NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Appendix 23.1 Extended Phase 1 Habitat Survey Report (Part 3 of 3)

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Offshore Wind Farm

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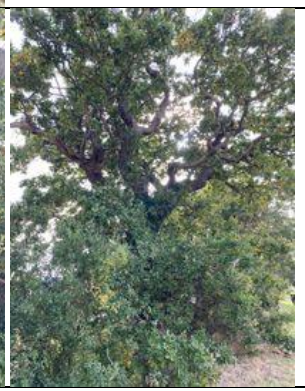
Bat roost feature reference	Notes	Habitat suitability	Photographs
BR180	Mature potentially veteran oak with some cracked limbs and split bark.	Moderate	 
BR181	Mature oak with no visible PRFs	Negligible	
BR182	Mature oak with one visible hole.	Low	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR183	Large, potentially veteran oak with split trunk and woodpecker holes	Moderate	  
BR184	Mature oak with large hole and cracked limbs	Moderate	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR185	Two mature oak with limited visible PRFs	Low	
BR186	Large mature ivy clad oak with limited visible PRFs	Low	
BR187	Mature ivy clad oak with cracks and holes	Moderate	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR188	Mature ivy clad oak with some cracks and holes.	Moderate	
BR189	Mature oak in roadside hedge. Ivy clad with some cracked limbs	Low	
BR190	Standalone mature oak with a cracked limb however largely isolated from wider habitat	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR191	Semi mature oak with some visible holes and cracked limbs, however nothing substantial and largely unconnected to wider habitats	Low	
BR192	Mature oak with no visible PRFs	Negligible	
BR193	Mature ivy clad oak with some visible cracked limbs	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR194	Mature oak with some visible PRFs	Low	
BR195	Mature oak behind hedge, no visible PRFs	Negligible	
BR196	Mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR197	Large mature oak with limited visible PRFs	Low	
BR198	Two Large mature oak, potentially veteran with some visible cracks and holes though largely disconnected from wider habitat.	Low	
BR199	Mature ash tree, no visible signs of PRF. Present within intact hedge	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR200	Mature ash tree, visible signs of PRF. Present within intact hedge	Moderate	
BR201	Mature oak tree, no visible signs of PRF. Present within intact hedge	Low	
BR202	Mature oak tree, visible signs of PRF. Present within intact hedge	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR203	Mature oak tree, visible signs of PRF. Present within intact hedge	Moderate	
BR204	Large ivy clad oak with a few cracked limbs.	Low	
BR205	Mature potentially veteran oak with multiple holes visible.	Moderate	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR206	Mature oak with limited visible PRFs	Low	
BR207	Trees in hedge look to have limited suitability for roosting bats, however closer inspection impossible due to electric fencing and horses.	Low	 
BR208	Mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR209	Mature ivy clad oak with a few visible holes though depth is questionable.	Low	
BR210	Mature oak with dead branches on top. Multiple holes visible, look to be woodpecker	Moderate	 
BR211	Mature oak with several visible holes and a potential woodpecker hole	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR212	Mature oak on field boundary with limited visible PRFs	Low	
BR213	Potentially veteran oak with visible holes and cracks	Moderate	 
BR214	Mature ivy clad oak with limited visible PRFs	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR215	Mature ash with multiple woodpecker holes visible. Landowner mentioned seeing green woodpecker regularly.	Moderate	 
BR216	Mature oak with no visible PRFs	Negligible	
BR217	Mature ash tree with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR218	Two oaks along field boundary with some visible PRFs however look to be to open to weather.	Low	 
BR219	Large mature oak with a few visible holes suitable for roosting bats.	Moderate	 
BR220	Large mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR221	Two mature oak with no visible holes, though unable to properly observe from other side	Low	
BR222	Mature walnut tree with two visible holes	Moderate	  

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR223	Large mature oak with visible crack and holes and dead branches	Moderate	
BR224	One oak, near hedges, limited visible PRF, mature	Low	
BR225	One oak, isolated, limited visible PRF, semi-mature	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR226	3 oaks, part of defunct hedge, limited visible PRF, mature	Low	 
BR227	One oak, in defunct hedge, limited visible PRF, semi-mature	Low	
BR228	One oak, in defunct hedge, limited visible PRF, semi-mature	Low	

