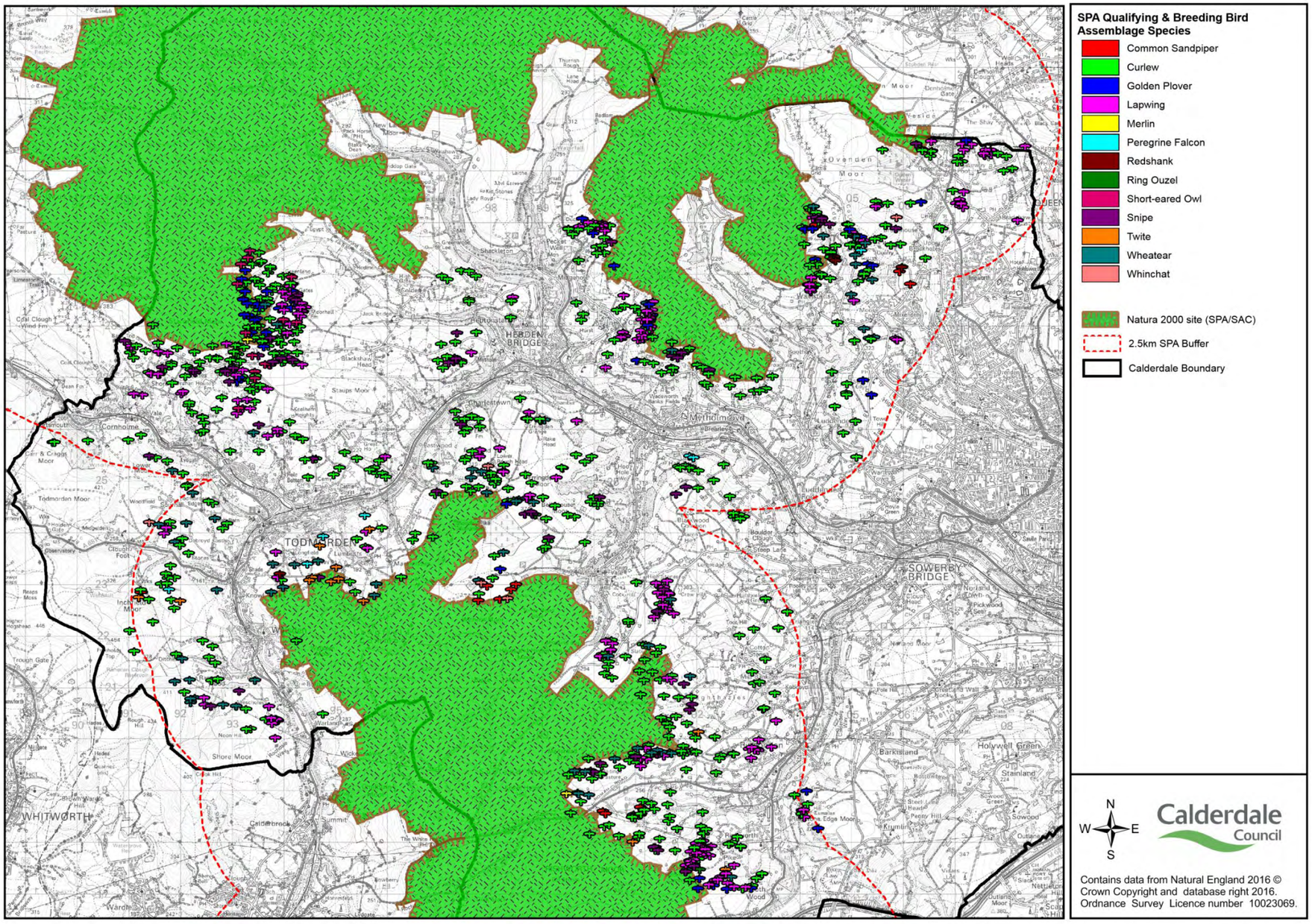


Figure 3: HRA- South Pennine Moors (phase 2) SPA fringe 2012 & 2015 bird survey results showing overall spatial distribution of qualifying species.

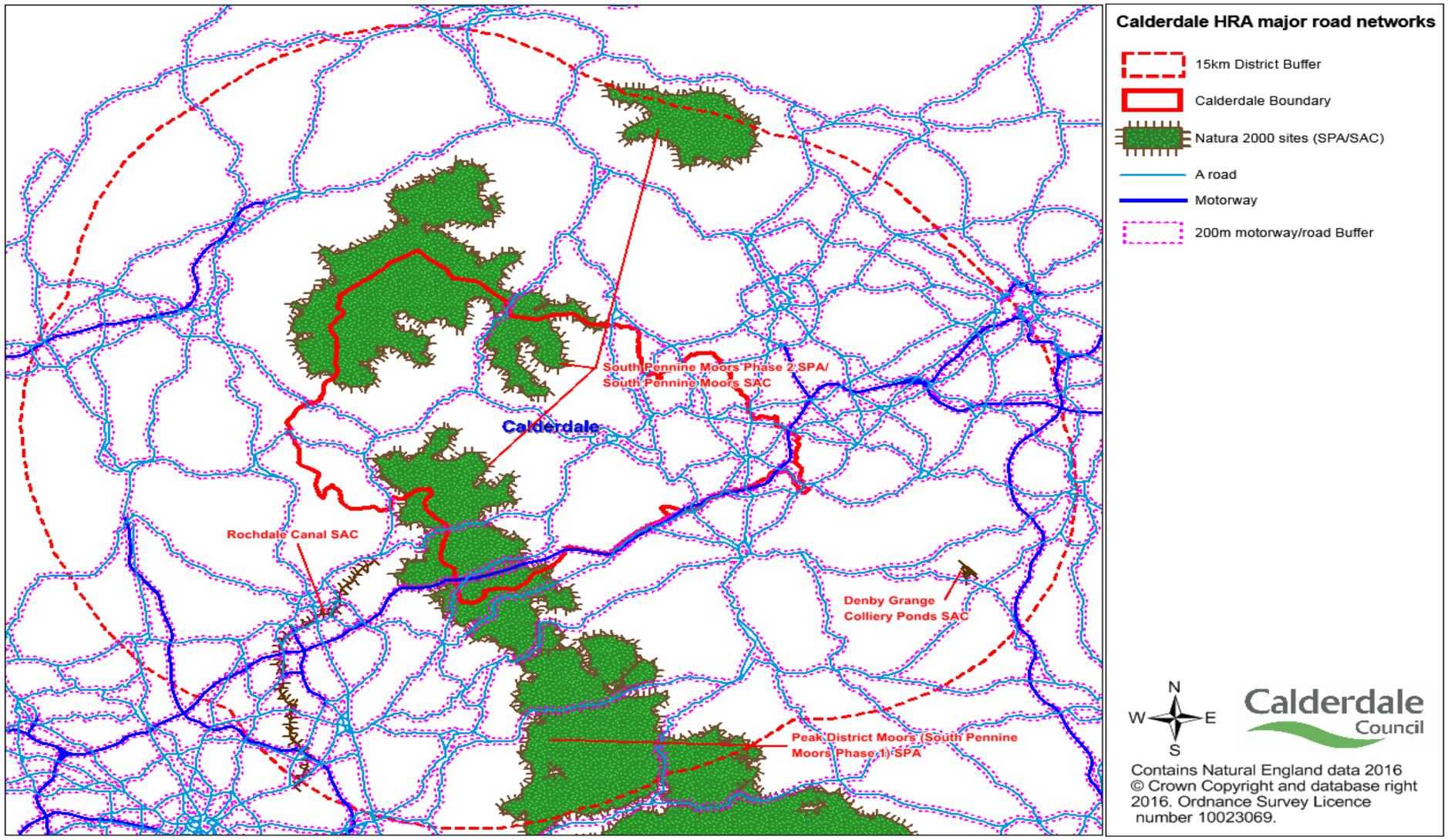


Figure 4: Major road networks (motorway & A roads) with 200m buffer distance within Calderdale + 15km

Table 3: Recorded abundances and foraging of birds from the South Pennine Moors (phase 2) SPA fringe bird surveys

Species	2012 moorland fringe survey		2015 moorland fringe survey	
	Recorded abundance (individuals)	Percentage of individuals foraging (%)	Recorded abundance (individuals)	Percentage of individuals foraging (%)
Article 4.1 species				
Golden Plover	33	39.4	51	45
Merlin	2	50	1	0
Breeding Bird Assemblage				
Common Sandpiper	14	50	1	0
Lapwing	80	31.3	272	27
Curlew	320	53.1	304	61
Peregrine	4	50	3	33
Redshank	5	80	0	0
Ring Ouzel	1	100	1	0
Short-eared Owl	13	100	1	100
Snipe	39	5.1	31	0
Twite	12	41.7	2	50
Wheatear	42	95	35	94
Whinchat	3	33	2	50

5.1.7 Table 3 above shows the percentage of recorded species foraging. This shows that a significant proportion of the recorded birds used the surrounding fringe to forage and therefore the land acts as an important functional habitat for the South Pennine Moors (phase 2) SPA birds.

5.1.8 Based on the bird survey data it is clear that functionally connected habitat exists around the SPA fringes of Calderdale. Based on the two bird surveys as well as advice from Natural England (the statutory nature conservation body), it is assumed that the potential for physical loss or damage to offsite functional connected habitat is most likely to be significant if development takes place within 2.5km of the SPA. Whereas it is acknowledged that many of the sites captured in this buffer will not be functionally connected land, it is important to apply such a distance to allow for all doubt to be removed at later stages. If a more stringent buffer was applied, some potentially harmful sites may be missed as part of the screening process. This approach is in line with the collected evidence base and the precautionary principle.

5.1.9 Dodd et al (2007) highlights caution in relation to the use of such buffer zones, highlighting inappropriate use of a buffer zone, and without objective information to back it up, could result in the effects of policies or proposals outside the buffer being missed. However the outlined evidence base and analysis is believed to act as appropriate 'objective information' to confidently use the specified buffer zone.

5.1.10 Impacts resulting from physical loss of habitat from the plan can be screened out in relation to the Rochdale Canal SAC, because these sites do not include mobile species amongst their qualifying features. Impacts relating to Denby Grange Colliery Ponds SAC can also be screened out in relation to physical loss as Calderdale is considered well beyond the mobile range of the great crested newt. Finally, impacts can be screened out in relation to Peak District Moors (South Pennine Moors Phase 1) and the Humber

Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar due to their distance from Calderdale.

5.1.11 Therefore, effects relating to physical loss of habitat onsite need to be considered in relation to the South Pennine Moors SAC and South Pennine Moors (phase 2) SPA. Offsite effects also need to be considered in relation to the South Pennine Moors (phase 2) SPA.

5.2 *None physical disturbance*

5.2.1 As well as physical disturbances, none physical disturbance is an important factor to consider arising from the outcomes of the Calderdale Local Plan. None physical disturbances are most likely to occur during the construction of new developments. Such activities are most likely to disturb bird species and other fauna; therefore they are a key consideration with respect to Natura 2000 sites where birds and other fauna are the qualifying feature(s). Reviews of multiple studies have shown the negative ecological consequences of night-time light pollution, especially with respect to encroachment of artificial light into previously unlit areas of the night-time environment (Gaston et al, 2012).

5.2.2 The impact of anthropogenic noise on animal communities is a well-researched topic. Research shows that such communities respond to noise stressors by increasing vigilance, hiding and/or retreating which may correspondingly decrease the amount of time they spend foraging (Kight & Swaddle, 2012). Anthropogenic noises are often louder, more frequent and more common than natural acoustic stimuli. As well as this, the review by Kight & Swaddle (2012) showed that anthropogenic noise can lead to DNA damage, alterations in gene expression and changes to a myriad of cellular processes related to appropriate neural, developmental, immunological and physiological functioning. In addition other authors have discussed ways in which noise can impact animal behaviour and community ecology. Therefore any developments near to the identified Natura 2000 sites have the potential to adversely impact upon the integrity of the site(s) and its conservation objective.

