3Fisheries in EMS Habitats Regulations Assessment for Amber risk categories

Site and gear/features interaction(s) assessed:

European Marine Site:	**Farne Island SPA**
Qualifying feature(s):	**Pursuit & Plunge Diving Birds & Benthic feeding birds**
Gear type(s):	**Static fixed nets** **Trammel nets** **Entangling nets** **Gill nets**
Gear/feature interaction reference(s):	**FARNE- 115** **FARNE- 123** **FARNE- 363** **FARNE – 364** **FARNE- 117** **FARNE- 125**

Revision history

The NIFCA HRA Audit document contains a full timeline of the approach to assess the feature/fishery interaction. Work commenced in March 2013 with the matrix assessment of all feature/fishery interactions to determine no effect, tLSE, evidence gaps requiring a full HRA. This HRA is for a feature/fishery interaction which an evidence gap was identified. The dates below are a summary of the final stages of the process, when evidence was collated and determinations carried out.

Date	***Revision***	***Editor***
18/03/2016	Document created	VR
March-June	Collation of evidence which informs the HRA	VR, SSM, NW (CS)
09/06/2016	Reviewed by Natural England (CS). Updated from comments provided	VR
25/10/2016	Reviewed with Natural England (CS). Updated from comments provided	VR
24/11/2016	Reviewed with Natural England (CS). Subsequently updated from discussions and comments provided	VR
28/03/2017	final version sent to Natural England	VR

Has Natural England been formally consulted on this tLSE (and do they agree)?	**Yes**

Date of document completion:	**30th March 2017**	**Dr. C.L. Scott**

IFCA reference
FARNESSPA - AA 001

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), including all proposed sites. 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. All blue classifications within the matrix identify where activity / interactions are unfeasible and pose no risk, therefore do not require any site assessments for management to be carried out.

Site level assessments are being carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive. The aim of this assessment is to determine whether management measures are required in order to ensure that fishing activity or activities will have no adverse effect on the integrity of the site. If measures are required, the revised approach requires these to be implemented by 2016.

Northumberland Inshore Fisheries and Conservation Authority (NIFCA) is implementing the site-level assessment process in four phases:

1. simple screening assessment (activity is not occurring/already managed or interaction categorised as blue in the matrix (no interaction with the feature))
2. likely significant effect (LSE) type test (scale or magnitude of effect not likely/likely to be significant)
3. detailed LSE type test
4. appropriate assessment (AA) type test (ascertaining whether the activity will cause an adverse effect on site integrity)

The purpose of this site specific assessment document is to assess whether or not in the view of **Northumberland Inshore Fisheries and Conservation Authority** the fishing activity of **static fixed nets** has a likely significant effect on the **pursuit & plunge diving birds and benthic feeding birds** of the **Farne Island SPA**, and on the basis of this assessment whether or not it can be concluded that activity of **static fixed nets** will not have an adverse effect on the integrity of this EMS.

An in-combination assessment will be carried out and will include gears screened out from the phase 2/3 assessment[i] for this site (section 8) and other non-fishery related activities.

1.2 Documents reviewed to inform this assessment

- Defra's risk assessment Matrix of fishing activities and European habitat features and protected species[ii]
- JNCC Seabird Monitoring Programme online database *http://jncc.defra.gov.uk/smp/*
- NIFCA monthly shellfish permit returns data provided by shellfish permit holders as a condition of their permit. Data recorded pertaining to static netting activity identifies which vessels are actively engaged in activity and their temporal and spatial extent.
- NIFCA patrol sightings, recording GPS location of vessel and activity.
- Reference list (Annex 1)
- Sector map of NIFCA district (Annex 2)
- Site boundary map (Annex 3)
- Marine Conservation Society beach litter data (Annex 4 & 5)
- Broad-scale Habitat map showing supporting marine habitats for Farne Island SPA (Annex 6)

2. Information about Farnes Island SPA

Situated two to six km off the coast of Northumberland, the Farne Islands consist of a cluster of 28 low- lying islands. First designated in 1951 as a Nature Reserve, the land down to the mean low tidal limit was designated an SPA in 1985 for its importance to breeding bird populations. This site sits wholly within the BNNC SAC and the Farne Islands' rocky coastline form important breeding grounds and haul- out sites for grey seal *Halichoerus grypus*, a feature of the BNNC SAC.

The site is managed by the National Trust, with two of the islands; the Inner Farne and Staple Island open to the public. National Trust rangers have surveyed the breeding seabird population (24 nesting species) every year since 1970, during which time the overall population has increased from approximately 27,000 breeding pairs (1970) to 87,000 (2014)[1].

At time of production of this AA the site has a proposed amendment as recommended in Stroud *et al*.2001 SPA review to include additional features. These are; supporting a nationally important population of an Annex I species, Roseate tern, an international important population of a migratory bird species, common guillemot and regularly supporting an internationally important seabird assemblage (breeding) of over 20,000 individuals (actual total 163, 819 individuals), with main named components (in addition to the qualifying tern species and common guillemot), to include the Atlantic puffin, *Fratercula arctica*, great cormorant *Phalacrocorax carbo*, European shag *Phalacrocorax aristotelis* and black-legged kittiwake *Rissa tridactyla* (Table1).

[i] Note: gears screened out of HRA type assessment in phase 2/3 are documented in site audit spreadsheet and are considered in-combination in section 8.

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

Table 1.The Farne Islands SPA qualifying features. [iii]

Feature	**Population Size** (2010- 2014)[1]	**% of UK Population**
Sandwich tern *Sterna sandvicensis*	Pairs: 862 Individuals: 1, 724	7.84%
Common tern *Sterna hirundo*	Pairs: 183 Individuals: 366	1.69%
Arctic tern *Sterna paradisaea*	Pairs: 2,003 Individuals: 4, 006	3.78%
Proposed Feature		
Common guillemot *Uria aalge*	Pairs: 32, 875 Individuals: 65, 751	1.72% *of North East Atlantic biogeographic populations
Roseate tern *Sterna dougalii*	Pairs: 13 Individuals: 26	1.88%
Internationally important seabird assemblage of over 20, 000 individuals	Individuals: 163, 819, with main components Atlantic puffin, 76, 798 (breeding adults)[2] Great cormorant, 203 (breeding adults) European shag, 1, 677 (breeding adults) Black-legged kittiwake, 8, 241 (breeding adults)	 6.62% 1.37% 3.11% 1.11%

2.1 Overview and qualifying features

- Pursuit and plunge diving birds

This feature depicts certain bird species foraging behaviour, diving from height while in flight into water to gain depth and speed to actively pursue its prey within the water column. This feature refers principally to species which are members of the Auk seabird family, common guillemot and Atlantic puffin, in addition to the great cormorant and European shag, which are named components of the seabird assemblage.

Common guillemot *Uria aalge*

Not listed as an Annex I species, the common guillemot is a regularly occurring migratory species which visits our coast to breed, protected under Article 4.2 of the Bird's Directive. Its breeding season is from May to September, during which adults will rear a single chick. Their diet consists of sandeels and clupeids species, for which adults will dive over 100m in depth in pursuit of their prey. When the chick is roughly one month old, (not fully fledged) it will follow its parents to the sea and learn to dive for food itself.

UK bird census of the common guillemot has shown their population to continually increase, 611,281 (69-70), 1,081,341 (85- 88) to 1,416,334 (98-02), (JNCC Seabird Monitoring Programme). This increasing trend has been mirrored on the Farne Island colony which currently holds a record high of 53,461 (Figure.1) which has prompted its proposal for its addition as a qualifying feature to the SPA.

[iii] Population and percentages taken from Natural England's Departmental brief for Coquet Island SPA – site amendment 2015.

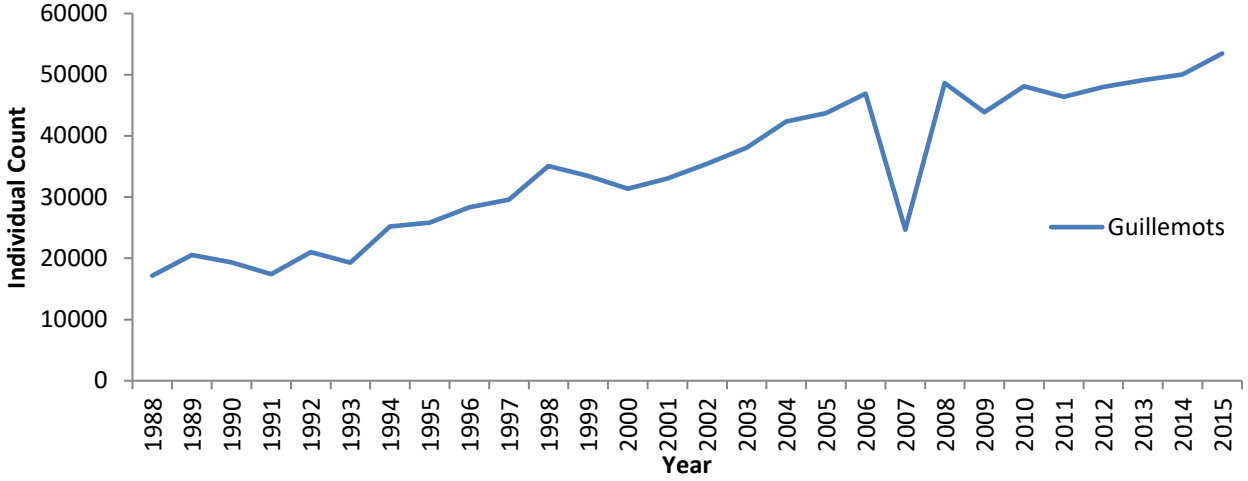

Fig.1 **I** *Data taken from JNCC Seabird Monitoring Programme database (http://jncc.defra.gov.uk/smp/) showing population trends for the common guillemots on Farne Islands.*

[1] population figures taken from Natural England's Departmental brief; Farne Islands Special Protection Area (SPA) – site amendment.

