

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

NWIFCA-MB-EMS-010

Date completed: 13th February 2017

Completed by: J. Haines

Site:

Morecambe Bay and Duddon Estuary

European Designated Sites: UK0013027 Morecambe Bay Special Area of Conservation (SAC)
UK 9005031 Morecambe Bay Special Protection Area (SPA)
UK11045 Morecambe Bay Ramsar
UK9005031 Duddon Estuary Special Protection Area (SPA)
UK11022 Duddon Estuary Ramsar
Morecambe Bay and Duddon Estuary pSPA

European Marine Site: Morecambe Bay and Duddon Estuary

Qualifying Feature(s):

SAC and Ramsar

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
H1130. Estuaries
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
H1150. Coastal lagoons
H1160. Large shallow inlets and bays
H1170. Reefs
H1220. Perennial vegetation of stony banks; Coastal shingle vegetation outside the reach of waves (NON MARINE)
H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand; Pioneer saltmarsh
H1330. Atlantic salt meadows (*Glaux-Puccinellietalia maritima*)
H2110. Embryonic shifting dunes (NON MARINE)
H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram (NON MARINE)
H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland (NON MARINE)
H2150. Atlantic decalcified fixed dunes (*Calluno-Ulicetia*); Coastal dune heathland (NON MARINE)
H2170. Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*); Dunes with creeping willow (NON MARINE)
H2190. Humid dune slacks (NON MARINE)
S1166. *Triturus cristatus*; Great crested newt (NON MARINE)
Natterjack Toad (NON MARINE)

SPA and Ramsar

A026 *Egretta garzetta*; Little egret (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*; Wigeon - (non-breeding – Ramsar only)
A054 *Anas acuta*; Northern pintail (non-breeding)
A063 *Somateria mollissima*; Common eider (non-breeding – Ramsar only)
A067 *Bucephala clangula*; Goldeneye - (non-breeding – Ramsar only)
A069 *Mergus serrator*; Red-breasted merganser - (non-breeding – Ramsar only)
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)
A142 *Vanellus vanellus*; Lapwing - (non-breeding – Ramsar only)
A143 *Calidris canutus*; Red knot (non-breeding)
A144 *Calidris alba*; Sanderling (non-breeding)
A149 *Calidris alpina alpina*; Dunlin (non-breeding)
A151 *Calidris pugnax*; Ruff (non-breeding)
A156 *Limosa limosa*; Black-tailed godwit (non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (non-breeding)
A160 *Numenius arquata*; Eurasian curlew (non-breeding)
A162 *Tringa totanus*; Common redshank (non-breeding)
A169 *Arenaria interpres*; Ruddy turnstone (non-breeding)
A176 *Larus melancephalus*; Mediterranean gull (non-breeding)
A183 *Larus fuscus*; Lesser black-backed gull (Breeding, non-breeding)
A184 *Larus argentatus*; Herring gull (Breeding)
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Phalacrocorax carbo; Cormorant – (non-breeding – Ramsar only)
Podiceps cristatus; Great crested grebe - (non-breeding – Ramsar only)
Seabird assemblage
Waterbird assemblage

Site sub-feature(s)/Notable Communities:

SAC and Ramsar

Sandbanks which are slightly covered by sea water all the time – Subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud.

Estuaries - Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal coarse sediment, intertidal rock, intertidal stony reef, intertidal biogenic reef: mussel beds, intertidal biogenic reef: *Sabellaria* spp., subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritima*).

Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats – Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal seagrass beds, intertidal coarse sediment.

Coastal lagoons

Large shallow inlets and bays – Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal seagrass beds, intertidal coarse sediment, intertidal rock, intertidal stony reef, intertidal biogenic reef: mussel beds, intertidal biogenic reef: *Sabellaria* spp., subtidal stony reef, circalittoral rock, subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritima*).

Reefs – Circalittoral rock, intertidal biogenic reef: mussel beds, intertidal biogenic reef: *Sabellaria* spp., intertidal rock, intertidal stony reef, subtidal stony reef.

Perennial vegetation of stony banks: Coastal shingle vegetation outside the reach of waves

***Salicornia* and other annuals colonising mud and sand: Glasswort and other annuals colonising mud and sand;**

Pioneer saltmarsh

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) (referred to as Saltmarsh)

Embryonic shifting dunes

Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”); Shifting dunes with marram

Fixed dunes with herbaceous vegetation (“grey dunes”); Dune grassland

Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); Coastal dune heathland

Dunes with *Salix repens* spp. *Argentea* (*Salicion arenariae*); dunes with creeping willow

Humid dune slacks

Great crested newt (*Triturus cristatus*)

Supporting habitat: Great crested newt (NON MARINE) – coastal sand dunes
Natterjack Toad (NON MARINE)- coastal sand dunes

SPA and Ramsar

Annual vegetation of drift lines, Atlantic salt meadows (*Glauco-puccinellietalia maritima*), coastal lagoons, freshwater and coastal grazing marsh, intertidal biogenic reef: mussel beds, intertidal coarse sediment, intertidal mud, intertidal rock, intertidal sand and muddy sand, intertidal seagrass beds, intertidal stony reef, *Salicornia* and other annuals colonising mud and sand, water column.

Generic sub-feature(s):

Intertidal mud and sand, Intertidal mud, Seagrass, Saltmarsh spp., Brittlestar beds, Subtidal muddy sand, Intertidal boulder and cobble reef, Subtidal boulder and cobble reef, *Sabellaria* spp. reef, Intertidal boulder and cobble reef, Surface feeding birds, Estuarine birds, Intertidal mud and sand, Intertidal boulder and cobble reef, Saltmarsh spp., Coastal lagoons.

High Level Conservation Objectives:

Morecambe Bay SAC

With regard to the SAC and the natural habitats and/or species for which the site has been designated (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 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.

Morecambe Bay SPA

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.

Duddon Estuary SPA

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.

Fishing activities assessed:**Gear type(s): Netting**

- Stake nets
- Static fixed nets
- Drift nets

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 (e.g. 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 2016.

The purpose of this site specific assessment document is to assess whether or not in the view of NWIFCA the fishing activity of netting has a likely significant effect on the qualifying features of the Morecambe Bay European Site, and on the basis of this assessment whether or not it can be concluded that netting 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 species¹
- Reference list² (Annex 1)
- Natural England's consultation advice (Annex 2)
- Site map(s) – sub-feature/feature location and extent (Annex 3)
- Fishing activity data (map(s), etc.) (Annex 4)

2. Information about the EMS

(See cover pages).

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

The Morecambe Bay and Duddon Estuary European Site interest features, boulder and cobble reef, *Sabellaria alveolata* reef and Seagrass beds are protected from all bottom towed gears, in addition Seagrass beds are protected from bait collecting or working a fishery by hand or using a hand operated implement through a prohibition under [NWIFCA Byelaw 6](#), introduced in May 2014.

4. Information about the fishing activities within the site

Most people who commercially fish in the Morecambe and Duddon Estuary European Site prosecute a wide variety of fisheries due to the seasonality and availability of stock, which include shrimping, netting, hand gathering (cockles and mussels) and potting. The operators who prosecute netting within the European Site use a range of nets at different times of year for different species. Therefore the figures given in each of the different netting types are often the same vessels / people.

In total there are 30 vessels that net within the European Site, 3 from Ravenglass, 10 from Barrow, 5 from Morecambe, 1 from Knott End, 5 from Sunderland Point, and 6 from Fleetwood. All of the vessels net on a seasonal basis. Most of the vessels also spend a proportion of their time fishing outside of the European Site. There are 13 commercial operators who set nets from the shore, 10 of which are stake nets and 3 of which are beach set gill and trammel nets.

Netting Regulation

North Western Inshore Fisheries and Conservation Authority was set up in 2011 under the Marine and Coastal Access Act 2009 and replaced the Cumbria Sea Fisheries Committee and North Western Sea Fisheries Committee. Both SFC Byelaws were merged and there are currently two sets of existing byelaws covering different parts of the site. The point in which the district byelaws are split is Haverigg Point (A line drawn true south west from 54.18967, -3.31833 to the 6nm boundary) as shown in Annex 5.

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.)

Netting within the European Site is regulated by:

North Western IFCA District

NWIFCA Byelaw 5 Heysham Bass Nursery Area prohibition of fishing

North Western SFC District

NWSFC	Byelaw 2	Attachment to nets	
NWSFC	Byelaw 7	Mesh sizes – nets other than trawls net	(Intertidal only)
NWSFC	Byelaw 8	Small mesh sizes – nets other than trawls net	(Intertidal only)
NWSFC	Byelaw 9	Mechanically propelled vessels – maximum length	
NWSFC	Byelaw 10	Set and Drift Nets	
NWSFC	Byelaw 11	Marking of fishing gear and keep pots	
NWSFC	Byelaw 19	Specified fish sizes	
NWSFC	Byelaw 26	Fixed Engine Prohibitions and Authorisations	(Annex 4 and 5)
NWSFC	Byelaw 27	Mobile Nets Prohibitions and Authorisations	(Annex 4 and 5)

Cumbria SFC District

CSFC	Byelaw 3	Size limits of boats allowed inside the district	
CSFC	Byelaw 4	Marking and siting of fixed nets, traps, pots and lines	
CSFC	Byelaw 10	Fixed Engine Fishery	(Annex 4 and 5)
CSFC	Byelaw 15	Vessels with a registered engine power > 221kw	

EU Council Regulations

Council Regulations (EC) No. 850/98 – Technical Measures

Council Regulations (EU) 2016/72 – Bass Fishing Restrictions

Note: The council regulation has changed in 2017 from Council Regulations (EU) 2016/72 to Council Regulations (EU) 2017/127 one of the changes within the regulation is for the protection of bass, because bass are a target species by some operators it is likely that the new regulation will reduce netting effort. Due to the regulations being new it is hard to predict what effect it will have on the fishing effort, within the document the fishing effort from 2016 has been used, the fishing effort in 2017 is likely to be less.

Stake Nets

- In the European Site there are 10 commercial operators who use stake nets. The typical length of stake net is between 50m and 100m of net. Most nets used are made from monofilament, and the mesh size varies from 90mm to 120mm mesh depending on target catch with 90mm being most common. The net is held in place by stakes which have been penetrated into the sediment. The net is typically staked every 1m to 3m which means the net's movement is restricted. The nets are typically set next to a channel / side channel. The nets are checked at low water on every tide on which they are fished. The nets are seasonal and are fished between May and October. The target species are usually bass, flatfish (mainly flounder with some plaice) and mullet but the net will catch other species of fish. Typical catch would be from one or two fish to one or two boxes of mixed fish (25-50kg).

