Fisheries in EMS Habitats Regulations Assessment for Amber and Green risk categories

NWIFCA-RA-SPA-006
Date completed: 23/02/2016
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Site: Ribble and Alt Estuaries

European Designated Sites: UK9005103 Ribble and Alt Estuaries Special Protection Area (SPA)
UK11057 Ribble and Alt Estuaries Ramsar
Sefton Coast SAC
(UK9020294 Liverpool Bay/Bae Lerpwl SPA adjoins this site – assessed separately in NWIFCA-LB-SPA-004)

European Marine Site **Ribble and Alt Estuaries**

Qualifying Feature(s):

SPA and Ramsar

A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding)
A038 *Cygnus cygnus*; Whooper swan (Non-breeding)
A040 *Anser brachyrhynchus*; Pink-footed goose (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A050 *Anas penelope*; Eurasian wigeon (Non-breeding)
A052 *Anas crecca*; Eurasian teal (Non-breeding)
A054 *Anas acuta*; Northern pintail (Non-breeding)
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)
A140 *Pluvialis apricaria*; European golden plover (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A144 *Calidris alba*; Sanderling (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A151 *Philomachus pugnax*; Ruff (Breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A183 *Larus fuscus*; Lesser black-backed gull (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
Waterbird assemblage
Seabird assemblage
Breeding Waterbird Assemblage

Natterjack toad (NON MARINE)

SAC

H2110. Embryonic shifting dunes
H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram
H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*
H2150. Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); Coastal dune heathland*
H2170. Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*); Dunes with creeping willow
H2190. Humid dune slacks
S1166. *Triturus cristatus*; Great crested newt
S1395. *Petalophyllum ralfsii*; Petalwort

Site sub-feature(s):

SPA and Ramsar

Supporting Habitat:

- intertidal rock
- intertidal sand and muddy sand
- intertidal mud
- intertidal mixed sediment
- coastal saltmarshes and saline reedbeds – (Saltmarsh)
- freshwater and coastal grazing marsh (Saltmarsh)
- coastal sand dunes (Sand dunes)
- water column

Great crested newt and Natterjack toad Supporting Habitat: Coastal sand dunes

Generic sub-feature(s):

Estuarine birds, Surface feeding birds, Benthic feeding seabirds, Intertidal mud and sand, Saltmarsh spp.

High Level Conservation Objectives:

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified and the Ramsar Site and the wetland habitats and/or species for which the site has been listed (the 'Qualifying Features' listed above), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive and ensure that the site contributes to achieving the wise use of wetlands across the UK, by maintaining or restoring:

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

Sefton Coast SAC

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

Fishing activities assessed:

Gear type(s):	
Static fixed nets-	Gill nets Trammels Entangling

1. Introduction

1.1 Need for an HRA assessment

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS). The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive.

This approach is being implemented using an evidence based, risk-prioritised, and phased basis. Risk prioritisation is informed by using a matrix of the generic sensitivity of the sub-features of EMS to a suite of fishing activities as a decision making tool. These sub-feature-activity combinations have been categorised according to specific definitions, as red, amber, green or blue.

Activity/feature interactions identified within the matrix as red risk have the highest priority for implementation of management measures by the end of 2013 in order to avoid the deterioration of Annex I features in line with obligations under Article 6(2) of the Habitats Directive.

Activity/feature interactions identified within the matrix as amber risk require a site-level assessment to determine whether management of an activity is required to conserve site features. Activity/feature interactions identified within the matrix as green also require a site level assessment if there are “in combination effects” with other plans or projects.

Some European Sites within the NWIFCA District consist of features that are not fully marine (eg. sand dunes) and therefore fall outwith of the EMS Review process. They have not been included in the original risk matrix. Due to the nature of some of the fisheries in the District, particularly intertidal fisheries, the NWIFCA has adopted the approach of carrying out full HRA on all the features (including non-marine) within European Sites to ensure that any potential risk from fishing activity has been identified and assessed.

Site level assessments are being carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive, that is to determine that fishing activities are not having an adverse effect on the integrity of the site, to inform a judgement on whether or not appropriate steps are required to avoid the deterioration of natural habitats and the habitats of species as well as disturbances of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this directive.

If measures are required, the revised approach requires these to be implemented by the end of 2016.

The purpose of this site specific assessment document is to assess whether or not in the view of NWIFCA the fishing activity of ‘Gill nets, Trammels and Entangling nets’ have a likely significant effect on the qualifying features of the Ribble and Alt Estuaries European Site and on the basis of this assessment whether or not it can be concluded that ‘Gill nets, Trammels and Entangling nets’ will not have an adverse effect on the integrity of this European Site.

1.2 Documents reviewed to inform this assessment

- Natural England's risk assessment Matrix of fishing activities and European habitat features and protected species[1]
- Reference list[2] (Annex 1)
- Natural England's consultation advice (Annex 2)
- Site map – sub-feature/feature location and extent (Annex 3)
- Fishing activity data (map) (Annex 4)

2. Information about the EMS

(See cover pages). Throughout this document this group of designated sites will be referred to as a whole as "Ribble and Alt Estuaries European Site".

3. Interest feature(s) of the EMS categorised as 'Red' risk and overview of management measure(s) (if applicable)

No interest features of the EMS categorised as 'Red' risk.

4. Information about the fishing activities within the site

Static bottom gears are anchored to the seabed and left to fish passively, capturing target species by enmeshing or entangling them (Millner, 1985; Potter & Pawson, 1991; Jennings & Kaiser, 1998). Gill, trammel and entangling net fishing procedures are all similar, with nets usually fished in groups with the end of each attached by bridles to a weight or anchor on the seabed, which in turn is attached to a marker buoy or dhan flag (Seafish, 2005). Gill nets consist of walls of netting set at or below the water surface, on the seabed or any depth in between, entangling fish by enmeshing them around the gills as they swim into it (Seafish, 2005; MCS report; Local IFCO, 2015). They can be made and deployed in a variety of ways, including the use of buoyed lines and weighted with anchors at each end and a body of low-visibility twine with the mesh size and hanging of webbing based on the target species (Grieve *et al.* 2014). A leadline runs along the bottom of the net to hold it to the seabed (or can be set to sit at a distance above), with the floatline holding it vertically (Grieve *et al.* 2014). Trammel nets are similar to gill nets but consist of (usually) three netting layers- one loose inner fine meshed central net surrounded by two larger mesh outer nets, anchored at the base and floating at the headline (MCS report & Grieve *et al.* 2014). Fish are tangled in the looser internal panel of the net after passing through the outer layer (Local IFCO, 2015). Tangle nets (or entangling nets) also are similar to gill nets but are slacker, shorter and have less or no flotation, leading to a looser-hung net lying on the seabed that entangles species (MCS report and Local IFCO, 2015). These nets are used to catch brill, turbot and thornback ray but they are not used commonly within the southern part of the NWIFCA District (Local IFCO, 2015). Lobster and crab are found as an occasional bycatch when nets are set near the Mersey walls (Local IFCO, 2015).