[2] population derived from average of 2008 and 2013 censuses

Atlantic puffin *Fratercula arctica*

The Farne Islands' Atlantic puffin population belongs to the north east Atlantic biogeographic population of the subspecies *F. arctica arctica* (5,176,257 pairs) which consists of France, GB, Isle of Man, Channel Islands, All- Ireland, Faroes, Norway, Iceland and Russia. Across its European range populations are declining, suspected to be due to low juvenile recruitment, which has upgraded the Atlantic puffin conservation status to 'Vulnerable' on the International Union for Conservation of Nature's Red List of Threatened species.

Due to the invasive methods required to conduct an accurate survey count, census of breeding pairs are conducted every five years, with the most recent count conducted in 2013, recording 39,962 Apparently Occupied Burrows, AOB (or breeding pairs) on the Farne Islands SPA (JNNC SMP). This is not internationally significant, but does represent 6.62% of the GB breeding population and therefore of national significance.

Monitoring records for Atlantic puffins for the Farne SPA since 1989 have steadily increased from 26,329 to peak at 55,674 in 2003 (figure 2). Declines experienced between 2003 and 2008 were attributed to a low abundance of suitable prey, namely the lesser sandeels, *Ammodytes marinus* (Morten 2007), which was mirrored across many breeding seabird species populations within the North Sea region. In 2003-2004 a high proportion of snake pipefish, *Entelurus aequoreus* were observed in monitoring programmes being fed to chicks, in which this alternative food source resulted in many chicks' deaths, due to its low nutritious value and unsuitability to swallow (Harris 2007). The last census for this site conducted in 2013 showed a slight increase of AOB to 39,962.

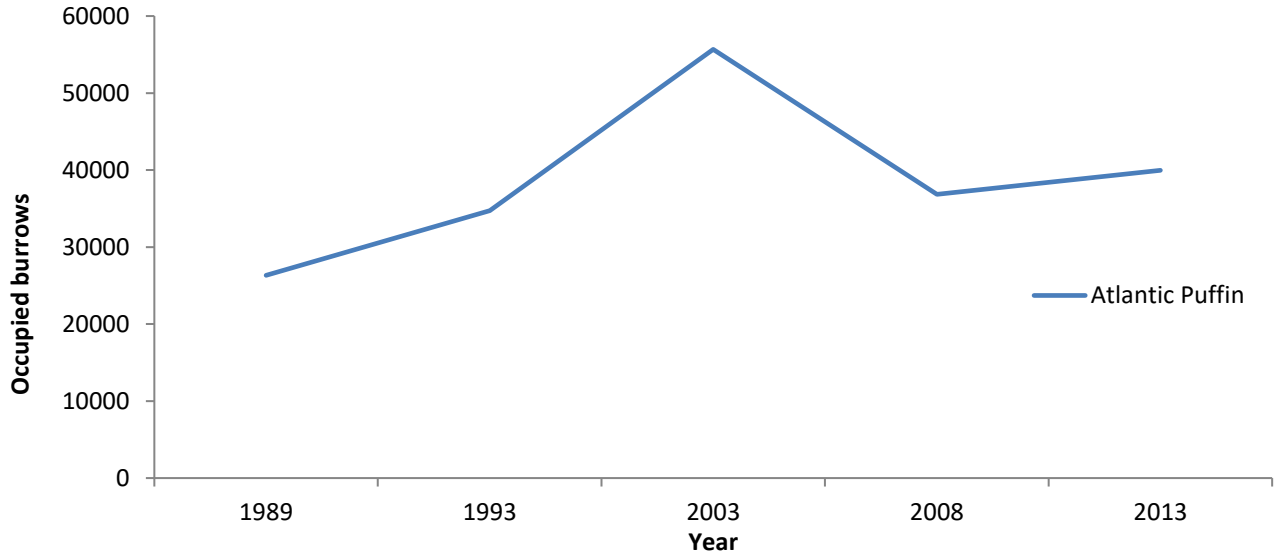

Fig 2. I *Data taken from JNCC Seabird Monitoring Programme database (http://jncc.defra.gov.uk/smp/) showing number of breeding pairs using 'Apparently Occupied Burrows' census to estimate breeding population.*

Great cormorant *Phalacrocorax carbo*

A generalist feeder, their diet consists mainly of benthic fish species, for which they have specialised adapted feathers to improve pursuit of prey underwater. They have been recorded as diving regularly up to 10m, the highest ever recorded is 35m (Birdlife.org).

During the last Seabird 2000 census (1999-2002), the total UK breeding population for the great cormorant was counted as 8,884 occupied nests, representing 1.5% of the global population (jncc.defra.gov.uk). Nationally this figure represented a nine percent increase from the last census conducted in 1985- 1988. However in comparison the Farne Island SPA breeding population shows a decreasing trend (figure 3) and an overall 39% decrease since the last (1985-88) census (Mitchell et al. 2004). This species is protected under Article 4.2 of the Bird's Directive, but not currently considered under threat (Natural England 2012).

Great cormorants exhibit low site fidelity to their breeding colonies and vary their nesting times within sites, breeding any time from mid- March to mid- September, making accurate counts difficult (jncc.defra.gov.uk). Typically considered a coastal breeder, inland breeding colonies have been increasing in size and location since 1986. Monitoring programmes of the cormorant inland colonies have recorded ringed individuals from the Farne Island SPA, showing movement between English breeding colonies (Newson et al. 2006).

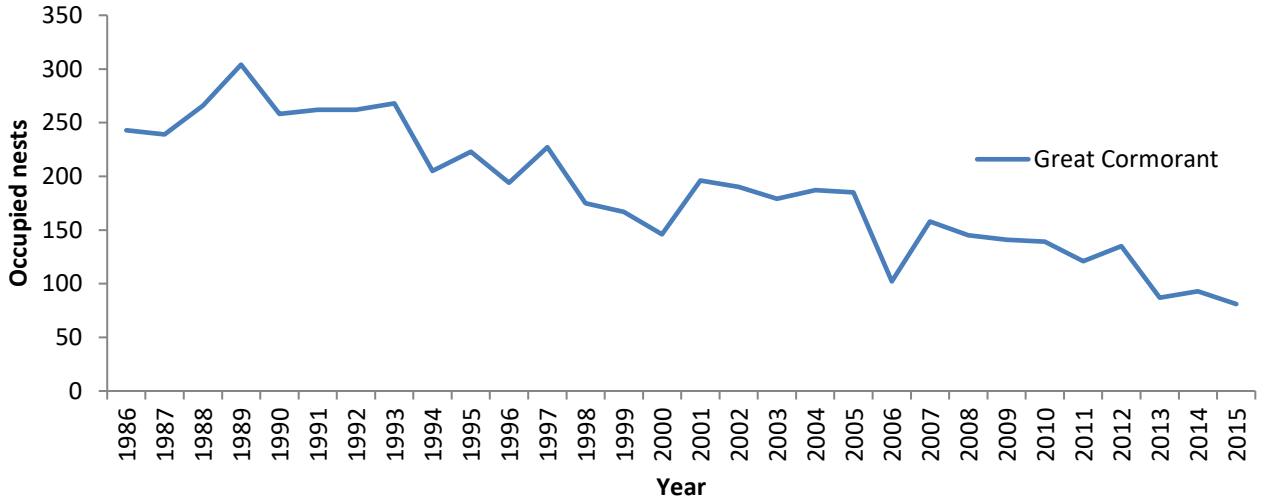

Fig 3. I *Data taken from JNCC Seabird Monitoring Programme database (http://jncc.defra.gov.uk/smp/) showing number of breeding pairs using 'Occupied nests' census to estimate breeding population.*

European Shag *Phalacrocorax aristotelis*

During the breeding season European shags forage close to their breeding colonies, generally within 4km. The adults are capable of diving up to 20m in pursuit of their prey, targeting benthic and demersal fish species for themselves and sandeels for their young.[6]

The UK population has continually fluctuated between national census (counting apparently occupied nests); 29,956 (1969-70), 36,276 (1985- 88) and 26,600 (1998-2002) breeding pairs. From the last census conducted (1985-88 to 1999-2002) the Farne Island SPA population has shown a 3% increase in the number of breeding pairs (Mitchell et al. 2004). Over the last decade their numbers steadily increased, experiencing one dramatic decrease in 2013 which was due to large mortality over winter storms of 2012/2013 (National Trust 2014).