The following NWIFCA regulations are in place:

- in NWSFC district, Byelaw 26 permits stake netting in Areas 7 to 11 with a prohibition in Areas 1 to 6 between 1st May and 30th November (Annex 5);
- NWSFC Byelaw 11 restricts maximum length of a single net to 275m, with is an additional restriction that nets must not be set closer than 137.5m from another net;

- CSFC Byelaw 10 prohibits netting in Area 4 from the 1st April to 30th November and further prohibits any shore and shallow water netting in the CSFC district from the 1st June to 30th November (the byelaw states any net used inside this period must have at least 3m of water over the headline at any state of the tide).

Static Nets – Gill Nets and Trammels

Static netting occurs from the shore or from a vessel. The nets are usually made of monofilament and consist of a lead line to keep the net on the seabed and have a corked or buoyed headline to ensure that as the tide rises the net will lift with the tide. The net mesh size is between 90mm and 120mm depending on target catch with 90mm being most common. A trammel net consists of three walls of net, a finer mesh sandwiched between two walls of a larger mesh size. Trammel nets are used mainly to target flatfish, flounder and some plaice. The flatfish that are caught, particularly flounder, are used as pot bait for the vessels which fish for crab and lobster to reduce costs and because flounder is of the little commercial value. Catches can vary greatly from a few fish to 250kg, with a typical catch of bass and mullet being between 1kg and 120kg with mullet unpredictable.

There are 30 vessels which have been known to fish with static nets in the site. The operators target neap tides and on average fish between two and ten tides a month. The nets are set from the vessel and anchored in place. The operator then usually leaves the net for a tide or at least a few hours before hauling. Each vessel can fish a couple of nets at once and nets are up to 275m long.

There are three operators who fish using static nets from the shore. These nets are typically set at low water near a channel. The nets are set on the sand then as the tide comes in the headline floats and lifts the net. At high water there is a depth of water above the headline and the net is fully submerged. The operator then checks the net at low water on the following tide and clears any catch. The net is then either left to fish the next tide or is removed. Typically a quad or tractor is used to get the nets to the target location and to transport the catch, and access is via established routes. Nets fished from the shore average between 100m and 250m in length.

Operators use gill nets which have a single wall of netting to target bass and mullet between May and October. Cod can be targeted with a mesh size of 130mm or greater, and the amount of netting is closely related to the monthly quota allocated to a vessel. One vessel has been known to fish for turbot and thornback ray in February and March in deeper water using a larger mesh size (150mm or greater).

The following NWIFCA regulations are in place:

- NWSFC byelaw 26 permits fixed engines in Areas 7 to 11 with a prohibition in Areas 1 to 6 between 1st May and 30th November (Annex 5) and restricts the maximum length of a single net to 275m. There is an additional restriction that nets must not be set closer than 137.5m from another net;
- CSFC Byelaw 10 prohibits placing of a fixed engine in Areas 1 to 4 from the 1st April to 30th November and prohibits any shore and shallow water netting in the CSFC district from the 1st June to 30th November (byelaw states any net used inside this period must have at least 3m of water over the headline at any state of the tide).

New bass regulations (Council Regulation (EU) 2016/72) have meant there has been an increase in the use of static gill nets due to drift netting being banned from the 1st January to the 30th June for bass. Netting for bass usually starts in May. The main months for static netting are May and June when drift netting is banned.

Drift Nets

Drift nets are mobile nets that are fished from a boat and that are not fixed or set in any way; instead they drift with prevailing currents and tide, catching fish by entangling. Drift nets are typically made of monofilament and have a mesh size between 90mm and 120mm depending on target species. The net is shot by paying the net out from the vessel; once all of the net is out the operator drifts with the net or allows the net to drift on its own. Once the net has drifted over the target area it is hauled, cleared of fish and re-shot. When fishing over rough ground the net does not come into contact with the sea bed as it would become caught and damaged. When fishing over sand the footrope may skim over the seabed.

There are 30 vessels which fish with drift nets in the site mainly targeting bass and mullet. The operators target neap tides and on average fish between two and ten nights a month. Due to recent restrictions on drift netting for bass, drift netting is prohibited from the 1st January to the 30th June, so drift netting for bass now starts on the 1st July and runs until October when catches decrease.

Drift netting does occur for cod but due to monthly quota allocations being small it does not occur very often meaning that species targeted are bass and mullet. The nets can be up to 500m in length and some operators will fish two nets at once, setting one off on a drift and then setting a second before hauling the first net. Catches can vary greatly from a few fish to 250kg, a typical catch of bass and mullet is between 1kg and 120kg with mullet unpredictable.

The following NWIFCA regulations are in place:

- NWSFC Byelaw 27 permits drift netting in Areas 7 to 11 with a prohibition in Areas 1 to 6 between 1st May and 30th November (Annex 5);
- CSFC Byelaw 10 prohibits drift netting in Area 4 from the 1st April to 30th November.

Anchored Flue Nets

An anchored flue net is a net which is fished across a channel, usually in a deeper pool at low water. Once the net is set and anchored, a boat is used to scare fish into the net by running up and down the length of the net and creating disturbance from the wash of the engine and by hitting the water with a dustbin lid shaped object to create noise and water disturbance. The net is the same as a gill net made of monofilament and with a mesh size between 90mm and 120mm. The target species is bass and mullet.

The following NWIFCA regulations are in place:

- NWSFC Byelaw 26 restricts netting between 1st May and 30th November in Areas 7 to 11;
- Within this time and area anchored flue netting is only permitted between 1st July and 30th November in district 2 – Leven Estuary and district 3 – Kent Estuary (Annex 5).

Outside of the seasonal restriction of Byelaw 26 anchored flue netting does not occur due to the seasonality of the target species.

In 2016 there were four permits for flue netting, which is the typical number each year with only a couple of operators occasionally using flue nets. The maximum length of net used is 75m with only one net permitted to fish at one time. The net has to be hauled every 30 minutes. Catches can vary greatly from a few fish to 250kg, and a typical catch of bass and mullet is between 1kg and 120kg with mullet unpredictable.

Whitebait Filter Nets

Whitebait filter nets are fixed nets with a fine mesh used to catch whitebait mainly consisting of sprats.

The following NWIFCA regulations are in place:

- NWSFC Byelaw 26 restricts netting between 1st May and 30th November in Areas 7 to 11;
- within this time and area whitebait filter netting is only permitted between 1st May and 31st May and then between the 1st September and 31st September and is restricted to one area, district 5 – Lune Estuary (Annex 5).

In 2016 there were 8 permits issued to fish whitebait nets with only two operators fishing up to ten nets collectively. Whitebait filter nets are fished in the upper reaches of an estuary; they are set at low water and consist of a cone shaped net 20m long with a 10m opening. Due to the way the net is set, it only fishes on the ebb tide. As the tide floods the buoyed headline rises to make the mouth of the net open, then on the ebb the water passes through the net and the small fish are filtered out of the net. The mesh size varies along the length of the net starting with a 50mm mesh for the first two quarters of the net, dropping to 16mm for the third quarter and 5mm for the final quarter. Outside of the Byelaw 26 seasonal netting restrictions, whitebait filter nets are fished most months by the same two operators. Catches can vary greatly with a typical catch being between 75kg and 100kg with a total maximum catch recorded as 1000kg.

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 EMS³.

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

5.1 Table 1: Assessment of LSE

Features: The NWIFCA carried out a mapping exercise overlaying fishing activity (Annex 6) on to a habitat map of the designated SAC and SPA supporting habitat features and sub features (Annex 7). Only habitat features that the fishing activity interacts with have been screened into the table of Assessment of Likely Significant Effect. All SPA features (bird species) have been screened in. All sand dune and saltmarsh features and sub-features have been screened out due to the fishing activity either happening from a boat or access to the intertidal area via established routes. It is not considered that any of the fishing activities will have an effect on the coastal processes which saltmarsh and sand dune features and sub features require.

Pressures: All pressures from the Advice on Operations table provided in the Morecambe Bay and Duddon Estuary Conservation Advice package have been screened out, other than the pressures in the following table, due to the nature of the fishing activity, size of vessels and the regulation already in place for netting in the Site. Only drift netting occurs on the sub-features circalittoral rock and intertidal biogenic reefs (mussel beds). Drift netting does not make contact with these features as the nets would get caught and become damaged or lost. Therefore the pressures of abrasion/disturbance of the substrate on the surface of the seabed and penetration, and/or disturbance of the substrate below the surface of the seabed have been screened out.

Qualifying Feature	Sub-feature	Potential pressure(s)	Sensitivity	Potential for Likely Significant Effect?	Justification and evidence
H1130. Estuaries	Intertidal mud	Abrasion/disturbance of the substrate on the surface of the seabed	Sensitive	No	<i>Stake/ Static/ Flue/ Drift/ Whitebait Net</i> The natural environment (mobile sediments) in which the fishing activity occurs is a highly dynamic and changeable environment. The areas which are targeted by the operators are constantly changing and the sediment moving. Stakes and anchors do penetrate into the substrate and all types of net that come into contact with the sea bed will cause abrasion. Within the site there are naturally high levels of sand movement due to moving channels and high tidal range. It is unlikely that netting will cause significant abrasion when compared to background levels. It can therefore be concluded that it is unlikely that abrasion, disturbance and penetration will have a significant effect on the extent, distribution, structure or function of the qualifying features.
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	Intertidal sand and muddy sand	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive	No	
H1160. Large shallow inlets and bays	Intertidal mixed sediments				
SPA Supporting Habitats					

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

		Removal of target species	Not Assessed	No	<i>Stake/ Static/ Flue/ Drift/ Whitebait Nets</i>
		Removal of non-target species	Not Assessed	No	EU technical measures (EC 850/98) on mesh sizes vary depending on target species and are in place to reduce the number of fish caught that are below the MLS / MCRS. Due to the scale of activity and the seasonality of fishing it is unlikely that the removal of larger specimens of fish is going to have a significant effect on the: - Presence and spatial distribution of associated communities; - Presence and abundance of typical species; - Species composition of component communities.
H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks	Subtidal coarse sediment	Abrasion/disturbance of the substrate on the surface of the seabed	Sensitive	No	<i>Static/ Flue/ Drift Nets</i>
H1160. Large shallow inlets and bays	Subtidal mixed sediment Subtidal sand	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive	No	The natural environment (mobile sediments) in which the fishing activity occurs is a highly dynamic and changeable environment. The areas which are targeted by the operators are constantly changing and the sediment moving. Stakes and anchors do penetrate into the substrate and all types of net that come into contact with the sea bed will cause abrasion. Within the site there are naturally high levels of sand movement due to moving channels and high tidal range. It is unlikely that netting will cause significant abrasion when compared to background levels. It can therefore be concluded that it is unlikely that abrasion, disturbance and penetration will have a significant effect on the extent, distribution, structure or function of the qualifying features.
		Removal of target species	Sensitive	No	<i>Static / Drift Nets</i>
		Removal of non-target species	Not Assessed	No	EU technical measures (EC 850/98) on mesh sizes vary depending on target species and are in place to reduce the number of fish caught that are below the MLS / MCRS. Due to the scale of activity and the seasonality of fishing it is unlikely that the removal of larger specimens of fish is going to have a significant effect on the: - Presence and spatial distribution of associated communities; - Presence and abundance of typical species; - Species composition of component communities.
H1160. Large shallow inlets and bays H1170. Reefs SPA Supporting Habitats	Intertidal biogenic reefs: mussel beds	Removal of target species Removal of non-target species	Sensitive Not Assessed	No No	<i>Drift Nets</i> EU technical measures (EC 850/98) on mesh sizes vary depending on target species and are in place to reduce the number of fish caught that are below the MLS / MCRS. Due to the scale of activity and the seasonality of fishing it is unlikely that the removal of larger specimens of fish is going to have a significant effect on the: - Presence and spatial distribution of associated communities; - Presence and abundance of typical species; - Species composition of component communities.