Static fixed netting is a low level fishery in the Ribble and Alt Estuaries European Site, with local officers reporting a maximum of twelve fishermen using static nets regularly, most commonly using ground set gill nets fastened down with anchors in intertidal areas. Gill nets may also be staked into the seabed- these nets are included in this assessment. Trammel and entangling nets are not

[1] See Fisheries in EMS matrix: http://www.marinemanagement.org.uk/protecting/conservation/documents/ems_fisheries/populated_matrix3.xls

[2] Reference list will include literature cited in the assessment (peer, grey and site specific evidence e.g. research, data on natural disturbance/energy levels etc)

as commonly used. Nets are set by foot (access by vehicle or foot) on sandy intertidal areas along the coast from Southport to Hightown (including Taylors Bank) and off Lytham as well as Penfold Channel (Local IFCO, 2015). One fisherman sets nets from a boat on the Mersey walls and nearby wrecks (access along established access route at Altcar). Areas of rocky ground are avoided in favour of sand. Monofilament nets are used by fishermen.

Static fixed netting is seasonal and occurs from October to June, although may run later into the summer if the weather conditions are suitable. Fishing is weather dependent during the winter months, with generally a lull in beach netting in summer months due to plankton levels. Wind and weed also affects fishing. Species targeted include bass, flatfish, cod and thornback rays.

One of the netters uses up to 1000 yards spread across 6 nets (maximum 300yds used at a time in one length) - this is the largest length of nets used by one fisherman and is on the Formby coast on Taylors Bank. In the Penfold Channel, around three fishermen use a combined maximum total length of 1000 yards of net, while the rest (the majority) use around 150 yds each in the area from Southport to Formby. Weights are buried deep in the sand with attachments for ropes to anchor the nets down to the seabed. Anchors are used for the static nets set from a boat.

As they are set intertidally, the net positions in the water column will vary throughout the stages of the tidal cycle- at low water the nets will be lying on the shore, during the flood and ebb tide the nets will be submerged but just under the water surface, and during high tide the nets will be fully submerged. Therefore there may be different impacts on the designated features at different tidal times.

Netting activity is regulated through NWSFC Byelaw 7 (Mesh sizes- nets other than trawl nets), Byelaw 8 (Small mesh nets- other than trawl nets) and Byelaw 11 (Marking of fishing gear and keep pots). There is also Byelaw 26 (Fixed engines- prohibitions and authorisations) which prohibits the use and placing of fixed engines in parts of the District including the Ribble Estuary from 1st May to 30th November. Netters can apply for a permit to be authorised to use set and drift nets during this time. This permit is combined with Byelaw 27 (Mobile nets-prohibitions and authorisations). There were around 57 NWSFC Byelaw 26/27 permit holders based in the surrounding area (including Preston, Blackpool, Poulton-le-Fylde, Lytham and Southport) in 2015 that the local fishery officer suggests could be fishing in this area, as well as occasional visitors from further away (out of 161 total Byelaw 26/27 permit holders in the entire district). This number may however include those fishing mobile nets (which are not being assessed in this document) and the local IFCO reports that around 20 fishermen actually fish fixed nets in this area using this permit (including recreational fishermen as well as commercial). Minimum fish sizes are regulated under NWSFC Byelaw 19. There is an EU restriction prohibiting any licenced fishing vessel to land, tranship or retain seabass between 1st January to 30th June 2016, and from 1st April 2016, landings of seabass through fixed gill net (or line) fisheries are subject to a 1300kg per month limit.

Access to fishing areas is by foot, 4x4 or tractor by established access routes. These include routes along the shore, slipways, paths, a route at Haul Road at Marshside Nature Reserve and through sand dunes near Formby and Altcar.

Current and recent static fixed net activity in the Ribble and Alt Estuaries European Site is therefore low level and officer stats confirm this (see Table 1).

Netting IFCO sightings for Ribble & Alt Estuaries European Site *(0 in other months not included in table)*	**From matrix**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Feb-15**	**Jun-15**	**Jul-15**	**Aug-15**
Shore trammel nets	Gill nets, trammels, entangling	0	0	0	0	0	0	0	0	2	0
Gill nets		4	6	1	12	7	6	2	7	2	6

Table 1: IFCO stats from patrols January 2014- August 2015

5. Test for Likely Significant Effect (LSE)

The Habitats Regulations Assessment (HRA) is a step-wise process and is first subject to a coarse test of whether a plan or project will cause a likely significant effect on an EMS[3].

Is the activity/activities directly connected with or necessary to the management of the site for nature conservation? NO

5.1 Table 2: Assessment of LSE

What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s) to features? (taken from NE Advice on Operations-anchored nets/lines).

Features: As the fishing activity occurs in intertidal areas across the European Site, all bird features except Ruff will be assessed in this document. (Breeding ruff have been screened out as the fishing activity is not close to nesting sites, nor does this species forage in the intertidal area).

The fishery only occurs on the supporting habitats listed on bullet points below; the rest of the supporting habitats have been screened out due to there being no interaction between the fishing activity and the supporting habitat. Petalwort, saltmarsh, grazing marsh and sand dune features have been screened out because access is via established access routes and therefore impacts on these features are considered to be insignificant.

- Intertidal mud
- Intertidal sand and muddy sand
- Intertidal mixed sediment

Pressures: All pressures from the Advice on Operations table provided in the Ribble and Alt Estuaries Conservation Advice package have been screened out other than the following pressures due to the nature of the fishing activity and the low level of fishing activity:

- Collision above water with static or moving objects not naturally found in the marine environment
- Collision below water with static or moving objects not naturally found in the marine environment
- Visual disturbance
- Removal of non-target species
- Abrasion/disturbance of the substrate on the surface of the seabed *(supporting habitat)*
- Penetration and/or disturbance on the substrate below the surface of the seabed including abrasion *(supporting habitat)*

[3] Managing Natura 2000 sites: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