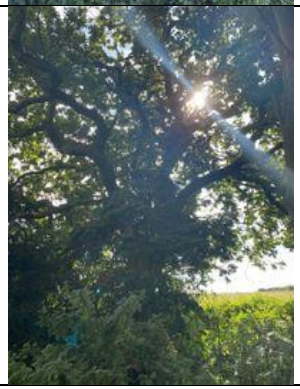
Bat roost feature reference	Notes	Habitat suitability	Photographs
BR229	One oak, isolated, limited visible PRF, semi-mature	Negligible	
BR230	Two Oak tree semi-mature. No PRFs visible, isolated	Negligible	
BR231	Two oaks, isolated, limited visible PRF, semi-mature	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR232	One oak, isolated, potential visible PRF, semi-mature,	Negligible	
BR233	Two oaks, isolated, limited visible PRF, semi-mature	Negligible	 
BR234	One Oak tree mature and dead. Some PRFs visible, semi-isolated in defunct hedge.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR235	One Oak tree mature. Some PRFs visible, semi-isolated in defunct hedge.	Low	
BR236	One Oak tree mature. No PRFs visible, semi-isolated in defunct hedge.	Low	
BR237	One Oak tree mature. Some PRFs visible, semi-isolated in defunct hedge.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR238	Mature oak tree, no visible PRFs, ivy clad, part of dense scrub.	Low	
BR239	Mature oak tree, no visible PRFs, part of dense scrub.	Low	
BR240	Mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR241	Mature oak with some cracked limbs however look to be unsuitable for roosting bats	Negligible	
BR242	Mature oak with no visible PRFs	Negligible	
BR243	Large mature oak with several holes present.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR244	2 x mature oak with limited visible PRFs	Low	
BR245	Mature oak in hedge with no visible PRFs	Negligible	
BR246	Mature oak with a few visible PRFs	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR247	Mature oak adjacent to pond with some visible holes	Moderate	
BR248	Mature oak in hedge, several visible holes and cracks	Moderate	
BR249	Mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR250	Mature oak with some visible PRFs	Moderate	 
BR251	Mature oak with no visible PRFs	Negligible	
BR252	One oak, part of defunct hedge, some PRF, dead tree	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR253	One oak, semi-isolated in line of trees, limited visible PRF, mature	Low	
BR254	One oak tree semi-mature. Some PRFs visible, semi-isolated in defunct hedge.	Moderate	 
BR255	One oaks tree semi-mature. Some PRFs visible, semi-isolated in defunct hedge.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR256	One Oak tree mature. Some PRFs visible, semi-isolated in defunct hedge.	Moderate	 
BR257	One Oak tree mature. Some PRFs visible, semi-isolated in defunct hedge.	Moderate	 
BR258	One Oak tree semi-mature. No PRFs visible, semi-isolated in defunct hedge.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR259	One Oak tree semi-mature. No PRFs visible, semi-isolated in defunct hedge.	Negligible	
BR260	One Oak tree mature and completely hollow. Some PRFs visible but completely hollow, semi-isolated in defunct hedge.	Negligible	
BR261	One Oak tree semi-mature. No PRFs visible, semi-isolated in defunct hedge.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR262	One Oak tree mature and nearly dead. Some PRFs visible, semi-isolated in defunct hedge.	Low	
BR263	One Oak tree mature. No PRFs visible, semi-isolated in defunct hedge.	Negligible	
BR264	One Oak tree semi-mature. No PRFs visible, semi-isolated in defunct hedge.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR265	Barn with holes and cracked tiles. Adjacent to good commuting and foraging habitat.	Moderate	   
BR266	One Oak tree mature dead. No PRFs visible, semi-isolated	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR267	One Oak tree mature. Some PRFs visible, semi-isolated in defunct hedge.	Low	
BR268	One Oak tree mature. Some PRFs visible, part of intact hedge.	Moderate	 
BR269	Large mature oak with some splits and cracks visible.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR270	Mature oak with some visible splits and cracks	Low	
BR271	Four oak, isolated along field boundary. Observed with binoculars, no visible PRFs and all are semi mature.	Negligible	
BR272	Large mature potentially veteran oak with a few cracked limbs.	Low	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR273	Two mature oaks with no visible PRFs	Negligible	 
BR274	Mature, potentially veteran oak. No visible holes though several knots present which may have access inside	Low	 
BR275	Mature oak with no visible PRFs.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR276	Mature oak with large hole and additionally cracks, though tree trunk is rather small. Potential opportunistic roosting only.	Low	 
BR277	Mature willow with at least one visible hole. Some discolouration visible.	Moderate	 
BR278	Semi mature oak with no visible PRFs	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR279	Looks like potential remnant section of hedge, with hawthorn and semi mature oak. No suitability for roosting bats	Negligible	
BR280	Mature oak with splits and cracks however nothing that looks substantial.	Low	
BR281	Mature ash with a few cracks but nothing substantial	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR282	Mature, potentially veteran sycamore with cracks and broken limbs.	Moderate	 
N/A	*BR283-BR303 not used*	N/A	N/A
BR304	Large mature ivy clad oak, difficult to see any potential PRFs.	Low	
BR305	Mature oak with large hole, potentially woodpecker.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR306	Mature oak with no visible PRFs	Negligible	
BR307	Mature oak with multiple holes, adjacent to hedgeline and close to woodland.	Moderate	 
BR308	Mature willow with lots of visible woodpecker holes that could potentially be used by roosting bats.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR309	Large mature ivy clad oak with some cracked limbs	Low	
BR310	Mature oak with one visible hole, potential staining present on outside.	Moderate	 
	BR311 not used	N/A	N/A
BR312	Single tree with negligible potential for roosting bats given absence of suitable PRFs.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR313	Group of willow trees assessed as providing moderate to high bat potential.	Moderate	
BR314	Willow tree assessed as providing moderate to high bat potential.	Moderate/high	
BR315	Group of willow trees with sections of fallen limbs. All assessed as providing moderate to high potential for supporting roosting bats.	Moderate/high	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR316	Single willow trees assessed as negligible for roosting bats due to absence of suitable PRFs.	Negligible	
BR317	Single willow trees assessed as negligible for roosting bats due to absence of suitable PRFs.	Negligible	
BR318	Trees assessed as providing negligible potential for roosting bats due to absence of suitable PRFs.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR319	Single tree assessed as providing moderate-high suitability for roosting bats due to presence of suitable PRFs.	Moderate/high	
BR320	Tree assessed as providing low - negligible potential for roosting bats due to limited number of PRFs.	Low/negligible.	 
BR321	Single tree assessed as providing negligible bat potential.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR322	Area of oak saplings (negligible bat potential) with bramble, hawthorn, dogrose scrub present.	Negligible	
BR323	Rabbit holes present. Single structure (brick) with a tiled roof. Exposed eaves and assessed as providing low to moderate bat potential.	Low/moderate	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR324	Two oak trees with broken limbs, rot holes and areas of loose bark present. Assessed as providing low bat potential.	Low	 
BR325	Single oak tree with loose bark and broken limbs. Assessed as providing low bat potential.	Low	
BR326	Group of elder trees, all of which assessed as providing negligible to low bat potential. Some are ivy clad and associated bramble scrub also present.	Negligible	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR327	Willow tree with broken limb and exposed bark - assessed as providing moderate bat potential	Moderate	 
BR328	Willow tree with exposed holes and loose bark - assessed as providing low bat potential	Low	 
BR329	Three single trees within hedge line assessed as providing low bat potential. Loose bark and broken limbs also present.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR330	Single willow tree with broken limb assessed to provide moderate bat potential.	Moderate	 
BR331	Three mature willow trees with broken limbs and assessed as providing low bat potential.	Low	
BR332	Veteran oak tree which is isolated in landscape. May provide limited roosting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR333	Veteran tree with woodpecker and knot holes. Potential roosting habitat, part of hedgerow network.	Low	
BR334	Veteran oak within moderate suitability woodland with holes and crevices which may provide roosting habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR335	Veteran oak tree with crevices and holes which may provide roosting habitat for bats. Within woodland with connectivity to wider landscape.	Moderate	
BR336	Tiny knot hole, however located in good commuting habitat (woodland).	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR337	Veteran oak tree with woodpecker hole which may provide roosting habitat. Within hedgerow and connected to good woodland habitat.	Moderate	
BR338	Veteran oak tree with crevices which may provide roosting habitat. Within hedgerow and connected to good woodland habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR339	Veteran oak tree with crevices and holes which may provide roosting habitat. Within hedgerow and connected to good woodland habitat.	Moderate	
BR340	Veteran oak tree with crevices and holes which may provide roosting habitat. Within hedgerow and connected to good woodland habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR341	Veteran oak tree with crevices which may provide roosting habitat. Within hedgerow and connected to good woodland habitat.	Moderate	
BR342	Veteran oak, large cavity 3m above ground. Located in good foraging habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR343	Dead oak, 3 woodpecker holes in trunk. Could support larger roost, also in well connected woodland.	Moderate	
BR344	Veteran ash tree with broken limb and crevices, within woodland providing potential roosting habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR345	Mature ash tree with 3 large woodpecker holes in upper trunk. Located in mature woodland.	Moderate	
BR346	Mature oak with cracks, located in species-poor hedgerow but near woodland to south.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR347	Veteran oak tree with some small crevices which may provide roosting habitat. Part of hedgerow network connected to wider landscape including woodland. Adjacent to road.	Low	
BR348	2x veteran oak trees with broken limbs providing potential capacity for a larger roosts. Part of hedgerow providing connectivity to wider landscape.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR349	Mature oak, large crack in open trunk, but isolated in landscape.	Low	
BR350	Mature oak with old woodpecker hole, potential for large, sheltered cavity inside. Very isolated in landscape (500m from foraging), in centre of arable fields.	Low	No photograph
BR351	Veteran oak tree with crevices and some holes which may provide roosting habitat. Within hedgerow and adjacent to field drain which provides connectivity to wider landscape including woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR352	Veteran oak tree with crevices which may provide roosting habitat. Within hedgerow providing some connectivity to wider landscape and adjacent to stream.	Moderate	
BR353	Large veteran oak with many limbs and lots of ivy cover which may provide roosting habitat for bats. Within hedgerow providing some connectivity to wider landscape including woodland. Also adjacent to stream.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR354	Veteran oak with small cavity in dead limbs. Isolated in landscape.	Low	
BR355	Veteran ivy covered oak which may provide roosting habitat for bats. Within a hedgerow which provides some connectivity to wider landscape including woodland.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR356	Mature oak with small cavity in dead limbs. Isolated in landscape.	Low	
BR357	Veteran oak tree with crevices which may provide roosting habitat. Within hedgerow providing some connectivity to wider landscape including woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR358	Mature oak with small cracks in dead limbs. Isolated in landscape.	Low	
BR359	Mature oak with large exposed opening in trunk. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR360	3x woodpecker hole in upper trunk of mature ash tree. Located in hedgerow, but isolated from wider landscape.	Low	
BR361	Elm tree with woodpecker hole in upper trunk. Located in hedgerow, but isolated from wider landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR362	Mature alder, small cracks around knot holes, but located adjacent to excellent foraging habitats around Tendring Brook.	Moderate	
BR363	Mature oak, small cracks around knot holes, but located adjacent to excellent foraging habitats around Tendring Brook.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR364	Mature willow, small crevices in trunk and covered in loose ivy, but located in excellent foraging habitat, by pond and Tendring Brook.	Moderate	
BR365	Mature willow, small crevices, but located in excellent foraging habitat, by pond and Tendring Brook.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR366	Mature oak, small cracks and crevices but located adjacent to excellent foraging habitats around pond and Tendring Brook.	Moderate	
BR367	Veteran willow tree with large fallen branch providing a scar and crevices for potential roosting. Adjacent to pond and Tendring Brook, therefore well connected to surrounding habitat and other local woodland habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR368	Tree with fallen crown, large crevices within trunk / branches which may provide roosting habitat. Within mature woodland adjacent to Tendring Brook and pond habitats as well as wider connectivity to other woodland habitat.	Moderate	
BR369	Mature oak tree with ivy cover which provide potential bat roosting habitat. Connected to linear commuting and foraging habitat to other woodland parcels and adjacent to Tendring Brook.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR370	Tall dead stump with woodpecker holes which provide potential bat roosting habitat. Connected to linear commuting and foraging habitat to other woodland parcels and adjacent to Tendring Brook.	Moderate	
BR371	Veteran willow tree with broken limbs and crevices which provide potential bat roosting habitat. Connected to linear commuting and foraging habitat to other woodland parcels and adjacent to Tendring Brook.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR372	Veteran willow tree with ivy cover and crevices which provide potential roosting habitat. Connected to linear commuting and foraging habitat to other woodland parcels and adjacent to Tendring Brook.	Moderate	
BR373	Mature oak tree with woodpecker holes and crevices which provide potential roosting habitat. Connected to linear commuting and foraging habitat to other woodland parcels and adjacent to Tendring Brook.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR374	Mature oak no obvious PRFs, but cannot see canopy in full. In good connecting habitat.	Low	
BR375	Veteran oak clad with ivy although with no other obvious PRFs, isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR376	Veteran oak clad with ivy although with no other obvious PRFs, isolated in landscape.	Low	
BR377	Veteran oak clad with ivy although with no other obvious PRFs, isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR378	Veteran oak clad with ivy although with no other obvious PRFs, isolated in landscape.	Low	
BR379	Mature oak with small crack under immature ivy, isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR380	Veteran ash, ivy clad, large crack present. Isolated in landscape.	Moderate	
BR381	Mature oak with some crevices which may provide roosting material. well connected to woodland and wider landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR382	Mature oak covered with ivy which may provide some roosting habitat. Within woodland and well connected to wider landscape and other local woodland.	Low	
BR383	Veteran oak tree with small crevices and many limbs. Potential roosting habitat with good connectivity to landscape and woodland via stream and hedgerow.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR384	Mature oak with small cracks in limb. On edge if tree line, but connected to Tendring Brook to south.	Low	
BR385	Collection of farm buildings (8 no.), some old brick buildings and some corrugated steel barns. Potential roosting space under roof flashing, especially the brick buildings. Connecting habitat to south.	Moderate	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
			