H1160. Large shallow inlets and bays H1170. Reefs	Circalittoral rock	Removal of target species Removal of non-target species	Sensitive Not Assessed	No No	<i>Drift Nets</i> EU technical measures (EC 850/98) on mesh sizes vary depending on target species and are in place to reduce the number of fish caught that are below the MLS / MCRS. Due to the scale of activity and the seasonality of fishing it is unlikely that the removal of larger specimens of fish is going to have a significant effect on the: - Presence and spatial distribution of associated communities; - Presence and abundance of typical species; - Species composition of component communities.
A026 <i>Egretta garzetta</i> ; Little egret A038 <i>Cygnus Cygnus</i> ; Whooper swan A040 <i>Anser brachyrhynchus</i> ; Pink-footed goose A048 <i>Tadorna tadorna</i> ; Common shelduck A050 <i>Anas Penelope</i> ; Wigeon A054 <i>Anas acuta</i> ; Northern pintail A063 <i>Somateria mollissima</i> ; Common eider (Breeding) A067 <i>Bucephala clangula</i> ; Goldeneye	Supporting Habitats assessed above	Collision above water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures) Collision below water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures)	Sensitive Sensitive	No No	<i>Stake/ Static/ Flue/ Drift/ Whitebait Net</i> Low number of operators spread over a large area and fishers targeting different areas at different times of the tide. The vessels and vehicles which are used are small (quads, tractors and under 10m vessels) and do not travel at fast speeds. Any lights used during night fishing are small and few from a vehicle and under 10m vessels. The fishing is not occurring close to large breeding aggregations and there are no known issues with birds colliding with fishing vessels or vehicles in the site. Collision and entanglement with nets above and below water will be assessed in the removal of non-target species.
A069 <i>Mergus serrator</i> ; Red-breasted merganser A130 <i>Haematopus ostralegus</i> ; Eurasian oystercatcher A137 <i>Charadrius hiaticula</i> ; Ringed plover A140 <i>Pluvialis apricaria</i> ; European golden plover A141 <i>Pluvialis squatarola</i> ; Grey plover A142 <i>Vanellus vanellus</i> ; Lapwing A143 <i>Calidris canutus</i> ; Red knot A144 <i>Calidris alba</i> ; Sanderling A149 <i>Calidris alpina alpina</i> ; Dunlin A151 <i>Calidris pugnax</i> ; Ruff A156 <i>Limosa limosa</i> ; Black-tailed godwit A157 <i>Limosa lapponica</i> ; Bar-tailed godwit A160 <i>Numenius arquata</i> ; Eurasian curlew A162 <i>Tringa totanus</i> ; Common redshank A169 <i>Arenaria interpres</i> ; Ruddy turnstone A176 <i>Larus melancephalus</i> ; Mediterranean gull A183 <i>Larus fuscus</i> ; Lesser black-backed gull (Breeding)		Removal of target species Removal of non-target species (marine species) Removal of non-target species (bird species) Visual disturbance	Sensitive Sensitive Sensitive Sensitive	Yes (whitebait nets only) No Yes Yes	<i>Stake/ Static/ Flue/ Drift/</i> EU technical measures (EC 850/98) on mesh sizes vary depending on target species and are in place to reduce the number of fish caught that are below the MLS / MCRS. Due to the small scale activity and seasonality of fishing it is unlikely that the removal of larger specimens of fish would have a significant effect on the food source of the birds which feed on fish as a food source. <i>Whitebait Net</i> Species taken through to AA: - Little Egret - Sandwich Tern - Common Tern - Little Tern - Red Breasted Merganser - Cormorant - Great Crested Grebe - Lesser black backed gull - Mediterranean gull - Herring gull All species taken through to AA All species taken through to AA

A184 <i>Larus argentatus</i> ; Herring gull (Breeding)					
A191 <i>Sterna sandvicensis</i> ; Sandwich tern (Breeding)					
A193 <i>Sterna hirundo</i> ; Common tern (Breeding)					
A195 <i>Sterna albifrons</i> ; Little tern (Breeding)					
<i>Phalacrocorax carbo</i> ; Cormorant					
<i>Podiceps cristatus</i> ; Great crested grebe					
Seabird assemblage					
Waterbird assemblage					

Is the potential scale or magnitude of any effect likely to be significant?⁴	Alone	OR In-combination⁵
	<p>Yes</p> <p>Comments :</p>	<p>Uncertain</p> <p>Comments :</p> <p>These activities also occur at the site:</p> <ul style="list-style-type: none"> • Beam trawl (whitefish) • Beam trawl (shrimp) • Light otter trawl • Fixed nets (gill, trammel, entangling) • Longlines • Pots and creels • Shrimp push nets • Hand working (cockles and mussels) <p>In combination effects will be assessed when all initial TLSEs for a site are completed.</p>
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 SPA and supporting habitat features

6.1.1 Pressures and Potential Impacts

6.1.1.1 Removal of target species

Some regional declines of seabirds have been related to fishing activity (Anker-Nilssen *et al.* 1997). There may be indirect effects to birds from fishing activity through removing and competing for prey resources, as seen in the North Sea where black-legged kittiwakes have declined by over 50% since 1990 during a period where there was an active lesser sandeel fishery (Frederiksen *et al.* 2004). This was also thought to be partly due to profound oceanographic changes at the same time (Frederiksen *et al.* 2004). Whitebait filter nets target juvenile fish and small fish species which are a food source for fish eating SPA features little egret, sandwich and common tern, red breasted merganser, cormorant and great crested grebe. By removing a potential prey resource could affect food availability, condition and survival of SPA features and the abundance of SPA features.

6.1.1.2 Removal of non-target species (bird species)

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 gill net bird bycatch comprised of diving birds including auks, with some incidental catches of other species including common tern. Studies carried out in Scotland, England and Ireland have reported that particular diving auk species at risk of being caught in nets are guillemots and razorbills (Žydelis *et al.* 2009; Smiddy, 2001; Bourne, 1989; Robins, 1991). 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 gill nets in the northeast 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, species-specific diving habits, abundance and distribution will determine the overall threat and numbers of birds killed within an area and will differ between locations, with increased effects seen closer to breeding colonies where inexperienced young birds may be more susceptible to entrapment (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 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). Robins (1991) reported localised seabird bycatch impacts in Britain and Ireland, with bass gill nets 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 in areas beside colonies but 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 gill nets near wintering areas for red throated divers were inspected over two years. It was thought that low bird population densities and low fishing intensity led to low levels of bird bycatch because birds were observed feeding nearby but no evidence of bird mortality 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; these nets also have the potential to entangle birds (Furness, 2003; Kaiser *et al.* 1996; Sewell & Hiscock, 2005). A study by Kaiser *et al.* (1996) followed ghost fishing catches in discarded gill and trammel nets over nine months: at first fish were mainly caught, with crustacea catches increasing over the duration of the study period and a total of three shags (diving bird species). 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).

6.1.1.3 Visual Disturbance

Visual disturbance can cause an increase in the amount of energy which is used due to the extra flights and increased alertness the bird takes to avoid the activity, decrease the amount of feeding time and concentrate the number of individuals into a smaller area which in turn increases competition rates and potentially decreases the availability of the food resource.

6.1.2 Exposure to Pressures

6.1.2.1 Removal of target species (marine fish)

There are currently eight permits issued for whitebait filter nets in the site with only two permits being used. The two fishers fish up to ten nets between them and typically catch between 75kg and 100kg of whitebait in a tide. Catches vary greatly from very little to a maximum of 1000kg. The majority of the catch consists of sprat with other species present in low numbers such as herring, sandeel and species of goby. The SPA features that could be effected by the removal of target species are little egret, sandwich and common tern, red breasted merganser, cormorant and great crested grebe as their diet is predominately made up of fish, lesser black backed gull, mediterranean gull and herring gull are known to feed on small fish which shoal close to the surface. Due to the number of fishers, the small quantity of catch, the size of the nets, the seasonal and spatial restrictions already in place it is unlikely the quantity of fish removed is going to affect the overall fish population and reduce availability of a food resource for the SPA features and therefore will not have an adverse effect on bird species which feed on fish.

6.1.2.2 Removal of non-target species (bird species)

Whooper swans spend the majority of the time feeding in freshwater and coastal grazing marsh habitats. The only time whooper swans may come in contact with the fishing activity is when transiting, therefore because of the nature of the species, the seasonality and the scale and intensity of the fishing activity it is unlikely that removal of non-target species (bird bycatch) will have an adverse effect on whooper swans.

Pink-footed geese spend a proportion of the time on the intertidal habitat mainly on the saltmarsh, upper part of the mudflats and in shallow water and are unlikely to interact with subtidal nets. There is a possibility they may interact with intertidal nets two hours either side of low water when the net is out of the water or only just covered by sea water. The intertidal netting targets the sand habitat which is not often used by pink footed geese and mainly occurs in the summer months April to October when numbers of pink footed geese are low it is therefore unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species.

Due to their behaviour little egret, oystercatcher, ringed plover, grey plover, lapwing, knot, sanderling, dunlin, ruff, black tailed godwit, curlew, redshank and turnstone are unlikely to come into contact with subtidal nets, although there is a minor chance that they may come into contact with intertidal set nets. Set nets are only usually exposed for two hours either side of low water. The nets are checked every low water they are fished. When the nets are being checked at low water the presence of the operator is likely to deter birds from the vicinity of the net and in daylight the nets and stakes are easily seen and likely to be avoided. Anchored fixed nets lie along the ground further reducing the chance of interactions. The intertidal netting targets sand habitat and mainly occurs in the summer months April to October when numbers of waders are lowest. The footprint of the intertidal nets is small due to the small scale and intensity of the fishing activity combined with the regulation in place, which limits the spatial and seasonal use of intertidal nets. Interaction and entanglement are unlikely and it is therefore unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on species of wader.