5.2.3 Based on the assessment of the evidence for the functionally connected land presented in section 5.1, it is assumed that effects of none physical disturbance are most likely to be significant within land 2.5km of the Natura 2000 sites. None physical impacts resulting from the Local Plan will only impact the Natura 2000 sites within Calderdale or directly adjacent to the (South Pennines Moors (phase 2) SPA and the South Pennine Moors SAC). However of these identified Natura 2000 sites, only the South Pennines Moors (phase 2) SPA contains fauna as a qualifying feature. **Therefore, the impacts of non-physical disturbance only need to be considered in relation to South Pennine Moors (phase 2) SPA.**

5.3 *Air pollution/quality*

5.3.1 Biodiversity 2020 identifies air pollution as a direct threat to biodiversity in England. Such pollutants can change the pH and nutrient levels of soils, which can change species composition, as well as flora, fauna which could also have secondary effects. Many habitats of nature conservation importance in the UK are adapted to low nutrient conditions and/or are vulnerable to acidification including many Natura 2000 sites. They are, therefore, sensitive to additional airborne nitrogen oxides (NO_x), sulphur dioxide (SO_2) and ammonia (NH_3), as well as to nitrogen deposition and acid deposition (Natural England, 2016a). National Atmospheric Emission Inventory (2015) identified that transportation is the single largest source of NO_x emissions and is emitted by road traffic in much larger quantities than SO_2 and NH_3. Natural England (2016b) review of the ecological impacts of road traffic concluded that vegetation was impacted by exposure to motor vehicle pollution up to 200m from roads and that distance has the potential to be greater. They also found that impacts are greatest within the first 50-100m from roads.

5.3.2 As a result of this evidence Natura 2000 sites within 200m of the major road network (motorways and A roads) will be highlighted as being at risk from increased air pollution. Figure 4 shows the major road networks within the HRA study area with a 200m buffer. This shows that multiple major roads fall within 200m of the South Pennine Moors SPA and SAC including the M62 motorway. Denby Grange Colliery Ponds is also within 200m of the A637 to the south, and Rochdale Canal SAC cuts across a number of strategic roads. Calderdale currently has seven Air Quality Management Areas (AQMA) throughout the district, however these are away from the Natura 2000 sites with the closest situated within the centre of Hebden Bridge, approximately 1.7 km from the closest Natura 2000 boundary.

5.3.3 Natural England (2016a) produced mapping showing the SACs and broad areas within them that have both a high exposure to NO_x as well as sensitivity to these pollutants. This mapping as well as the data used in their preparation was provided by Natural England. It shows that the South Pennine Moors SAC currently has a medium sensitivity to NO_x exposure. The spatial distributions of the estimated NOx exposure levels from road traffic were also investigated. The study shows (table 4) the South Pennine Moors SAC is above 100% of it critical load for N deposition. It is estimated that the majority of the SAC currently has low exposure to NO_X; however those areas with high and medium estimated exposure and associated NO_x levels are located within Calderdale where the M62 and A672 intersects the district. It is important to note that this study and the acquired data only gives a spatial context to exposure and sensitivity of SACs to NO_x emissions from road traffic in a national context. Due to the methodology of the study and advice from Natural England it would not be appropriate to use the statistics to inform the HRA assessment process. It is however presented in the HRA to contextualise the sensitivity of the site and where its estimated high exposure is experienced.

Table 4: South Pennine Moors SAC categorisation of potential risk of impacts due to NO_x concentration from road traffic 2011 data*			
Site sensitivity	Medium	Medium	Medium
Baseline deposition cf. CL	>100%	>100%	>100%
Exposure to NOx from traffic taking account of background concentrations	H	M	L
South Pennine Moors SAC	**2727.6 ha**	**1243.11 ha**	**60888.07 ha**

**Data provided by Natural England which formed the preparation of the Natural England (2016a) report. The information should however be taken in a national comparison context opposed to a localised one.*

5.3.4 Data provided by the Air Pollution Information systems (APIS)[14] (shown in Table 5a and 5b) shows exceedances of critical loads/levels for atmospheric pollutant types relevant to the HRA, at a range of grid references on the strategic road network within and connecting to the Calderdale district which are within a Natura 2000 site or within 200m. This data supports the Natural England report and shows the high N deposition currently exceeds the critical load for the habitat. Based on the high rainfall for the area, APIS recommend that the higher end of the critical load range for Blanket Bog should be used. However, the NO_x levels are currently below the critical level and therefore have the potential to increase exposure to a level which would likely impact the habitat exists.

Table 5a: Air Pollution data for the Road Networks within 200m of the Rishworth Moor	
Site/ Area	**South Pennine Moors SAC - Rishworth Moor:** M62 junction (A672) ; Rochdale Road (A58) & Cragg Vale (B6138)*
Grid reference(s)	**398970, 415050; 398070,418170; 397800,418780**
Levels	
Deposition 2012-14 (N/ha/year)	**22.68**
Concentration (NOx µgm-3)	**19.13**
Habitat Limits	**Dwarf Shrub Heath**
Critical Load Range(N/ha/year)	10-20
Critical Level NOx (µgm-3)	30
Habitat Limits	**Blanket Bogs**
Critical Load Range(N/ha/year)	
Critical Level NOx (µgm-3)	30
Source: APIS	
**the database listed the same N Deposition level and NOx concentration for the 3 areas of Rishworth Moor*	

[14] The APIS is a jointly funded service between the Centre for Ecology and Hydrology and the UK statuary pollution and conservation agencies. It aims to provide a comprehensive source of information on air pollution and the effects on habitats and species for impact assessments.

Table 5b: Air Pollution data for the Road Networks within 200m of Wadsworh Moor	
Site/ Area	**South Pennine Moors SAC – Wadsworth Moor Hebden Bridge Road (A6033)**
Grid reference	**397800,418780**
Concentration (NOx µgm-3)	14.55
Habitat Limits	**Blanket Bogs**
Critical Load Range(N/ha/year)	5-10
Critical Level NOx (µgm-3)	30
Source: APIS	

5.3.5 At the time, Calderdale was preparing a Core Strategy, before converting to a Local Plan. The Council commissioned work to undertake detailed traffic modelling and concluded that any of the preferred options would lead to a significant impact on the local transport network and as a result, lead to a likely increase in air pollution. The work did not identify any significant road networks increases within 200m of the Natura 2000 sites in Calderdale. However since Calderdale has moved from preparing a Core Strategy to producing a single local plan including site allocations, this modelling work is now outdated and does not reflect the current plan proposals. It does however, suggest that due to the overall scale development proposed through the Local Plan it is likely to result in an increase in traffic on the strategic road networks in and around Calderdale[15]. It is also unlikely a sudden shift in spatial distribution will occur based on current potential sites.

5.3.6 Due to this, and the fact that the updated detailed traffic modelling relating to the scale and final locations of development in the Local Plan has not yet been produced, the potential for increased air pollution to impact any Natura 2000 sites in and outside Calderdale (+15km) needs to be considered within the screening assessment.

5.4 *Recreation and Urban Impacts*

5.4.1 Recreation activities and human presence can have an adverse impact on the integrity of a Natura 2000 site through physical disturbance, i.e. erosion, arson and trampling as well as disturbance to species including breeding birds. This is because these areas have been shown to be widely used by the local populations for a range of recreational activities (Clarke et al, 2006). The degree of impact and sensitivity of SAC and SPA habitats and species are summarised below in table 6a and 6b[16]. It shows that most habitats and bird species have a degree of direct negative impact resulting from recreational site users.

[15] Traffic forecast data for the planned level of growth will determine if increases in vehicle traffic in and around Calderdale are likely to be significant. Such work is currently being undertaken, and this will be drawn on to inform the HRA.
[16] Tables adapted from Anderson (1990) referenced in the Bradford core strategy HRA.

Table 6a: Relative sensitivity of moorland features to recreation and urban impacts adapted from Anderson (1990)				
Habitats	Direct Impact		Indirect Impact	
	Tramping	**Disturbance**	**Fire**	**Management**
Dry dwarf-shrub heath	**XX**		**XXX**	
Wet dwarf-shrub heath	**XXX**		**XX**	
Blanket mire	**XXX**		**XXX**	
Mountain	**XXX**		**X**	
Acid grassland	**XX**		**XX**	
Calcareous grassland	**XX**			**XX**
Flushes/springs	**XXX**			
Rock ledges	**XX**			
Screes	**XX**			
Breeding birds		**XXX**	**XXX**	**XX**
Wintering birds (Raptor roosts)		**X**		
Invertebrates	**XX**		**XX**	**X**
Key (degree of negative effects): **Least**	**X**	**XX**	**XXX**	**Most**

Table 6b: Relative sensitivity of moorland plants to trampling adapted from Anderson (1990)

Least Sensitive	Species	Notes	SAC/SPA Presence
	Common bent/crested dog's tail	As in some in-bye land	Not major component of SAC Annex 1 habitats
	Wavy hairgrass/ sheep's fescue	On mineral soils	Often minor component of SAC dry heath habitat
	Heather	Young	Major component of Annex 1 dry heath and blanket bog habitats
	Mat-grass	Usually on drier, thin peats or peaty mineral soils	Often component of heavily grazed dry heath habitat
	Purple moor-grass	Usually on wetter flushed peaty soils.	Major component of wetter heath and blanket bog habitats
	Bracken	Young plants	Can be invasive on drier heath and acid grassland habitats
	Heather	Old – old plants are brittle and easily broken.	Major component of Annex 1 Dry Heath and blanket bog habitats. Important for nesting SPA birds
	Crowberry/bilberry	On peat	Major component of Annex 1 dry heath and blanket bog habitats
	Cotton-grass spp.	Cotton-grass mire on peat	Major component of Annex 1 blanket bog habitats
Most sensitive	***Sphagna***	Flushes, mire on peat.	Major component of blanket bogs and transition mire habitats

5.4.2 Importantly, blanket bog and dry heath are a qualifying feature of the South Pennine Moors SAC, both of which have a high sensitivity. Table 2b lists Cotton-grass *spp* and Heather as 'more sensitive' to trampling, both of which are again found within the South Pennine Moors SAC.

5.4.3 Policies or site allocations in the Local Plan may potentially lead to an increase in visitor numbers within Natura 2000 sites. Consideration will be given to factors such as the characteristics and current use of the Natura 2000 sites, and their accessibility from potential development areas. On this basis, recreation and urban impacts are considered to be key considerations with regards to the South Pennine Moors SAC and

SPA but are less likely to be significant in relation to Denby Grange Colliery Ponds and Rochdale Canal SAC due to the relative distance from Calderdale.

5.4.4 Dowling (2012) investigated the impacts of recreational use of bird abundance and behaviour within the South Pennine Moor Phase 2 SPA. The study found that areas of the moors with high recreational use had the lowest values for bird community diversity, evenness and richness. The sites with the highest recreational use were closer to towns and roads, and had good quality footpaths and car parking facilities. Pearce-Higgins et al (2007) investigated the impacts of recreation on both the Golden Plover and Dunlin (qualifying species found on the South Pennine Moors phase 2 SPA) within the South Pennine Moors phase 1 SPA. The study found that for both species were negatively affected by visitor pressure only at high numbers (less than 30 visitors per weekend day) and showed none to little disturbance or nesting favourability in lower visitor numbers.

5.4.5 Byrne (2014) investigated attitudes and actions of recreational users within South Pennine Moor SPA. The study found that of the 558 users surveyed 59% (n=328) were non-local participants (travelled over 3 miles to get to the site), while the other 41% (n=230) local participants (n=558) (travelled under 3 miles to get to the site). Of these users a 62% (n=344) did not know the site was protected, the study found a significant relationship between local participants who also knew the site was protected. It also found a significant number of people left the marked paths, increasing the likelihood of damaging behaviour. These findings highlight the fact that recreational use can threaten the integrity of the South Pennine Moors Natura 2000 sites. Therefore it is logical to assume that increases in visitor numbers to the South Pennine Moors may negatively affect the integrity of the Natura 2000 sites without appropriate mitigation in place.