BR386	Veteran oak, ivy clad, well connected by watercourse and woodland	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR387	Veteran oak clad with ivy, in woodland by watercourse. Well connected.	Moderate	
BR388	Veteran oak with large hole in trunk, not exposed to elements. Isolated in landscape, but woodland to north and south.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR389	Mature oak, isolated in landscape but woodlands nearby. Minimal PRFs observed.	Low	
BR390	Veteran oak, large empty cavity, isolated in landscape but woodland to north.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR391	Veteran oak, with large open scar. Potential for moderate internal roost. Good connecting habitat with woodland to north.	Moderate	
BR392	Dead oak with large cavities under bark. Located in good foraging habitat, wet woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR393	Mature oak tree with ivy cover, connected to foraging habitat and woodland, potential roosting habitat.	Low	
BR394	2x veteran oaks with extensive ivy cover and large crevices, located in semi-natural woodland with ponds and field margin/hedgerows adjacent.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR395	Oak tree with woodpecker holes. Within woodland that is well connected to surrounding landscape. Provides potential roosting habitat.	Moderate	
BR396	Veteran oak, small crevices in upper limbs. Located in leylandii hedgerow. Near pond for foraging.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR397	4x barns - exposed internal timbers, but small cracks and crevices under the flashing suitable for temporary roosts.	Low	
BR398	Mature oak with small knot hole and crevices. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR399	Veteran oak, with no obvious crack or crevices but of sufficient age to have some present. Isolated in landscape.	Negligible	
BR400	2x veteran oaks with multiples small cracks in old knot holes. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR401	Mature ash, woodpecker hole in bole. Isolated in landscape.	Low	
BR402	2x mature oaks, large crack near top and immature ivy present.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR403	3x mature oaks, ivy-clad with potential PRFs present underneath. Isolated in landscape.	Low	
BR404	Mature oak with crack in dead limbs and immature ivy. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR405	Mature oak with cracks in dead limbs and ivy-clad. Isolated in landscape.	Low	
BR406	Mature oak with exposed dead limb. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR407	Veteran oak tree with some cracks and crevices, connected to pond habitat and reasonable connection to wider landscape.	Low	
BR408	Veteran oak, small crevices in dead limbs. Isolated in wider landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR409	Veteran oak with cavity under bark and cracks in dead limbs. Good foraging and roosting into woodland to east.	Moderate	
BR410	Mature isolated oak tree, no obvious PRFs.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR411	Veteran oak with holes and crevices which may provide roosting habitat. However relatively isolated in landscape, although close to woodland.	Low	
BR412	Mature oak with small cracks in trunk. Isolated in landscape	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR413	Mature oak with small cracks in trunk. Isolated in landscape	Low	
BR414	Mature oak tree with small crevices, but isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR415	Mature ash tree with woodpecker hole, but isolated in landscape.	Low	
BR416	Oak tree with large cavity in centre, potential roosting habitat for bats. However, isolated in landscape with no connectivity to other habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR417	Large cavity inside trunk, but exposed to elements. Isolated in landscape.	Low	
BR418	Oak tree with woodpecker hole which may provide some roosting habitat. Low connectivity to surrounding landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR419	Dead oak with multiple crevices, part of hedgerow network with moderate connectivity.	Moderate	
BR420	Mature oak, medium crack in bark near crown. In good linear habitat connecting to nearby woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR421	Mature oak, no obvious cracks or features, although noted that canopy cannot be viewed in full.	Negligible	
BR422	Large oak tree with ivy cover providing limited roosting opportunities. Adjacent to road and part of hedgerow with good connectivity to wider landscape and woodland.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR423	Mature oak with crevices under loose bark, in woodland by pond, with drains nearby providing good connecting habitat.	Moderate	
BR424	Dead sycamore with large scars in trunk, holes in woodland, with drains nearby providing good connecting habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR425	Tree with dead branches and cavities providing potential for roosting habitat within woodland, with good connectivity to wider landscape.	Moderate	
BR426	Dead oak tree with woodpecker holes and cavity in one side (not visible in photo). Potential roosting habitat, part of woodland with good connectivity to commuting and foraging habitat in wider landscape.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR427	Dead sycamore x2, with large knot holes/scars in trunks, in woodland, with drains nearby providing good connecting habitat.	Moderate	
BR428	Dead sycamore with large knot holes in woodland, with drains nearby therefore good connecting habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR429	Ivy-covered veteran oak tree with cavity in one limb. Potential for larger bat roost which is well connected to wider habitat and adjacent to woodland.	Moderate	
BR430	Mature sycamore, no obvious holes or cracks although cannot see canopy in full.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR431	Mature ivy clad oak no obvious PRFs but ivy may provide some. Good connecting habitat to woodland to east.	Low	
BR432	Mature sycamore, minor holes or cracks, good connecting habitat to woodland to east.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR433	Mature ivy clad sycamore, no obvious PRFs but ivy may provide some. Moderate connecting habitat to woodland to east. Dead sycamore with new PRFs adjacent.	Low	
BR434	Mature oak tree with significant ivy cover and branch cavity. Provides potential roosting habitat with connectivity to woodland and wider landscape.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR435	Mature oak tree within hedgerow with good connectivity to wider landscape and woodland. No ivy cover, but small holes and cavities.	Low	
BR436	Veteran oak with significant central cavity providing potential large capacity bat roost habitat with reasonable connectivity to wider landscape including woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR437	Mature oak, significant ivy cover, within hedgerow with good connectivity to woodland and wider landscape.	Low	
BR438	Mature oak with significant ivy cover, part of hedgerow with good connectivity to wider landscape including some woodland.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR439	Mature oak with cavity, part of hedgerow with good connectivity to wider landscape.	Moderate	
BR440	Mature ivy clad oak no obvious PRFs but ivy may provide some. No surrounding habitat, but watercourse to west.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR441	Mature oak, no visible PRFs and isolated. Note watercourse to west (300m).	Negligible	
BR442	Mature oak, no visible PRFs and isolated. Note watercourse to west (200m).	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR443	3x mature oaks, no visible PRFs, and isolated, although watercourse to west.	Low	
BR444	2x mature oaks, no visible PRFs, and isolated, although watercourse to west.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR445	Mature oak, no visible PRFs, and isolated, although watercourse adjacent.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR446	2x mature oaks, 1 visible PRF (small hole in limb and isolated, although watercourse to west).	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR447	Mature oak, small PRFs in dead limb, and isolated, although watercourse adjacent.	Low	
BR448	Mature oak, small PRFs in dead limb, and isolated, although watercourse adjacent.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR449	Mature oak and mature ash, small PRFs in dead limbs, and isolated, although watercourse adjacent.	Low	
BR450	3x mature ash trees, no visible PRFs and isolated, although watercourse to west.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR451	4x mature oak trees, no visible PRFs and isolated, although watercourse adjacent.	Negligible	
BR452	Mature oak overhanging stream. Small PRFs in dead limbs. Stream provides connectivity, but no vegetation.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR453	Veteran oak, with large hollow central cavity. Adjacent to stream and hedgerow, and woodland away to north. Could support larger roost.	Moderate	
BR454	Veteran oak tree with large cavity in centre. Part of hedgerow providing connectivity to wider landscape including woodland. Potential for larger capacity roost.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR455	Mature oak with significant ivy cover. Crevices may provide roosting habitat, within hedgerow providing connectivity to wider landscape including woodland.	Moderate	
BR456	Veteran dead oak, small crack and crevices visible, adjacent to ponds and a small woodland.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR457	Oak tree with some crevices, and some holes. Within hedgerow providing some connectivity to wider landscape.	Low	
BR458	Mature oak tree with crevices in trunk and woodpecker hole, providing potential bat roosting habitat. Located within hedgerow providing some connectivity to wider landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR459	Veteran oak with dense ivy, could provided limited PRFs. Good lake and ditch foraging nearby.	Low	
BR460	Veteran oak with dense ivy, could provided extensive PRFs. Good lake and ditch foraging nearby.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR461	Veteran oak huge but exposed cavity inside, suitable for large roost. However tree is isolated.	Moderate	
BR462	Mature oak, moderate cavity, but isolated - nearby woodland has minimal roosting features.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR463	Veteran oak tree with a hole in trunk potentially providing roosting opportunities. However, poorly connected to wider landscape.	Low	
BR464	Mature oak with woodpecker holes, in woodland and adjacent to ditches providing connecting habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR465	Veteran oak, with moderate cavities in decaying limbs. Connected via stream to foraging ponds near farmhouse.	Moderate	
BR466	Veteran oak, with small cavities in limbs. Connected via stream to foraging ponds near farmhouse.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR467	Veteran oak, with moderate cavities in decaying trunk. Connected via stream to foraging ponds near farmhouse.	Moderate	
BR468	Veteran oak, large cavities capable of supporting large roosts. Some limited commuting habitat to the south.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR469	Veteran oak tree with crevices, potential large bat roosting habitat with connectivity to wider habitat within hedgerow.	Moderate	
BR470	Veteran oak, covered in ivy, with potential PRFs beneath, connecting habitat of scrub to south.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR471	Veteran oak, covered in ivy, but limited PRFs underneath, connecting habitat of scrub to south.	Low	
BR472	Veteran oak, covered in ivy, but limited PRFs underneath, connecting habitat of scrub to south.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR473	Veteran oak tree with large cavity and ivy cover, potential roosting habitat within a hedgerow providing commuting and foraging connectivity to wider landscape.	Moderate	
BR474	Veteran oak, covered in ivy, but limited PRFs underneath, connecting habitat of scrub to south.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR475	Veteran oak, covered in dead ivy, but limited PRFs underneath, connecting habitat of scrub to south.	Low	
BR476	Veteran oak, covered in ivy, and with limited cavities underneath, connecting habitat of scrub to south.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR477	Veteran oak, covered in ivy, and with limited cavities underneath, connecting habitat of scrub to south.	Low	
BR478	Veteran oak, with limited cavities connecting habitat of hedgerow to south.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR479	Veteran oak, with ivy providing PRFs. Limited connectivity.	Low	
BR480	Veteran oak, large cavities capable of supporting large roosts. However isolated from commuting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR481	Veteran oak, large cavities capable of supporting large roosts. However isolated from commuting habitat.	Low	
BR482	Veteran oak, large cavities capable of supporting large roosts. However isolated from commuting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR483	Veteran oak, large cavities capable of supporting large roosts. More isolated than adjacent tree to the north.	Moderate	
BR484	Veteran oak, covered with ivy - potential PRFs under ivy. More isolated than adjacent tree to north.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR485	Veteran oak tree with crevices. Potential larger bat roosting site with connectivity to other commuting and foraging habitat within wider landscape.	Moderate	
BR486	Line of mature black poplar with ivy, all with low bat potential with small crevices underneath the ivy.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR487	Veteran oak tree, cavity in centre and scar down trunk. Potential large roosting habitat, however isolated in landscape.	Moderate	
BR488	Veteran oak tree, potential cavity inside which may provide capacity for larger bat roosting habitat. Isolated in landscape.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR489	Veteran oak, decaying bark around limbs provides crevices, suitable for small roosts. Isolated.	Low	
BR490	Veteran oak, decaying bark around limbs provides crevices, suitable for small roosts. Isolated.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR491	Oak tree with significant ivy cover, potential for roosting habitat underneath ivy. Low connectivity to surrounding landscape	Moderate	
BR492	Veteran isolated oak, ivy provides for opportunistic roosting.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR493	Veteran isolated oak, small crack for opportunistic roosting.	Low	
BR494	Veteran oak, large open cavity in centre, suitable for larger roost. Isolated, but ditch provides some nearby foraging habitat.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR495	Mature oak tree covered in mature ivy. Potential for extensive roosting habitat below ivy. Isolated in landscape.	Moderate	
BR496	Mature oak tree with some crevices. Isolated in landscape.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR497	Mature oak tree, potential for extensive roost space underneath retained bark. In a mature tree line connected to plantation woodland.	Moderate	
BR498	Veteran oak tree with cavity inside, therefore potential capacity for large roost. However, very isolated in landscape, so limited connectivity to supporting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR499	Veteran oak tree with cavity inside, therefore potential capacity for large roost. However, very isolated in landscape, so limited connectivity to supporting habitat.	Low	
BR500	Veteran oak tree with cavity inside, therefore potential capacity for large roost. However, very isolated in landscape, so limited connectivity to supporting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR501	Veteran oak tree, huge open cavity, exposed to the elements but with multiple roosting opportunities. However very isolated, with no nearby suitable foraging/commuting habitat.	Low	
BR502	Veteran oak tree with cavity inside, therefore potential capacity for large roost. However, very isolated in landscape, so limited connectivity to supporting habitat. Epiphytic hawthorn growing out of cavity.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR503	Veteran oak tree, cavity exposed to the elements. However very isolated, with no nearby suitable foraging/commuting habitat.	Low	
BR504	Mature oak tree with crevices potentially suitable for roosting. Part of a mature hedgerow with good commuting routes from tree.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
			