Qualifying Feature	Sub-feature	Gear type and potential pressures	Sensitivity	Potential for Likely Significant Effect?	Justification and evidence
A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding) A038 *Cygnus cygnus*; Whooper swan (Non-breeding) A040 *Anser brachyrhynchus*; Pink-footed goose (Non-breeding)	*Supporting habitats assessed separately*	***Static fixed nets:*** *- Gill nets, Trammels, Entangling* ○ Collision above water with static or moving objects not naturally found in the marine environment	Sensitive	NO	(Estuarine birds-grazing) For the majority of the time bird features are present in saltmarsh and farmland areas, and occasionally in the intertidal area. Fishing gear is visible at low water when out of the water lying on the seabed in the intertidal area. This, and the limited scale and intensity of netting activity means collision with gear above/out of water is highly unlikely. This is therefore unlikely to have a significant effect on the population or distribution of the qualifying features.
		○ Collision below water with static or moving objects not naturally found in the marine environment	Sensitive	**YES**	Fishing gear may be very close to the water surface during tidal flood and ebb periods. Risk of interaction (such as collision below water) between bird feature and fishing gear when birds are occasionally present in coastal area.
		○ Visual disturbance	Sensitive	NO	The scale and intensity of the netting activity and access is limited resulting in limited visual disturbance with little increase on background levels which is unlikely to have an effect on the population or

					distribution of the qualifying features when they are occasionally present in the coastal area. Established access routes are used.
		○ Removal of non-target species such as…			
		- Accidental bycatch of fish (bird prey)	(No interaction)	NO	No interaction- birds feed on cereal, potatoes, grain and grass.
		- Accidental bycatch of birds	Sensitive	**YES**	Fishing gear may be very close to the water surface during tidal flood and ebb periods. Risk of interaction (such as collision below water) between bird feature and fishing gear when birds are occasionally present in coastal area.
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)	*Supporting habitats assessed separately*	***Static fixed nets:*** *- Gill nets, Trammels, Entangling*			(Estuarine birds)
A050 *Anas penelope*; Eurasian wigeon (Non-breeding)		○ Collision above water with static or moving objects not naturally found in the marine environment	Sensitive	NO	Fishing gear is visible at low water when out of the water lying on the seabed in the intertidal area. This, and the limited scale and intensity of netting activity means collision with gear above/out of water is highly unlikely. This is therefore unlikely to have a significant effect on the population or distribution of the qualifying features.
A052 *Anas crecca*; Eurasian teal (Non-breeding)					
A054 *Anas acuta*; Northern pintail (Non-breeding)					
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)					
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)		○ Collision below water with static or moving objects not naturally found in the marine	Sensitive	**YES**	Birds forage on shore, wade in shallow water and dabble in the

A140 *Pluvialis apricaria*; European golden plover (Non-breeding) A141 *Pluvialis squatarola*; Grey plover (Non-breeding) A143 *Calidris canutus*; Red knot (Non-breeding) A144 *Calidris alba*; Sanderling (Non-breeding) A149 *Calidris alpina alpina*; Dunlin (Non-breeding) A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding) A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding) A162 *Tringa totanus*; Common redshank (Non-breeding) Seabird assemblage Waterbird assemblage Breeding waterbird assemblage		environment			upper few centimetres of the water- they do not go more than a few centimetres below the water surface. However fishing gear may be very close to the water surface during tidal flood and ebb periods. Risk of interaction (such as collision below water) between bird feature and fishing gear at this time.
		o Visual disturbance	Sensitive	NO	The scale and intensity of the netting activity and access is limited resulting in limited visual disturbance with little increase on background levels which is unlikely to have an effect on the population or distribution of the qualifying features.
		o Removal of non-target species such as… - Accidental bycatch of fish (bird prey)	Sensitive	NO	The only birds that feed on fish are shelduck, ringed plover and redshank. Bird species feed on a wide range of prey and the fish they do feed on are small and would not be caught in the nets mesh. The impact on the bird feature food resource is therefore minimal. This is unlikely to have an effect on the population or distribution of the qualifying features.
		- Accidental bycatch of birds	Sensitive	**YES**	Fishing gear may be very close to the water surface during tidal flood

					and ebb periods. Risk of interaction (such as collision below water) between bird feature and fishing gear at this time if birds are wading or floating on the water surface. Bird species do not go below the water surface and limited activity means accidental removal of birds is highly unlikely when the nets are fully submerged.
A183 *Larus fuscus*; Lesser black-backed gull (Breeding) A193 *Sterna hirundo*; Common tern (Breeding) Breeding seabird assemblage Non-breeding waterbird assemblage	*Supporting habitats assessed separately*	***Static fixed nets:*** *- Gill nets, Trammels, Entangling* o Collision above water with static or moving objects not naturally found in the marine environment	Sensitive	NO	(Surface feeding seabirds) Fishing gear is visible at low water when out of the water lying on the seabed in the intertidal area. This, and the limited scale and intensity of netting activity means collision with gear above/out of water is highly unlikely. This is therefore unlikely to have a significant effect on the population or distribution of the qualifying features.
		o Collision below water with static or moving objects not naturally found in the marine environment	Sensitive	**YES**	Risk of interaction (such as collision below water) between bird feature and fishing gear when submerged. Also fishing gear may be very close to the water surface during tidal flood and ebb periods and there is risk of interaction at this time also.
		o Visual disturbance	Sensitive	NO	The scale and intensity of the netting activity and

					access is limited resulting in limited visual disturbance with little increase on background levels which is unlikely to have an effect on the population or distribution of the qualifying features.
		○ Removal of non-target species such as… - Accidental bycatch of fish (bird prey)	Sensitive	NO	The scale and intensity of the netting activity is limited resulting in limited pressure from removal of non-target species and impact on bird feature food resource is minimal. Scaup does not feed on fish, just molluscs.
		- Accidental bycatch of birds	Sensitive	**YES**	Risk of entrapment of bird feature in fishing gear when fully submerged or when near the surface in tidal flood or ebb period.
SPA Supporting Habitat	Intertidal mud Intertidal sand and muddy sand Intertidal mixed sediment	○ Abrasion/disturbance of the substrate on the surface of the seabed ○ Penetration and/or disturbance on the substrate below the surface of the seabed including abrasion *(eg through abrasion and movement of substrate via contact of nets as well as penetration from anchoring/ stakes)*	Sensitive Sensitive	NO NO	Abrasion, penetration and disturbance could be caused by nets, weighted lines and anchors during fishing activity. However, nets are set on sandy substrate and the area is naturally highly dynamic with strong currents, and a large tidal range, therefore any impacts caused by abrasion, penetration or disturbance would be quickly dissipated. Access to the fishery is via established access routes. No

					increase in disturbance on existing background levels. The scale and intensity of the netting activity is limited and unlikely to have a significant effect on the extent, distribution, structure or function of the habitats of the qualifying features.
Natterjack toad (NON MARINE) S1166. *Triturus cristatus*; Great crested newt	Coastal sand dunes (sand dunes)	***Static fixed nets:*** *- Gill nets, Trammels, Entangling* ○ Visual disturbance		NO	Natterjack toads are present on land in area near Hightown Dunes, not in vicinity of majority of fishing activity. They are also present in Altcar rifle range but there is no public access there. Access to beach is via vehicle and foot on established access routes or coastal path, therefore no increase on existing background disturbance levels. The scale and intensity of the netting activity and access is limited resulting in limited visual disturbance which is unlikely to have an effect on the population or distribution of the qualifying features.