5.4.6 In 2014 Natural England published a report entitled *Monitor of Engagement with the Natural Environment* [MENE] *Survey (2009-12): Visit taking in the South Pennines* (Burt et al, 2014). It analysed data from the 2009-12 period focusing largely on the South Pennines, in order to understand visitor patterns more adequately, and took a sample of 3,422 respondents over the study period. The report found that residents of the South Pennines are heavy users, of the 12 million visits to the moors throughout the study period 36% were taken by residents of the area, 18% were from people who live in the surrounding South Pennine Catchment area and 46% originated from further afield (cities) such as Leeds and Manchester. Visitors within the South Pennines were more likely to be in the most affluent socio-economic group. The study also highlighted that place of residence (i.e. urban, rural or urban fringe) are also significant factors with people from the urban populations taking far fewer visits on average. The report found that users from urban areas who are resident in the area take visits to moorlands far less frequently than people living in urban fringe or rural areas. From the study only 2.3% of the visitors recorded were from Calderdale. Another important finding was that the majority of visits taken by residents of the South Pennines involved dog walking (68%). The findings of this study are very important in helping to understand how the South Pennine Moors Natura 2000 sites may be impacted by increased visitor numbers resulting from the Local Plan and in combination with other plans. It is therefore presumed that increased number of visitors generated from the plan will result from allocations close to the urban and rural fringes to the moors.

5.4.7 As well as recreational impacts, developments in close proximity to Natura 2000 sites can have a potential likely significant effect to the integrity of the site as a result of 'urban edge' or 'urbanisation' impacts. These impacts are especially significant for the moorlands of the South Pennines Moors SPA and SAC. Their close proximity can result in a broad range of impacts including fly tipping; dumping of garden waste and therefore the potential to introduce invasive/alien plants; off-road vehicles leading to track erosion; disturbance to (conservation) grazing livestock; increased incidence of wildfire; and predation from domestic pets and urban scavengers. Such activities are reported and stored on the Pennine Watch Website[17] and show extensive reports of off-roading, fly tipping and wildfire starting, many of which are recorded within the boundaries of Calderdale. On the south coast of England, Natural England identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation, particularly the risk of chick predation by cats.

5.4.8 As part of City of Bradford Core Strategy HRA, visitor surveys were undertaken to look at the recreational factors relating to the South Pennine Moors Natura 2000 sites within their district. The study concluded that a 'zone of influence' existed resulting from recreational impacts on the Natura 2000 sites within 10.5 km of the sites. This zone represents the area within the most recreational visitors to the Natura 2000 sites are expected to originate. As well as this other urban factors called 'urban edge' impacts (which include fly tipping, off-road vehicle use, wildfire and increased domestic predation) where found to mainly take place within 400m of the Natura 2000 sites. The Bradford core strategy concluded that adverse effects on the integrity of the South Pennine Moors SAC and SPA could not be ruled out due to recreation pressure, loss of functionally linked land used by the breeding bird assemblage and urban edge pressures. As a result a policy was developed to act as mitigation which created three zones. The research undertaken for the HRA of the Bradford Core Strategy is being drawn upon as appropriate to inform the HRA of the Calderdale Local Plan, following its same use in the Kirklees Draft Local Plan HRA report.

5.4.9 The nature of development proposed is important to consider, for example, employment sites are considered less likely to result in increased recreation pressure/use than residential sites as employees will be at work within the development site for the majority of the time.

5.4.10 Consideration is being given to the potential need to take a strategic approach to mitigation of recreation pressure on the South Pennine Moors SAC and SPA, in the form of buffers for development.

5.4.11 **Therefore, at this stage, recreation related impacts need to be considered within the screening exercise in relation to all of the Natura 2000 sites within Calderdale (+15km) but greater consideration with respect to the South Pennine Moors SAC and South Pennine Moors SPA (Phase 2).**

[17] http://www.moorwatch.co.uk/view-reports

5.5 *Water quality and quantity*

5.5.1 Development arising from the Calderdale Local Plan has the potential to increase demand for water resources as a result of the overall growth expected as a result of the plan. Yorkshire Water published its 'Water Resources Management Plan' which sets out their plan to maintain the supply and demand of water resources for the next 25 years (2015/16- 2039/40). Yorkshire Water (2014) incorporates future pressures on supply and demand driven by predicted climate change. It also incorporates future changes to the Yorkshire population, housing and water use in the Yorkshire region. Calderdale lies within the Grid SWZ, which is a highly integrated surface and groundwater zone dominated by the operation of rivers and reservoirs. The report concludes that the baseline supply-demand balance for the Grid SWZ dry year annual average scenario, shows a substantial deficit which increases over the planning period as the forecast supply cannot meet the forecast demand. This deficit is largely the result of the impacts of climate change and sustainability reductions. Climate change is forecast to create a year on year incremental reduction in supply. The report sets out a number of options for balancing the deficit, involving a combination of demand reduction (including reducing leakage and processing losses) and ways of increasing supply (including increasing abstraction from certain boreholes). It was concluded that a surplus can be achieved during the 25 year plan period and therefore meet the needs of the region. As part of the Water Resources Management Plan a HRA was undertaken on the preferred solution in order to assess its impact on Natura 2000 and Ramsar sites. The option which had the most potential to impact the South Pennine Moors SPA was removed. The conclusions of the HRA showed that with the appropriate mitigation measures in place, the plan would not have a significant effect on the integrity of identified sites.

5.5.2 As part of an informal consultation on the Calderdale Local Plan HRA screening methodology, Natural England highlighted the need to ensure that the assumptions used in the Water Resource Management Plan to determine "no likely significant effects", are in line with the level of growth proposed in the plan. The management plan based its projections for growth on local and regional authorities housing strategies, expert assessments and government policy. Therefore it is understood that growth assumed in the plan is in line with that of the Calderdale Local Plan. Any changes in demand should be accounted for in the surplus, and will be accounted for in the 5 year review of the Water Resource Management Plan.

5.5.3 Natural England also advised that the capacity for individual allocations to be connected to the mains water supply and sewers should be considered and where this is not possible, water abstraction necessary to deliver these allocations should be assessed. Natural England did however acknowledge that in some cases, the assessment would be more appropriate at the project level. In response to this, all allocations as part of the Local Plan will be within areas of established water infrastructure, and where such infrastructure is not in place i.e. greenfield development sites, necessary connection and extensions to the water grid will take place to meet the deliverability of these sites. As part of the site assessment process for the Local Plan, the proximity to the built up area was a determining factor, meaning if a site was not connected to the built up area it was filtered from the process and not allocated. Therefore the Plan will not allocate sites which would need to independently extract water on site and therefore have the greatest

potential to result in adverse effects on the integrity of Natura 2000 sites. It is beyond the scope of the HRA to assess the likelihood of developments resulting from planning allocation, which may require access to water and sewage systems independent to mains infrastructure. However, in line with the future Local Plan any planning application would be required to address this issue and demonstrate that it would not adversely impact the integrity of Natura 2000 sites.

5.5.5 Therefore in line with the Water Resources Management Plan HRA, the Calderdale Local Plan is not expected to have a significant effect on the integrity of the identified Natura 2000 sites as a result of increased water demand.

5.5.6 As well as potential impacts to water quantity, it may also be adversely affected from the impacts of the Calderdale Local Plan. The existing waste water treatment plants within Calderdale (shown in table 7) act as a possible source to lead to a decrease in water quality. These are located downstream from the South Pennine Moors SAC and (phase 2) SPA in the east of the district. The Rochdale Canal SAC is a water body that has the potential to be adversely impacted from waste water discharge due to its proximity and physical connection to Calderdale and dependence on nutrient levels. Water supplied to the Rochdale Canal also partly arises from the Pennines (Natural England, 2014a). The Rochdale Canal SAC is located to the West and upstream from Calderdale. It would therefore be very unlikely to be affected by discharges from the waste water treatment works that serve Calderdale. Whereas, there is a potential for the river Calder and the Calder and Hebble navigation (linked to the Rochdale Canal) to discharge water between each other, such transfer is unlikely to occur in significant enough quantities to impact the canal water quality. Due to the lock system of the canal it is unlikely that water would be able to flow up into the SAC section of the Rochdale Canal. Finally, it is important to note that Natural England (2014)[18] does not list the connection to the wider canal system (and the flow of water) as a threat or pressure, with on site management to prioritise for the improvement of the SAC.

5.5.7 Denby Grange Colliery Ponds SAC also has the potential to be impacted by a reduction in water quality, however it is not known to be hydrologically connected to water bodies within Calderdale that receive discharges from the waste water treatment. As well as this, it is important to note that the treatment of waste water is governed by a variety of regulatory and legislative measures, including the EU Water Framework Directive[19], which addresses the environmental impacts of waste water including the impacts on Natura 2000 sites. It should, therefore, provide sufficient protection to the integrity of the sites irrespective to any hydrological links between the site and impacts of the Calderdale Local Plan.

[18] The Rochdale Canal SAC site improvement plan

[19] Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy

Table 7 : Main waste water treatment works serving settlements in Calderdale		
Waste water treatment plant	**Settlement**	**Discharges to**
Brighouse Upper Sludge Treatment Facility	Brighouse	River Calder
Copley Sewage Sludge Treatment Plant	Sowerby Bridge	River Calder

5.5.8 Therefore based on the screening assumptions, water quality impacts arising from the Calderdale Local Plan can be screened out in relation to all the identified Natura 2000 sites within Calderdale (+15km).

Summary of the screening assumptions

5.5.9 Based on the outlined evidence, a number of screening assumptions have been established to inform the HRA screening process of the Calderdale Local Plan. Based on these assumptions the following effects on the multiple identified Natura 2000 sites have been screened in/out as shown in Table 8 below. Also EC (2000) guidance recognises that plans or plan components that are general statements of policy cannot have significant effects; as an example it cites general policy sustainable development as such an example.

Table 8: Screening assumption conclusions					
	South Pennine Moors (phase 2) SPA	**South Pennine Moors SAC**	**Peak District Moors (South Pennine Moors Phase 1) SPA**	**Rochdale Canal SAC**	**Denby Grange Colliery Ponds SAC**
Physical loss of habitat (site and functionally connected habitat)	Screened in (onsite and offsite)	Screened in (onsite only)	Screened out (offsite and onsite)	Screened out (offsite and onsite)	Screened out (offsite and onsite)
None physical disturbance	Screened in (onsite and offsite)	Screened out (offsite and onsite)	Screened out (offsite and onsite)	Screened out (offsite and onsite)	Screened out (offsite and onsite)
Air Pollution	Screened in	Screened in	Screened in	Screened in	Screened in
Recreation and Urban Impacts	Screened in (greater consideration)	Screened in (greater consideration)	Screened in	Screened in	Screened in
Water quality and quantity	Screened Out	Screened Out	Screened Out	Screened Out	Screened Out

6 Interpretation of 'likely significant effect'

6.1 Due to the subjective interpretation of the Habitats Regulations, applicable case law can be used to interpret when effects should be considered as a "likely significant effect", when carrying out a HRA of a land use plan. Case law is a vital source of information regarding how legislation should be correctly interpreted and applied (Chapman & Tyldesley, 2016b). Firstly the Waddenzee case[20], in which Landelijke Vereniging tot Behoud van de Waddenzee (National association for conservation of the Waddenzee, 'the Waddenvereniging') and the Nederlandse Vereniging tot Bescherming van Vogels (Netherlands association for the protection of birds, 'the Vogelbeschermingsvereniging') challenged the Staatssecretaris van Landbouw, Natuurbeheer en Visserij (Secretary of State for agriculture, nature conservation and fisheries, 'the Secretary of State') for the issuing of licences for the mechanical fishing of cockles in the special protection area (SPA) of the Waddenzee (Holland).The European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive (translated into Reg. 105 in the 2017 Habitats Regulations), including that:

- An effect should be considered 'likely', *"if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site"* (para 44).
- An effect should be considered 'significant', *"if it undermines the conservation objectives"* (para 48).
- Where a plan or project has an effect on a site "*but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned"* (para 47).