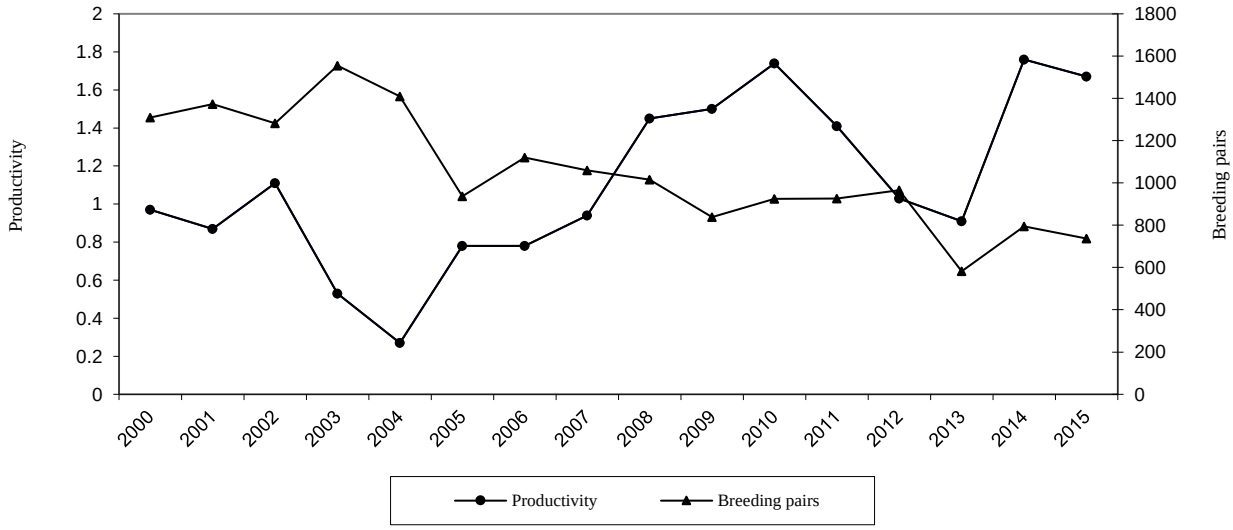

Fig 4 I *Population trends of breeding pairs of European Shags. Graph taken from National Trust Farne Island 2015 Report.*

- Benthic Feeding Birds

The benthic feeding species of the Farne Islands SPA, although not named main components form part of the internationally important seabird assemblage of over 20,000 individuals which breed on the islands. These species specialise in feeding on organisms at the bottom of the seabed, namely small crustaceans and molluscs which is characteristic of diving ducks species, shelduck *Tadorna tadorna* and common eider *Somateria mollissima*.

Common eider, *Somateria mollissima*

There are approximately 27,000 pairs of the common eider present within the UK during the summer breeding months (rspb.org.uk). The colony at the Farne Islands is located at the southern boundary of their breeding range. During winter their UK populations increase as they migrate southward to shelter through the winter months.

Over the last 15 years, numbers of common eider breeders and their productivity success has fluctuated on the Farne Islands (figure 5), with the lowest recorded during 2012. Numbers and productivity have since increase annually, with a slight decrease recorded in 2015 to current breeding pairs observed as 570 (Blakely & Tooth 2015).

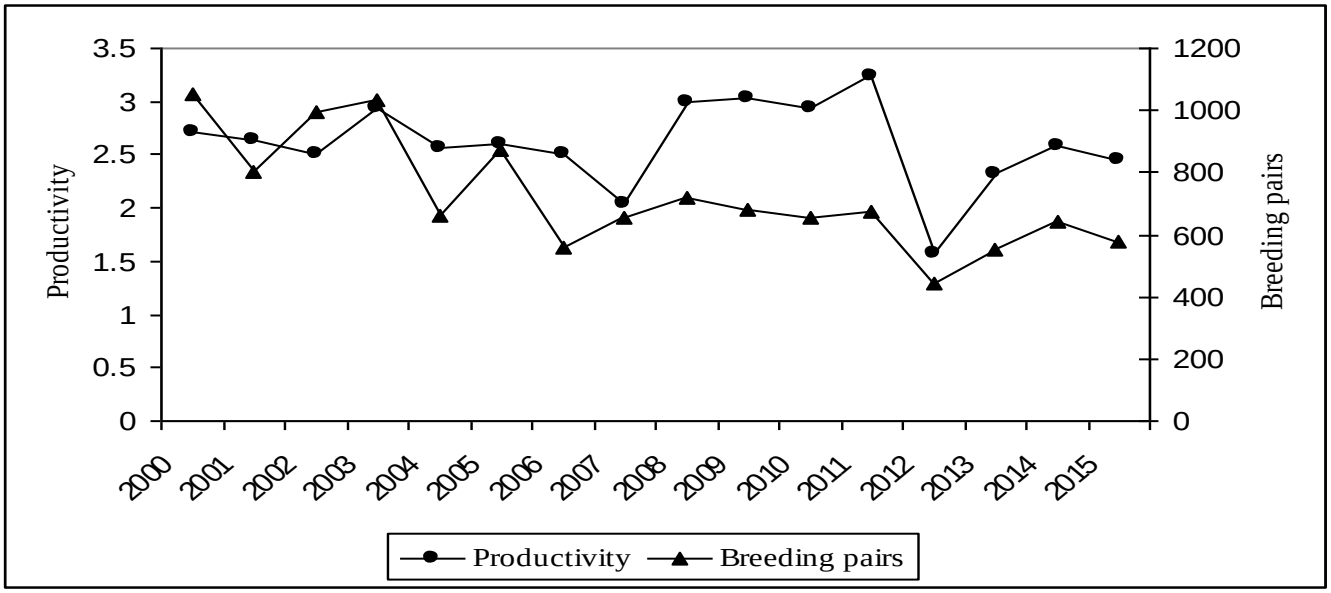

Fig 5 I *Population and productivity trends of breeding pairs of common eiders. Graph taken from National Trust Farne Island 2015 Report.*

Shelduck, *Tadorna tadorna*

Shelducks are year round residents within the UK, with numbers increasing during the over-wintering season. Currently there is estimated to be approximately 15,000 breeding pairs (rspb.org.uk), increasing to 73,500 individuals over winter months (A6.27 JNCC). Information on national breeding trends for Shelduck is sparse, with reports focusing on overwintering non-breeding populations. Increases in over-wintering populations during the mid- 1980s were partially attributed to increases in the British breeding population (A6.27 JNCC).

Shelducks are rare breeders on the Farne Islands with less than 20 nesting pairs recorded within five years (National Trust 2015). In recent years two adult pairs were recorded in 2013 and one in 2014. During the 2015 breeding season one adult pair and four additional adults of shelduck were observed by NT wardens on the Farne Islands, but it is unconfirmed if they bred as they were not observed with any young.

2.2 Conservation Objectives

There is no Regulation 33 advice for the Farne Island SPA and available generic interim advice does not specify conservation objectives for the features 'pursuit and plunge diving birds' and 'benthic birds'. The generic conservation targets exists under the term 'Annex I and regularly occurring migratory species' which has been used for the features under consideration in this assessment.

The inferred conservation objectives for these features differ; for 'pursuit and plunge diving birds' **Recover** and 'benthic feeding birds' **Maintain** in favourable condition, both with medium confidence level (see section 6 of Detailed tLSEs).

- the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.

- the abundance and structure of the assemblage at or above its current or target level (whichever is the higher) through maintaining breeding productivity and adult survival.

- the concentrations and deposition of air pollutants[to] below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).

- the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding).

- the water quality and quantity to a standard which provides the necessary conditions to support the SPA feature, where the supporting habitats of the feature are dependent on surface water.

- the size of the population at a level which is above either the population-size included on the SPA Citation or an alternative baseline-population or that based on the current mean peak count or equivalent, whichever is the higher.

3. Interest feature/fisheries interactions of the FARNESPA categorised as 'Red' risk and overview of management measure(s)

No interest features of the Farne Islands SPA were categorised as a 'Red' risk, however this SPA sits wholly within the Berwickshire and North Northumberland Coast SAC for which a red risk interaction of mobile fishing gears and reef features implemented in 2014 with the creation and implementation of Northumberland Inshore Fisheries and Conservation Authority Byelaw 7: Prohibition of the use of Mobile Fishing Gear within the English section of the Berwickshire and Northumberland Coast SAC.

4. Information about fishing activities surrounding the site

In assessing the level of static net fishing within the NIFCA district, two sources of data have been analyse; monthly shellfish permit returns (low to moderate data confidence) and Officers' patrol sighting data (high data confidence). The monthly return forms are submitted by shellfish permit holders only and providing information on netting activity/landings is not mandatory; therefore these may not be capturing total netting activity. Data from 2006 to 2010 has been excluded from the analysis as this information was captured by the Marine and Fisheries Agency, MFA (MMO predecessor) for under 10m vessels only. During this period information for over 10m vessels was captured through European log sheets, for which NIFCA do not process the data. Data collected during this period is less defined spatially and incomplete and therefore does not provide a descriptive representation of our fleet and is excluded.

The assessment of T, J and drift nets for the migratory salmonid fishery has been omitted from this Appropriate Assessment, as this activity is regulated by the Environment Agency and who are required to carry out its

assessment. This activity is however considered in Section 8 of this document within the in-combination assessments.