Shelduck, pintail and wigeon are dabbling ducks and only use the top of the water column and the intertidal so are unlikely to interact with nets fished from a vessel as the set nets will be below the surface of the water. When a vessel is drift netting the presence of the vessel is likely to deter the duck from close proximity. There is a possibility they may interact with intertidal nets two hours either side of low water when the net is out of the water or only just covered by sea water. Set nets are only usually exposed for two hours either side of low water. The nets are checked every low water they are fished. When the nets are being checked at low water the presence of the operator is likely to deter birds from the vicinity of the net and in daylight the nets and stakes are easily seen and likely to be avoided. Anchored fixed nets lie

along the ground further reducing the chance of interactions. The intertidal netting targets sand habitat and mainly occurs in the summer months April to October when numbers of these species are lowest. The footprint of the intertidal nets is small due to the small scale and intensity of the fishing activity combined with the regulation in place, which limits the spatial and seasonal use of intertidal nets. Interaction and entanglement are unlikely and it is therefore unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species of duck.

Eider, goldeneye, red breasted merganser and cormorant are species of bird that dive deeper in the water column and therefore may interact with subtidal nets and intertidal nets when they are submerged. Mediterranean, lesser black-backed and herring gull could interact with the intertidal nets when they are exposed and subtidal nets when they are close to the surface. Sandwich, common and little tern are surface feeding birds and therefore may interact with subtidal nets and intertidal nets when they are close to the surface or shallowly submerged. At a maximum there are 1.5km in total length of stake nets, and a total length of 15km of either fixed or drift net, as typically a vessel will fish one or the other depending on the target species, substrate fishing over and to comply with legislation.

The following factors also minimise risk to these species of diving birds:

- netters falls outside of the pSPA boundary;
- total area of the Morecambe Bay and Duddon Estuary pSPA is 667sq km;
- fishing is seasonal; typically April to October?
- static nets are only fished over one tide at a time; typically between 6-8 hours
- when drift netting the vessel stays with the nets which will deter the birds from the vicinity of the nets;
- drift netting usually only occurs four hours over low water;
- not all vessels fish concurrently;
- vessels and areas fished are spread out;
- from historical Fishery Officer and industry reports there is no known issue with bird bycatch.

It is therefore unlikely that collision above and below water with static or moving objects not naturally found in the marine environment and accidental bird bycatch will have an adverse effect on the integrity of the European Site.

6.1.2.3 Visual Disturbance

Whooper swans spend the majority of the time feeding in freshwater and coastal grazing marsh habitats, and would only come into contact with the fishing activity is when transiting. Therefore due to the nature of the species, the seasonality and the scale and intensity of the fishing activity is unlikely that visual disturbance will have an adverse effect on whooper swans.

Pink-footed geese spend a proportion of the time on the intertidal habitat mainly on the saltmarsh, upper part of the mudflats and in shallow water and are unlikely to be disturbed by the subtidal netting activity. There is a possibility that intertidal netting activity may cause visual disturbance. The intertidal netting mainly occurs in the summer months April to October when numbers of pink-footed geese are low and absent: it is therefore unlikely that visual disturbance will have an adverse effect on these species.

Little egret have the potential to be disturbed when feeding. Little egret prefer to feed in shallow water 10cm to 20cm in depth (Kushlan & handcock 2005). The areas where intertidal netting and little egrets may interact is at the edge of channels and in shallow pools. There is potential for the birds to be disturbed when vehicles are travelling to the fishing areas and fishing. Little egret commonly feed in solitary or in lose

flocks (del hoyo et al. 1992), and therefore any disturbance is likely to affect only a few individuals. Due to the fishing being seasonal between spring and autumn, the low number of operators, the operators targeting different areas, the setting, removing and checking of nets only occurring over low water, any disturbance is likely to be minimal.

Golden plover are only likely to feed in the intertidal areas when weather conditions are harsh and the ground is hard from frost on their normal inland feeding areas. Due to the majority of the fishing activity occurring between spring and autumn it is unlikely that golden plover will be found near the fishery.

Dunlin, black-tailed godwit, bar-tailed godwit, curlew and redshank mainly target mudflats as their feeding grounds. Lapwing use a variety of habitats (marine and terrestrial), and when present on the intertidal they tend to target mudflats. In Morecambe Bay most of the intertidal nets are set on sandy habitat close to the low tide level. Redshank roost and nest on saltmarsh. All access to the fishing grounds is by established access routes and visual disturbance is unlikely. Any visual disturbance that does occur is likely to be short lived and any displacement minimal.

Disturbance to these species is likely to be minimal due to the following:

- the above species feed mainly on mudflats;
- intertidal net fishing is seasonal between spring and autumn when wader numbers are typically lower than the over-wintering population;
- number of fishers using intertidal nets is low with operators targeting different areas;
- the setting, removing and checking of nets only occurs over low water;
- black-tailed godwits are in low numbers between April and June and bar-tailed godwits migrate in March and arrive back in October further reducing the chance of disturbance.

Oystercatcher, ringed plover, grey plover, knot, sanderling and turnstone all feed on a variety of substrates in the intertidal area. Waders will move in and out with the tide feeding in and on the sediment, each wader having a preferred prey source and size. The time in which the fishing activity has the potential to cause disturbance is the over low water near the water's edge. Oystercatchers within Morecambe Bay are usually observed in the greatest number feeding on mussel beds and skears, in particular Heysham Flat and Foulney mussel beds which are not targeted by intertidal netters. Grey plover are not present in significant numbers between May and July, further reducing the likelihood of disturbance to grey plover.

Disturbance to these species is likely to be minimal due to the following:

- the above species feed on a variety of substrates;
- intertidal net fishing is seasonal between spring and autumn when wader numbers are typically lower than the over-wintering population;
- number of fishers using intertidal nets is low with operators targeting different areas;
- the setting, removing and checking of nets only occurs over low water.

It is unlikely that vessels will disturb little egret, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, oystercatcher, ringed plover, grey plover, knot, sanderling and turnstone due to it being a boat based activity and the birds spending the majority of their time on the intertidal areas feeding. There is a small possibility that when the birds are flying they may be disturbed, but due to the small size of the vessels and the level of background vessel movement any disturbance will be minimal.

Shelduck, pintail, wigeon, goldeneye, red breasted merganser, cormorant and great crested grebe are often found on the water, so there is a potential for disturbance by netting vessels.

Disturbance to these species from netting vessels is likely to be minimal due to the following:

- vessels are spread out across the site;
- vessels size (less than 10m);
- relatively slow speed at which the vessels travel (when drift netting the vessels drift at the same speed as the current);
- shelduck, pintail, wigeon and goldeneye are in the greatest numbers in the winter months when fishing level is at its lowest;
- red breasted merganser and great crested grebe are often only found individually or in small groups and not in large rafts.

Shelduck, pintail and wigeon spend a proportion of their time on intertidal mud, there is potential for these species to be disturbed by the intertidal net fishers but any disturbance is likely to be minimal due to:

- the species being on mudflats and sand being the typical target ground for setting the intertidal net
- the intertidal net fishing being seasonal between spring and autumn when numbers of shelduck, pintail, wigeon and goldeneye are typically lower
- the low number of fishers using intertidal nets
- the operators targeting different areas
- the setting, removing and checking nets is only going to be over low water.

Mediterranean gull, lesser black-backed gull and herring gull are present on both the intertidal and open water and therefore there is potential for visual disturbance from both the intertidal net fishing and the boat fishing. Gulls utilise a range of habitats both marine and terrestrial and are more likely to be attracted to the fishing activity as an easy food source opportunity rather than disturbed. Any disturbance is likely to be minimal and any displacement temporary and only for a short distance.

Sandwich tern, common tern, and little tern rarely use the intertidal area at low water when the intertidal nets are being checked, resulting in little chance of disturbance from the intertidal net fishers. There is potential for the fishing vessels to disturb the terns when feeding or transiting.

Disturbance and displacement to these species from netting vessels is likely to be minimal due to the following:

- vessels are spread out across the site;
- vessels size (less than 10m);
- relatively slow speed at which the vessels travel (when drift netting the vessels drift at the same speed as the current);
- terns have a large foraging range.

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	Level of exposure ⁹ of feature to pressure	Mitigation measures ¹⁰
<i>Egretta garzetta</i> ; Little egret <i>Sterna sandvicensis</i> ; Sandwich tern <i>Sterna hirundo</i> ; Common tern <i>Sterna albifrons</i> ; Little tern <i>Mergus serrator</i> ; Red-breasted merganser <i>Phalacrocorax carbo</i> ; Cormorant <i>Podiceps cristatus</i> ; Great crested grebe <i>Larus melancephalus</i> ; Mediterranean gull <i>Larus fuscus</i> ; Lesser black-backed gull <i>Larus argentatus</i> ; Herring gull	Maintain or restore the population and distribution of the qualifying features.	Removal of target species from whitebait filter nets	Potential to effect the:- - Food availability - Condition and survival of SPA species - Abundance of SPA species	Only 8 permits, of which two are used, maximum of ten nets catching typically between 75kg and 100kg per tide. Seasonal and temporal restrictions through NWSFC byelaw 26. Fishing activity not going to significantly affect European Site fish population and therefore not reduce availability of food resource. No adverse effect on bird species which feed on fish.	None
<i>Cygnus Cygnus</i> ; Whooper swan	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	Whooper swans spend the majority of the time feeding in freshwater and coastal grazing marsh habitats. Due to the nature of the species, the seasonality and the scale and intensity of the fishing activity it is unlikely that removal of non-target species will have an adverse effect on whooper swans.	None

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.

		Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Whooper swans spend the majority of the time feeding in freshwater and coastal grazing marsh habitats. The only time whooper swans may come in contact with the fishing activity is when transiting, therefore because of the nature of the species, the seasonality and the scale and intensity of the fishing activity it is unlikely that visual disturbance will have an adverse effect on whooper swans.	None
<i>Anser brachyrhynchus</i> Pink-footed goose	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	Pink footed geese spend time on intertidal habitat mainly on the saltmarsh, upper part of the mudflats and in shallow water, unlikely to interact with subtidal nets. Intertidal netting mainly occurs in the summer when geese numbers are low it is therefore unlikely that removal of non-target species will have an adverse effect on pink footed geese.	None
		Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Pink-footed geese spend a proportion of the time on the intertidal mainly on the saltmarsh, upper part of the mudflats and in shallow water and are unlikely to be disturb by the subtidal netting activity. There is a possibility the intertidal netting activity may cause visual disturbance. The intertidal netting mainly occurs in the summer months April to October when numbers of pink footed geese are low and it is therefore unlikely that visual disturbance will have an adverse effect on these species.	None
<i>Pluvialis apricaria</i> ; European golden plover	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	Only likely to feed in the intertidal areas when weather conditions are harsh and the ground is hard from frost on their normal inland feeding areas. Due to the majority of the fishing activity occurring between spring and autumn it is unlikely that golden plover will be found near the fishery.	None
		Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Only likely to feed in the intertidal areas when weather conditions are harsh and the ground is hard from frost on their normal inland feeding areas. Due to the majority of the fishing activity occurring between spring and autumn it is unlikely that golden plover will be found near the fishery.	None
<i>Egretta garzetta</i> ; Little egret <i>Haematopus ostralegus</i> ; Eurasian oystercatcher	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	Not likely to come into contact with subtidal nets. Intertidal nets exposed two hours either side of low water, nets are checked at every low water they are fished, presence of fisher likely to deter birds from vicinity of net, small number of fishers, seasonal April to October when number of waders are lowest. It is	None