BR505	Veteran oak, with large decay cavity in centre, but open to elements and vulnerable to ground predators. Isolated in landscape.	Low	

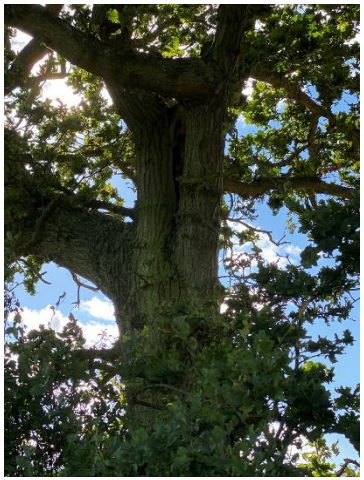
Bat roost feature reference	Notes	Habitat suitability	Photographs
BR506	Old woodpecker hole, in broken willow branch. Exposed to the elements.	Low	
BR507	Old woodpecker hole within mature tree, with larger cavity inside and safe from ground predators. 2x other openings.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
			
BR508	Mature oak with crevices. However, isolated from surrounding potential habitat features.	Negligible	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR509	Mature oak tree with woodpecker hole. Potential for roosting, part of mature hedgerow with links to wider habitat.	Low	
BR510	Large barn, multiple openings around eaves, could not see inside, but potential for summer roosts.	Moderate	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR511	Mature oak, a number of holes and openings present, although largely isolated landscape.	Low	
BR512	Mature oak, 2x tiny pipistrelle-sized holes present.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR513	Semi-mature oak, thick ivy providing gaps beneath it. Isolated.	Low	
BR514	Large scar in mature hawthorn tree, exposed to elements, limited connecting habitat.	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR515	Mature oak with crack with potential holes inside, however tree doesn't look to be substantial enough to support a bat roost. Potential opportunistic roosting only, if enough cover from the elements	Low	 

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR516	Mature oak in hedge with a few visible cracks and holes, though doesn't appear to be substantial enough for protection against elements	Low	
BR517	Mature oak in hedge with a few visible cracks and holes, though doesn't appear to be substantial enough for protection against elements	Low	

Bat roost feature reference	Notes	Habitat suitability	Photographs
BR518	Mature oak with a few visible holes but nothing substantial	Low	
BR519	Mature potentially veteran oak with lots of holes and cracks, however potentially quite isolated from commuting and foraging habitat.	Low	

Appendix F – Full HSI Assessment Results

Pond ID	Date of HSI	SI 1: Location	SI 2: Pond area	SI 3: Pond drying	SI 4: Water Quality	SI 5: Shade	SI 6: Waterfowl	SI 7: Fish	SI 8: Pond count	SI 9: Terrestrial habitat	SI 10: Macrophytes	HSI score
PO59	20 September 2021	1	0.05	0.90	0.67	1.00	0.67	0.67	1	1.00	0.50	0.61
PO60	20 September 2021	1	0.00	0.90	0.33	0.70	0.01	0.67	1	1.00	0.35	0.50
PO61	20 September 2021	1	0.31	0.10	0.33	0.70	0.67	0.67	1	1.00	0.30	0.50
PO62	20 September 2021	1	0.31	0.90	0.33	1.00	0.67	0.67	1	1.00	0.40	0.66
PO63	20 September 2021	1	0.41	0.90	0.67	1.00	0.67	0.67	1	1.00	0.45	0.74
PO64	20 September 2021	1	1.00	0.10	0.33	1.00	0.67	1.00	1	1.00	0.40	0.62
PO65	20 September 2021	1	0.21	0.90	0.33	0.50	0.67	0.67	1	1.00	0.30	0.58
PO67	20 September 2021	1	0.50	0.10	0.33	1.00	0.67	1.00	1	1.00	0.35	0.57
PO68	20 September 2021	1	0.31	0.10	0.33	0.20	0.67	0.67	1	1.00	0.80	0.49
PO69	22 September 2021	1	0.21	0.10	0.33	0.60	0.67	0.67	1	1.00	0.90	0.53
PO70	22 September 2021	1	0.05	0.10	0.33	1.00	0.67	0.67	1	1.00	1.00	0.49
PO72	13 October 2021	1	0.05	0.10	0.33	1.00	1.00	1.00	1	1.00	0.30	0.47
PO73	13 October 2021	1	0.05	0.10	0.33	1.00	1.00	1.00	1	1.00	0.30	0.47
PO77	13 October 2021	1	0.60	0.10	0.33	0.60	0.67	0.67	1	0.67	0.80	0.56
PO78	13 October 2021	1	1.00	0.90	0.33	1.00	0.67	0.01	0.93	1.00	0.30	0.47
PO83	13 October 2021	1	0.41	0.90	0.67	1.00	0.67	0.67	0.9	0.67	0.35	0.69
PO84	13 October 2021	1	0.80	0.90	0.33	0.60	0.67	0.67	0.85	0.67	1.00	0.72
PO85	13 October 2021	1	0.00	0.90	0.67	1.00	0.67	0.67	0.9	1.00	0.35	0.80
PO86	23 September 2021	1	0.00	0.90	1.00	1.00	0.67	0.67	0.93	1.00	0.40	0.84
PO87	24 September 2021	1	0.90	0.90	0.33	1.00	0.67	0.67	0.85	0.67	0.30	0.68
PO88	23 September 2021	1	0.70	0.90	0.33	1.00	0.67	0.67	0.83	0.67	0.35	0.67
PO89	23 September 2021	1	0.96	0.90	0.33	0.80	0.67	0.67	0.83	0.67	0.30	0.67
PO95	23 September 2021	1	0.31	0.90	0.33	0.20	0.67	0.67	0.69	1.00	0.30	0.53
PO97	23 September 2021	1	0.41	0.90	0.67	0.20	0.67	0.67	0.83	1.00	0.30	0.59
PO98	23 September 2021	1	0.98	0.90	0.67	1.00	0.01	0.67	0.96	1.00	0.50	0.53
PO99	23 September 2021	1	1.00	0.90	0.67	0.60	0.67	0.67	0.98	1.00	0.80	0.81
PO100	12 October 2021	1	1.10	0.90	0.33	1.00	0.67	0.33	0.93	1.00	0.45	0.70
PO101	12 October 2021	1	0.21	0.90	0.67	0.60	0.67	0.67	0.9	1.00	0.30	0.63
PO102	24 September 2021	1	0.98	0.90	0.67	1.00	0.67	0.67	0.96	1.00	0.40	0.80
PO104	12 October 2021	1	0.83	0.90	0.33	1.00	0.67	1.00	0.93	1.00	0.30	0.73
PO105	27 September 2021	1	0.31	0.90	0.33	0.20	0.67	0.67	0.76	1.00	0.35	0.54
PO106	27 September 2021	1	0.60	0.90	0.33	1.00	0.67	0.67	0.69	0.67	0.30	0.64
PO108	08 October 2021	1	0.50	0.90	0.33	0.60	0.67	0.67	0.69	1.00	0.30	0.62
PO109	08 October 2021	1	0.98	0.90	0.33	1.00	0.67	0.67	0.76	0.67	0.50	0.71