4.1 Static fixed and gill nets

Levels of static netting activity (gill, trammel and entangle) within the NIFCA district have declined considerably in recent years and have currently remained very low, with just 5 boats (NIFCA permit returns 2015) known to set nets on an infrequent basis (Jon Green, pers. comms.). This is reflected in the number of vessels setting static nets and the total number of days nets are set at sea from 2003- 2015, all of which is recorded by monthly returns forms submitted by shellfish permit holders within the NIFCA district.

The number of vessels setting static nets in the NIFCA district as a whole has dropped from 29 in 2003 to 5 in 2015, with just one vessel reporting (NIFCA permit returns) to set static fixed nets within close proximity of the Farne Islands SPA (Newton to Borders, sector 6 & 7) during 2015 (figure 5). Furthermore the annual sum of days in which vessels recorded setting static nets has decreased significantly over this period with vessels logging 827 days of netting activity in 2003 to 37 days in 2015 (figure 6). Activity of static fixed nets being set within sector 6 & 7 (surrounding waters of the Farne Islands) has remain consistently low throughout this period, with no activity being recorded in 2012 and 2013. The highest activity recorded was during 2005, for 86 days (figure 6). Most recent returns (2015) for setting static nets show this activity occurring exclusively in August (figure 7).

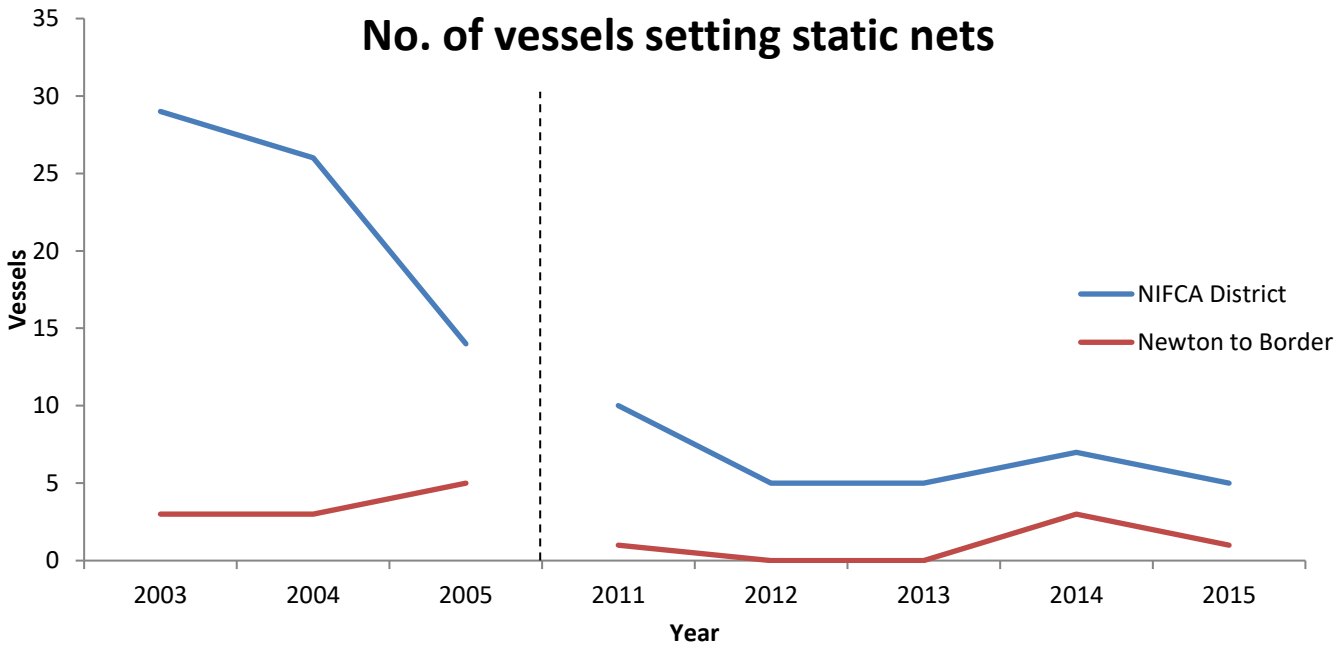

Figure.5 **I** *Total number of vessels reported in shellfish returns using static nets (gill, entangling and trammel nets) throughout the NIFCA district and total within the Newton to border district (sectors 6 & 7), surrounding waters of Farne Island SPA from 2003 to 2015.*

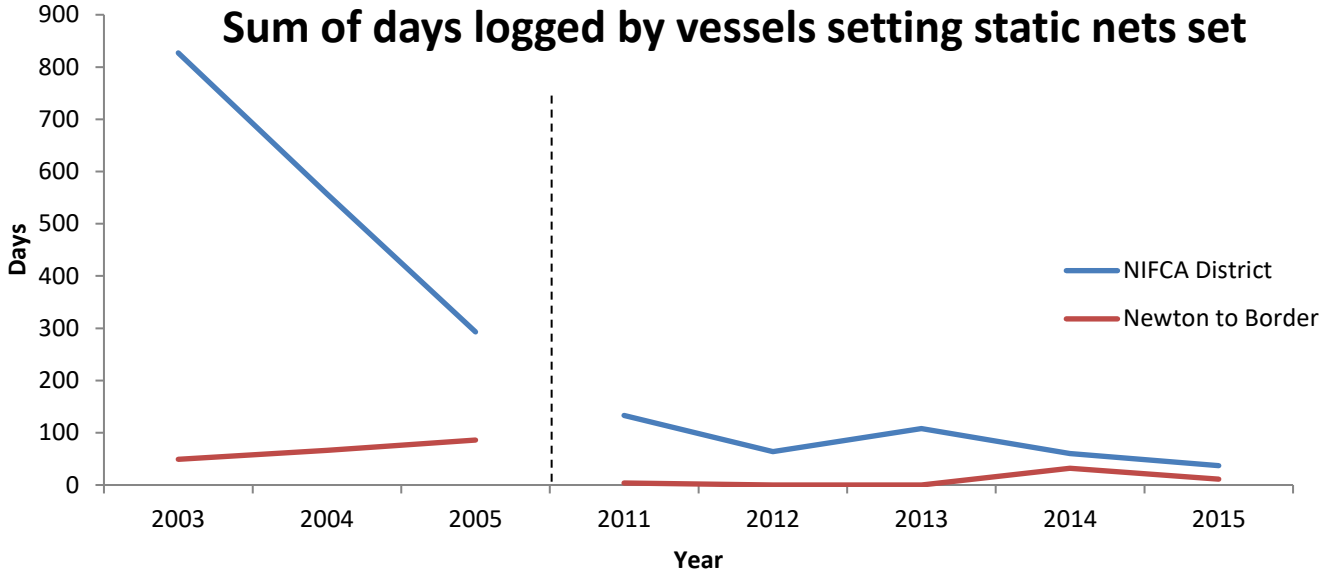

Figure 6 **I** *Total number of days static nets reported in shellfish returns to be set throughout the NIFCA district and those set in the sectors Newton to border district, surrounding waters of Farne Island SPA from 2011 to 2015.*

The classified breeding bird species of the Farne Islands SPA are present on site from April through to September. Over the past five years netting activity in the Farne Islands SPA has occurred solely within the months August, September and December. The highest activity has been recorded in September, with two vessels reported setting nets, one in 2011 and the other in 2014 for 4 and 21 days retrospectively (figure 7). The netting activity recorded in August and September coincides with the breeding season of the SPA features during which a total of 1,009m length of netting was set. No activity was reported during 2012 and 2013.