6.2 Recent European Court judgement (Sweetman 2013) confirmed the threshold of the LSE test is a low one ie its purpose is to initially screen for the risk of the possibility of an effect, not to precisely establish the full extent of the effect (which is the role of the next stage of appropriate assessment). This stage is intended to ensure that all relevant plans and projects likely to have an effect on a European site are subject to further steps of Habitats Regulations Assessment by the competent authority.

6.3 If a plan or project is not connected with or necessary to the management of the site and is likely to have a significant effect, or the likelihood of significant effects is uncertain, the competent authority must carry out an Appropriate Assessment (AA) to assess the implications for the site and whether it can be ascertained that the project will not have an adverse effect on site integrity.

6.4 Another interpretation delivered to the Court of Justice of the European Union[21] commented that:

"The requirement that an effect in question be 'significant' exists in order to lay down a de minimis *threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having* any *effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."*

[20] ECJ Case C-127/02 "Waddenzee" Jan 2004.
[21] *Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala* 22nd Nov 2012.

6.5 This opinion therefore allows for the authorisation of plans and projects whose possible effects, alone or in combination, can be considered 'trivial' or *de minimis*; referring to such cases as those *"that have no appreciable effect on the site"*. In practice such effects could be screened out as having no likely significant effect; ie they would be 'insignificant'.

6.6 If a plan or project is not connected with or necessary to the management of the site and is likely to have a significant effect, or the likelihood of significant effects is uncertain, the competent authority must carry out an Appropriate Assessment (AA) to assess the implications for the site and whether it can be ascertained that the project will not have an adverse effect on site integrity.

7 Mitigation provided by the Local Plan

7.1 Potential impacts of the Calderdale Local Plan may be mitigated to different levels of degree through the implementation of both certain designations (green spaces) as well as policies.

7.2 Dodd et al (2007) discussed as to what stage mitigation should be incorporated into the HRA process, specifically its role within the screening process. They highlight that it is important that screening is not confused with the assessment of the effects of mitigation measures within an Appropriate Assessment (AA). Their justification is that it is wrong to confuse the test for whether an AA is required.

7.3 In terms of mitigation, the Plan acts as the best method to implement the needed mitigation and therefore the relevant policies have been, and will continue to be, developed alongside the findings of the HRA.

7.4 From a review of neighbouring Local Authority's plans as well as national examples, it is clear that mitigation as a result of the HRA process is implemented into a Plan in two main ways. Firstly some local authorities have adapted the relevant policy wording into existing policies (for example Kirklees), whereas others have incorporated all the required mitigation into a single policy specific to safeguarding the relevant Natura 2000 sites. The latter approach is shown with the Bradford Core Strategy Policy SC8 (appendix 2).

8 Identification of other plans and projects which may have 'in combination' effects

8.1 Regulation 105 of the Conservation of Habitats and Species Regulations 2017 states an Appropriate Assessment is necessary when "*a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site*".

8.2 EC (2001) summaries the importance of assessing impacts in this way, as it establishes whether or not there may be, overall, an impact which may have significant effects on a Natura 2000 site. For example, a proposed development may be built in close proximity to a Natura 2000 site and the non-physical disturbance it may generate will not significantly affect the designated bird alone. However, if there were other existing or proposed projects or plans (e.g. housing development resulting neighbouring district on

another boundary to the site), then total noise levels from all these projects taken together may cause disturbance then that is concluded as being “significant”.

8.3 In line with Regulation 105, it is necessary to consider whether there may also be significant effects in combination with other plans or projects, where likely significant effects have been identified in the Calderdale Local Plan. In order to do this, plans and projects that may result in combination significant effects with the Calderdale Local Plan, have been identified. Early work was undertaken in relation to identifying such plans and projects for the Calderdale Core Strategy HRA, however this work ceased as the Plan progressed to a Local Plan as much of the information had become out-of-date. It has now therefore been updated during this HRA process.

8.4 Due to the large scale of plans, and following the approach taken in the Core Strategy HRA, the search focused on planned spatial growth plans within the authorities adjacent to Calderdale and within the wider strategic region. As well as highlighting the potential in combination effects resulting from these plans, any HRA outcome/work for the respective plans has been summarised. The plans of the following authorities have been included in the scope of this exercise:

- City of Bradford Metropolitan Council
- Kirklees Council
- Oldham Council
- Rochdale Council
- Rossendale Council
- Burnley Council
- Pendle Council
- Peak District National Park Authority
- Craven Council
- Leeds City Council
- Wakefield Council
- Greater Manchester Combined Authority
- West Yorkshire Integrated Transport Authority

The full assessments to date of the in combination effects as part of the screening exercise are shown in Appendix 3.

9 Screening findings and outcomes

9.1 Section 4 described the screening approach taken as part of the HRA and section 5 presented the sites baseline information, assessment evidence base and the screening assumptions for the HRA screening process. The complete screening assessment matrix is shown in Appendix 5. It lists the sites that have been subject to screening and the relevant findings.

9.2 The Local Plan has been screened to its most recent iteration, the draft Calderdale Local Plan. This is the mid stage of the plan and many components could be likely to change, be removed and added therefore the results of the screening under the HRA should be read in light of this. As the plan develops the HRA will be changed alongside to reflect it. Importantly, development of policies in the plan will likely change the likely potential significant impact of other policies by action as mitigation or avoidance.

Proposals that may likely have significant effects

9.3 At this stage in the Local Plan process all the policies have been screened in.

Proposals that may have significant effects, but this is currently uncertain

9.4 The remainder of the Policies have been assessed and are unlikely to result in "significant effects" due to their location and relative distance from the Natura 2000 sites. It is recognised that some of the policies may have an impact upon Natura 2000 sites, however it is considered that there are other policies in the Plan that afford sufficient protection so as not to result in significant effects.

9.5 Policy SD3 states a housing requirement of 12,600 homes across the district but the majority of the proposed housing development is in the east of the Borough, away from the Natura 2000 sites, and whilst there may be potential to result in physical and non-physically disturbance as well as toxic contamination, this is uncertain until the planning application stage. It is also likely that air pollution levels (NOx) on roads near to the sites may increase but this also is dependent upon development taking place.

9.6 Housing allocation, mixed use allocation and urban extensions over 2.5km of a Natura 2000 boundary have been screened in due to the uncertainty that they could increase recreational use in all the identified site and increase air pollution levels near the sites. Recreational impacts however are most likely to be greatest within the South Pennines Moors (phase 2) SPA and SAC. Employment allocations within and over 2.5km of Natura 2000 have yet to be assessed.

Proposals which are unlikely to have significant effects

9.7 The remaining policies and allocations have been screened out as unlikely to have significant effects. As part of the screening process, some of the policies below were shown to have an uncertain "likely significant effects", however with the recommended mitigation, the policy is unlikely to have a negative effect. The policies listed at Appendix 5 have been assessed and the majority of them have been screened out due to that fact that there is sufficient mitigation in place in the plan **or** the policy itself will not directly

result in development. EC (2000) guidance recognises that general statements of policy such as these are unlikely to have significant effects.

9.8 It is important to note however that not all these policies are currently developed to the level in which these potential benefits can be delivered. They are to be subject to public consultation in the summer of 2018 and may change. It should be noted that for the purposes of screening, it is assumed that all necessary modifications will be made at a later date.

9.9 At this stage and with respect to the policies and allocations identified as having a likely significant effect on the Natura 2000 sites (screened in), an appropriate assessment needs to be undertaken in order to make a full detailed assessment as to the potential impacts of the Local Plan components. In line with the precautionary principle, those plan components which have been screened in as having a potential but uncertain significant impact, also need to be further assessed in the form of an appropriate assessment. The remaining plan components identified as unlikely to have a significant effect as part of the screening stage, can be screened out for further assessment at this stage. Any modifications to either the allocations or policies will be re-screened in later iterations of the Calderdale Local Plan HRA.

10 Appropriate Assessment

10.1 Based on the outcome of the screening stage, if the likely significant effects on Natura 2000 sites are unable to be ruled out, under regulation 105 of the Conservation of Species and Habitats Regulations 2017 and under Article 6(3) and (4) of the EC Habitats Directive, the plan-making authority is required under to undertake an 'Appropriate Assessment' of the implications of the plan for Natura 2000 site(s). This process assesses the identified impacts of the project or plan, either alone or in combination with other projects or plans with respect to the integrity of the Natura 2000 sites, i.e. the site's function and conservation objectives as per guidance from EC (2001) and Dodd et al (2007). Additionally, where there are adverse impacts found to still be prevalent, appropriate mitigation and/or avoidance has been developed.

10.2 The current assessment has indicated that there is at least one policy that needs to be reviewed through the "Appropriate Assessment" process.

A South Pennine Moors (phase 2) SPA

10.3 In terms of the likelihood of potential significant effects on the identified Natura 2000 sites, the South Pennine Moors (phase 2) SPA along with the South Pennine Moors SAC are most likely to be affected as a result of the Calderdale Local Plan due to the presence of large sections of these Natura 2000 sites within the Calderdale boundary.

Functionally Connected Land & Non-Physical Disturbance

10.4 The South Pennine Moors Site Improvement Plan (Natural England, 2014b) lists Planning Permission as both a pressure and threat to the sites ability to meet its conservation objectives. When appraising the potential sites individually in relation to the commissioned bird surveys (and therefore potentially functionally connected land) it is important to consider if it is possible to identify sites that are **(1)** unlikely to be deliverable (where significant numbers are recorded on-site or likely to be disturbed off-site) and should therefore be avoided; **(2)** deliverable with mitigation (either site specific or strategic) and **(3)** deliverable without mitigation (unconstrained).

10.5 Figure 6i-vi shows the location of SPA birds around the fringes of the South Pennine Moors and the potential site allocation originated from the commissioned bird surveys. This data set has been drawn upon for the appropriate assessment stage.

10.6 Whereas a significant amount of potential sites (residential, employment, mixed use, and urban extensions) have been screened in as a result of the application of a 2.5 km buffer[22] some of these are located within the built up areas of Walsden, Todmorden, Cornholme, Hebden Bridge, Mytholmroyd, Luddenden Foot, Ripponden and North Halifax. Sites within the built up area are very unlikely to lead to the loss of functionally connected land and non-physical disturbance because such land is a)

[22] To reflect potentially functionally connected land, based on the bird surveys undertaken for the Calderdale HRA.

not shown to be used by the SPA birds due to being in an urban area, b) are buffered by the existing buildings and developments in terms of noise and light, and c) the habitat located in these areas are not considered to be classed as one that is used by the bird species. Therefore for the purposes of the Calderdale HRA, it has been assessed that development of sites allocated within the existing built up area will not have a likely significant effect on the South Pennine Moors (phase 2) SPA in terms of loss of functionally connected land and non-physical disturbance. Sites on the fringes of these settlements are not classed as sites within the built up area and have been further assessed in terms of presence and proximity of recorded SPA birds, habitat type and proximity to development. Individual assessments of these sites in relation to potentially functionally connected land have been assessed in line with the precautionary principle.

10.7 Sites which have been assessed as not having potential to be functionally connected to the SPA and or lead to non-physical disturbance are shown below.

Table 9: LP sites not considered to be potentially functionally connected

Local Plan Potential Site	Area within Calderdale
LP0914 (Residential Allocation) LP1534 (Residential Allocation)	Walsden
LP0640 (Residential Allocation) LP0659 (Residential Allocation)	Todmorden (inc Cornholme)
LP1503 (Residential Allocation)	Hebden Bridge (inc Heptonstall & Old Town)
LP0938 (Residential Allocation)	Sowerby Bridge
LP0238 (Residential Allocation) LP1009 (Residential Allocation) LP1379 (Residential Allocation) LP1486 (Residential Allocation)	North Halifax (Mount Tabor and above)

10.8 As a result of an individual site assessment in relation to physical loss of land, it is clear that the majority of sites screened in (within 2.5km) will not lead to a loss of functionally connected land. It is important to state however that these sites may still lead to a likely significant effect on the identified Natura 2000 sites as a result of other impact pathways. The sites listed are those not believed to lead to a loss of functionally connected land & non-physical disturbance.