Is the potential scale or magnitude of any effect likely to be significant?[4]	**Alone** Uncertain **Comments :** Static netting activity in the Ribble & Alt Estuaries European Site has the potential for gear interaction with the bird features through collision and entanglement below the water surface although the levels of netting occurring in the European Site are low with 12 commercial netters fishing. The NWIFCA concludes that netting may have a likely significant effect on the SPA features of the Ribble & Alt Estuaries European Site, therefore an Appropriate Assessment will be carried out.	**OR In-combination[5]** N/A **Comments :** These activities also occur at the site: • Beam trawl (whitefish, shrimp) • Light otter trawls • Handworking (access from land and vessel) • Longlines • Drift nets (demersal and pelagic) • Pots/creels • Shrimp push nets • Digging for bait In combination effects will be assessed when all initial TLSEs for a site are completed.
Have NE been consulted on this LSE test? If yes, what was NE's advice?	Yes	

[4] Yes or uncertain: completion of AA required. If no: LSE required only.
[5] If conclusion of LSE alone an in-combination assessment is not required.

6. Appropriate Assessment

6.1 Potential risks to features

Introduction

Extensive intertidal mud and sandflats make up the Ribble and Alt Estuaries SPA, along with large areas of saltmarsh in inner areas. A wide sandy shore runs from Crosby to the Alt Estuary, and along the Sefton Coast to the Ribble Estuary. Birds use the large areas of intertidal sand and mudflats as an important feeding area when exposed at low tide. Roost sites are used in the estuary itself (NE site information, 2015).

Static nets

(details of gear and activity described in section 4).

- **All SPA Bird Features** (excluding Ruff which has been screened out at the TLSE stage)

Potential pressures: Due to the nature of the fishing activity all pressures from the Advice on Operations other than the following have been screened out:

- Collision / interaction BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures) and entrapment
- Removal of non-target species (eg accidental bycatch of birds)

Impacts

There may be indirect and direct impacts of fisheries on birds, such as gear entrapment/bycatch (CCW, 2012) and collision above or below the water surface. Birds may be drowned when caught in gear, leading to incidental mortality (Tasker *et al.* 2000, Furness, 2003). Set nets in particular can be a potential hazard to all diving seabirds and are thought to have caused declines to seabird populations around the world through bycatch (Gubbay & Knapman, 1999, Žydelis *et al.* 2009). The risk of entanglement of diving species is increased when nets are made from synthetic materials such as mono-filament nylon which makes nets difficult for birds to see whilst swimming underwater (Furness, 2003, Sonntag *et al.* 2012).

In a study by Sonntag *et al.* (2012), it was assumed that horizontal diving foraging birds were more vulnerable to net mortality than vertical diving species, as were birds that aggregate in large flocks (rather than small groups), and species with lower biogeographic population sizes. A study carried out in Newfoundland by Davoren (2007) found the majority of gillnet bird bycatch comprised of diving birds including auks, with some incidental catches of other species including common tern. Various studies carried out in Scotland, England and Ireland have reported that particular species at risk of being caught in nets as bycatch are guillemots and razorbills- diving auk species (Žydelis *et al.* 2009; Smiddy, 2001; Bourne, 1989; Robins, 1991; RSPB 2010). Žydelis *et al*. (2009) reported that every year in the UK, thousands of guillemots and hundreds of razorbills were caught as bycatch, with annual mortality from gillnets in the north-east of Scotland alone estimated at 10,000-15,000. A study in 1992 also found that the main seabird species caught and killed in salmon bag nets in northeast Scotland were razorbills and guillemots (species particularly vulnerable to entanglement in nets), although losses were small in relation to the total number of

the species in the area (Murray *et al.* 1994). A review into the impacts of fisheries on marine birds in Welsh waters found relatively few reported interactions, with those found relating mostly to bycatch in set nets and disturbance/ prey abundance effects from shellfish harvesting (CCW, 2012).

Fishing effort, bird species and diving habits, abundance and distribution will determine the overall threat and numbers of birds killed within the fishery area and will differ between locations, with increased effects seen closer to breeding colonies where inexperienced young birds may be most susceptible to trapping (Ainley *et al.* 1981; Harrison & Robins, 1992; Tasker *et al.* 2000; Sewell *et al.* 2007; Murray *et al.* 1994; Furness, 2003; Gubbay & Knapman, 1999; Sewell & Hiscock, 2005). A CCW review (2012) stated that impacts varied spatially and temporally, with different effects to bird populations in different locations and at different times of year.

Unintentional bycatch of birds can occur when nets (or any other types of fishing gear) are set within the feeding range of seabirds (Tasker *et al.* 2000). In areas located around diving seabird colonies, or where high densities of birds gather on the water surface, there may be high incidental gill net fishery bycatches (Gubbay & Knapman, 1999; Sewell & Hiscock, 2005). A report by Robins (1991) reported localised seabird bycatch impacts in Britain and Ireland, with bass gillnets set in winter in St Ives Bay (Cornwall) accidentally catching up to 1000 razorbills and guillemots. Other studies in Wales and Scotland found specific impacts were seen in areas of nets set beside colonies but with no evidence of widespread impact (Thomas, 1992; Murray, 1993; Murray *et al*., 1994; Tasker *et al.* 2000). Sewell *et al.* (2007) reported a study in Cardigan Bay where beach-set gillnets set near wintering areas for red throated divers were inspected over 2 years. It was thought that low bird population densities and low fishing intensity led to low levels of fishery bird bycatch as although birds were observed feeding nearby, no evidence of mortality of the birds was identified (Sewell *et al.* 2007).

Gear loss can lead to “ghost fishing” where nets continue to fish after being lost (through bad weather or following damage by mobile gears) or discarded, potentially leading to entanglement of seabirds also (Furness, 2003; Kaiser *et al.* 1996; Sewell & Hiscock, 2005). A study by Kaiser *et al*. (1996) examined ghost fishing catches in gill and trammel nets over 9 months following gear being cut free, which reported fish being the main catch first, then increased crustacea catches over the 9 months. Three shags (diving bird species) were also found caught in the gill net- wave and tidal action may cause lost nets to be brought closer inshore and could lead to bird bycatch which may vary seasonally (Kaiser *et al.* 1996).