Pond ID	Date of HSI	SI 1: Location	SI 2: Pond area	SI 3: Pond drying	SI 4: Water Quality	SI 5: Shade	SI 6: Waterfowl	SI 7: Fish	SI 8: Pond count	SI 9: Terrestrial habitat	SI 10: Macrophytes	HSI score
PO118	27 September 2021	1	0.00	0.90	0.67	1.00	0.67	0.01	0.85	1.00	0.30	0.54
PO119	27 September 2021	1	0.93	0.90	0.67	1.00	0.67	0.33	0.85	1.00	0.35	0.72
PO127	28 September 2021	1	0.60	0.90	0.67	1.00	0.67	0.67	0.58	1.00	0.35	0.71
PO128	08 October 2021	1	0.31	0.90	0.33	1.00	0.67	0.67	0.58	0.33	0.40	0.56
PO129	08 October 2021	1	0.31	0.90	0.33	0.20	0.67	0.67	0.76	0.67	0.30	0.51
PO132	28 September 2021	1	0.00	0.90	0.67	1.00	0.67	0.67	0.69	0.67	0.30	0.74
PO137	28 September 2021	1	0.41	0.90	0.67	1.00	0.67	0.67	0.83	0.67	1.00	0.76
PO143	08 October 2021	1	1.10	0.90	0.67	1.00	0.67	0.67	0.66	1.00	0.70	0.82
PO144	01 October 2021	1	0.50	0.10	0.01	0.20	0.67	0.33	0.76	0.67	0.30	0.28
PO145	01 October 2021	1	0.80	0.90	0.33	0.60	0.67	0.67	0.83	0.67	0.30	0.63
PO148	20 September 2021	1	0.50	0.90	0.33	0.60	0.67	0.67	0.65	1.00	0.35	0.63
PO167	20 September 2021	1	0.00	0.90	1.00	1.00	0.67	0.33	0.85	1.00	0.30	0.76
PO169	20 September 2021	1	0.00	0.90	0.33	1.00	0.67	0.67	0.9	1.00	0.35	0.75
PO170	20 September 2021	1	1.00	0.90	0.33	1.00	0.67	0.67	0.85	1.00	0.55	0.76
P0173	23 September 2021	1	0.50	0.90	0.33	0.40	0.67	0.67	1	1.00	0.35	0.63
P0174	23 September 2021	1	0.50	0.90	0.33	1.00	0.67	0.01	1	0.67	0.40	0.44
P0175	23 September 2021	1	0.50	0.90	0.33	1.00	0.67	0.67	0.76	1.00	0.35	0.67
P0176	23 September 2021	1	0.50	0.90	0.33	1.00	0.67	0.67	0.96	1.00	0.90	0.75
PO103	11 March 2022	1	1.10	0.50	0.67	1.00	0.67	0.67	0.85	0.67	0.40	0.72
PO107	11 March 2022	1	0.21	1.00	0.67	1.00	1.00	0.67	0.85	1.00	1.00	0.78
PO112	11 March 2022	1	N/A[1]	0.90	0.67	0.50	0.67	0.67	0.755	0.67	0.55	0.74
PO112	11 March 2022	1	N/A	0.90	0.67	0.50	0.67	0.67	0.755	0.67	0.50	0.74
PO113	11 March 2022	1	1.00	0.10	0.33	0.20	1.00	1.00	0.685	0.67	0.40	0.51
PO114	11 March 2022	1	N/A	0.50	0.67	0.60	0.67	0.67	0.755	0.67	0.50	0.71
PO115	11 March 2022	1	0.60	0.10	0.33	0.60	0.67	1.00	0.825	0.33	0.50	0.51
PO116	11 March 2022	1	N/A	0.90	0.67	1.00	0.67	0.33	0.825	0.67	0.70	0.77
PO117	10 March 2022	1	0.60	0.50	0.67	0.70	0.67	0.67	0.85	0.33	0.80	0.65
PO120	10 March 2022	1	N/A	0.90	0.67	1.00	0.67	0.33	0.85	0.33	0.50	0.70
PO121	10 March 2022	1	0.05	0.90	0.01	1.00	1.00	1.00	0.85	0.01	0.30	0.25
PO122	11 March 2022	1	0.91	0.50	0.67	1.00	0.67	0.67	0.925	0.33	1.00	0.73
PO124	09 March 2022	1	0.92	0.50	0.33	0.20	0.67	0.67	0.9	0.33	0.50	0.54
PO133	09 March 2022	1	0.80	1.00	0.33	1.00	0.67	0.67	0.85	1.00	0.40	0.73

[1] For those ponds with an area greater than >2,000 sqm, the area is excluded from the calculation.

Pond ID	Date of HSI	SI 1: Location	SI 2: Pond area	SI 3: Pond drying	SI 4: Water Quality	SI 5: Shade	SI 6: Waterfowl	SI 7: Fish	SI 8: Pond count	SI 9: Terrestrial habitat	SI 10: Macrophytes	HSI score
PO134	09 March 2022	1	1.00	1.00	0.33	0.70	0.01	0.67	0.85	1.00	0.50	0.48
PO135	09 March 2022	1	N/A	0.90	0.67	1.00	0.01	0.33	0.9	0.33	0.40	0.47
PO141	09 March 2022	1	N/A	1.00	0.67	1.00	0.01	0.67	0.755	0.33	0.50	0.51
PO142	11 March 2022	1	N/A	0.90	0.67	1.00	0.01	0.67	0.65	0.33	0.50	0.50
PO178	09 March 2022	1	N/A	0.90	0.67	1.00	0.01	0.33	0.9	0.67	0.40	0.50
PO183	09 March 2022	1	N/A	0.90	0.67	1.00	0.01	0.01	0.755	0.33	0.40	0.34
PO192	10 March 2022	1	1.00	0.50	0.33	0.50	1.00	1.00	0.925	0.67	0.40	0.68
PO193	10 March 2022	1	0.21	0.10	0.33	0.40	1.00	1.00	0.925	0.33	0.35	0.44

Appendix G – Biodiversity Net Gain Baseline Report

REPORT

Appendix G – Biodiversity Net Gain Baseline Report

Client: North Falls Offshore Wind Ltd

Reference: PB9244-RHD-ZZ-ON-RP-EC-0086

Status: S0/P01.02

Date: 17 May 2022

Royal HaskoningDHV

Enhancing Society Together

HASKONINGDHV UK LTD.

2 Abbey Gardens
Great College Street
London
SW1P 3NL
Industry & Buildings
VAT registration number: 792428892

+44 207 2222115 **T**
email **E**
royalhaskoningdhv.com **W**

Document title: Appendix G – Biodiversity Net Gain Baseline Report

Document short title:
Reference: PB9244-RHD-ZZ-ON-RP-EC-0086
Status: P01.02/S0
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Project name: North Falls Offshore Wind Farm
Project number: PB9244
Author(s): Charlotte Clements, Kitty Taylor

Drafted by: Charlotte Clements, Kitty Taylor

Checked by: Gordon Campbell

Date: 18/05/2022

Approved by: Gordon Campbell

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Royal HaskoningDHV

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1 Introduction

This document presents baseline information gathered as part of the project's Extended Phase 1 Habitat Survey with regard to biodiversity net gain, including an outline of the relevant legislation and policy underpinning biodiversity net gain, details of the methodology used for gathering data, and full details of the information required to undertake a net gain assessment for the North Falls Offshore Wind Farm project (herein 'the project'). This document will be used to further inform the project's biodiversity net gain approach throughout the project life cycle.

This document has been written in line with the following guidance:

- Biodiversity Net Gain: Good practice principles for development (CIEEM, IEMA and CIRIA, 2016);
- Biodiversity Net Gain: Report and Audit templates (Version 1) (CIEEM, 2021); and
- Guidelines for Ecological Report Writing (Second Edition) (CIEEM, 2017)

1.1 Project Background

The project is a proposed extension to the Greater Gabbard offshore wind farm, which is located off the east coast of England in the Southern North Sea and was opened in 2013. The project is being developed by North Falls Offshore Wind Farm Ltd. (NFOW), a joint venture between SSE Renewables and RWE.