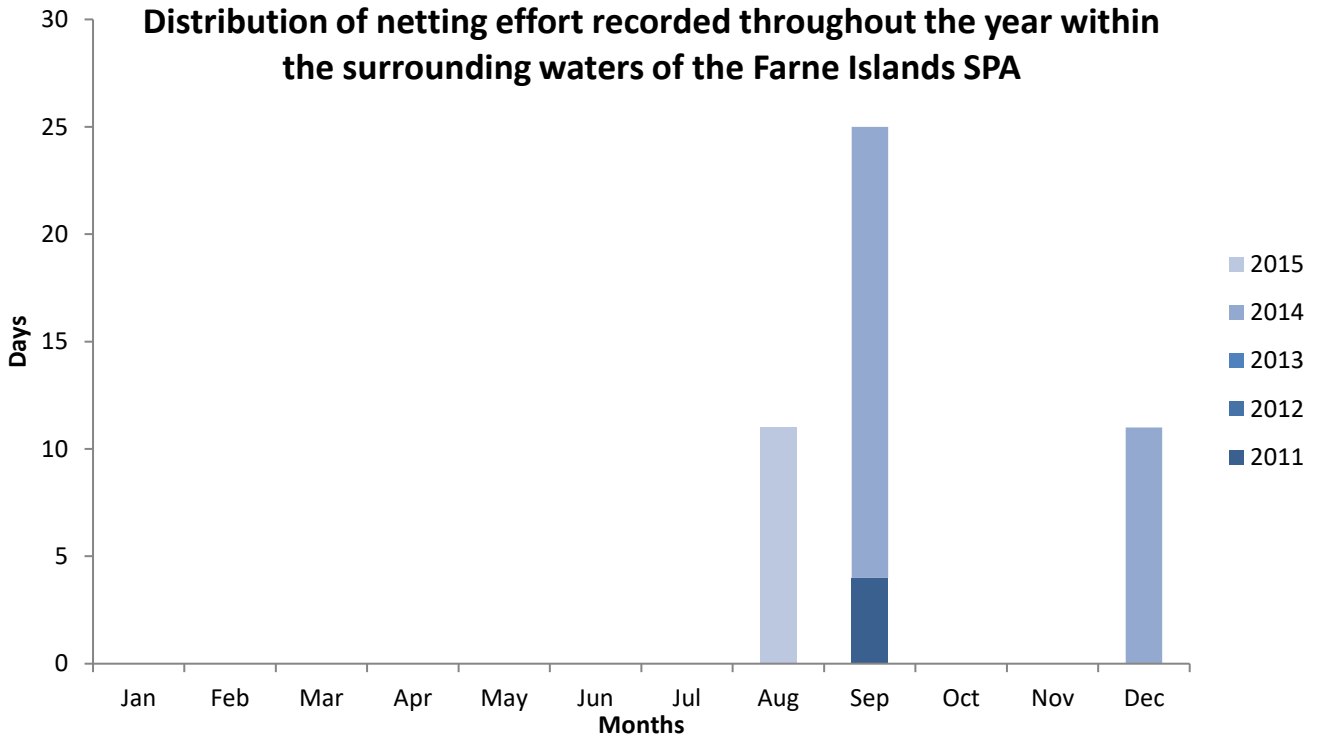

Figure 7 **I** Frequency *in which nets were set from 2011 to 2015 from Newton to the Scottish border (sectors 6 & 7), surrounding waters of Farne Island SPA.*

No vessels without a shellfish entitlement are known to NIFCA officers to be setting gill nets within the district and the declining trend in netting apparent from the monthly returns forms also correlates with sightings of netting activity from regular NIFCA patrols (figures 8 & 9), with very few sightings made since 2013, compared with previous years. Mapping of the sightings in figure 9 also shows that no sightings of static netting activity have been made within the Longstone to Scottish border sector since 2003 and static netting activity is concentrated in the southern part of the NIFCA district, which is partially attributed to harsher tidal and sea conditions north of Amble (CIFCO Al Browne pers. comm. 2016). Local expert knowledge combined with permit returns with patrol sightings provides a high confidence level to the data.

Patrol effort increased significantly during 2010 and 2011 (figure 8) with the employment to two more enforcement officers. This sharply changed from 2011 to 2012 due to diversification of the regulatory authority's role from purely enforcement as the Sea Fisheries Committee to responsibilities towards conservation as IFCAs under the Marine Coastal Access Act 2010. This effort remained at a lower level during 2014 and 2015 with decommission of the St Oswald and the commission of a new patrol vessel, St Aidan.

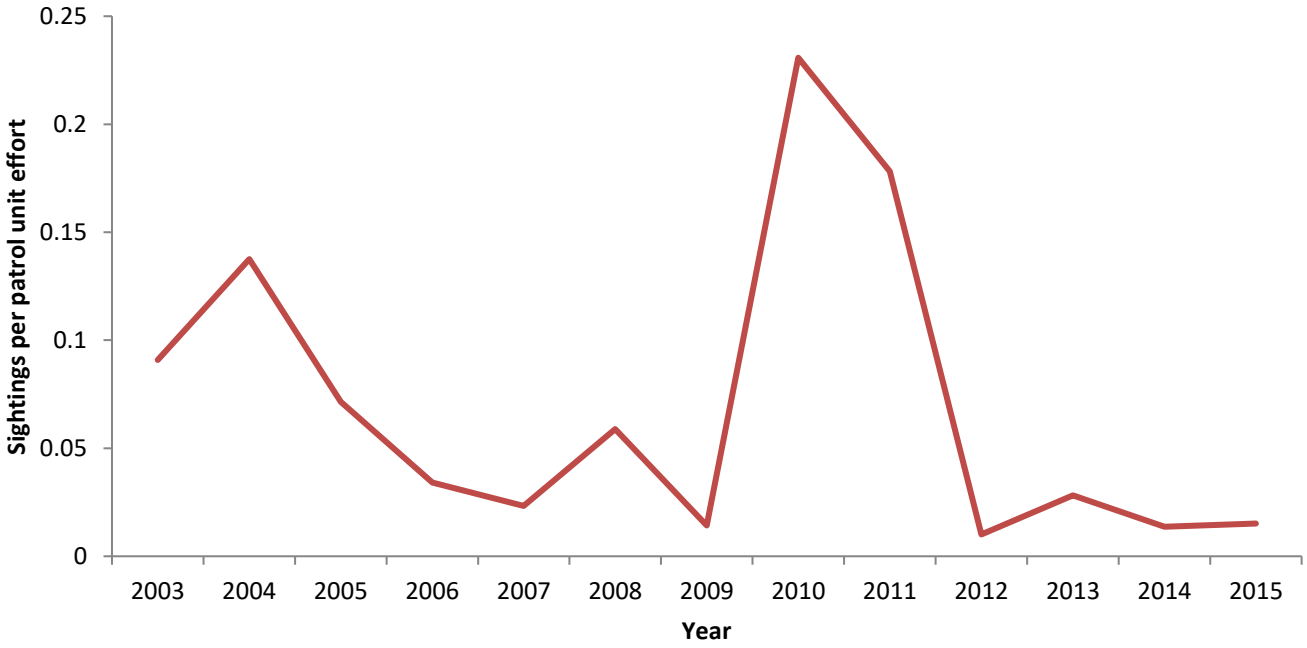

Figure 8 | *Number of sightings per sea patrol annually (per unit effort) of static netting activity within the Northumberland Inshore Fisheries and Conservation Authority district 2003 – 2014.*

15-20 years ago, static fixed netting was an important fishery off Northumberland, targeting predominantly cod in the winter and turbot in the summer. Mesh sizes of these nets are dependent on their target species, as specified under Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organism**s.** Annex VI states the minimum mesh sizes for fixed gears, applicable to our district, with 140mm being used for Cod and 90- 99mm for flatfish species. Generally effort was highest during the winter (figure 5), while fishermen turned to their pots in the summer.

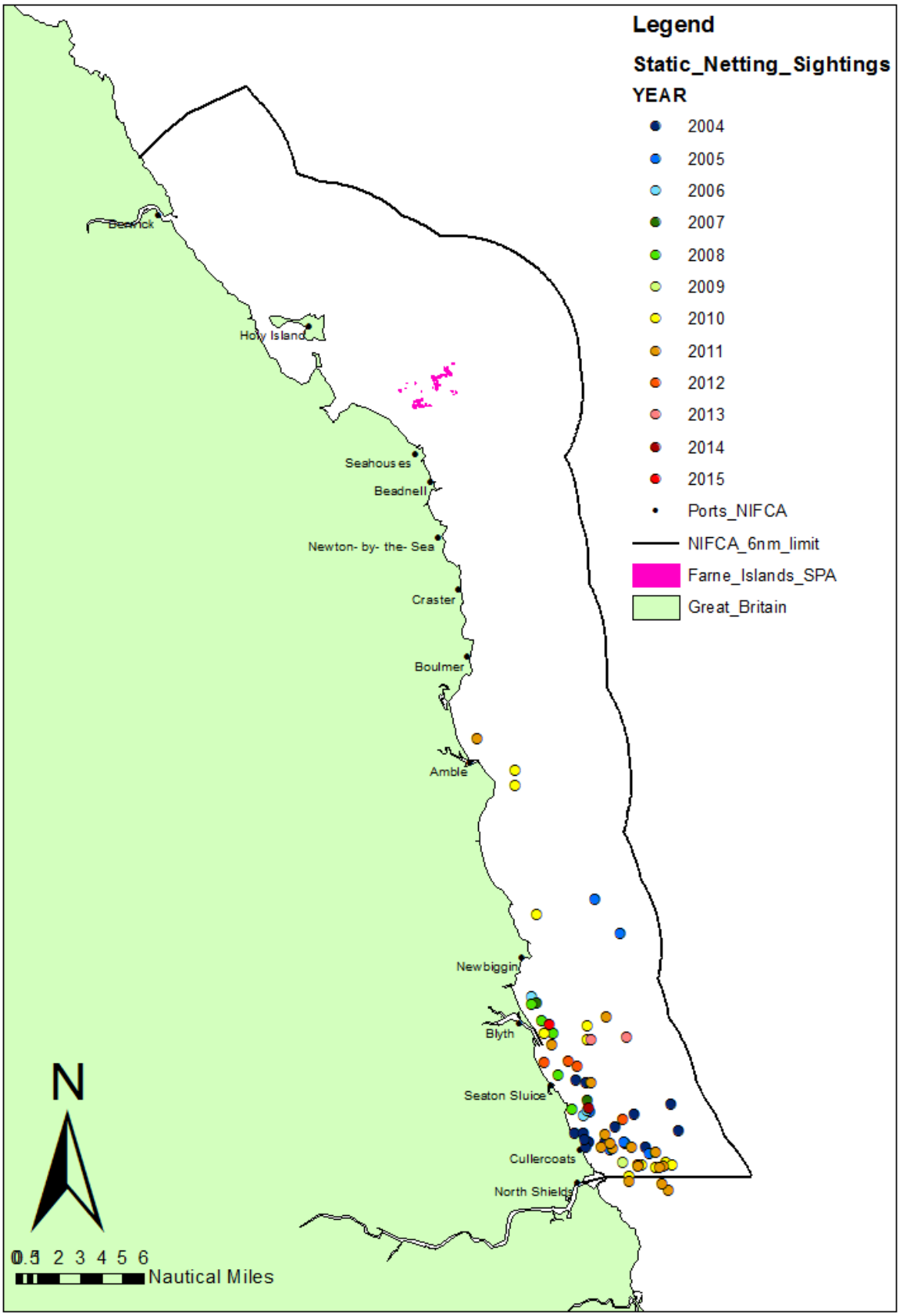

Figure 9 | *Map of sightings of fishing vessels deploying/hauling bottom-set static nets from the NIFCA Patrol Vessel St. Oswald during routine patrols from 2003 – 2015. Each point represents an individual sighting.*