10.9 The remaining sites may be deliverable with mitigation, as it is neither certain or uncertain if these sites are regularly used by SPA birds. In line with the precautionary principle it should be assumed that these sites have importance as it cannot be ruled out on the basis of the current evidence that these sites are not of importance to the SPA bird communities.

10.10 In order for these sites to be deliverable, it should be listed on the site allocation constraints that the site should be ecologically appraised and incorporate appropriate mitigation to prevent adverse effects on the South Pennine Moors (phase 2) SPA. Mitigation could include the retention of identified foraging habitat, provision of alternate habitat and the requirement for major development not to take place during the breeding season for any identified species. The requirement for such actions should firstly identify in detail the ecological value of the site in terms of relationship to the SPA, and then seek to implement appropriate mitigation where appropriate[23].

10.11 Site which may be deliverable with mitigation are shown below.

Table 10: LP sites which are potentially functionally connected/non-physical disturbance and require mitigation

Local Plan Potential Site	Area within Calderdale
LP0635 (Residential Allocation)	Walsden
LP0053 (Residential Allocation) LP0651 (Residential Allocation) LP0658 (Residential Allocation) LP1637 (Residential Allocation)	Todmorden (inc Cornholme)
LP1501 (Residential Allocation)	Hebden Bridge (inc Heptonstall & Old Town)
LP0253 (Residential Allocation)	Luddenden & Luddenden Foot
LP0234 (Residential Allocation) LP1486 (Residential Allocation) LP1487 (Residential Allocation) LP1488 (Residential Allocation) LP1489 (Residential Allocation) LP1547 (Residential Allocation)	North Halifax (Mount Tabor and above)

[23] The approach is in line with guidance by Dodd et al (2007, pg 31) which describes the deferring of decisions to lower levels in the planning system. The guidance states that "*spatial plans may not have all the answers about the detailed effects upon European sites, but each should, at least, be able to...set parameters for more detailed questions… planning applications should address".* Less information is available to predict overall consequences of each allocation. Due to the large spatial scale of the Calderdale Local Plan it is not possible to provide the level of ecological information that would be required and collected at a planning application level.

10.12 Along with the potential site allocations proposed, some of the proposed policies within the Local Plan have been screened in as both having a likely and potential significant effect on the South Pennine Moors (phase 2) SPA as a result of physical loss of land (potential functionally connected land) and non-physical disturbance.

10.13 Two of the allocations are large “Garden Suburbs” (**LP1458& LP1461**), which would accommodate significant amounts of development, these urban extensions would both require further mitigation **as well** as the mitigation required for the smaller potential site allocations above. It is recommended that the boundary is redrawn for both these sites as illustrated below (figure 5) to remove the western sections of the sites which are both within very close proximity to recorded SPA use and potentially functionally connected land. If the recommended sections are removed the sites are likely to be sufficient distance to not impact the integrity of the South Pennine Moors SPA in terms of physical loss of land and non-physical disturbance.

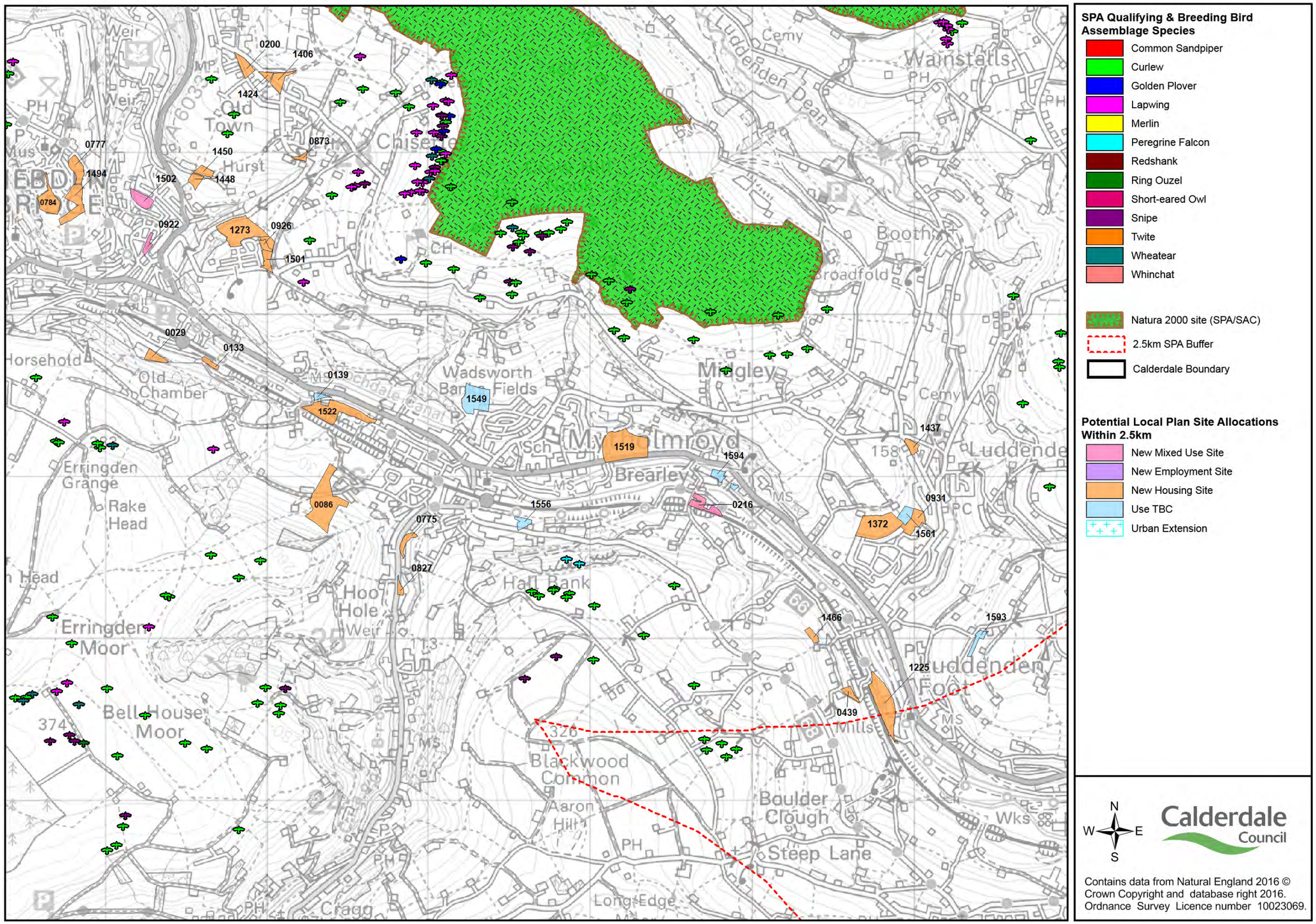
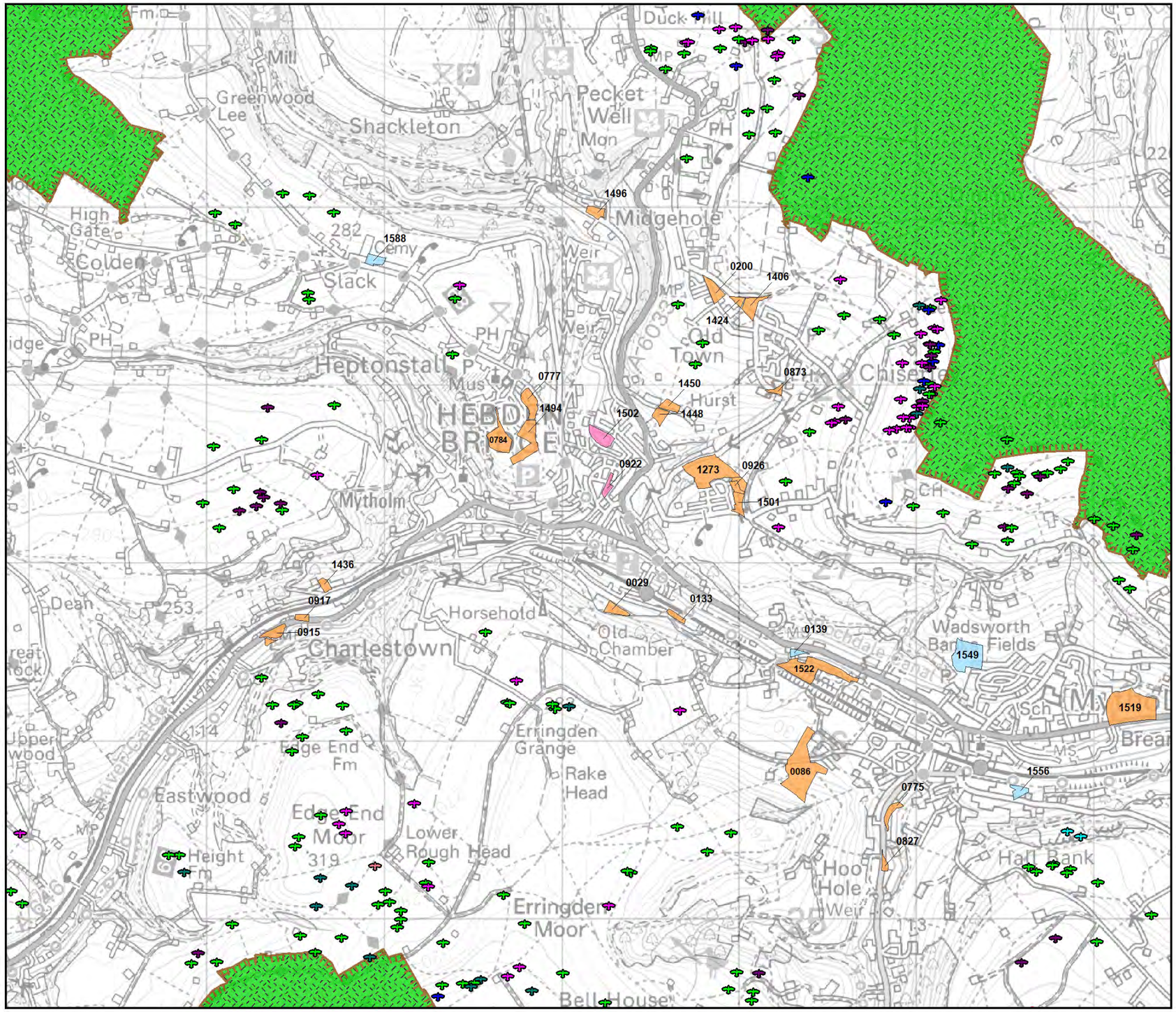


Figure 6i: SPA bird extent and potential site allocations around Cragg Vale and Mytholmroyd



SPA Qualifying & Breeding Bird Assemblage Species

- Common Sandpiper
- Curlew
- Golden Plover
- Lapwing
- Merlin
- Peregrine Falcon
- Redshank
- Ring Ouzel
- Short-eared Owl
- Snipe
- Twite
- Wheatear
- Whinchat

- Natura 2000 site (SPA/SAC)
- 2.5km SPA Buffer
- Calderdale Boundary

Potential Local Plan Site Allocations Within 2.5km

- New Mixed Use Site
- New Employment Site
- New Housing Site
- Use TBC
- Urban Extension