<i>Charadrius hiaticula</i> ; Ringed plover <i>Pluvialis squatarola</i> ; Grey plover <i>Vanellus vanellus</i> ; Lapwing <i>Calidris canutus</i> ; Red knot <i>Calidris alba</i> ; Sanderling <i>Calidris alpina alpina</i> ; Dunlin <i>Calidris pugnax</i> ; Ruff <i>Limosa limosa</i> ; Black-tailed godwit <i>Limosa lapponica</i> ; Bar-tailed godwit <i>Numenius arquata</i> ; Eurasian curlew <i>Tringa totanus</i> ; Common redshank <i>Arenaria interpres</i> ; Ruddy turnstone				therefore unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on species of wader.	
		Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Dunlin, black tailed godwit, bar tailed godwits, curlew and redshank mainly target mudflats as their feeding grounds. Lapwings use a variety of habitats. Intertidal nets are set on sandy habitat close to the low tide level. Black tailed godwits are in low numbers between April and June and bar tailed godwits migrate in March and arrive in October further reducing the chance of disturbance. Oystercatcher, ringed plover, grey plover, knot, sanderling and turnstone all feed on a variety of substrates in the intertidal area. Oystercatchers within Morecambe Bay usually observed in the greatest number feeding on mussel beds and skears. Grey plover are not present in significant number during fishing season further reducing the likelihood of disturbance to grey plover. It is unlikely that vessels will disturb waders due the birds spending the majority of their time on the intertidal areas feeding. There is a small possibility that when the birds are flying they may be disturbed but due to the small size of the vessels and the level of background vessel movement any disturbance will be minimal. Disturbance to these species is likely to minimal due to the following: • the above species feed on a variety of substrates; • intertidal net fishing is seasonal between spring and autumn when wader numbers are typically lower than the over-wintering population; • number of fishers using intertidal nets is low with operators targeting different areas; the setting, removing and checking of nets only occurs over low water. It is therefore unlikely that visual disturbance will have an adverse effect on species of wader.	None
<i>Tadorna tadorna</i> ; Common shelduck <i>Anas acuta</i> ; Northern pintail Anas Penelope; Wigeon	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	Dabbling ducks not likely to come into contact with subtidal nets. Intertidal nets exposed two hours either side of low water, nets are checked at every low water they are fished, presence of fisher likely to deter birds from vicinity of net, small number of fishers, seasonal April to October when number of ducks are lowest. It is therefore unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species of ducks.	None

		Visual disturbance	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring 	<p>These species are often found on the water, so there is a potential for disturbance by netting vessels. Due to the vessels being spread out across the site, the vessel being small (less than 10m), the relatively slow speed at which the vessels are travelling, when drift netting the vessel is drift at the same speed as the current, species are in the greatest numbers in the winter months when fishing level is at its lowest.</p> <p>As these species spend a proportion of their time on intertidal mud, there is potential for them to be disturbed by intertidal net fishers. However due to the fishing activity typically targeting sandy habitats, the intertidal net fishing being seasonal between spring and autumn when numbers of each species are typically lower, the low number of fishers using intertidal nets, the operators targeting different areas, the setting, removing and checking nets only occurring over low water any disturbance is likely to minimal.</p>	None
<ul style="list-style-type: none"> - <i>Somateria mollissima</i>; Common eider - <i>Bucephala clangula</i>; Goldeneye - <i>Mergus serrator</i>; Red-breasted merganser - <i>Phalacrocorax carbo</i>; Cormorant - <i>Podiceps cristatus</i>; Great crested grebe 	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity 	<p>it is unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species of diving birds because:</p> <ul style="list-style-type: none"> • total area of the Morecambe Bay and Duddon Estuary pSPA is 667sq km; • fishing is seasonal; typically April to October • static nets are only fished over one tide at a time; • when drift netting the vessel stays with the nets which will deter the birds from the vicinity of the nets; • drift netting usually only occurs four hours over low water; • not all vessels fish concurrently; • vessels and areas fished are spread out; • from historical Fishery Officer and industry reports there is no known issue with bird bycatch. 	None
		Visual disturbance	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring 	<p>Although these species are mainly found on water, so there is a potential for disturbance by netting vessels, it is unlikely that visual disturbance will have an adverse effect on them because:</p> <ul style="list-style-type: none"> - vessels are spread out across the site; - vessel size (less than 10m); - relatively slow speed at which vessels travel; - when drift netting vessels drift at same speed as current. <p>Although these species spend a proportion of their time on the intertidal, so there is potential for them to be disturbed by intertidal net fishers, it is unlikely that</p>	None

				visual disturbance will have an adverse effect on them because: - number of fishers using intertidal nets is low; - operators target different areas; - setting, removing and checking nets only occurs over low water.	
<ul style="list-style-type: none"> <i>Larus melancephalus</i>; Mediterranean gull <i>Larus fuscus</i>; Lesser black-backed gull <i>Larus argentatus</i>; Herring gull 	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	It is unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species because: <ul style="list-style-type: none"> max total length of stake nets 1.5km and a total length of 15km of a mix of fixed and drift nets; total area of the Morecambe Bay and Duddon Estuary pSPA is 667sq km; fishing is seasonal; typically April to October static nets are only fished over one tide at a time; when drift netting the vessel stays with the nets which will deter the birds from the vicinity of the nets; drift netting usually only occurs four hours over low water; not all vessels fish concurrently; vessels and areas fished are spread out; from historical Fishery Officer and industry reports there is no known issue with bird bycatch. 	None
		Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Gull species are present on both the intertidal and open water and therefore there is potential for visual disturbance from both the intertidal net fishing and the boat fishing. Gulls utilise a range of habitats both marine and terrestrial and are more likely to be attracted to the fishing activity as an easy food source opportunity rather than disturbed. Any disturbance is likely to be minimal and any displacement will be temporary and only a short distance Therefore it is unlikely that visual disturbance will have an adverse effect on these species.	None
<ul style="list-style-type: none"> <i>Sterna sandvicensis</i>; Sandwich tern <i>Sterna hirundo</i>; Common tern <i>Sterna albigifrons</i>; Little tern 	Maintain or restore the population and distribution of the qualifying features.	Removal of non-target species (bird species)	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Assemblage diversity	It is unlikely that the removal of non-target species (bird bycatch) will have an adverse effect on these species because: <ul style="list-style-type: none"> max total length of stake nets 1.5km and a total length of 15km of a mix of fixed and drift nets; total area of the Morecambe Bay and Duddon Estuary pSPA is 667sq km; fishing is seasonal; typically April to October static nets are only fished over one tide at a time; when drift netting the vessel stays with the nets which will deter the birds from the vicinity of the nets; drift netting usually only occurs four hours over low water; 	None

				<ul style="list-style-type: none"> • not all vessels fish concurrently; • vessels and areas fished are spread out; • from historical Fishery Officer and industry reports there is no known issue with bird bycatch. 	
		Visual disturbance	Potential to affect the:- <ul style="list-style-type: none"> - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring 	Terns rarely use the intertidal area at low water resulting in little chance of disturbance from intertidal net fishers. There is potential for fishing vessels to disturb terns when feeding or transiting. Due to vessels being spread out across the site, the vessel size (less than 10m), the relatively slow speed at which vessels travel, when drift netting the vessels drift at the same speed as the current, terns have a large foraging range, any disturbance is likely to be minimal and any displacement will be temporary and only a short distance. Therefore it is unlikely that visual disturbance will have an adverse effect on these species.	None

7. Conclusion¹¹

Taking into account the information detailed in the Appropriate Assessment, it can be concluded that at the current level of netting there is no adverse effect on the integrity of the Morecambe Bay and Duddon Estuary European Site interest features.

8. In-combination assessment¹⁴

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 nets at current activity levels has no adverse effect on the integrity of the Morecambe Bay and Duddon Estuary European Site interest features.

¹¹ If conclusion of adverse affect alone an in-combination assessment is not required.

Annex 1: Reference list

- Ainley, D.G., DeGange, A.R., Jones, L.L., Beach, R.J. 1981. Mortality of seabirds in high-sea salmon gillnets. *Fish. Bull.* 79: 800-806.
- Bourne, W.R.P. 1989. New evidence for bird losses in fishing nets. *Marine Pollution Bulletin*. 10: 482.
- CCW Report. 2012. Review of the impacts of fisheries on marine birds with particular reference to Wales. Marine Spatial Planning in Wales Project. WWT consulting. CCW Policy Research Report No. 11/6.
- Davoren, G.K. 2007. Effects of Gill-Net Fishing on Marine Birds in a Biological Hotspot in the Northwest Atlantic. *Conservation Biology*. 21 (4):1032-1045.
- Furness, R.W. 2003. Impacts of fisheries on seabird communities. *Scientia Marina* 67 (Suppl.2): 33-45.
- Gubbay, S. & Knapman, P.A. 1999. A review of the effects of fishing within UK European marine sites. English Nature (UK Marine SACs Project). 134 pages
- Harrison, N. & Robins, M. 1992. The threat from nets to seabirds. *RSPB Conservation Review* 6: 51-56.
- Kaiser, M.J., Bullimore, B., Newman, P., Lock, K., Gilbert, S. 1996. Catches in 'ghost fishing' set nets. *Marine Ecology Progress Series* Vol. 145:11-16.
- Natural England Marine Interim Conservation Advice for Special Protection Area (UK9005081), UK9005081_Morecambe_Bay_SPA_Advice_on_Operations
UK9005081_Morecambe_Bay_SPA_SAT_Birds
- Natural England Marine Interim Conservation Advice for Special Area of Conservation (UK0013027), UK0013027_Morecambe_Bay_SAC_Advice_on_Operations
UK0013027_Morecambe_Bay_SAC_Generic_SAT_Habitats
UK0013027_Morecambe_Bay_SAC_Generic_SAT_Species
- Murray, S. 1993. Marine wildlife and net fisheries around Scotland and Northern Ireland in 1992. Royal Society for the Protection of Birds, Sandy. 96 pp.
- Murray, S., Wanless, S., & Harris, M. P. 1994. The effects of fixed salmon *Salmo salar* nets on guillemot *Uria aalge* and razorbill *Alca torda* in northeast Scotland in 1992. *Biological Conservation*, 70: 251–256.
- Robins, M. 1991. *Synthetic Gill Nets and Seabirds*. Worldwide Fund for Nature/Royal Society for the Protection of Birds, Godalming. 68 pp.
- Sewell, J. & Hiscock, K., 2005. Effects of fishing within UK European Marine Sites: guidance for nature conservation agencies. Report to the Countryside Council for Wales, English Nature and Scottish Natural Heritage from the Marine Biological Association. Plymouth: Marine Biological Association. CCW Contract FC 73-03-214A. 195 pp.
- Sewell, J., Harris, R., Hinz, H., Votier, S., Hiscock, K. 2007. An assessment of the impact of selected fishing activities on European Marine Sites and a review of mitigation measures. Report to the Seafish Industry Authority (Seafish). Marine Biological Association of the UK, Plymouth and the University of Plymouth, members of the Plymouth Marine Sciences Partnership.
- Smiddy, P. 2001. Auks (alcidae) drowned in fishing nets in east Cork in January and February 1983. *Irish Naturalists Journal*. 26(11): 414-419.
- Sonntag, N., Schwemmer, H., Fock, H.o., Bellebaum, J., Garthe, S. 2012. Seabirds, set-nets and conservation management: assessment of conflict potential and vulnerability of birds to bycatch in gillnets. *ICES Journal of Marine Science*, 69: 578-589.