Anecdotal evidence indicates that the decline in the use of any type of static fixed nets (gill, trammel and entanglement) within the NIFCA district is due to various factors, but predominantly the introduction of Total Allowable Catches and quotas in 1983 which drove many towards potting for shellfish. Locally, the cessation of dumping sewage sludge at sea around 15 years ago, particularly off the River Tyne and Blyth, is attributed to a decline in local cod stocks which used the dumping grounds for feeding. Furthermore increases in the population of grey seals off the Northumberland coast, particularly the Farne Islands which is home to one of England's largest colony with over 1000 pups born annually, has also led to a decline in fixed netting within the district as fishermen hold the seals responsible for eating/damaging fish caught within the nets. These interactions have also been witnessed by NIFCA enforcement officers during routine inspections, as fishermen hauled their nets, evidence of predation of the caught fish was clearly visible in addition to seals observed feeding directly from the nets as they were being hauled (NIFCO Stewart-Moore pers. comm.)

4.2 Management (Static fixed nets)

There are various existing management measures in place within the NIFCA district that affect static fixed netting:

NIFCA Byelaw 6 Fixed Engines:

Prohibition 4. A person must not use a fixed engine to fish for or take sea fish at any time during the period 26th March to 31st October inclusive;

(a) in waters that are less than 7 metres in depth, unless those waters are separated from the shore by waters deeper than 7 metres at any state of the tide;
(b) where the headline of the fixed engine is less than 4 metres below the surface of the water at any state of the tide.

NIFCA Byelaw 5 Marking of Fishing Gear and Keep Boxes:

Prohibition 2. A person must not fish for or store sea fish using a pot, keep box or passive gear unless:

(a) the marker buoy or dahn is clearly visible on the surface of the water; and
(b) where a string of no more than 5 pots is used, a marker buoy or dahn is attached to one end of the string; or
(c) where subparagraph 2(b) does not apply, a marker buoy or dahn is fixed to both ends of the pot, keep box or passive gear.

Prohibition 3. A marker buoy or dahn used in accordance with paragraph 2 must display the following information:

(a) where the marker buoy or dahn is placed from a relevant fishing vessel, the name, port letters and numbers of that relevant fishing vessel;
(b) where the marker buoy or dahn is not placed from a relevant fishing vessel, the owner's name and telephone number.

4.3 Other fishing activity within the Farne Islands SPA

Potting for European lobster *Homarus gammarus* and brown crab *Cancer pagurus* is the principle fishery within the Northumberland IFCA district, with 115 commercial shellfish permit holders in 2015 and approximately 38,000 [commercial] pots fished within the district (2014). Fishers record which district they have set pots on their monthly returns forms which enable NIFCA to monitor fishing activity within the site. Commercial shellfish permit holders are

limited to 800 pots and permitted vessels must not exceed 12 metres in length (Byelaw 4 Crustacea and Molluscs permitting and Pot Limitation). Recreational shellfish permit holders are limited to five pots and must not take more than one lobster, five edible or velvet crabs, 20 whelks or five prawns in any one day. Under NIFCA's new permitting scheme (January 2016), recreational fishing must pay £10 for a permit which when received permit holders were requested on a voluntary basis to record catch information.

5. Test for Likely Significant Effect (tLSE)

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

FARNE-363: Plunge & Pursuit Diving Birds

1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?	No
2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)? *Sensitivities as listed are based on DRAFT Interim conservation advice. Reference to Regulation 35 advice for the Farnes Islands SPA and best judgement has been used to determine which of these pressures are truly exerted by the gear type(s).	Above water noise (Sensitive)[1] Collision ABOVE water with static or moving objects not naturally found in the marine environment. (Sensitive)[2] Collision below water (Sensitive)[2] Introduction or spread of non-indigenous species (Sensitive)[3] Litter i.e. Ghost fishing (Sensitive)[4] Removal of non-target species i.e. bycatch (Sensitive)[5] Underwater noise changes (Sensitive)[6] Visual disturbance (Sensitive)[7] Selective extraction of species (i.e. removal of target species)[8,9]
3. Is the feature potentially exposed to the pressure(s)?	Yes

4. What are the conservation objectives for the feature? *DRAFT interim conservation advice does not give definitive conservation objectives. However, completing an HRA without COs is difficult. The CO as listed in this document is based on current knowledge of the status, and the pressures, affecting designated features (see sections 4 &5). Expert judgement has been used to determine which features may be exposed to the pressure(s) resulting in inferred COs. These COs are assigned a degree of uncertainty i.e. a subjective confidence level based on evidence 'High', 'Medium,' 'Low', and 'Unknown'.	Conservation objective for plunge & pursuit diving birds: **Recover *:** - the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised. - the abundance and structure of the assemblage at or above its current or target level (whichever is the higher) through maintaining breeding productivity and adult survival. - the concentrations and deposition of air pollutants[to] below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk). - the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding). - the water quality and quantity to a standard which provides the necessary conditions to support the SPA feature, where the supporting habitats of the feature are dependent on surface water. - the size of the population at a level which is above either the population-size included on the SPA Citation or an alternative baseline-population or that based on the current mean peak count or equivalent, whichever is the higher. Those conservation objectives that might be affected by gill netting activities are underlined. *Confidence level for interim, inferred Conservation Objective: **MEDIUM** (see section 6 for detail).

5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?	Levels of netting activity within the surrounding waters of the Farnes Islands SPA are currently very low, with just one or two boats known to set nets on an infrequent basis (Jon Green, pers. comms.). The SPA site is managed by the National Trust, and staff members have not observed nets set in close proximity of the site; nets are generally set further south (John Walton, Coastal & Marine Officer National Trust, pers. comms. 17/04/2014).There have also been no reports of any classified SPA bird species caught within nets around the Farnes Islands in 2014 or 2015 (Ed Tooth, National Trust Farnes Ranger. Pers. comms. 23/02/16). NIFCA Byelaw 6 (Fixed Engines) includes a number of technical, spatial and temporal restrictions designed to minimise the potential of accidental bycatch of birds within the district. For instance, between 26th March – 31st October it is prohibited to set a fixed engine in waters less than 7m depth and the headline of the fixed engine must be at least 4m below the surface of the water. Given the current low levels of activity and the lack of reports of seabird bycatch in nets around the Farne Islands, it is unlikely that gill netting is having a significant adverse impact; however more information is needed to confirm this.	
6. Condition and Conservation Objective Inferences	Of the two species of pursuit and plunge diving birds designated for the Farne Islands SPA, puffins had a poor season in 2015 attributed to flooding of burrows, resulting in reduced productivity[16]. This decline in puffin abundance reflects a national trend, which has resulted in puffins being added to the IUCN Red List. Guillemot numbers on the Farne Islands however are increasing, with 35,820 pairs recorded in 2015, a 3% increase from 2014 and a 2555% increase since records began in 1971[16]. No conservation objective is provided for 'Pursuit and Plunge diving birds' within the Farne Islands SPA; the CO of 'Maintain' for guillemots and 'Recover' for puffins is inferred from the National Trust's 2015 report for breeding birds on the Farnes with a medium level of confidence.	
7. Is the potential scale or magnitude of any effect likely to be significant?	**Alone:** **No** *However a full Appropriate Assessment is required to confirm this.	**OR In-combination** **No**

FARNE-364: Benthic Feeding Birds

1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?	No
2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)? *Sensitivities as listed are based on DRAFT Interim conservation advice. No 33 or 35 Reference is available for the Farne Islands SPA and best judgement has been used to determine which of these pressures are truly exerted by the gear type(s).	Above water noise (Sensitive)[1] Collision ABOVE water with static or moving objects not naturally found in the marine environment. (Sensitive)[2] Collision below water (Sensitive)[2] Introduction or spread of non-indigenous species (Sensitive)[3] Litter i.e. Ghost fishing (Sensitive)[4] Removal of non-target species i.e. bycatch (Sensitive)[5] Underwater noise changes (Sensitive)[6] Visual disturbance (Sensitive)[7] Selective extraction of species (i.e. removal of target species)[8,9]
3. Is the feature potentially exposed to the pressure(s)?	Yes

4. What are the conservation objectives for the feature? *DRAFT interim conservation advice does not give definitive conservation objectives. However, completing an HRA without COs is difficult. The CO as listed in this document is based on current knowledge of the status, and the pressures, affecting designated features (see sections 4 &5). Expert judgement has been used to determine which features may be exposed to the pressure(s) resulting in inferred COs. These COs are assigned a degree of uncertainty i.e. a subjective confidence level based on evidence 'High', 'Medium,' 'Low', and 'Unknown'.	Conservation objective for benthic feeding birds: **Maintain*:** - the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised. - the abundance and structure of the assemblage at or above its current or target level (whichever is the higher) through [maintaining/restoring] breeding productivity and adult survival. - the concentrations and deposition of air pollutants[to] below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk). - the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding). - the water quality and quantity to a standard which provides the necessary conditions to support the SPA feature, where the supporting habitats of the feature are dependent on surface water. - the size of the population at a level which is above either the population-size included on the SPA Citation or an alternative baseline-population or that based on the current mean peak count or equivalent, whichever is the higher. Those conservation objectives that might be affected by gill netting activities are underlined. *Confidence level for interim, inferred Conservation Objective: **MEDIUM** (see section 6 for detail).