N W E S

Calderdale Council

Figure 6ii: SPA bird extent and potential site allocations around Hebden Bridge

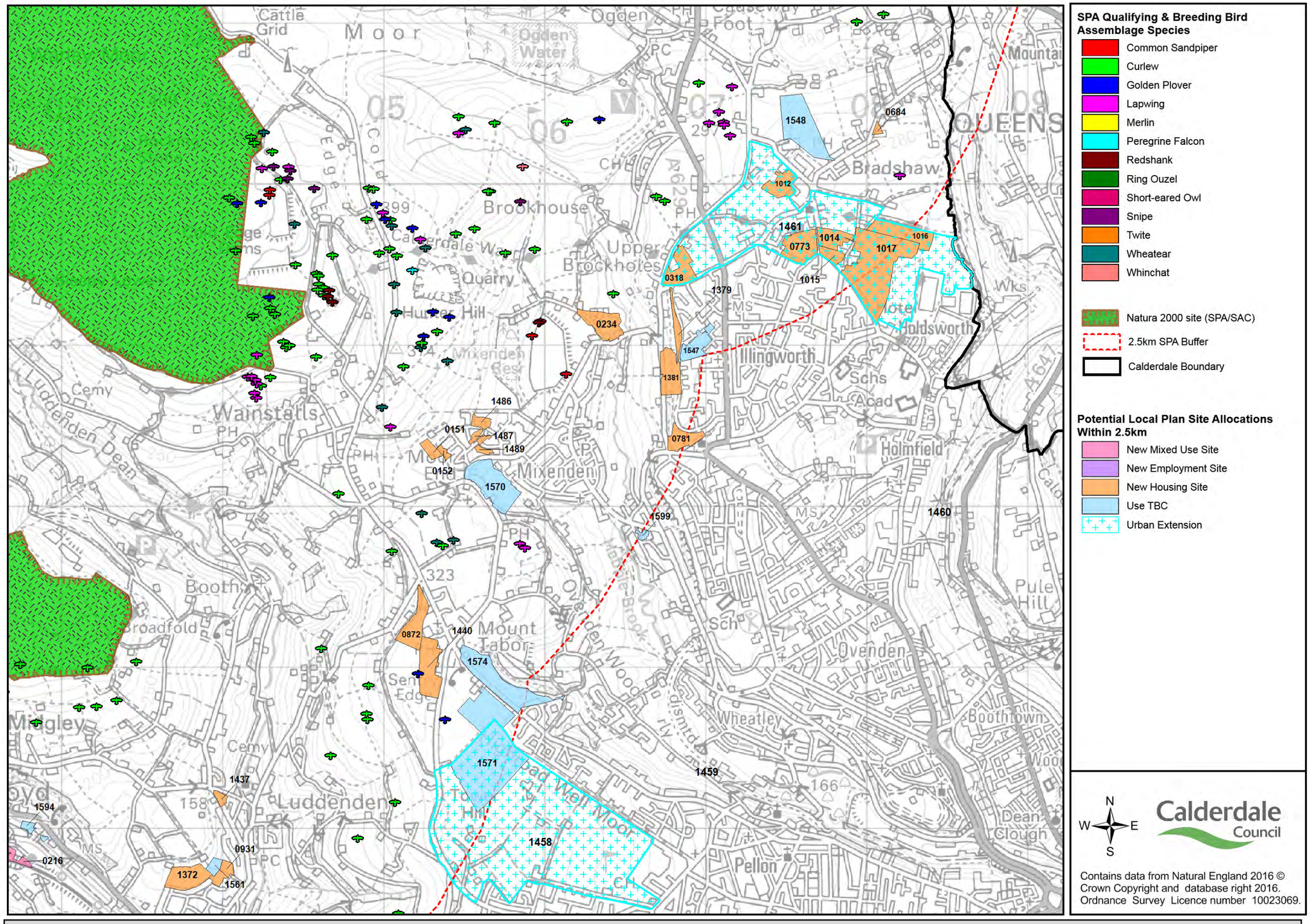


Figure 6iii: SPA bird extent and potential site allocations around Luddenden and North Halifax

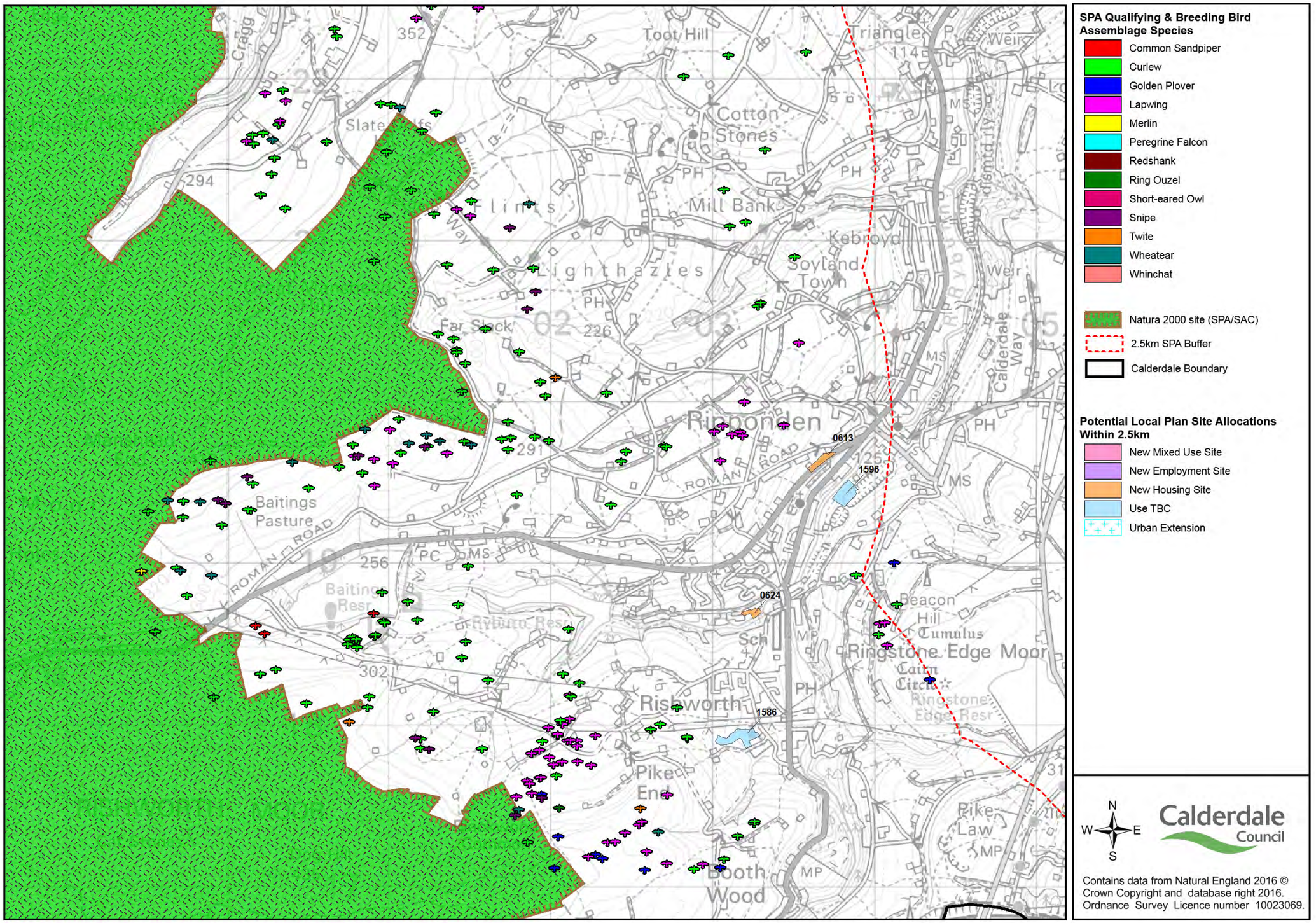


Figure 6iv: SPA bird extent and potential site allocations around Ripponden and Rishworth

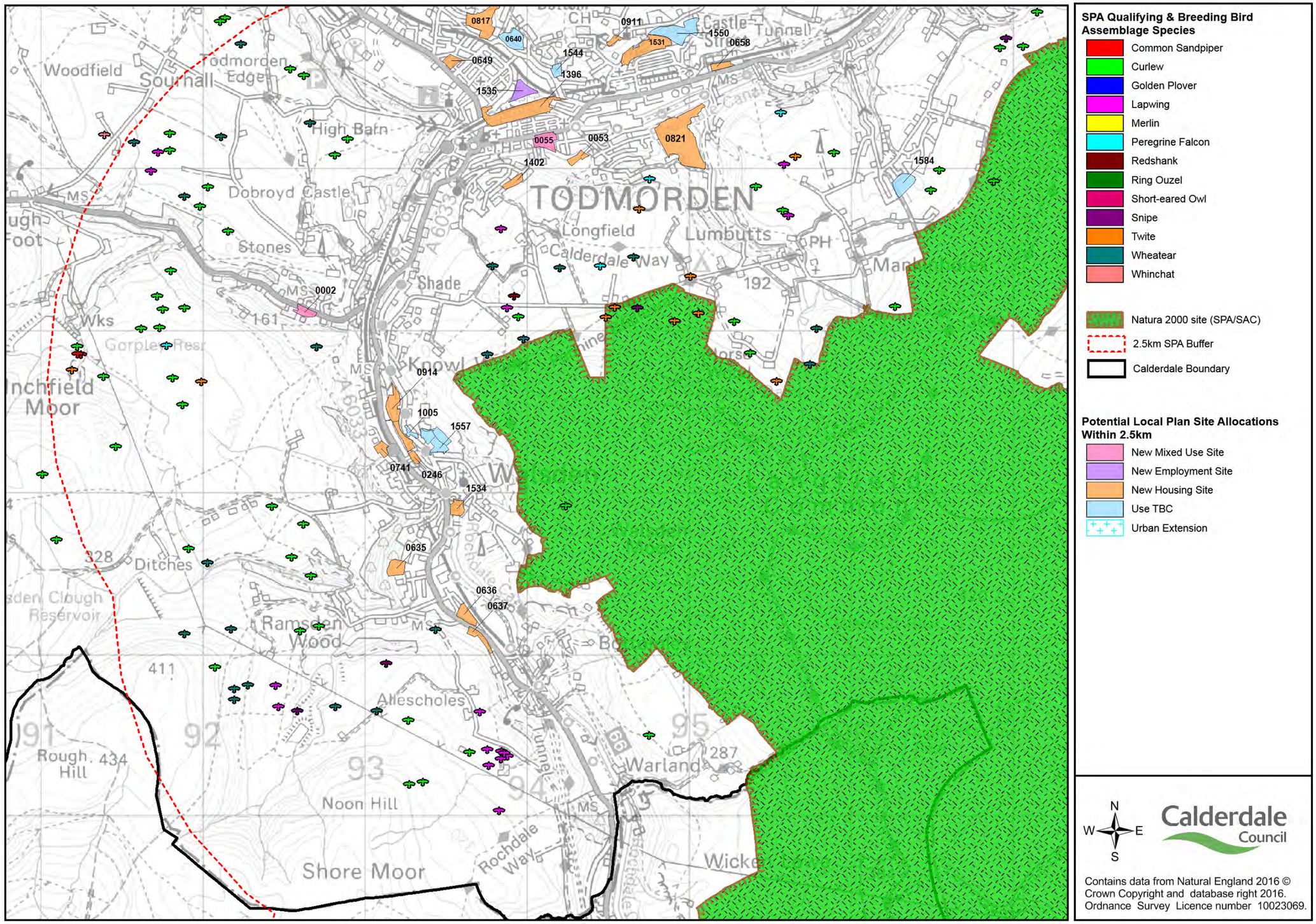


Figure 6v: SPA bird extent and potential site allocations around Walsden and Todmorden