Tasker, ML, Camphuysen, C.J., Cooper, J., Garthe, S., Montevecchi, W.A., Blaber, S.J.M. 2000. The impacts of fishing on marine birds. *ICES Journal of Marine Science* 57: 531-547.

Thomas, D. 1992. *Marine Wildlife and Net Fisheries around Wales*. Royal Society for the Protection of Birds/Countryside Council for Wales, Newtown. 55 pp.

Žydelis, R., Bellebaum, J., Österblom, H., Vetemaa, M., Schirmeister, B., Stipniece, A., Dagys, M., van Eerden, M., Garthe, S. 2009. Bycatch in gillnet fisheries- An overlooked threat to waterbird populations. *Biological Conservation*. 142: 1269-1281.

Annex 2: Natural England's consultation advice

Date: 6 March 2017
Our ref: 208488
Your ref: NWIFCA-MB-EMS-010



Jonathan Haines
North Western Inshore Fisheries and Conservation Authority
Preston Street
Carnforth
Lancashire
LA5 9BY

Hombeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 080 3900

BY EMAIL ONLY

Dear Jonathan

Formal Advice to NWIFCA: Fisheries in EMS Habitats Regulations Assessment for Amber Risk Categories in Morecambe Bay and Duddon Estuary EMS, including gear types: stake nets, static fixed nets and drift nets (NWIFCA-MB-EMS-010).

Thank you for your consultation on the above which was received by Natural England on 13 February 2017.

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 EMSs¹. 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 Habitat Regulations Assessment (HRA) 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 Morecambe Bay Special Area of Conservation (SAC), Morecambe Bay Special Protection Area (SPA), Morecambe Bay Ramsar, Duddon Estuary SPA, Duddon Estuary Ramsar and Morecambe Bay and Duddon Estuary potential SPA (pSPA):

- NWIFCA-MB-EMS-010: Stake nets, static fixed nets and drift nets

¹ Defra revised approach:
<https://www.gov.uk/government/publications/revised-approach-to-the-management-of-commercial-fisheries-in-sea/lean-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 HRA 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.

Minor suggested amendments to the assessment:

- The pressure 'removal of target species' (marine fish) should also include the gull species as they are known to feed on small fish which shoal close to surface
- Under Section 6.1.2.2 (discussion on the impacts of removal of non-target species) the assessment states as a justification for reducing the perceived risk to birds "*approx. 50% of the area targeted by drift netters and 30% of the area targeted by static netters falls outside of the pSPA boundary*". We would recommend removing this justification it is potentially not applicable. We acknowledge there may be some movement of birds beyond the SPA boundary; however where those birds can be linked back to the SPA and the area of sea could be deemed as functionally linked to the SPA the birds are offered protection by the habitats regulations.

Subject to the outcomes of the in combination assessments, it is Natural England's view that through their HRA, 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



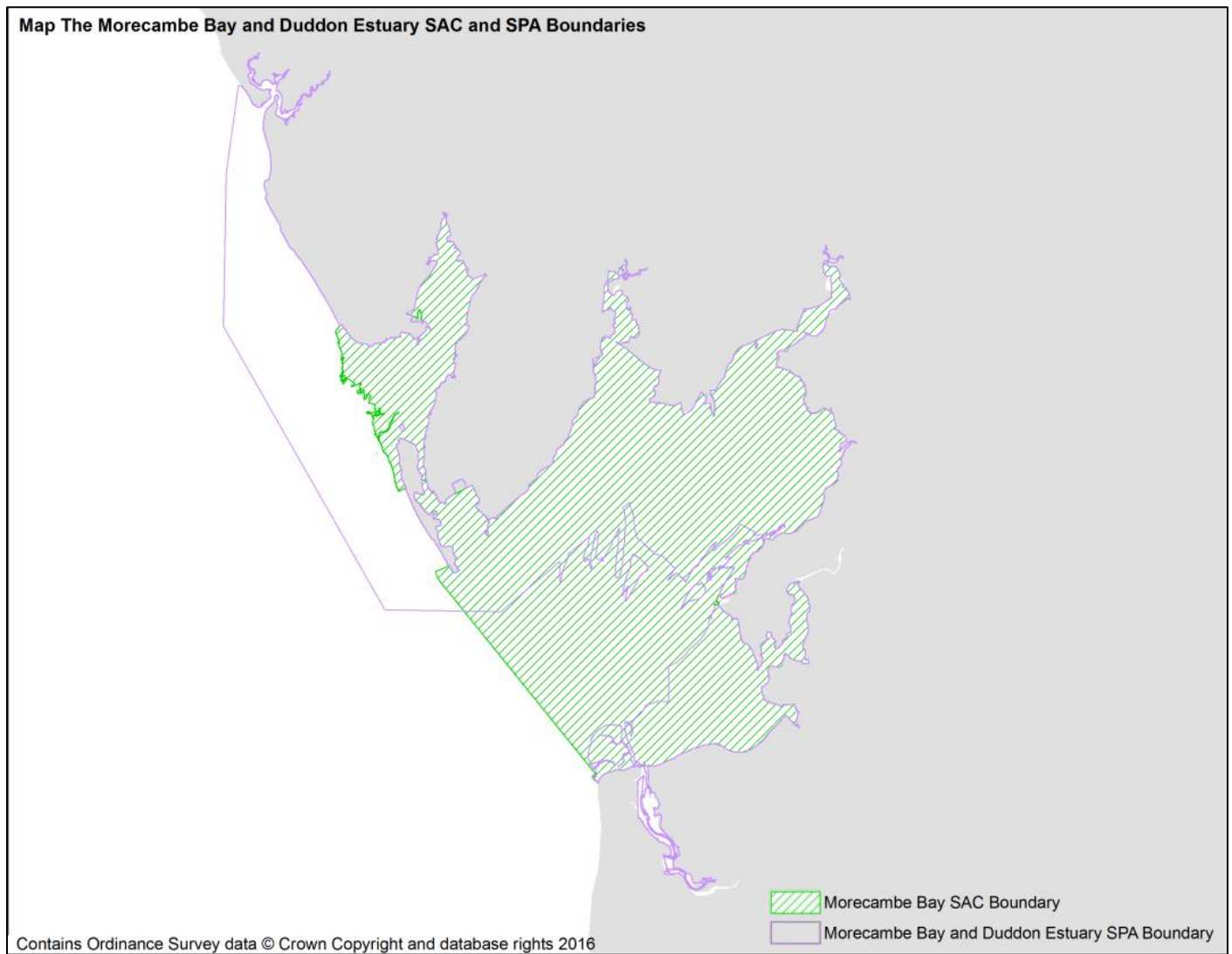
Lucy May
Marine Adviser
Natural England
Email: lucy.may@naturalengland.org.uk
Tel: 0208 22 56003



Page 2 of 2

Natural England is accredited to the Cabinet Office Service Excellence Standard

Annex 3: Site Map



Annex 4: Netting Regulation within the European Site

NWSFC Byelaw 26 regulates fishing with fixed engines within the NWSFC boundaries of the Morecambe Bay and Duddon Estuary European Site.

This byelaw applies to that part of the District within a line drawn on the seaward side of the baselines 6 nautical miles from the baselines from which the breadth of the territorial sea adjacent to the United Kingdom is measured. For the purposes of this paragraph "the baselines" means the baselines as they existed at 25th January, 1983 in accordance with the Territorial Waters Order in Council 1964 (1965 III p.6452A) as amended by the Territorial Waters (Amendment) Order in Council 1979 (1979 II p.2866).

a) The placing and use of fixed engines for the taking of sea fish is prohibited in those parts of the District numbered 1 to 11 as defined in paragraph (c) below during the period 1st May to 30th November following except for:

i. Anchored flue nets placed or used in the parts of the District numbered 2 and 3 during the period 1st July to 30th November following with the written permission of the Authority and subject to conditions 1) to 4) below and the conditions set out at paragraph b) below;

- 1) No net to exceed 75m in length when measured along the headline.
- 2) The elapsed time period between shooting the net and hauling the net shall not exceed 30 minutes.
- 3) All nets shall be actively worked by passing or splashing during the fishing operation.
- 4) Only one such net shall be carried or used at any time.

ii. Moored whitebait filter nets placed or used seaward of a line drawn from Bazil Point (Latitude 54° 00.25' North, Longitude 02° 51.50' West) to Fishnet Point (Latitude 54° 00.03' North, Longitude 02° 51.00' West) in the part of the District numbered 5 during the periods 1st May to 31st May following and 1st September and 30th November following with the written permission of the Authority and subject to the conditions set out at paragraph b) below;

iii. Fixed engines placed or used for fishing for sea fisheries resources in the parts of the District numbered 8 to 11 during the period 1st May to 30th November following with the written permission of the Authority and subject to the conditions set out at paragraph b) below.

b) Any permission issued by the Authority under paragraph a) above shall be under the hand of the Chief Officer and shall be subject to conditions set out in the permission as detailed in subparagraphs (i) to (v) below.

i. Permissions under this paragraph shall be issued to the user of a fixed engine on demand, not transferable, numbered, shall be valid subject to sub-paragraph (iii) below, for a part of the District as defined in paragraph c) of this byelaw and shall specify the type and numbers of fixed engines to which they apply.

ii. Permissions shall be valid during the period from 1st May until 30th November inclusive in each year except in respect to anchored flue nets for which the period shall be 1st July to 30th November following and moored whitebait filter nets for which the period shall be 1st May to 31st May following and/or 1st September to 30th November following.

iii. Upon notification in writing to a person who has been issued a permission to place and use a fixed engine, the placing and use of that fixed engine may be temporarily suspended by the Authority in parts of the areas defined at paragraph c) below in order to protect salmon and sea trout and their migration.

iv. A fixed engine subject to any permissions under this byelaw shall be set and used in such manner that there is no interference with the migration of salmon or sea trout and that such fish are not taken. If such fish are taken, they shall be put back into the sea immediately and the fixed engine shall be re-set as soon as possible to avoid any reoccurrence.