The project is proposed in response to The Crown Estate's (TCE) extension leasing round, launched in 2017, with TCE recognising that extensions to operational wind farms are proven to be a successful way of efficiently developing more offshore generating capacity. NFOW was awarded an Agreement for Lease (AfL) from TCE in September 2020. NFOW have begun the process of baseline data collection to inform an Environmental Impact Assessment (EIA) for the project in support of a Development Consent Order (DCO) application proposed to be submitted to the Planning Inspectorate in 2023.

NFOW is currently awaiting a grid connection offer from National Grid, which will then inform the detailed site selection of the offshore cable corridor, landfall location, onshore cable route and onshore substation location. Whilst this process is ongoing, in order to ensure that adequate baseline data is collected to inform the project's EIA, NFOW have undertaken a suite of ecological surveys in 2021 and March 2022 so that baseline data for the project can be gathered.

In the first instance, for these 2021 and March 2022 ecological surveys, NFOW has targeted an area immediately landward of the coast between the settlements of Clacton-on-Sea and Frinton (herein the 'cable landfall search area'). This area has been targeted as the most likely area in which cable will be brought ashore. Following receipt of preliminary information from National Grid in Summer 2021 regarding the location potential grid connection points which will be offered to NFOW, NFOW has undertaken an initial site selection exercise to identify potential onshore cable corridor options. These initial onshore cable corridor options have then been used as the basis for identifying a footprint (herein the 'onshore project area', as shown in Figure 1 of the *Extended Phase 1 Habitat Survey Report,* to which this report is appended) which is the subject of the information presented in this report.

Royal HaskoningDHV was commissioned to undertake an Extended Phase 1 Habitat Survey within and up to 50m from the onshore project area in April, July, September and October 2021 and March 2022. This document uses information gathered during the Extended Phase 1 Habitat Survey to provide an initial assessment of the biodiversity value of the onshore project area, for use in future biodiversity net gain calculations for the project.

2 Biodiversity Net Gain

Biodiversity net gain is an approach to development that aims to leave the natural environment in a better state than before. The process consists of specific and measurable actions and outcomes that are undertaken throughout the project lifecycle, from conducting baseline data collation for assessment through to calculating biodiversity gains and losses as a result of the project's development. The intention for the biodiversity net gain process is to deliver demonstrable and quantifiable benefits to biodiversity that will apply to all habitats within the onshore project area.

The Environment Act 2021 states that a minimum of 10% biodiversity net gain will be mandatory for all developments, including Nationally Significant Infrastructure Projects (NSIPs).

2.1 Biodiversity net gain principles

CIEEM, IEMA and CIRIA have developed ten good practice principles for biodiversity net gain which provide a framework for projects (CIEEM, IEMA and CIRIA, 2016). The ten principles are:

- **Principle 1** – **Apply the mitigation hierarchy**:
  - Ensure that potential impacts on biodiversity are first avoided and then mitigated. As a last resort and in agreement with local stakeholders and decision makers that unavoidable losses are compensated for;
- **Principle 2** – **Avoid losing biodiversity that cannot be offset by gains elsewhere**:
  - Avoid impacts on irreplaceable biodiversity, these cannot be offset.
- **Principle 3** – **Be inclusive and equitable**:
  - Engage with stakeholders and decision makers early in the project cycle with regard to designing, implementing, monitoring and evaluating the project approach to biodiversity net gain;
- **Principle 4** – **Address risks**:
  - Mitigate difficulty and uncertainty by applying well-accepted ways to add contingency when calculating biodiversity losses and gains;
- **Principle 5** – **Make a measurable net gain contribution**:
  - Achieve a measurable overall gain for biodiversity;
- **Principle 6** – **Achieve the best outcomes for biodiversity**:
  - Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge
- **Principle 7** – **Be additional**:
  - Achieve biodiversity outcomes that demonstrable exceed existing obligations (i.e. do not deliver something that would occur anyway);
- **Principle 8** – **Create a net gain legacy**:
  - Ensure long term benefits for biodiversity;
- **Principle 9** – **Optimise sustainability**:
  - Prioritise biodiversity net gain and where possible optimise the wider environmental benefits for a sustainable society and economy ;and
- **Principle 10** – **Be transparent**:
  - Communicate all biodiversity net gain activities in a transparent and timely manner with stakeholders and decision makers.

These principles can be simplified and applied to a project using the schematic in Error! Reference source not found..

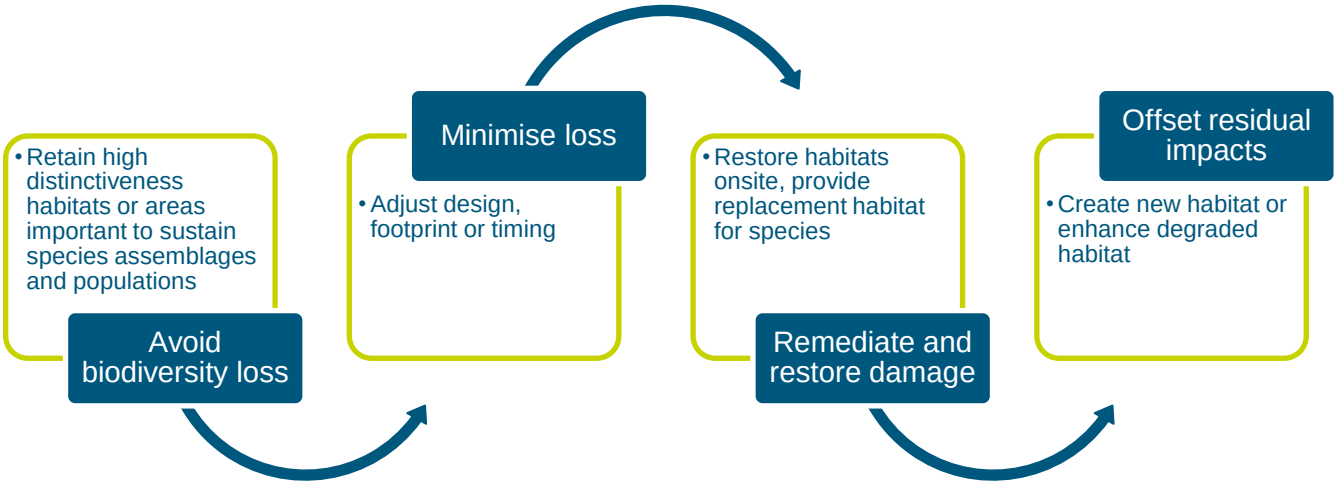

Plate 2-1 Application of biodiversity net gain principles

2.2 Application of Biodiversity Metric 3.1

A full biodiversity net gain assessment will require the use of the metric assessment tool (v3.1), an excel-based programme that uses habitat as a proxy for biodiversity, to assess the biodiversity gains of a project. Using the baseline information presented within this document (as well as any updated baseline data available), the metric is used to calculate the baseline (i.e. pre-development) biodiversity units for the project using the formulae presented in Error! Reference source not found..

Plate 2-2 Pre-development metric calculation formulae

The baseline biodiversity units will be used, in combination with details of the area impacted by the project's construction and operation, to calculate the areas of habitat that will be impacted and/or lost as a result of the project (post-development). A similar calculation will be made of all the habitats that will be retained, created or enhanced post-development and the metric will take into consideration the difficulty, time and spatial issues associated with any habitat enhancement or creation proposed, using the formulae in Error! Reference source not found. in addition with that shown in Error! Reference source not found..

Plate 2-3 Post-development metric calculation formulae

In summary, the following steps are followed when using the biodiversity metric tool:

- **Step 1 – Project planning:**
  - Identify sites where the metric will be used and planned actions that will potentially change the habitats
- **Step 2 – Data collection:**
  - Collect baseline habitat data and check local plans and policies for the strategic significance of particular habitats, determining expected effects of planned actions that will potentially change habitats
- **Step 3 – Calculation:**
  - Input data into the metric tool to generate biodiversity unit scores
- **Step 4 – Informing design and decisions:**
  - Use the results of Step 3 to improve the design and communicate gains and losses to inform planning decisions.

The biodiversity metric tool will be treated as a live document and be updated throughout the project's lifecycle in order to inform stakeholder communication and engagement, refinement of habitat creation and to aid design. Final calculations can then be undertaken and compared to baseline calculations prior to submission of the project's Development Consent Order (DCO) application. The final metric calculations will be presented within a design stage report to accompany the Ecological Impact Assessment (EcIA) and will include the following aspects:

- Baseline habitat descriptions;
- Review and application of biodiversity net gain principles;
- Project description and mitigation design;
- Completed quantitative assessment (i.e. Metric 3.1);
- Project implementation plan (i.e. Outline Ecological Management Plan (OEMP)); and
- Biodiversity net gain management and monitoring plan.

3 Legislation and Policy

Local and national policy sets out the standards across planning, design and development, and biodiversity, by which all developments should seek to align. The information provided in **Table 3.1** details how biodiversity conservation, enhancement and net gain has been integrated into both local and national policy and outlines the relevant policy documents for this project.