Exposure

The static net fishery in the Ribble and Alt Estuaries European Site is small scale compared to the fisheries discussed in the above reports, with a maximum of twelve commercial fishermen using static nets regularly. There has been only one report of bird bycatch known to the local fishery officer in the last 30 years and the only diving bird species present in the area are those included in the “Non-breeding waterbird assemblage” of Common scoter, Cormorant and Scaup. The main populations of Common scoter and Cormorant are found further offshore (*pers. comm.* Natural England, 2016) and this area is not prime feeding ground for them. Scaup are diving ducks, feeding on shellfish (mussels and cockles), crustacea and small insects. These birds are mainly found in freshwater areas. Although a small number of these birds may occasionally be found in coastal areas, feeding in the Ribble and Alt Estuaries European Site, given the low numbers of birds and low level of fishing activity the risk of interaction between bird feature and fishing gear is low.

Shelduck, Wigeon, Teal and Pintail are surface feeding dabbling ducks. It is unlikely these birds (and Bewick's swan, Whooper swan and Pink-footed goose) would collide with or become entangled (caught as non-target bycatch) in static nets present under the water surface which are set to target demersal fish species. This is due to the net being weighted and present further down into the water column towards the seabed, deeper than these birds would feed (in the surface layer). It is unlikely the birds would interact with the nets at low water when the nets are visible on the shore.

Wader species (Oystercatcher, Ringed Plover, Golden Plover, Grey plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Whimbrel, Curlew) feed in the intertidal area on the shore and wade in shallow water. Due to this the birds would not interact with the nets when they are fully submerged and are unlikely to interact with the nets at low water when they are visible on the shore.

During flood and ebb tidal periods however, there will be a time where the set nets are partly/ fully submerged but may be only just covered by the water. At this time they may pose a risk of entrapment to waders and dabbling ducks as they would not be visible to them as they would be at low water, but also would not be fully submerged and covered by a depth of water where they would not pose a risk.

Taking into account the movement of the net in water currents, the nets would have an approximate width of 1m (0.001km) when set on the seabed, and a combined total length used of 3200yards (just under 3km), giving an approximation of 0.003 km^2 footprint of nets being used in the Ribble and Alt Estuaries European Site (the total site covers 124 km^2). This is 0.00242% of the site overall area (spread across the whole site- Annex 4), generally only during October to June (when nets are fished) and in the event that all the nets were being fished at the same time. The birds would also need to be in this area at the same time as fishing is occurring for there to be an interaction between the gear and the features. It would also only be during the hours of the tidal ebb and flood period when nets are set but not fully submerged that a potential risk of interaction is faced by the wader and dabbling duck species.

Common tern and Lesser black-backed gull (and Black-headed gulls) are surface feeding birds that forage in the upper part of the water column but do not go any deeper into the water than this. Surface feeding birds, which forage only at or a few centimetres below the water surface, are less affected (Sonntag *et al.* 2012), and it is therefore unlikely these birds would collide with or become entangled (caught as non-target bycatch) in static nets when they are set fully under the water surface, deeper than the birds feed. It is also unlikely the birds would interact with the nets at low water when they are visible on the shore (out of the water). There may be a risk of interaction during tidal flood and ebb periods, when the net is submerged but not fully set or weighted to the bottom, and may be very close to the water surface. Common tern and Lesser black-backed gull are present at the site from April to September, with a peak in number of gulls between April to August and Common Tern in July and August when post-breeding individuals arrive (Natural England Ribble & Alt Estuaries SPA and Ramsar Supplementary Advice, March 2015). Fishing generally occurs between October and June, therefore there are up to 3 months where the fishery is occurring while the main population of birds are present at the site, however there is evidence that there are some small populations of Lesser black-backed gulls present all year round at the site (British Trust for Ornithology (BTO), 2014; Natural England Ribble & Alt Estuaries SPA and Ramsar Supplementary Advice). As the approximate static net fishing footprint is 0.00242% of the overall site (when all nets are set at the same time), and the overlap for interaction is 3 months, it is highly unlikely there would be an impact from the gear on the feature.

Overall, interaction (such as collision below water and entanglement) between bird feature and fishing gear is highly unlikely due to the limited scale of activity and the small numbers of nets set. The local fishery officer is only aware of one report of bird bycatch in the past 30 years. In addition, the footprint of netting activity is small (0.00242% of the entire site) compared to the distribution and numbers of birds across the European Site (12,412.3 ha). This activity is therefore unlikely to have a significant effect on the population or distribution of the qualifying features.

Table 2: Summary of Impacts

Feature/Sub feature(s)	Conservation Objective	Potential pressure[6] (such as abrasion, disturbance) exerted by gear type(s)[7]	Potential ecological impacts of pressure exerted by the activity/activities on the feature[8] *(reference to conservation objectives)*	Level of exposure[9] of feature to pressure	Mitigation measures[10]
A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding) A038 *Cygnus cygnus*; Whooper swan (Non-breeding) A040 *Anser brachyrhynchus*; Pink-footed goose (Non-breeding)	Maintain or restore the population and distribution of each of the qualifying features within the site.	Risk of interaction (such as collision below water) between bird feature and fishing gear. Removal of non-target species (bird bycatch)	Potential risk to population and distribution of the qualifying bird features from injury or mortality caused by interaction between gear and feature.	Birds are very occasionally present in the coastal area. It is unlikely the birds would interact with the nets at low tide when the nets are visible on the shore. It is unlikely the birds would collide with gear below water as the nets are set deeper than they feed. There is a potential for interaction during tidal flood and ebb period when net is close to water surface when birds are present and nets are set. There is a low exposure of risk due to low level activity. The scale and intensity of	N/A

[6] Guidance and advice from NE.
[7] Group gear types where applicable and assess individually if more in depth assessment required.
[8] Document the sensitivity of the feature to that pressure (where available), including a site specific consideration of factors that will influence sensitivity.
[9] Evidence based e.g. activity evidenced and footprint quantified if possible, including current management measures that reduce/remove the feature's exposure to the activity.
[10] Detail how this reduces/removes the potential pressure/impact(s) on the feature e.g. spatial/temporal/effort restrictions that would be introduced.