5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?	Levels of netting activity within the surrounding waters of the Farne Islands SPA are currently very low, with just one or two boats known to set nets on an infrequent basis (Jon Green, pers. comms.). The SPA site is managed by the National Trust, and staff members have not observed nets set in close proximity of the site; nets are generally set further south (John Walton, Coastal & Marine Officer National Trust, pers. comms. 17/04/2014).There have also been no reports of any classified SPA bird species caught within nets around the Farne Islands in 2014 or 2015 (Ed Tooth, National Trust Farnes Ranger. Pers. comms. 23/02/16). NIFCA Byelaw 6 (Fixed Engines) includes a number of technical, spatial and temporal restrictions designed to minimise the potential of accidental bycatch of birds within the district. For instance, between 26th March – 31st October it is prohibited to set a fixed engine in waters less than 7m depth and the headline of the fixed engine must be at least 4m below the surface of the water. Given the foraging behaviour of benthic feeding seabirds and the current low levels of netting activity within the vicinity of the Farne Islands SPA, there have been no reports of benthic feeding birds being caught in nets around the Farne Islands and it is unlikely that gill netting is having a significant adverse impact on benthic feeding seabirds within the site; however more information is needed to confirm this.	
6. Condition and Conservation Objective Inferences	Benthic feeding seabirds are not included as a designated feature of the Farne Islands SPA in the Interim Conservation Advice (2015), however they are present at the site and are a classified bird species (e.g. Common eider). Eider duck numbers dropped on the Farne Islands in 2015 by 10.79% although productivity only dropped by ~5%[16]. Good numbers of other benthic feeding birds such as the Oystercatcher and Ringed Plover were recorded at the site in 2015[16]. In lieu of conservation objectives for 'Benthic feeding seabirds' within the Farne Islands SPA; the CO of 'Maintain' is inferred from the data provided by the National Trust 2015 report on breeding birds on the Farne Islands with a 'Medium' level of confidence.	
7. Is the potential scale or magnitude of any effect likely to be significant?	**Alone:** **No** *However a full Appropriate Assessment is required to confirm this.	**OR In-combination** **No**

6. Appropriate Assessment

If a 'Test of Likely Significant Effect (Section 5) identified the potential for a significant effect on the EMS feature/sub-feature as a result of the gear-type under consideration, or if there is a lack of information regarding the impact of the gear type on the feature, it has been carried forward for a full Appropriate Assessment to assess whether or not the potential LSE is likely to have an adverse effect on the conservation objectives given for the designated features of the site in question. The full appropriate assessment for the gear/feature interaction of static fixed nets/ pursuit & plunge diving birds and static fixed nets/ benthic feeding birds within the Farne Island SPA is given below.

6.1 Potential risks to features

The potential pressures, ecological impacts, levels of exposure and mitigation measures for static fixed netting activity in regards to the designated features 'pursuit & plunge diving birds' and 'benthic feeding birds' within the Farnes Island SPA are summarised in Table 2.

Table 2: Summary of Impacts

Feature/ Sub feature(s)	Conservation Objective	Potential pressure (such as abrasion, disturbance) exerted by gear type(s)	Potential ecological impacts of pressure exerted by the activity/activities on the feature[4]	Level of exposure of feature to pressure	Mitigation measures
Pursuit & Plunge Diving Birds / Benthic feeding birds	**The abundance and structure of the assemblage at or above its current or target level (whichever is the higher) through maintaining breeding productivity and adult survival.**	Above water noise	"Whilst activity would cause pressure, impact considered better captured by 'visual disturbance"[1]	N/A	N/A
		Collision ABOVE & BELOW water with static or moving objects not naturally found in the marine environment.	'Collision can occur as a result of this activity in instances where a vessel in used.'	Vessel activity within the surrounding waters of the Farne Islands attributed to gill net fishing vessels has remained constantly low. The highest number of vessels reported to set nets were five in 2005. Currently only one vessel (under 10m in length) operates static nets within the NIFCA sector 6 & 7, an area approximately 1,075km^2. Activity recorded coincided during the breeding season for 11 days in August (NIFCA 2015). Influencing factors such as, low TAC, increasing seal population at the Farnes continue to maintain low levels of this fishing activity. The extremely low level of vessel activity attributed to static netting within the vicinity of the SPA means that collision of classified birds with vessels is highly unlikely.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.

		Removal of non-target species i.e. bycatch.	'Pressure may be exerted by by-catch associated with fixed nets and lines. However, vulnerability of feature to pressure will need to be considered on a case-by-case basis.'[6] Activity of SPA feature foraging behaviour places risk of interaction (entanglement) resulting in injury or mortality.	Historically netting activity within NIFCA sector 6 & 7, an area approximately 1,075km^2 has remained consistently low, with the highest number recorded in 2005 as five. In 2015 only one vessel reported operating static nets for 11 days in August. Furthermore National Trust have not observed static nets being set in close proximity to the site and there have been no reports of classified SPA birds species caught in nets in the vicinity of the Farnes (John Walton Coastal & Marine Officer pers.comm 2014). The Marine Conservation Society conduct marine litter surveys along the UK coastline, which record incidences of dead birds. From 2005- 2015 217 surveys have been conducted within the NIFCA district, of which 34 recorded incidences of dead birds. From these, 4 surveys identified (4-7 individuals) Atlantic puffins, 2 in 2007, 1-4* in 2011 and 1 in 2013. No attribution was given to their deaths.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'
		Removal of non-target species i.e. features preferred prey species.	Selective extraction of species (i.e. removal of target species). The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. Removal of target and non-target prey species has the potential to impact features' populations.	EU legislation regulates mesh sizes of static nets, which are determined by the target species. Static netting in the NIFCA district targets predominantly whitefish e.g. Cod and Saithe or flatfish e.g. Turbot and Plaice, which require mesh sizes of 140mm and 100mm retrospectively. The pursuit and diving features primarily target Sandeels (Ammodytidae), while the benthic feeding species target small mollusc and crustaceans. These mesh sizes are therefore too large to catch sandeels and the smaller crustacean species. Furthermore this activity was only carried out for a period of 11 days	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.

				during August and therefore this level of activity would be insufficient to impact the availability of prey species for adults, in addition to successfully rear their young.	
	the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding).	Collision ABOVE & BELOW water with static or moving objects not naturally found in the marine environment.	'Collision can occur as a result of this activity in instances where a vessel in used.'[2]	Vessel activity within the surrounding waters of the Farne Islands attributed to static net fishing vessels has remained constantly low. The highest number of vessels reported to set nets within NIFCA sector 6 and 7 were five in 2005, an area approximately 1,075km^2. Currently only one vessel (under 10m in length) operates static nets these districts with activity coinciding during the breeding season for 11 days in August (NIFCA 2015). Influencing factors such as, low TAC, increasing seal population continue to maintain low levels of this fishing activity. The low number and time attributed to static netting by vessels is highly unlikely to have an adverse impact on the classified bird species supporting habitat extent.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.
		Litter i.e. Ghost fishing.	'Discarded/lost lines, hooks and nets which could be problematic for mobile species. Other types of litter generated by activity generally not considered to occur at level that would cause concern.'[5] Activity of SPA feature foraging behaviour places risk of interaction (entanglement) resulting in injury or mortality.	Fishing net recorded in the Marine Conservation Society beach litter surveys along the NIFCA district coastline has shown that the frequency of netting found from 2005 to 2012 has generally decreased from one piece every 54m to every 201m, retrospectively. The highest frequency was recorded in 2013, every 36m, which has since declined to every 107m in 2015. (Annex 4). Over 10years of surveys the occurrence of fishing net records around the Farne Island SPA has been relatively low (annex 5).	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'. NIFCA will continue to participate in collecting

					information or NEBBS**
		Removal of non-target species i.e. bycatch.	'Pressure may be exerted by by-catch associated with fixed nets and lines. However, vulnerability of feature to pressure will need to be considered on a case-by-case basis.'[6] Activity of SPA feature foraging behaviour places risk of interaction (entanglement) resulting in injury or mortality.	The number of vessels recorded around the Farne Islands attributed to static net fishing has remained consistently low, with the highest number recorded in 2005 as five; in 2015 there was only one. This vessel operated static nets for 11 days in August. Furthermore National Trust have not observed static nets being set in close proximity to the site and there have been no reports of classified SPA birds species caught in nets in the vicinity of the Farnes (John Walton Coastal & Marine Officer pers.comm 2014). The Marine Conservation Society conduct marine litter surveys along the UK coastline, which record incidences of dead birds. From 2005- 2015 217 surveys have been conducted within the NIFCA district, of which 34 recorded incidences of dead birds. From these, 4 surveys identified (4-7 individuals) Atlantic puffins, 2 in 2007, 1-4* in 2011 and 1 in 2013. No attribution was given to their deaths.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fishery and the conservation status of sites' features. Annual assessments of gear losses and marine litter surveys from MCS, NWT will ensure any management requirements are met and remain 'fit for purpose'. NIFCA will continue to participate in collecting information or NEBBS**
		Visual disturbance.	'May result from the presence/movement of the vessel and potentially also the presence/movement of the gear. Magnitude of pressure would depend on nature and scale/intensity of activity.'[7] Potential for disturbance during courtship within surrounding waters with boat traffic of vessels gillnetting in vicinity.	The number of vessels recorded around the Farne Islands attributed to static net fishing has remained consistently low, with the highest number recorded 2005 as five; in 2015 there was only one. This vessel is part of the inshore under10m fleet and operated static nets for 11 days in August. Due to the low level this poses a low exposure risk to the feature for its potential to cause disturbance and displacement from marine courtship and feeding grounds.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'