Table 3.1 Local and National policy context for biodiversity net gain

National policy or legislation	Relevance to biodiversity net gain
Environment Act 2021	The Environment Act 2021 passed into law in November 2021. This legislation will 'protect and enhance our environment for future generations' and includes a mechanism to introduce mandatory biodiversity net gain in England only. The legislation introduces a

National policy or legislation	Relevance to biodiversity net gain
	10% minimum net gain as a condition of planning for both applications under the Town and Country Planning Act 1990 (as amended) (TCPA) and for Nationally Significant Infrastructure Projects (NSIPs) consented under the Planning Act 2008.
National Policy Statement (NPS) for Energy – EN1 (part 4)	NPS EN-1 set the policy framework for determination of Nationally Significant Infrastructure Projects (NSIPs) and integrates the UK Government's objectives for infrastructure capacity and development with its wider economic, environmental and social policy objectives, including climate change goals and targets, in order to deliver sustainable development. The current draft NPS (EN1, part 4) states that new proposals should seek to enhance that nature environment through biodiversity gain where possible, encourages applicants to use the most current version of the Defra biodiversity metric to calculate their biodiversity baseline and inform their biodiversity net gain outcomes and to present this data as part of their application.
National Planning Policy Framework (NPPF) (2021)	Sets the planning framework for England. The NPPF was republished in 2019 and has strengthened wording surrounding biodiversity net gain, requiring new developments to "minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".
The Natural Environment and Rural Communities (NERC) Act (2006)	The NERC Act, as amended in 2021 by the Environment Act 2021, now includes a new duty for local authorities to conserve *and enhance* biodiversity as part of the core functions.
Biodiversity 2020: A strategy for England's wildlife and ecosystem services	This strategy builds on the Natural Environment White Paper and sets out a framework for delivering international biodiversity commitments and national aspirations for biodiversity to 2020. The status of biodiversity will be monitored through assessing indicators such as the extent of protected areas, the pressures on biodiversity, the status of priority species, ecosystem services and public enjoyment.
Planning Practice Guidance (PPG)	The PPG now provides more detail surrounding biodiversity net gain, particularly under 'Biodiversity, geodiversity and ecosystems', including how biodiversity should be taken into account through planning.
BS 8683:2021 'Process for designing and implementing biodiversity net gain'	This British Standards document provides a best practice process to follow when delivering biodiversity net gain.
Local policy or legislation	**Relevance to biodiversity net gain**
Tending District Local Plan 2013-2033 and Beyond – Publication Draft (June, 2017), Section 1 adopted in January 2021	**Objective 8** – "*To provide a network of interconnected multi-functional natural green and blue spaces which secures a net gain in biodiversity and geodiversity; promotes healthy lifestyles; and enhances the quality of the natural and built environment*." **Policy SPL 3** – Sustainable Design "*the design and layout of the development maintains or enhances important existing site features of landscape, ecological, heritage or amenity value*;" **Policy PPL 4** – Biodiversity and Geodiversity "*Proposals for new development should be supported by an appropriate ecological assessment. Where new development would harm biodiversity or geodiversity, planning permission will only be granted in exceptional circumstances, where the benefits of the development demonstrably outweigh the harm caused and where adequate mitigation or, as a last resort, compensation measures are included, to ensure no net loss, and preferably a net gain, in biodiversity." "Proposals for new infrastructure and major development should consider the potential for enhanced biodiversity, appropriate to the site and its location, including, where appropriate, within Green Infrastructure*."

National policy or legislation	Relevance to biodiversity net gain
Essex Green Infrastructure Strategy (2020)	An independent, cross party commission set up to help Essex County Council define how it plays its part in tackling climate change. Part of the Strategy's remit definition states that '*Green infrastructure …provides and creates green corridors for our wildlife thereby making our biodiversity more robust, particularly in the face of the challenges presented by Climate Change".*

4 Methodology

This document details the first stage of the process in assessing biodiversity net gain for a project: providing details of the habitat conditions assessments undertaken for land covered during the Extended Phase 1 Habitat Survey that is within the onshore project area. The other stages outlined in **Section 2** will be progressed as the project develops. Details of the methodology for this stage of the biodiversity net gain assessment process are outlined below.

Royal HaskoningDHV, on behalf of NFOW, undertook an Extended Phase 1 Habitat Survey during 2021 and March 2022, which covered all land within the onshore project area where landowner access had been secured at the time of survey. The Extended Phase 1 Habitat Survey was undertaken in accordance with the methodology set out in the Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment (IEMA 1995)) and habitats were recorded using the system set out within the Joint Nature Conservation Committee (JNCC) *'Handbook for Phase 1 habitat survey: A technique for environmental audit'* (JNCC 2010).

As part of the Extended Phase 1 Habitat Survey, each habitat feature (linear and area) was subject to a habitat conditions assessment, in line with the Defra Biodiversity Metric 3.0 (Panks et al., 2021)[1] and Biodiversity Net Gain: Good practice principles for development (CIEEM, 2016).

4.1 Habitat conditions assessment

The habitat conditions assessments presented within this document are based on the UK Habitat Classification System Version 1.1 (Butcher et al., 2020). In order for the correct conditions assessment to be used, the field surveyors first converted each JNCC habitat to the corresponding UK Habitat Classification using a conversion tool. The remainder of this document is presented as the UK Habitat Classification in order to be in line with the biodiversity metric tool.

The conditions assessment use a set of defined criteria for each habitat, as presented in **Table 4.1**, which lists both positive and negative indicators that the surveyor assesses to determine the overall condition of the habitat, therefore these assessments should be undertaken by suitably qualified ecologists who are able to identify the habitats and species and therefore the features that the assessment criteria utilises. The conditions assessments for the project were undertaken by a Royal HaskoningDHV ecologist who is an associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Each habitat is assigned an inherent distinctiveness, according to their relative biodiversity value, with habitats that are scarce or declining typically scoring higher relative to habitats that are common or more widespread. Certain habitat types, such as agricultural crop fields, areas of hard-standing or sealed surfaces, are classified as automatically of 'poor' distinctiveness and therefore no conditions assessment is required.

[1] *At the time of the surveys, the Defra Biodiversity Metric 3.1 had not yet been released, therefore this stage of the assessment was based on Version 3.0.*

The criteria for determining the condition of habitats identified during the Extended Phase 1 Habitat Survey are provided in **Table 4.1**. Each criteria has an associated score which is then totalled to provide the overall habitat condition.

Table 4.1 Conditions assessment criteria (Panks et al., 2021)

Habitat	Assessment criteria	Distinctiveness
Woodland	• Determining the age distribution of trees (with more points awarded for a variety of sapling, semi-mature and mature trees present); • Identifying any wild, domestic or feral herbivore damage; • Identifying any invasive plant species; • Identifying the number of native tree species present; • Determining the cover of native tree and shrub species present (where results indicated >80% of both canopy and understorey species present leading to a higher score); • Identifying the amount of open space present; • Identifying features of woodland regeneration present (related to age distribution of tree species); • Identifying the vertical structure of the woodland (i.e. number of storeys present); • Presence of veteran trees; • Amount of deadwood present; and • Determining whether any signs of disturbance are present (i.e. nutrient enrichment indicator species presence).	Medium
Scrub	• There are at least three woody species present with no more than one species comprising more than 75% of the cover; • A good age range is present including seedlings and both young and mature shrubs; • No invasive non-native or undesirable species are present; • There is a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitats; and • There are clearings, glades or rides present providing sheltered edges.	Medium
Grassland	• There must be 6-8 species per m^2; • Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm); • Some scattered scrub (including bramble) may be present, but accounts for less than 20% of total area; • Physical damage evident in less than 5% of total area (i.e. cattle poaching, machinery usage/storage, damaging levels of access or other management activities); • Cover of bare ground between 1-5% of total area; • Cover of bracken less than 20%; and • There is an absence of invasive non-native species and undesirable species The criteria for determining medium or high distinctiveness grassland are the same as for low distinctiveness grassland, however wildflowers, sedges and indicator species for a particular grassland type must be clearly and easily visible throughout the sward.	Low / Medium / High
Ditches (standing and running water)	• Good water quality with clear water (low turbidity) indicating no signs of pollution; • A range of emergent, submerged and floating plants are present (e.g. >10 species in a 20m length); • Less than 10% cover of filamentous algae and/or duckweed; • A fringe of marginal vegetation is present along more than 75% of the ditch; • Physical damage evident along less than 5% of the ditch (e.g. poaching, machinery damage etc.);	Medium