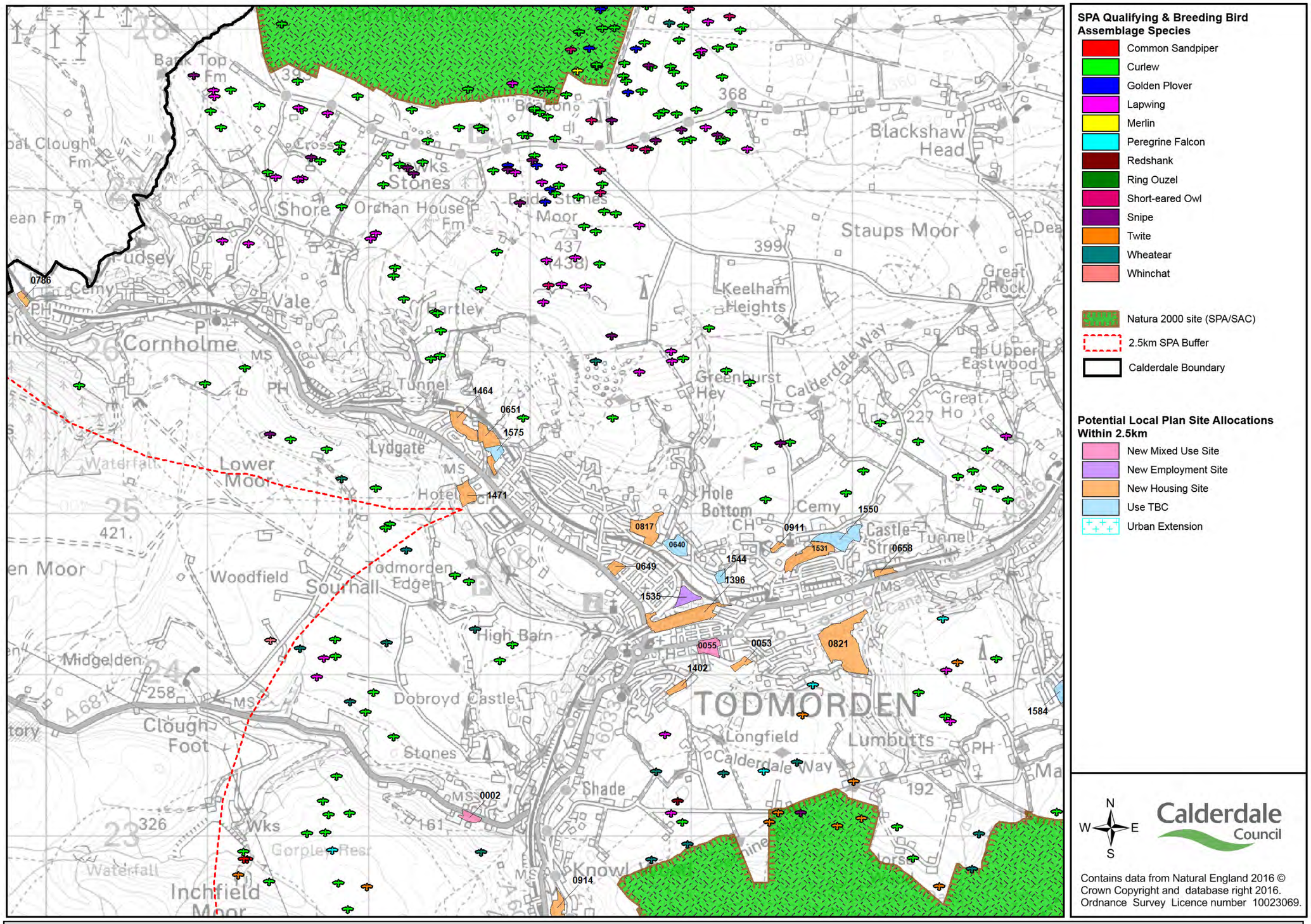


Figure 6vi: SPA bird extent and potential site allocations around Todmorden and Cornholme

10.14 Along with the potential site allocations proposed, some of the proposed policies within the Local Plan have been screened in as both having a likely and potential significant effect on the South Pennine Moors (phase 2) SPA as a result of physical loss of land (potential functionally connected land) and non-physical disturbance. These policies are:

- Policy SD2 – Non Allocated Sites
- Policy SD3 – Housing Target
- Policy HP8 - Meeting the Needs of Gypsies and Travellers and Travelling Showpeople
- Policy HP6 - Affordable Housing

10.15 In their response to the Initial Draft Local Plan consultation, Natural England commented that it "broadly welcomes the assessment undertaken and the evidence collected and proposed to be collected which we consider to be appropriate and robust. However we have two technical points with regards to the compliance of the assessment with the Habitats Regulations which we advise that you consider.

10.16 Firstly we note that a number of identified effects from the plan are screened out as no likely significant effects, despite significant assessment and evidence being collected. We would consider that the assessment in relation to loss of functionally connected land and non-physical disturbance, air pollution and recreational use and urban edge impacts should be considered an appropriate assessment.

10.17 This is not to say that Natural England disagrees with the assessment undertaken, which we consider to be very good (with some further work needed in places), but that we consider the Habitats Regulations Assessment terminology used to be incorrectly applied.

10.18 Secondly we note a slight discrepancy between the assessment in part 10 which notes that air pollution and recreational use and urban edge impacts cannot be ruled out at this stage until further evidence is provided and the conclusions in part 11 and appendices 5 and 6 which rule out likely significant effects in relation to these issues at this stage. We advise that strictly speaking at this stage the assessment should state that there is insufficient evidence to rule out likely significant effects (or indeed adverse effects on integrity) but that the evidence necessary is being collected.

10.19 However Natural England welcome and commend the intention to provide visitor surveys and further air quality assessment."

10.20 At present sufficient mitigation does not exist within the plan to prevent the four policies leading to likely significant effects in terms of physical loss of land and non-physical disturbance. At present no policy wording seeks to prevent any application being developed on land which is used and/or may impact foraging SPA bird communities. There is also no explicit wording making reference to the Natura 2000 sites and the value of the fringes that exist around them. In order for the policies not to have such impact the following mitigation has been development and recommended.

10.21 In order to mitigate the potential impact, specific policy wording should be adopted for Policy GN3 'Natural Environment' or included in a separate policy designed to address the findings of this report. At present the policy does not specifically prevent developments which may affect Natura 2000 sites, therefore the following policy wording has been recommended to be added to the existing policy.

> All proposed development located within the 2.5km South Pennine Moors SPA/SAC buffer and outside the urban area should undertake an ecological assessment to establish if the land is of importance to designated South Pennine Moors (phase 2) SPA species.
>
> All proposed development which may directly or indirectly compromise the conservation objectives of a European designated Natura 2000 site will not be permitted unless the proposal meets the conditions specified in regulation 61 and 62 of the Conservation of Habitats and Species Regulations 2010 (Habitats Regulations).

10.22 At present **Policy SD7** is not clear as to what specific policies are meant by the wording 'policies to protect the countryside'. It should make clear that for any exemption to policies which protect the South Pennine Moors (phase 2) SPA, the proposal would still be required to demonstrate overriding pubic interest in line with the Habitats Regulations to allow affordable housing development in area which may potentially negatively impact a Natura 2000 site.

10.23 If such recommended modifications are implemented into the Calderdale Local Plan there should be sufficient avoidance mechanisms and mitigation in place to prevent any likely significant effects on the South Pennine Moors in terms physical loss of land (potentially functionally connected) and non-physical disturbance as a result of the screened in policies and potential land allocations.

Air pollution

10.24 The traffic modelling undertaken for the now abandoned Calderdale Core Strategy, (based on similar distributions of growth around the South Pennines) has been drawn upon to initially assess the potential increase and strain on the road network and associated emissions resulting from this increase. The road network within 200m of the South Pennine Moors SAC/ SPA (phase 2), and therefore at risk on impacting the South Pennine Moors has been previously identified and described in the screening section of this report.

10.25 Due to the general distribution of growth focused within the east of the district, and therefore well away from the South Pennine Moors SAC/SPA, the traffic modelling shows that these are the areas in which the increase on the road network will likely occur most, along with the associated emissions. The baseline traffic flows for roads within 200m of the South Pennines are very low and are well within capacity of the road. The reports show that with the predicted levels of growth resulting from the Calderdale Local Plan, the road networks identified as being able to affect the Natura 2000 site are not likely to increase in significant amounts and therefore it is unlikely lead to an increase in air pollution which may impact upon the habitat vegetation of the site.

10.26 The M62 which runs within 200m of the Natura 2000 site has not be modelled, however as this is a major transport network there is a strong possibility that in-combination with other authorities plans, this network will increase. Highways England is responsible for the M62 and have been consulted on as part of the Local Plan. They are also therefore responsible for the management of the road network and any subsequent improvements needed. Therefore any impact in increases from air pollution on the M62 is beyond the scope of this assessment.

10.27 Therefore at present adverse effects on the integrity to the South Pennine Moors (phase 2) SPA and SAC as a result of air pollution arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans can be be ruled out. However it is important to state that traffic modelling is being undertaken to inform the Calderdale Local Plan, when available this assessment will be reviewed in line with the up-to-date evidence.

Recreational use and urban edge impacts

10.28 Section 5.4 outlines clear evidence of the negative impacts on increases in recreational use on both Natura 2000 sites in general (Clarke et al, 2006; Anderson, 1990) as well as the impacts on the South Pennine Moors SPA and SAC (Dowling, 2012; Pearce-Higgins et al, 2007). Whereas in no way does Calderdale Council aim to stop the recreational use of the South Pennine Moors by its residents, it is important that any increase in its use resulting from the Local Plan is managed in a sustainable way alongside the growth of Calderdale, which prevents the sites conservation objectives being compromised.

10.29 At the present time the distances and frequency travelled by residents within Calderdale to use the Natura 2000 sites is not known. This is due to the absence of targeted visitor surveys within Calderdale. Such visitor survey work is however being undertaken by Calderdale Council with the aim of filling these gaps in the evidence base and inform the mitigation needed. The results of these surveys are still required.

10.30 As this information is not available a preliminary assessment has been undertaken to help shape the mitigation and avoiding action needed. With the scale and distribution of growth proposed, and in line with the precautionary principle, the growth generated may result in some increase in recreational use. The majority of allocation of sites will however take place in the east of the district away from the Natura 2000 site boundary and is therefore less likely to result in increases of recreational impact on the moors. Some site allocation will however take place in settlements close the South Pennine Moors and these are more likely to impact the Natura 2000 site.

10.31 Some allocation and future development proposals will also likely lead to larger increases in recreational use than others, as a result of both size and proximity to the South Pennine Moors. Therefore, the following requirements should be included in allocations and future development proposals for recreational and urban extensions within 2.5km of the South Pennine Moors as well as for site allocations and future applications which are above 4 ha in size throughout Calderdale.

Hab

Allocation and applications will be required to provide natural or public open space on site. The scale and size of the natural or public open space to be provided will be determined by the size of the development. Where it is either not feasible to provide public or natural open space on site a finical contribution will be sought to facilitate the need for natural open space off-site.

10.31 This policy wording should therefore act as mitigation which should detract pressure away from the South Pennine Moors as a result of growth around the district.

10.32 The use of the Local Infrastructure Tariff (LIT) may also provide financial contributions to help manage and maintain the South Pennine Moors (phase 2) SPA/SAC as a result of an increase in recreational use. However as LIT cannot be specially be reserved for specific projects or area it cannot be guaranteed that any money from LIT could be used to help mitigate the result of the Local Plan on Natura 2000 sites.

10.33 The mitigation suggested is however preliminary in nature, due to the current lack of evidence. The level and scope of mitigation will need to be reviewed; when more detailed evidence on recreational use as well as the final site allocations is available. The mitigation may need to be stringent such as the policy wording used by Bradford Council in their Core Strategy.

10.34 Therefore, at present, adverse effects on the integrity to the South Pennine Moors (phase 2) SPA and SAC as a result of recreation impacts arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out at this stage due to the lack of evidence. This will be reviewed in a later version of the Calderdale Council HRA.

B South Pennine Moors SAC

10.35 In terms of the likelihood of potential significant effects on the identified Natura 2000 sites, the South Pennine Moors SAC along with the South Pennine Moors (phase 2) SPA are most likely to be affected as a result of the Calderdale Local Plan due to the presence of large sections of these Natura 2000 sites within the Calderdale boundary.

Recreational use

10.36 The impacts of recreational use of the South Pennine Moors SAC as a result of the Calderdale Local Plan has been assessed in conjunction with the South Pennine Moors (phase 2) SPA and therefore impacts on the SAC as a result of recreational use. See the assessment in section **10.1.3.**

10.37 The assessment stated that, at present, adverse effects on the integrity to the South Pennine Moors (phase 2) SPA and SAC as a result of recreation impacts arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out at this stage due to the lack of evidence. This will be reviewed in a later version of the Calderdale Council HRA.

Air Pollution

10.38 The impacts of air pollution of the South Pennine Moors SAC has been assessed in conjunction with the South Pennine Moors (phase 2) SPA, and therefore impacts on the SAC as a result of air pollution. See the assessment in section **10.1.2.**

10.39 The assessment stated that at present adverse effects on the integrity to the South Pennine Moors (phase 2) SPA and SAC as a result of air pollution arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans can be to be ruled out. However it is important to state that traffic modelling is being undertaken to inform the Calderdale Local Plan, when available this assessment will be reviewed in line with the up-to-date evidence.