v. The holder of a permission under this byelaw shall be required to submit to the Authority, no later than the 5th day of the month immediately following the period of use of the relevant fixed engine or fixed engines, such information in regard to catches and fishing effort under the terms of such permission as the Authority may require.

c) The parts of the District referred to in paragraph a) above are those parts inshore of the following lines:

- (1) Duddon Estuary - a line drawn from Green Road Station (Latitude 54° 14.6' North, Longitude 03° 14.7' West) to Whelpshead Crag (Latitude 54° 14.5' North, Longitude 03° 12.5' West) thence to Dunnerholme Point (Latitude 54° 12.5' North, Longitude 03° 12.6' West).
- (2) Leven Estuary - a line drawn from Canal Foot (Latitude 54° 11.4' North, Longitude 03° 03.1' West) to the grain silo at Sandgate Marsh Farm (Latitude 54° 10.2' North, Longitude 02° 59.3' West).
- (3) Kent Estuary - a line drawn from the seaward tip of Holme Island (Latitude 54° 11.5' North, Longitude 02° 53.3' West) to Blackstone Point (Latitude 54° 11.3' North, Longitude 02° 52.0' West).
- (4) Keer Estuary - a line drawn from the disused chimney in position Latitude 54° 09.1' North, Longitude 02° 49.4' West) in a 186° (True) direction to Scalestone Point (Latitude 54° 05.0' North, Longitude 02° 50.1' West).
- (5) Lune Estuary - a line drawn from Sunderland Point (Latitude 53° 59.4' North, Longitude 02° 52.8' West) to Cockersand Abbey (Latitude 53° 58.6' North, Longitude 02° 52.4' West). (6) Wyre Estuary - a line drawn from the shoreward end of Knott End Ferry Slipway (Latitude 53° 55.7' North, Longitude 02° 59.8' West) to the lower lighthouse at Fleetwood (Latitude 53° 55.7' North, Longitude 03° 00.45' West).
- (7) Ribble Estuary - a line drawn from St. Cuthberts Church Lytham St. Annes (Latitude 53° 44.3' North, Longitude 02° 58.5' West) in a 167° (True) direction to Crossens Sewage Works (Latitude 53° 40.8' North, Longitude 02° 57.1' West).
- (8) Duddon Estuary - a line drawn from Haverigg Point (Latitude 54° 11.3' North, Longitude 03° 19.0' West) in a 152° (True) direction to high water mark on Walney Island in the vicinity of Shope Tree Scar (Latitude 54° 08.6' North, Longitude 03° 16.5' West) and a line drawn between Lowsy Point (Latitude 54° 09.2' North, Longitude 03° 14.8' West) and North End Haws (Latitude 54° 09.0' North, Longitude 03° 15.0' West) except the area defined at (1) above.
- (9) Leven, Kent and Keer Estuaries - a line drawn from Aldingham Church (Latitude 54° 07.6' North, Longitude 03° 05.8' West) in a 114° (True) direction to Morecambe Stone Jetty Light (Latitude 54° 04.4' North, Longitude 02° 52.7' West) except the areas defined at (2), (3) and (4) above.
- (10) Lune Estuary - a line from the Lighthouse at the seaward end of South Jetty at Heysham (Latitude 54° 01.9' North, Longitude 02° 55.7' West) in a 226° (True) direction to the vicinity of the King's Scar Buoy (Latitude 53° 57.0' North, Longitude 03° 04.3' West) thence in a 147° (True) direction to Rossall Point Coast Guard (Latitude 53° 55.3' North, Longitude 03° 02.6' West) except the areas defined at (5) and (6) above.
- (11) Ribble Estuary - a line drawn from the root of St. Annes Pier (Latitude 53° 44.9' North, Longitude 03° 02.1' West) in a 232° (True) direction to a position Latitude 53° 41.7' North, Longitude 03° 08.9' West in the vicinity of the Gut Buoy thence in a 118° (True) direction to the root of Southport Pier (Latitude 53° 39.2' North, Longitude 03° 00.8' West) except the area defined at (7) above.

NWSFC Byelaw 27 regulates fishing with Mobile nets within the NWSFC boundaries of the Morecambe Bay and Duddon Estuary European Site.

(a) No person shall, for the purposes of Section 37(1) of the Salmon Act 1986, use any drift, draft, seine or other mobile net (except trawl nets of any kind including hand push nets used in fishing for shrimps) in those parts of the District numbered 1, 2, 3, 4, 5, 6 and 7 at paragraph (d) below during the period 1st May to 30th November following unless the use of such nets is licensed by the Environment Agency under Section 25 of the Salmon and Freshwater Fisheries Act, 1975.

(b) No person shall, for the purposes of Section 37(1) of the Salmon Act 1986, use any drift, draft, seine or other mobile net (except trawl nets of any kind including hand push nets used in fishing for shrimps) in those parts of the District numbered 8, 9, 10 and 11 in paragraph (d) below during the period 1st May to 30th November following unless the use of such nets are either licensed by the Environment Agency under Section 25 of the Salmon and Freshwater Fisheries Act, 1975 or authorised by the Committee in accordance with paragraph (c) below.

(c) (i) Any written authorisation issued under this paragraph shall be under the hand of the Clerk to the Committee and shall be subject to the conditions set out in the authorisation as detailed in sub-paragraphs (ii) to (v) of this paragraph.

(ii) Authorisations issued under this paragraph shall be valid during the period from 1st May until 30th November inclusive in each year, issued on demand to the user for nets as described in paragraph (a) above, not transferable, numbered, shall be valid, subject to sub-paragraph (iii) below, for a part of the District as defined in paragraph (d) of this byelaw and shall specify the number and type of nets to which they apply. 32

(iii) Upon notification in writing to a person who has been granted an authorisation under this paragraph to use a net, the use of that net may be temporarily suspended by the Committee in parts of the areas defined at paragraph (d) below in order to protect salmon and sea trout and their migration.

(iv) Any net authorised under this paragraph shall be used in such places, at such times and in such manner that it does not interfere with the migration of salmon and sea trout. If such fish are taken they shall be put back into the sea immediately and the net shall be reset as soon as possible to avoid any re-occurrence.

(v) The holder of an authorisation under this paragraph shall be required to submit annually to the Committee such information in regard to catches and fishing effort under the terms of such authorisation and on such dates as the Committee may require.

(d) This byelaw shall apply to all those parts of the District inshore of the following lines.

- | | | |
|------|--------------------------------|-------------------------------------|
| (1) | Duddon Estuary | - boundaries as above in byelaw 26. |
| (2) | Leven Estuary | - boundaries as above in byelaw 26. |
| (3) | Kent Estuary | - boundaries as above in byelaw 26. |
| (4) | Keer Estuary | - boundaries as above in byelaw 26. |
| (5) | Lune Estuary | - boundaries as above in byelaw 26. |
| (6) | Wyre Estuary | - boundaries as above in byelaw 26. |
| (7) | Ribble Estuary | - boundaries as above in byelaw 26. |
| (8) | Duddon Estuary | - boundaries as above in byelaw 26. |
| (9) | Leven, Kent and Keer Estuaries | - boundaries as above in byelaw 26. |
| (10) | Lune Estuary | - boundaries as above in byelaw 26. |
| (11) | Ribble Estuary | - boundaries as above in byelaw 26. |

CSFC Byelaw 10 regulates fishing with nets within the CSFC boundaries of the Morecambe Bay and Duddon Estuary European Site.

The placing and use of fixed engines for taking sea fisheries resources is prohibited in the District except in the following areas and during the periods and according to the conditions given:

(1) The Upper Solway In the sea area east of a line drawn 1840 true from Powfoot in Scotland position Latitude 54° 58'.66N Longitude 003° 19'.63W to Grune Point in England position 54° 54'.00N 003° 20'.24W, from 1st October to 31st January inclusive:

- a) Each net shall be constructed from twine of a minimum thickness of 2 millimetres.
- b) Nets shall be constructed of multifilament, braided or cabled twines.
- c) Any stakes used in connection with the net, must be removed for the duration of the period 1st February to 30th September in each year.

(2) Areas 1 to 4

Area 1 - River Ellen, Maryport The sea area within a radius of 1 nautical mile drawn from Maryport south pier beacon position Latitude 54° 43'.06N Longitude 003° 30'.69W from 1st December to 31st March inclusive.

Area 2 - River Derwent, Workington The sea area within a radius of 1 nautical mile drawn from Workington south pier beacon position Latitude 54° 39'.10N Longitude 003° 34'.60W from 1st December to 31st March inclusive.

Area 3 - The Rivers Ehen and Calder, Sellafield The sea area within a radius of 1 nautical mile drawn from the centre of Calder Railway bridge position Latitude 54° 24'.62N Longitude 003° 30'.18W from 1st December to 31st March inclusive.

Area 4 - The Rivers Irt, Mite and Esk, Ravenglass The sea area within a radius of 2 nautical miles drawn from the centre of the bridge at Ravenglass carrying the Carlisle to Barrow-in-Furness railway line over the River Mite position Latitude 54° 21'.45N Longitude 003° 24'.68W from 1st December to 31st March inclusive.