Habitat	Assessment criteria	Distinctiveness
	• Sufficient water levels are maintained (a minimum of 50cm in minor ditches and 1m in main drains); • Less than 10% is heavily shaded; and • There is an absence of non-native plant and animal species.	
Lakes	The score is based on physical, hydrological, chemical and biological elements from natural to artificial in line with the Lake Naturalness Assessment Guidance (Natural England, 2019), of which the physical characteristics are as follows: • 1 – No evidence of human physical modifications of the shoreline / riparian land is all semi-natural / edges shelve gently allowing colonisation by plants; • 2 – Physical modifications of no more than 5% of shoreline / riparian land is 90% semi-natural / plant colonisation at least 10m from edge • 3 – Physical modification of no more than $^1/_3$ of shoreline / riparian land is at least $^2/_3$ semi-natural / plant colonisation at least 3m from edge; • 4 – Physical modification up to $^2/_3$ of shoreline / riparian land is at least $^1/_3$ semi-natural / narrow strip of emergent/floating/submerged plants present; and • 5 – Modification of the shoreline is widespread with more than $^2/_3$ of the shoreline reinforced / riparian land is semi-natural for less than $^1/_3$ of its extent / artificial steep edges so little to no habitat can be colonised by plants.	Ranges from Low to High depending on the type of lake (e.g. an ornamental lake is 'low' distinctiveness whereas a reservoir is 'medium' distinctiveness)
Ponds	• Good water quality with clear water (low turbidity, unless grazed by livestock), indicating no obvious signs of pollution; • Semi-natural habitat is present for at least 10m from the pond edge; • Less than 10% of the pond is covered with duckweed or filamentous algae; • The pond is not connected to other waterbodies, either via streams, ditches or artificial pipework; • Water levels should be able to fluctuate throughout the year, no obvious dams, pumps or pipework present; • There is an absence of non-native plant and animal species; • The pond is not artificially stocked with fish; and • In non-woodland ponds, plants should cover at least 50% of the pond area and the surface is no more than 50% shaded by woody bankside species.	High
Hedgerow	• Height >1.5m average along length; • Width >1.5m average along length; • Gap at hedge base <0.5m for 90% of length; • Gap in hedge canopy <10% of total length and no canopy gaps present >5m; • Undisturbed ground/perennial vegetation >1m; • Undesirable perennial vegetation indicative of nutrient enrichment <20%; and • Current damage >90% of hedgerow free of damage caused by human activities. For hedgerows with trees the following apply: • At least one mature tree per 30m stretch; and • At least 95% of hedgerow trees are in a healthy condition.	Low / Medium / High

5 Results

5.1 Habitat summaries

All habitats that were encountered during the Extended Phase 1 Habitat Survey were subject to a biodiversity net gain conditions assessment. A brief description of each habitat is provided below, followed by the findings of the conditions assessment for each habitat.

Woodland

A total of 44 areas of woodland were recorded, consisting of small pockets at field boundaries/roadside margins through to larger areas of dense woodland habitat. A significant number of woodland areas were used by landowners for game bird enclosures, therefore in some instances access inside the woodland was not possible.

The woodland species were largely dominated by oak *Quercus robur* with sweet chestnut *Castanea sativa*, beech *Fagus sylvatica*, willow *Salix spp.*, sycamore *Acer pseudoplatanus*, birch *Betula spp.,* elm *Ulmus spp*., poplar *Populus spp.* and ash *Fraxinus excelsior* alongside understorey species such as hawthorn *Crataegus monogyna*, field maple *Acer campestre*, blackthorn *Prunus spinosa* and hazel *Corylus avellana*. The mixed woodlands had an appropriate number of pine species (such as Scot's pine *Pinus sylvestris* and cypress *Cupressaceae spp.*) to classify them as a mixed woodland.

Scrub

A total of 12 areas of scrub were recorded, ranging from small areas adjacent to arable field margins, areas of habitat adjacent to both dry and wet ditches and/or running water, as well as larger areas of successional habitat associated with adjacent woodland areas. This habitat consisted mostly of bramble *Rubus fruticosa*, nettle *Urtica dioica*, common hogweed *Heracleum sphondylium* and thistle *Cirsium vulgare* with scattered oak, hawthorn, hazel and willow.

Grassland

A total of 41 areas of grassland were recorded, which ranged from areas of grassland with low species diversity that was used for animal grazing (such as horses, sheep and cattle), to areas of arable grassland that are regularly mown for hay. More diverse grassland areas were also recorded with a range of species present and a variety of sward heights. Species present included perennial rye grass *Lolium perenne*, Timothy grass *Phleum pratense*, cock's foot *Dactylis glomerata*, hard rush *Juncus inflexus*, false-oat grass *Arrhenatherum elatius*, meadow grass *Poa spp.,* alongside bristly ox-tongue *Helminthotheca echioides*, fleabane *Pulicaria dysenterica*, common and ribwort plantain *Plantago spp.*, clover *Trifolium spp.*, dandelion *Taraxacum officinale*, bramble and nettle.

Tall Ruderal

A total of 13 areas of tall ruderal habitat were recorded, including large areas of natural tall ruderal habitat adjacent to scrub and woodland as well as smaller areas of tall ruderal wildflowers incorporated into agricultural land. These areas were characterised by tall sward grasses such as Yorkshire fog *Holcus lanatus*, *Bromus spp*., creeping buttercup *Ranunculus repens*, fleabane and bristly ox-tongue.

Standing and Running Water

Standing and running water was identified in 36 locations during the Extended Phase 1 Habitat Survey. They consisted of static field margin drainage ditches through to small streams with a range of flow rates.

Lakes and Ponds

In addition to drainage ditches and small streams, a total of 74 ponds were also identified during the Extended Phase 1 Habitat Survey, these ranged from small ephemeral ponds associated with agricultural land through to larger ornamental garden ponds and fishing lakes.

Hedges

A total of 195 hedges were identified during the Extended Phase 1 Habitat Survey and subject to a conditions assessment. They were classified as follows:

- 12 intact species-rich (JNCC: J2.1.1);
- 66 intact species-poor (JNCC: J2.1.2);
- 21 defunct species-rich (JNCC: J2.2.1);
- 37 defunct species-poor (JNCC: J2.2.2);
- 29 species-rich with trees (JNCC: J2.3.1); and
- 30 species-poor with trees (JNCC: J2.3.2).

5.2 Conditions assessment results

The results of the habitat conditions assessments for each of the identified habitats presented in **Section 4.1** is shown in **Table 5.1**.

Table 5.1 Habitat conditions assessment results

Habitat	UK Hab code	Total no of feature	Habitat condition (*assessed in line with Table 4.1*)		
			Poor	Moderate	Good
Hedgerows	h2a	12	6	3	3
	h2a	66	29	17	20
	h2	21	17	3	1
	h2	37	30	6	1
	h2a	29	1	14	14
	h2a	30	15	11	4
Woodland	w1, 37	20	5	10	5
	w1, 36	9	5	4	0
	w2, 36	1	1	0	0
	w1h, 37	3	0	3	0
	w1h, 36	11	6	4	1
Mixed parkland / scattered trees	h3, 20, 11	2	1	1	0
Scrub	h3	10	4	3	3
	h3, 10	2	2	0	0
Arable field margin	c1a	6	6	0	0
Improved grassland	g4	30	28	2	0
Marshy grassland	g1, 15, 16, 17	4	2	0	2
Poor semi-improved grassland	g3c6	7	3	4	0

Habitat	UK Hab code	Total no of feature	Habitat condition (*assessed in line with Table 4.1*)		
			Poor	Moderate	Good
Bracken – scattered	g1c, 12	1	1	0	0
Other tall herb and fern – tall ruderal	g3, 16	13	8	3	2
Standing and running water	r1, r2	34	29	5	0
Ponds	r1	74			
Total		**261**	**71**	**85**	**53**

6 Summary and Next Steps

The results of the biodiversity net gain habitat conditions assessment for the project, as shown in **Table 5.1**, conclude that the majority of habitats recorded during the Extended Phase 1 Habitat Survey are of a 'poor' condition (58% of the total), with 'moderate' condition habitats encountered less frequently (26% of the total) and 'good' condition habitats encountered even less frequently (only 16% of the total).

This initial assessment potentially provides scope for enhancement opportunities within the footprint of the project infrastructure, from the restoration of poor or moderate condition habitats or the provision of new habitats. These habitats should be designed to provide additional benefits beyond maintaining the current condition and may, for example, provide habitat for protected or rare species or extend the habitat available for locally significant species. Some examples of enhancement opportunities that could be explored as part of the project design could include, but not be limited to, the following:

- Planting of species rich grassland/meadow;
- Tree planting (i.e. incorporated around the landscaping features at the onshore substation);
- Hedgerow reinstatement of higher condition (i.e. 'poor' and 'moderate' hedgerows replanted with native species to obtain a 'good' habitat condition);
- Improvement of existing drainage ditches/watercourses (i.e. bank reprofiling and vegetation planting to encourage native species such as water vole *Arvicola amphibious*);
- Incorporation of 'b-lines' (insect highways that are mapped and recorded within Essex);
- Planting of habitat suitable for specific species, for example the planting of hog's fennel *Peucedanum officinale* within coastal grassland as the key larval food source of the Annex II species Fisher's estuarine moth *Gortyna borelii lunata*.

Key considerations for the above enhancement opportunities will be based on agreement from local landowners, specifically with regard to hedgerow enhancement.

The project has explored initial consultation with stakeholders in regard to obtaining information on potential existing 'off-site' opportunities for biodiversity enhancement within the local area. These tend to consist of local wildlife site initiatives through to larger national projects led by Natural England. Further details on collaboration opportunities will be investigated throughout the project lifecycle and feed into the project biodiversity net gain ambitions.

Whilst this assessment provides an initial scope for biodiversity enhancement opportunities, it should be noted that a full biodiversity net gain assessment using the baseline presented here be required once further details about the project's onshore infrastructure are known. In addition, this baseline will need updating following future survey work and changes to the onshore project area.

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NORTH FALLS

Offshore Wind Farm

sse Renewables | RWE

HARNESSING THE POWER OF NORTH SEA WIND

North Falls Offshore Wind Farm Limited

A joint venture company owned equally by SSE Renewables and RWE.

To contact please email contact@northfallsoffshore.com

North Falls Offshore Wind Farm Limited Registered Address: Windmill Hill Business Park, Whitehill Way, Swindon, Wiltshire, SN5 6PB, United Kingdom

Registered in England and Wales Company Number: 12435947