C Peak District Moors (South Pennine Moors Phase 1) SPA

10.40 The Peak District Moors (South Pennine Moors Phase 1) SPA was screened in as having potential to be adversely impacted as a result of various components of the Calderdale Local Plan in relation to both recreational impacts and air pollution. The site adjoins the South Pennine Moors (phase 2) SPA within Kirklees and collectively the two SPA sites make up the boundary of the South Pennine Moors SAC.

Recreational use

10.41 As described in section 9 **the site allocations** along with Policy SD1 and SD2 were screened in as potentially causing likely significant effects on the Natura 2000 site and requiring further Appropriate Assessment.

10.42 Whereas the Peak District Moors are regarded as a popular area for recreation, the SPA is not located within the boundary of Calderdale and at its closest point is 5km. Therefore, there is limited availability of access to the SPA from settlements within Calderdale. The habitat and landscape found on the Peak District Moors is however very similar to that of the South Pennine Moors (phase 2) SPA which is an alternative and more accessible moorland. As a result of these factors, it is unlikely the Peak District Moors (South Pennine Moors Phase 1) SPA will receive the same expected increases of recreational pressure as the South Pennine Moors within Calderdale.

10.43 The mitigation described in section 10.1.3 for the South Pennine Moors (phase 2) SPA would also apply to the Peak District Moors SPA due to detracting recreational use from the moors and therefore associated increases in pressure. These measures include the requirement for open space provision on site for new development in line with the site's size.

10.44 Therefore, adverse effects on the integrity to the Peak District Moors (South Pennine Moors Phase 1) SPA as a result of recreation impacts arising from the allocation and policies can be screened in from the Calderdale Local Plan, and in combination with other plans cannot be ruled out.

Air Pollution

10.45 The road network within 200m of the Peak District Moors SPA and therefore at risk of impacting the Natura 2000 site has been previously identified and described in the screening section of this report. Importantly the Natura 2000 site is not within the border of Calderdale and at its closest distance is 5km for the Calderdale Boundary. Due to the distance it is unlikely that a significant amount of traffic along these road networks will originate in Calderdale.

10.46 The traffic modelling undertaken for the now abandoned Calderdale Core Strategy (based on similar distributions of growth around the South Pennines) has been drawn upon to initially assess the potential increase and strain on the road network and associated emissions resulting from this increase. The traffic modelling showed the road networks in the eastern district and flowing to Huddersfield carried some of the greatest strain. Road networks flowing into Huddersfield are beyond 200m (and therefore the risk zone) of the Natura 2000 site. It is therefore highly unlikely that any increases in traffic (and therefore air pollution) resulting from the Calderdale Local Plan will result in a significant increase in traffic close to the Peak District Moors SPA.

10.47 Therefore, at present, adverse effects on the integrity to the Peak District Moors (South Pennine Moors Phase 1) SPA as a result of air pollution arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out. However it is important to state that traffic modelling is being undertaken to inform the Calderdale Local Plan, when available this assessment will be reviewed in line with the up-to-date evidence.

D Rochdale Canal SAC

10.48 The Rochdale Canal SAC was screened in as having potential to be adversely impacted as a result of various components of the Calderdale Local Plan in relation to both recreational impacts and air pollution.

Recreational use

10.49 As described in section 9, the **site allocations within 2.5km** along with **Policy SD1 and SD2** were screened in as potentially causing likely significant effects on the Natura 2000 and requiring **further Appropriate Assessment.**

10.50 The Rochdale Canal flows through Calderdale; however at its closest point to Calderdale the Rochdale Canal SAC is located over 4km away. Such distance could be easily accessible by the western section of the district. However the majority of development is located to the Eastern section of the district, well away from the protected SAC section of the Rochdale Canal. As stated the Rochdale Canal as well as the Calder and Hebble Navigation run through Calderdale. It is therefore not considered likely that residents of Calderdale will travel to the protected section of the Canal for day to day recreational activities, when comparable sections of canal exist extensively within Calderdale.

10.51 The SAC is designated for the presence of *Luronium natans* (Floating water-plantain) within the watercourse. The Rochdale Canal Site Improvement Plan (Natural England 2014a) does not state recreational activities as a threat or pressure to the conservation objectives of the site. Also neither the Rochdale Council Core Strategy nor the Oldham Council LDF identified an increase in recreational use as causing likely significant effects to the Rochdale Canal SAC.

10.52 Therefore, adverse effects on the integrity to the Rochdale Canal SAC as a result of recreation impacts arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out.

Air Pollution

10.53 As described in section 9 the **site allocations** along with **Policy SD1 and SD2** were screened in as potentially causing likely significant affects to the Natura 2000 sites and required further Appropriate Assessment.

10.54 The Site Improvement Plan for the SAC (Natural England 2014a) lists air pollution as a pressure to the conservation objective of the site. It also states that the Nitrogen deposition exceeds the critical load as of 2014 and action is being implemented to control, reduce and ameliorate atmospheric nitrogen impacts. The SAC runs alongside (within 200m) and intersects a number of major transport routes. One of these is the A58, which passed though Calderdale and the A6033 out of Calderdale connects to. Therefore increased traffic generation created in Calderdale as a result of the Calderdale Local Plan has the potential to increase air pollution levels. However the majority of growth created as a result of the Calderdale Local Plan will be in the east of the district away from the Rochdale Canal SAC.

10.55 Traffic modelling was previously undertaken for the Calderdale Core Strategy which looked at three situations based on the core strategy distribution of growth focused within Halifax and the East of the district. No growth has been increased in the west district since the decision to move to a single Local Plan. The modelling showed that in all situations traffic routes out of Todmorden (A6033) and the A58 towards the Rochdale Canal SAC did not significantly increase in terms of traffic flow and traffic volume.

10.56 Therefore at present adverse effects on the integrity to the Rochdale Canal SAC as a result of air pollution arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out. However it is important to state that traffic modelling is being undertaken to inform the Calderdale Local Plan, when available this conclusion will be reviewed in line with the up-to-date evidence to make sure the assessment is accurate.

E Denby Grange Colliery SAC

10.57 The Denby Grange Colliery SAC was screened in as having potential to be adversely impacted as a result of various components of the Calderdale Local Plan in relation to both recreational impacts and air pollution.

Recreational use

10.58 As described in Section 9 **site allocations** along with **Policies SD1 and SD2** were screened in as potentially causing likely significant affects the Natura 2000 and requiring further Appropriate Assessment.

10.59 At its closest distance Denby Grange Colliery SAC is >10km to the Calderdale boundary. It is therefore not considered to be a particularly convenient and accessible location for day to day recreation activities. The levels of recreational activity on and around the site are also thought to be low. Neither the Site Improvement Plan (Natural England, 2014c) list recreational activity as a threat or pressure to the site ability to meets its conservation objectives.

10.60 Therefore, adverse effects on the integrity to Denby Grange Colliery SAC as a result of recreation impacts arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out.

Air Pollution

10.61 As described in section 9 the **site allocations** along with **Policy SD1 and SD2 (Sustainable Development)** were screened in as potentially causing likely significant affects to the Natura 2000 sites and required further Appropriate Assessment.

10.62 The A637 runs within 200m of Denby Grange Colliery SAC. Several roads run out of Calderdale and into Kirklees. Air pollution resulting from an increase in traffic along that route could indirectly affect the qualifying great crested newt as a result of changes to the chemistry structure of the habitats. As any increase in traffic as a result of the Calderdale Local Plan would flow into Kirklees in order to access this route, impacts needs to be considered in-combination with the Kirklees Local Plan. Due to the distance from the SAC and Calderdale it is however unlikely that a significant amount of traffic along this road network will originate in Calderdale as the site is neither directly adjacent to Calderdale nor situated on a direct road connection to Calderdale[24]. The Site Improvement Plan (Natural England, 2014c) does not list air pollution as a threat or pressure on the sites ability to achieve its conservation objectives.

10.63 Therefore, adverse effects on the integrity to Denby Grange Colliery SAC as a result of air pollution arising from the allocation and policies screened in from the Calderdale Local Plan and in combination with other plans cannot be ruled out.

10.64 Natural England in their consultation response also identified the Humber Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar.

[24] The route would have to pass though the Huddersfield ring road (A62).

Recreational Use

10.65 Rivers, lakes, estuaries, coastal areas, wetlands and water under the ground provide many different benefits to society; from supplying drinking water and supporting fisheries to providing an essential resource for business and agriculture, transport routes and a source of recreation that promotes wellbeing. It is critical that this precious resource is managed properly to ensure that the needs of society, economy and wildlife can be met and maintained over the long-term. The purpose of a river basin management plan is to provide a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs

decisions on land-use planning. The Humber Estuary SPA and SAC falls within the Calderdale boundary. Due to the lack of visitor survey information, the level of recreational activity on and around the site is unknown but thought to be low.

Air Pollution

10.66 As described in section 9 the **site allocations** along with **Policy SD1 and SD2 (Sustainable Development)** were screened in as potentially causing likely significant affects to the Natura 2000 sites and required further Appropriate Assessment. The Site Improvement Plan for the SAC (Natural England 2014a) lists air pollution as a pressure to the conservation objective of the site. It also states that the Nitrogen deposition exceeds the critical load as of 2014 and action is being implemented to control, reduce and ameliorate atmospheric nitrogen impacts. The SAC runs alongside (within 200m) and intersects a number of major transport routes. One of these is the A58, which passed though Calderdale and the A6033 out of Calderdale connects to. Therefore increased traffic generation created in Calderdale as a result of the Calderdale Local Plan has the potential to increase air pollution levels.

10.67 In response to the Initial Draft Local Plan consultation, Natural England comments that "we broadly welcome the assessment, particularly the inclusion of bird survey information, however we have a number of suggestions to make in relation to the assessment of impacts on loss of functionally connected land and non-physical disturbance.

10.68 Firstly we consider that the assessment of sites within the 2.5km buffer zone to be an appropriate assessment rather than an assessment of likely significant effects. In addition we would welcome further details of the analysis of sites within the 2.5km buffer in relation to site constraints which make allocations unlikely to be favourable to South Pennine Moors Phase 2 SPA birds (such as disturbance and overlooking buildings or trees) and the findings of the bird surveys.

10.69 We note also that the assessment of sites in appendix 6 notes a degree of uncertainty with regards to the timing and nature of proposals at the project stage for sites within 2.5km of the the South Pennine Moors Phase 2 SPA. We agree with this uncertainty and advise that you consider including a policy requirement in the plan in relation to assessing the impact of proposals at the project level when details of timing and the nature of the proposal are clearer. This is particularly important for the sites identified in table 11 of section 10 but also those in table 10 within 2.5km which are currently either grassland or arable sites and do not have very significant constraints to use by SPA birds. This could either be in the form of site specific requirements in the plan or as part of policy GN3".

11 Conclusions

11.1 The HRA of the Calderdale Local Plan has been undertaken in line with the current available guidance available as well as input from Natural England. The assessment is also based on a precautionary approach as required under the Habitats Regulations.

11.2 Provided that the mitigation and avoidance measures recommended in this report are adopted, the plan is unlikely to result in significant adverse effects to any of the identified Natura 2000 sites (South Pennine Moors SPA (phase 1 & 2), South Pennine Moors SAC, Rochdale Canal SAC and Denby Grange Colliery Ponds SAC) in relation to (1) physical loss of land (including off-site functionally connected land) (2) non-physical disturbance and (3) impacts on water quality and quantity.

11.3 However it is still uncertain at this stage as to whether some elements of the plan have the potential to result in significant adverse effects to the South Pennine Moors (phase 2) SPA & SAC. This is the result of the impact of air pollution from traffic and recreational impact on the moor.

11.4 The Court of the European Union case of *People Over Wind and Sweetman v Coillte Teoranta* is noted but has not yet been taken fully into account.

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