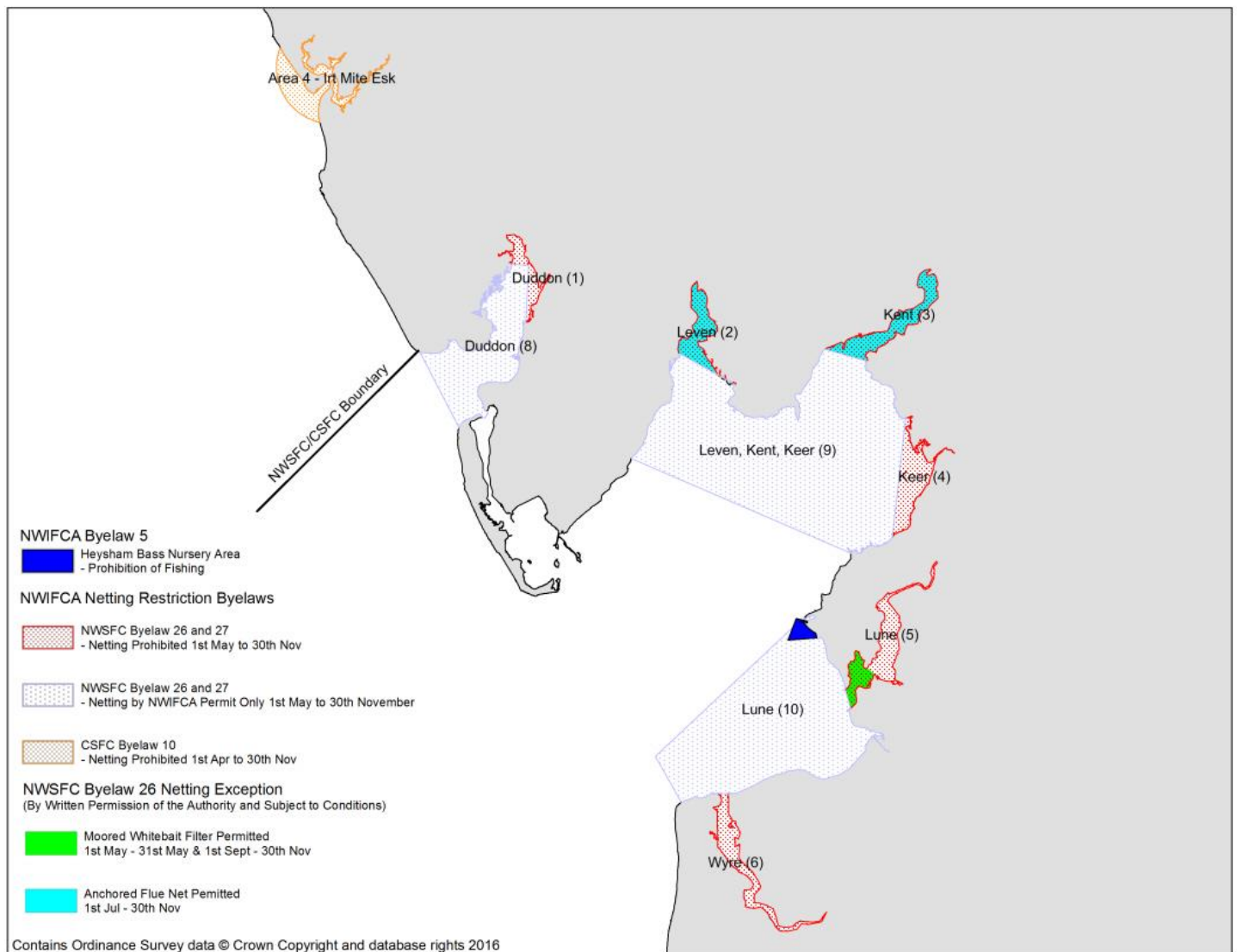
(3) Deep Water Fishing Anywhere in the District, excluding the four box areas defined in (2) above, at all times of the year provided that there is at least 3 metres of water above the instrument at all states of the tide.

(4) Shallow Water Fishing The sea area adjacent to the coastline from Grune Point to the southernmost boundary of Cumbria Sea Fisheries District, excluding the four box areas defined in (2) above from 1st December to 31st May inclusive.

(5) General Conditions

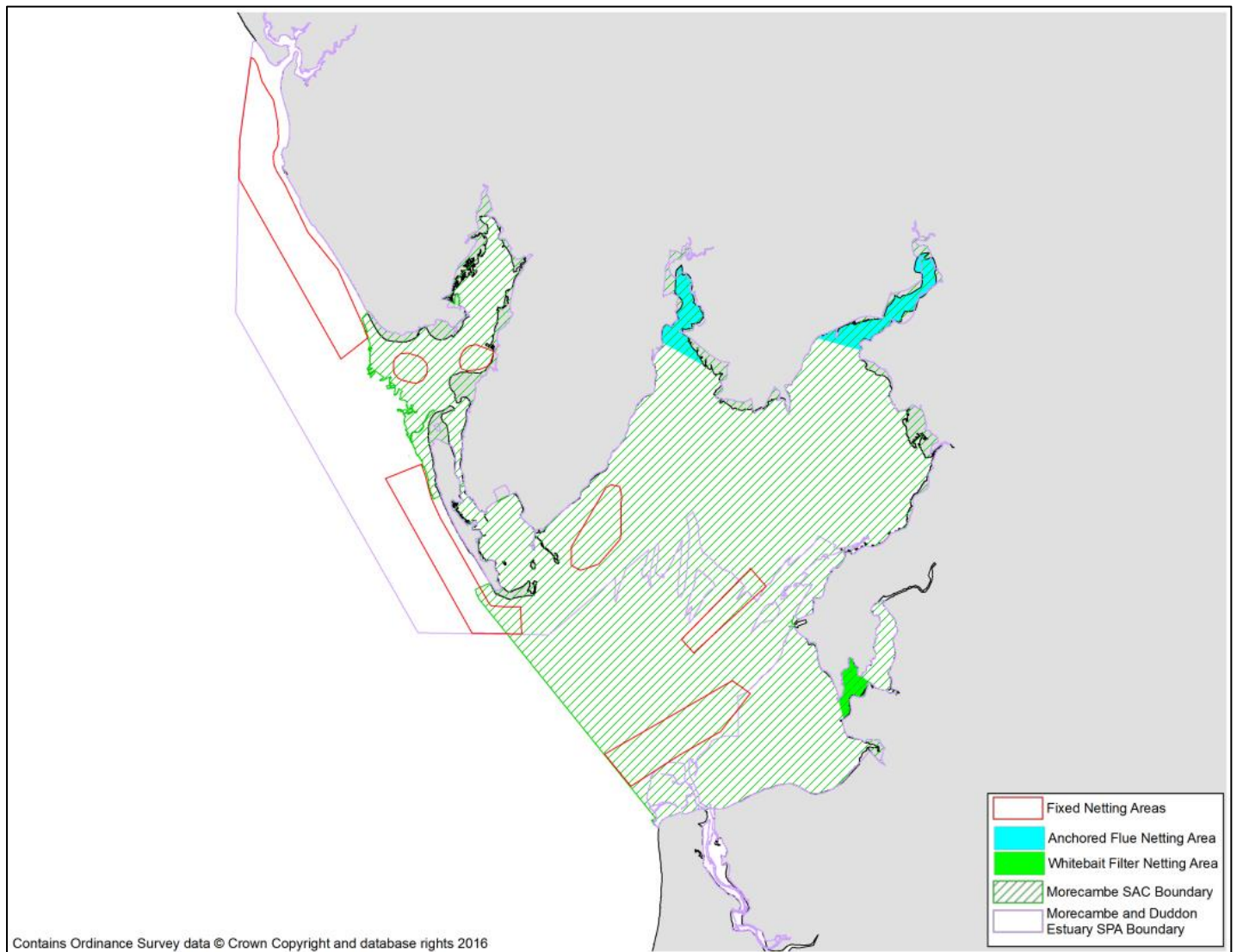
- a) A fixed engine shall not be used for taking or facilitating the taking of salmon or sea trout.
- b) A fixed engine must be fished regularly whilst it is set, that is to say the engine shall be visited and, cleared of fish at least once every other tide, unless adverse weather conditions prevent this operation being carried out.
- c) Any salmon or sea trout taken by a fixed engine shall be returned to the sea immediately upon the first emptying of the fixed engine following such taking and whether such salmon or sea trout be alive or dead.
- d) A fixed engine shall not exceed 240 metres in length.
- e) No portion of any net shall at any time encroach into any channel less than 300 metres wide which exists at low water of the tide during which the net is used for fishing. DRIFT OR BEACH SEINE NETS No Drift or Beach Seine Nets shall be used within the four Box Areas set out in part 2 of the Fixed Engine Fishery byelaw for this District or in the sea area east of a line drawn from Powfoot in Scotland to Grune point in England.

Annex 5 – NWIFCA netting byelaws

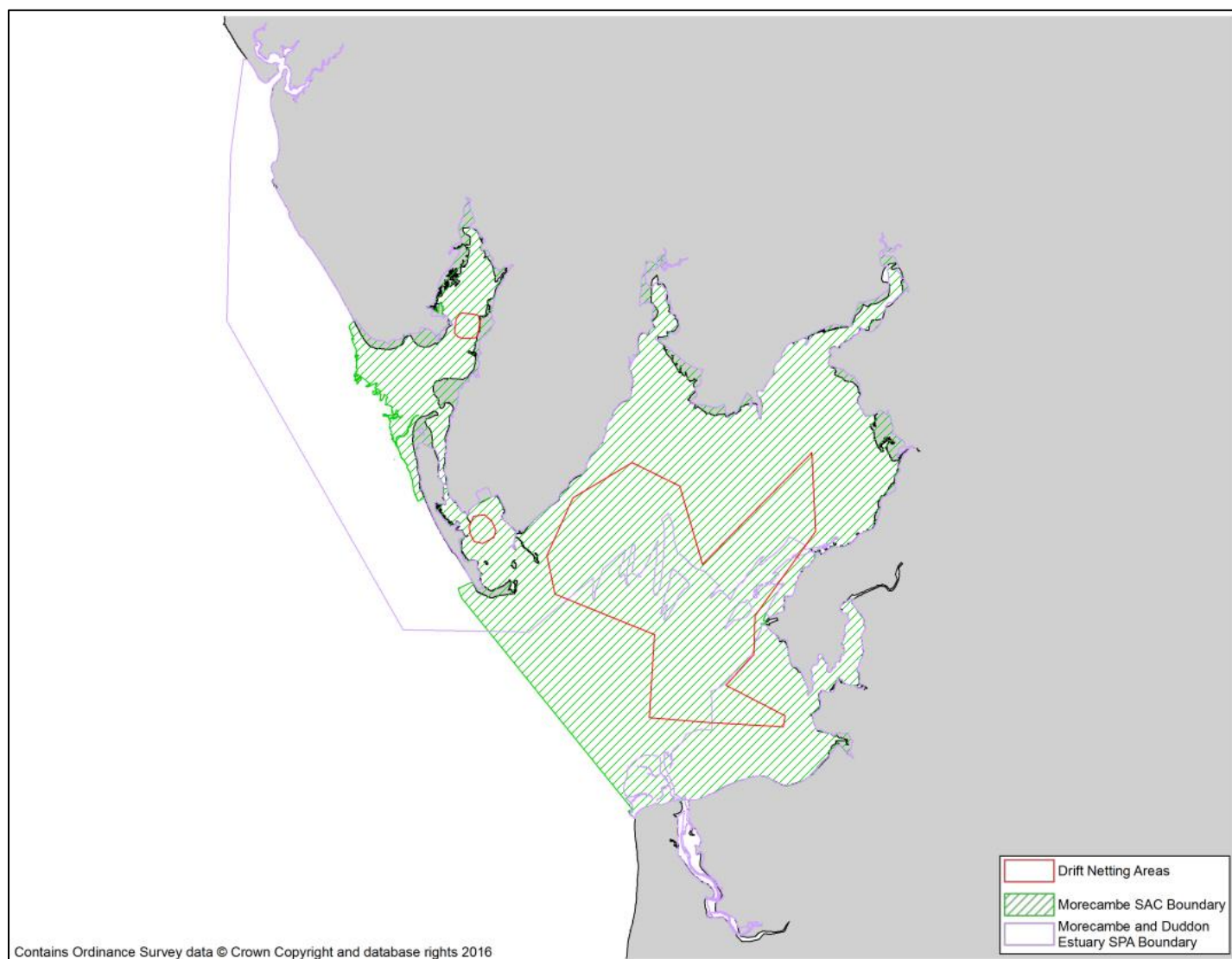


Annex 6: Fishing activity maps

Fixed Netting



Drift Netting



Annex 7: Broad Scale Habitat Map