				the netting activity is low (0.00242% footprint across entire site) resulting in very limited risk of collision. This is unlikely to have a significant effect on the **population or distribution** of the qualifying features.	
A048 *Tadorna tadorna*; Common shelduck (Non-breeding) A050 *Anas penelope*; Eurasian wigeon (Non-breeding) A052 *Anas crecca*; Eurasian teal (Non-breeding) A054 *Anas acuta*; Northern pintail (Non-breeding)	Maintain or restore the population and distribution of each of the qualifying features within the site.	Risk of interaction (such as collision <u>below</u> water) between bird feature and fishing gear. Removal of non-target species (bird bycatch)	Potential risk to population and distribution of the qualifying bird features from injury or mortality caused by interaction between gear and feature.	Features are surface feeding bird species (dabbling ducks) - there is very limited risk of collision of birds with gear below water as the nets are set deeper than they feed. It is unlikely the birds would interact with the nets at low water when the nets are visible on the shore. There is a risk of interaction during tidal flood and ebb period when net is close to water surface when nets are set. There is a low exposure of risk due to low level activity. The scale and intensity of the netting activity is low (0.00242% footprint across entire site) resulting in very limited risk of collision. This is unlikely to have a	N/A

				significant effect on the **population or distribution** of the qualifying features.	
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding) A137 *Charadrius hiaticula*; Ringed plover (Non-breeding) A140 *Pluvialis apricaria*; European golden plover (Non-breeding) A141 *Pluvialis squatarola*; Grey plover (Non-breeding) A143 *Calidris canutus*; Red knot (Non-breeding) A144 *Calidris alba*; Sanderling (Non-breeding) A149 *Calidris alpina alpina*; Dunlin (Non-breeding) A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding) A157 *Limosa*	Maintain or restore the population and distribution of each of the qualifying features within the site.	Risk of interaction (such as collision <u>below</u> water) between bird feature and fishing gear. Removal of non-target species (bird bycatch)	Potential risk to population and distribution of the qualifying bird features from injury or mortality caused by interaction between gear and feature.	Features are wader species - there is no risk of interaction of birds with gear below water when fully set and they would avoid gear at low water when visible in the intertidal area. There is a risk of interaction during tidal flood and ebb period when net is close to water surface when nets are set. There is a low exposure of risk due to low level activity. The scale and intensity of the netting activity is low (0.00242% footprint across entire site) resulting in very limited risk of collision. This is unlikely to have a significant effect on the **population or distribution** of the qualifying features.	N/A

lapponica; Bar-tailed godwit (Non-breeding) A162 *Tringa totanus*; Common redshank (Non-breeding) Waterbird assemblage Seabird assemblage Breeding waterbird assemblage					
A183 *Larus fuscus*; Lesser black-backed gull (Breeding) A193 *Sterna hirundo*; Common tern (Breeding) Breeding seabird assemblage *(inc. black-headed gull, -not assessed in their own right)* Non-breeding waterbird assemblage *(inc. whimbrel, curlew, cormorant, scaup, common scoter, - not assessed in their own right)*	Maintain or restore the population and distribution of each of the qualifying features within the site.	Risk of interaction (such as collision <u>below</u> water) between bird feature and fishing gear. Removal of non-target species (bird bycatch)	Potential risk to population and distribution of the qualifying bird features from injury or mortality caused by interaction between gear and feature.	Lesser black-backed gull, common tern and black-headed gull are surface feeding bird species – it is unlikely there would be a risk of collision or entanglement of birds with gear set below water, deeper than the birds feed. It is also unlikely these birds would interact with the nets at low water when they are visible on the shore (out of the water). Whimbrel and Curlew are wader species- there is no risk of interaction of birds with gear below water when fully set and they would avoid gear at low water when visible in the intertidal area.	N/A

				There is a risk of interaction during tidal flood and ebb period when net is close to water surface when nets are set. The diving bird species of Cormorants and Common scoter are found further offshore and not often in vicinity of fishing area. Scaup are diving ducks, found mainly in freshwater areas, feeding on shellfish, crustacea and small insects. There is a low exposure of risk due to low level activity. The scale and intensity of the netting activity is low (0.00242% footprint across entire site) resulting in very limited risk of collision. There has been one instance of bycatch of birds reported to the local fishery officer in the last 30 years and limited activity means accidental removal of birds is unlikely. This is unlikely to have a	

				significant effect on the **population or distribution** of the qualifying features.	

7. Conclusion[11]

Taking into account the information detailed in the Appropriate Assessment, it can be concluded that the current low level of fishing, using gill nets, trammels and entangling nets, has no adverse effect on the integrity of the Ribble and Alt Estuaries European Site interest features.

8. In-combination assessment[13]

In combination effects will be assessed in a separate document when all initial TLSEs for a site are completed.

9. Summary of consultation with Natural England

See attached advice from Natural England (Annex 2).

10. Integrity test

It can be concluded that fishing using static fixed nets has no adverse effect on the integrity of the Ribble and Alt Estuaries European Site interest features.

Annex 1: Reference list

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[11] If conclusion of adverse effect alone an in-combination assessment is not required.

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Annex 2: Natural England's consultation advice

Date: 23 February 2016
Our ref: 179138
Your ref: NWIFCA-RA-SPA-006 & NWIFCA-RA-SPA_007

NATURAL ENGLAND

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North Western Inshore Fisheries and Conservation Authority (NWIFCA)
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BY EMAIL ONLY

Dear Sarah

Formal Advice to NWIFCA. Fisheries in EMS Habitats Regulations Assessment for Amber risk Categories in Ribble & Alt Estuaries SPA, including gear types: Gill nets, trammels, entangling nets (NWIFCA-RA-SPA-006) and drift nets (demersal and pelagic) (NWIFCA-RA-SPA-007).

Thank you for your consultation on the above which was received by Natural England on 17 February 2016.

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

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in EMSs[1]. The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive. This document states that for 'green' risk activities a site level assessment will be required if there are 'in combination effects' with other plans or projects. The Department's strong preference is that site level assessments be carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive. Appropriate management measures should be put in place to ensure that the fishing activity or activities either 1) have no likely significant effect on a site in view of its conservation objectives or 2) following assessment, can be concluded to have no adverse effect on the integrity of the site.

Natural England has considered the two Habitat Regulations Assessments (HRAs) prepared by North Western Inshore Fisheries and Conservation Authority (IFCA) for the purposes of making an assessment consistent with the provisions of Article 6(3). Please accept this letter as Natural England's formal advice on the assessments and the conclusions they make. The assessments consider the effects of the following fishing activities on the Ribble & Alt Estuaries Special Protection Area (SPA):

- NWIFCA-RA-SPA-006: Gill nets, trammels, entangling nets;
- NWIFCA-RA-SPA-007: Drift nets (demersal and pelagic);

[1] Defra revised approach: https://www.gov.uk/government/publications/revised-approach-to-the-management-of-commercial-fisheries-in-european-marine-sites-overarching-policy-and-delivery

We are content that the best available and most up to date evidence has been used to carry out the HRAs by North Western IFCA officers to determine whether management of an activity is required to conserve site features, and thus to ensure the protection of the features, from direct and indirect impacts, from the collection of marine fisheries resources.

We note that in combination effects will be assessed in a separate document when all initial Tests of Likely Significant Effects (tLSEs) for a site are completed.

Subject to the outcomes of the in combination assessments, it is Natural England's view that through their two HRAs, North Western IFCA officers appear to have appropriately identified those activities that are likely to have a significant effect in view of the site's conservation objectives, and whether management measures are required in order to ensure that the assessed fishing activity or activities will have no adverse effect on the integrity of the EMS.

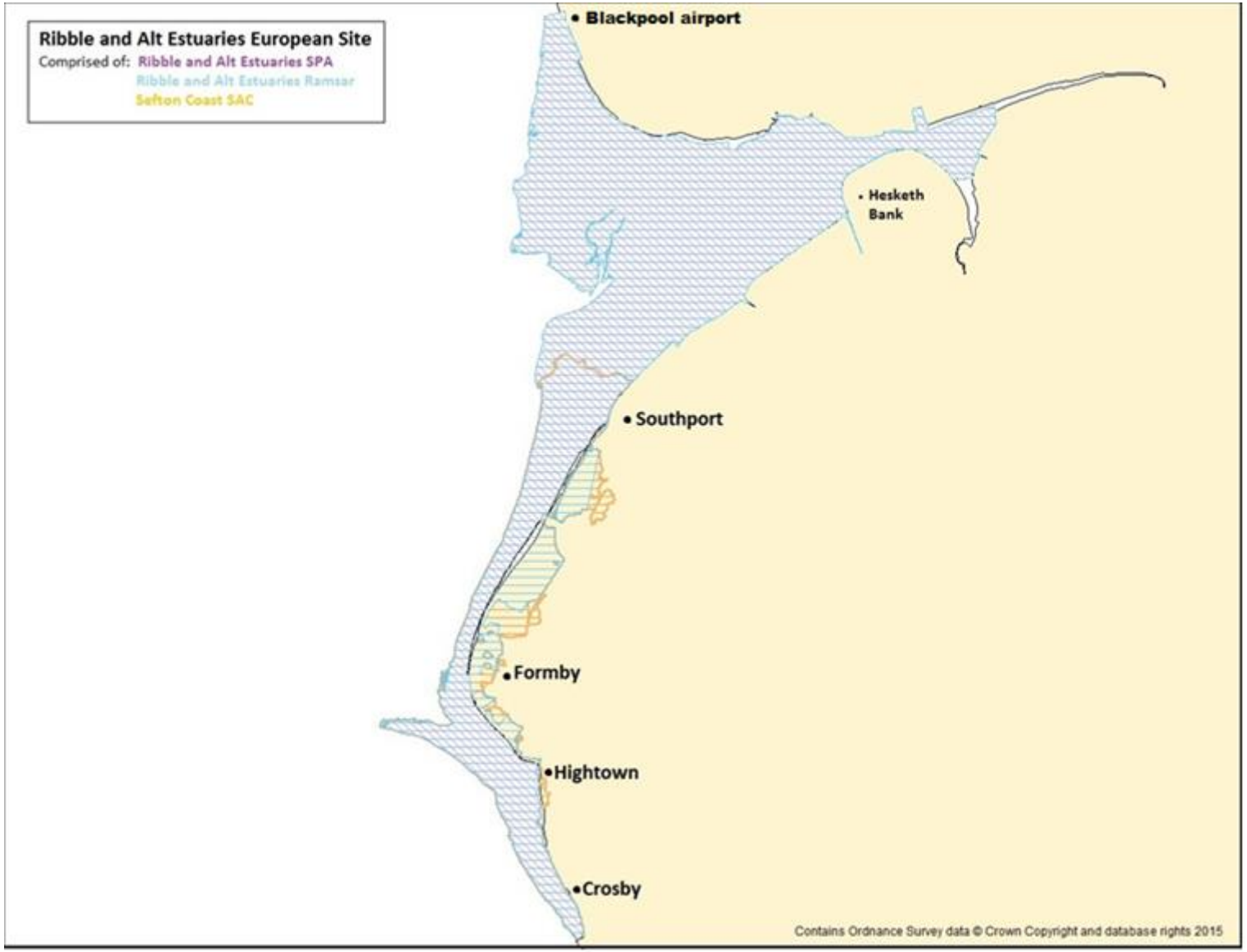
It is Natural England's view that any foreseeable risk, or harm to the site has been appropriately assessed; and a robust mechanism for re-assessing that risk is in place. This view is based on our current knowledge of the impacts of these fishing activities on the designated features.

If you require any further comments or have any queries regarding the above please contact me to discuss them further.

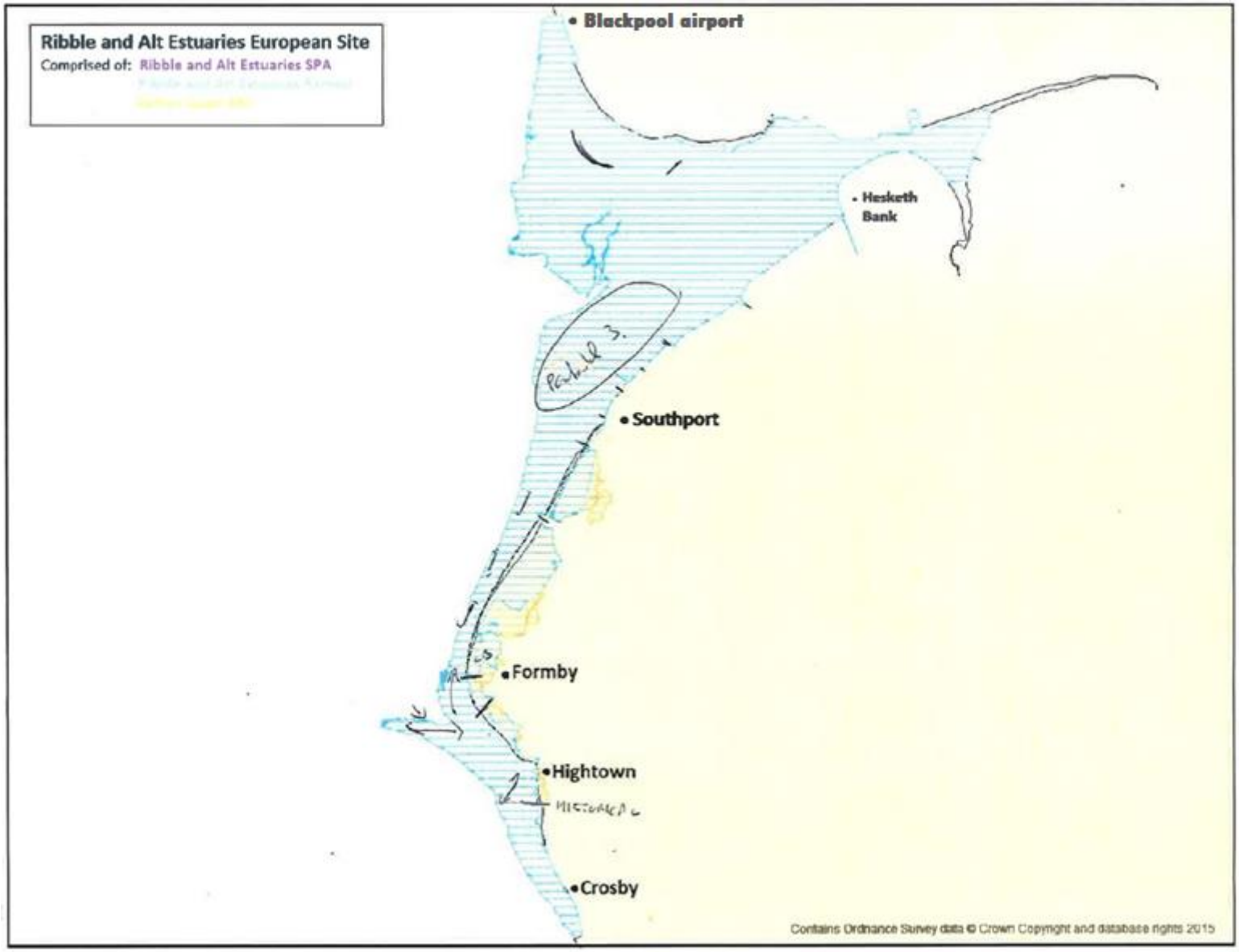
Yours sincerely

Emily Hardman
Cheshire, Greater Manchester, Merseyside and Lancashire Area Team
Email: Emily.Hardman@naturalengland.org.uk
Tel: 0300 060 4011

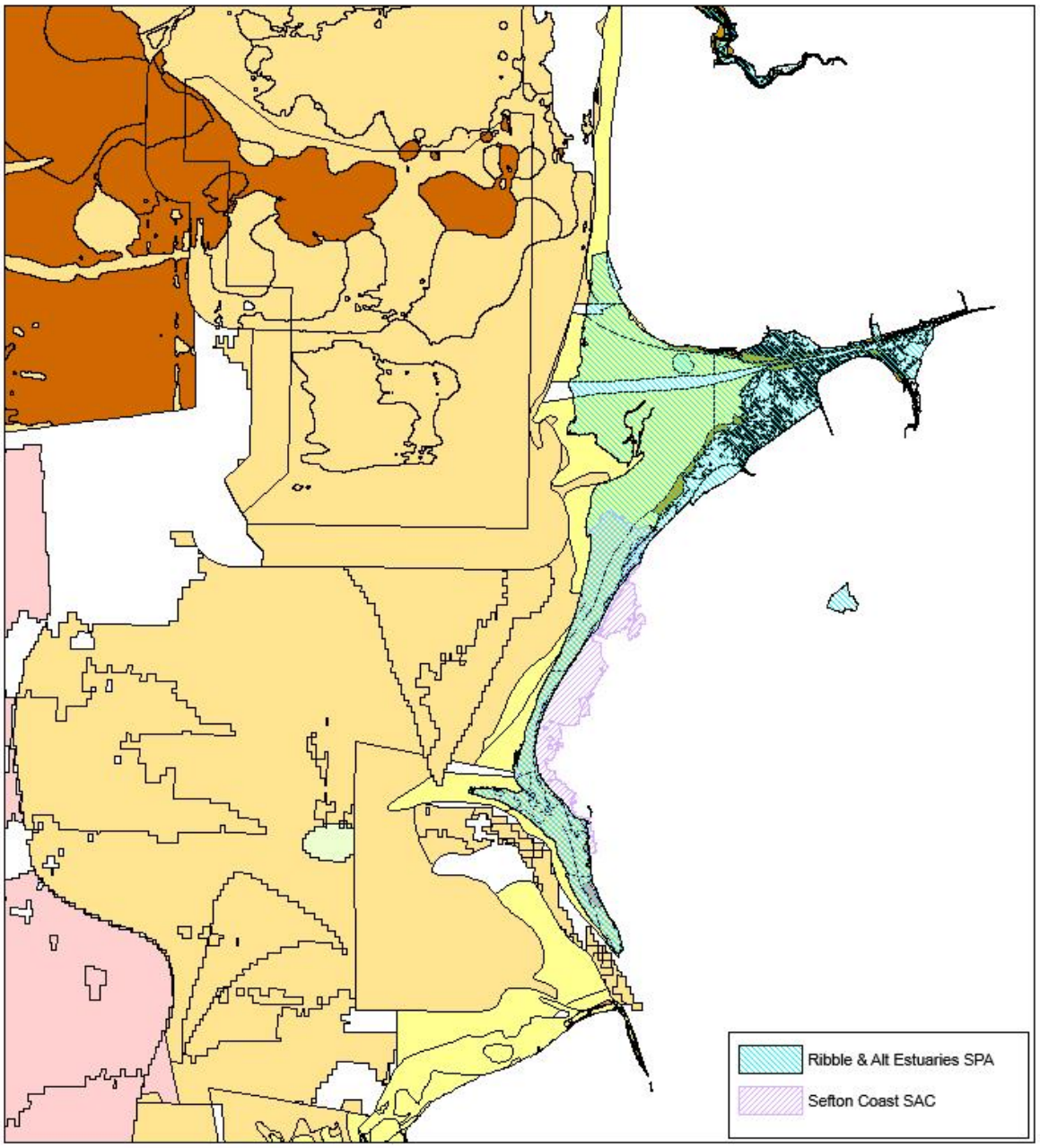
Annex 3: Site Map



Annex 4: Fishing Activity (IFCO knowledge, dashed lines show activity 25.08.15)



Annex 5: Feature map



Broad Scale Habitats

Eunis Code	EMS Subfeature Common Name	Eunis Code	EMS Subfeature Common Name
A1	Intertidal rock	A3	Infralittoral rock
A2.1	Intertidal coarse sediment	A4	Circalittoral rock
A2.2	Intertidal sand and muddy sand	A5.1	Subtidal coarse sediment
A2.3	Intertidal mud	A5.2	Subtidal sand
A2.4	Intertidal mixed sediments	A5.3	Subtidal mud
A2.5	Saltmarsh	A5.4	Subtidal mixed sediments
A2.61	Intertidal seagrass beds	SF_SH_5	Intertidal biogenic reef: mussel beds
A2.71	Intertidal biogenic reef: Sabellaria spp.	SF_SH_6	Subtidal biogenic reef: mussel beds