		Removal of non-target species i.e. removal of target species.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. Removal of target and non-target prey species has the potential to impact features' populations.	EU legislation regulates mesh sizes of static nets, which are determined by the target species. Static netting in the NIFCA district target predominantly whitefish e.g. Cod and Saithe or flatfish e.g. Turbot and Plaice, which require mesh sizes of 140mm and 100mm retrospectively. The pursuit and diving classified species primarily target Sandeels (Ammodytidae), while the benthic feeding species target small mollusc and crustaceans. These mesh sizes are therefore too large to catch sandeels and the smaller crustacean species. Furthermore this activity was only carried out for a period of 11 days during August and therefore this level of activity would be insufficient to impact the availability of prey species for adults, in addition to successfully rear their young.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.
		Underwater noise changes.	Pressure (e.g. increase in noise above ambient level) would be exerted via vessel movement, gear deployment/towing/hauling and the use of fish finding sonars.	Vessel activity within the surrounding waters of the Farne Islands attributed to static netting has remained constantly low. Currently only one vessel (under 10m) operates within NIFCA sector 6 and 7 and recorded setting nets for 11 days during August. While operating gear the vessel's engine will be at a low setting and mechanical haulers on deck are installed with hydraulics, so any noise created is minimal.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.

	Size of the population at a level which is above either the population-size included on the SPA Citation or an alternative baseline-population or that based on the current mean peak count or equivalent, whichever is the higher.	Collision ABOVE & BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures)[2]	'Collision can occur as a result of this activity in instances where a vessel in used.'[2]	Vessel activity within the surrounding waters of the Farne Islands attributed to static netting has remained constantly low. The highest number of vessels reported to set nets within NIFCA sector 6 and 7 were five in 2005, an area approximately 1,075km^2. Currently only one vessel (under 10m in length) operates static nets these districts with activity coinciding during the breeding season for 11 days in August (NIFCA 2015). Influencing factors such as, low TAC, increasing seal population continue to maintain low levels of this fishing activity. The low number and time attributed to static netting by vessels is highly unlikely to have an adverse impact on the classified bird species population.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.
		Litter i.e. Ghostfishing	'Discarded/lost lines, hooks and nets which could be problematic for mobile species. Other types of litter generated by activity generally not considered to occur at level that would cause concern.'[5] Activity of SPA feature foraging behaviour places risk of interaction (entanglement) resulting in injury or mortality.	Fishing net recorded in the Marine Conservation Society beach litter surveys along the NIFCA district coastline has shown that the frequency of netting found from 2005 to 2012 has generally decreased from one piece every 54m to every 201m, retrospectively. The highest frequency was recorded in 2013, every 36m, which has since declined to every 107m in 2015. (Annex 4). Over 10years of surveys the occurrence of fishing net records around the Farne Island SPA has been relatively low (annex 5).	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'. . NIFCA will continue to participate in collecting information or NEBBS**
		Removal of non- target species (bycatch)	'Pressure may be exerted by by-catch associated with fixed nets and lines.	The number of vessels recorded around the Farne Islands attributed to static net fishing has remained consistently low, with the highest	None required, except implementation of Monitoring and Control Plan for Static Netting,

			However, vulnerability of feature to pressure will need to be considered on a case-by-case basis.'[6] Activity of SPA feature foraging behaviour places risk of interaction (entanglement) resulting in injury or mortality.	number recorded in 2005 as five; in 2015 there was only one. This vessel operated static nets for 11 days in August. Furthermore National Trust have not observed static nets being set in close proximity to the site and there have been no reports of classified SPA birds species caught in nets in the vicinity of the Farnes (John Walton Coastal & Marine Officer pers.comm 2014). The Marine Conservation Society conduct marine litter surveys along the UK coastline, which record incidences of dead birds. From 2005- 2015 217 surveys have been conducted within the NIFCA district, of which 34 recorded incidences of dead birds. From these, 4 surveys identified (4-7 individuals) Atlantic puffins, 2 in 2007, 1-4* in 2011 and 1 in 2013. No attribution was given to their deaths.	which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'. . NIFCA will continue to participate in collecting information or NEBBS**
		Removal of non- target species (i.e. removal of target species)	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. Removal of target and non-target prey species has the potential to impact features' populations.	EU legislation regulates mesh sizes of static nets, which are determined by the target species. Static netting in the NIFCA district targets predominantly whitefish e.g. Cod and Saithe or flatfish e.g. Turbot and Plaice, which require mesh sizes of 140mm and 100mm retrospectively. The pursuit and diving features primarily target Sandeels (Ammodytidae), while the benthic feeding species target small mollusc and crustaceans. These mesh sizes are therefore too large to catch sandeels and the smaller crustacean species. Furthermore this activity was only carried out for a period of 11 days during August and therefore this level of activity would be insufficient to impact prey availability.	None required, except implementation of Monitoring and Control Plan for Static Netting, which outlines the parameters to be assessed for the fixed net fishery and the conservation status of sites' features. Annual assessments of fishing effort and communications with NT will ensure any management requirements are met and remain 'fit for purpose'.

The following conservation objectives for pursuit and plunge diving birds and benthic feeding birds are not deemed to be at risk from pressures associated with static netting activity within the Farne Islands SPA, as they refer to non-marine habitat or are outside the remit of Northumberland IFCA:

- the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.
- the concentrations and deposition of air pollutants[to] below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).

- water quality and quantity to a standard which provides the necessary conditions to support the SPA feature, where the supporting habitats of the feature are dependent on surface water.

*****Different species of dead birds were found on MCS survey, which only recorded total dead birds found. Atlantic puffin was a named species but no figure provided solely for this species, therefore the figure of 1- 4 dead birds was used in this assessment.
******North East Beached Bird Survey – at the time of these assessments the data is not available, but will sought for annual assessments as part of NIFCAs Monitoring and Control Plans.

7. Conclusion

The Farne Islands SPA is of international and national importance to breeding population of seabirds, which includes the classified birds species under the feature 'pursuit and plunge diving birds': the common guillemot (internationally important population of migratory seabird), Atlantic puffin, great cormorant and European shag (named components seabird assemblage) and the feeding 'benthic feeding birds, common eider and shelduck (seabird assemblage). Both these features group the classified bird species according to how they forage for food and in order to successfully breed these birds must have unimpeded access to their foraging grounds; the surrounding waters of Farne Islands SPA. The main potential pressure identified is the accidental bycatch of these species in the static nets as they forage for their food and this risk to the Farne Islands SPA population sis considered within this Appropriate Assessment.

Current levels of gill netting are infrequently low within the NIFCA district, predominantly occurring in the most southern part of the district. Since 2003 static netting has decreased from 29 vessels to currently just five reporting operating static nets in their monthly shellfish permit returns. Within NIFCA sector six and seven (the surrounding waters of the Farne Islands SPA) static netting activity has remained consistently low, with the maximum number of vessels recording this activity as five in 2005 for a total sum of 86 days. Only one vessel reported static netting activity within this area during 2015, for a total of 11 days during August. The decline of this fishery is due to various factors, namely low quotas and, anecdotally, seal predation from an increasing population at a local breeding colony in the northern part of the district. These factors continue to exert influence on maintaining an extremely low activity level which is concentrated at the southern part of the NIFCA district. Additionally effort is concentrated south of Amble as there appears to be a higher abundance of whitefish (Jon Green pers. comm. 2016).

The Farne Islands SPA is managed and the classified birds species monitored by the National Trust. A CO of 'Recover' was inferred for the feature 'pursuit & plunge diving birds' due to the upgraded vulnerability status of the European populations of Atlantic puffin (IUCN Red List) in 2015. The most recent five year census conducted on the Farne Island SPA (2013) show that this population is increasing with current numbers of (AOB) at 39,962, having experienced a decline during the 2003 (55,7674) and 2008 (36,835) census. This decline is attributed to a lack of prey availability of sandeels which affected a number of seabird colonies within the North Sea region (Harris et al. 2007, Frederiksen et al. 2007). Declines in catch during the mid- 1990's through to early 2000's have caused the closure of this fishery in the NE of England, the major sandeel fishery currently occurring on Dogger Bank (JNCC.defra.gov.uk). The static net fishery within NIFCA's districts targets larger whitefish and flatfish species, which under EU legislation governs the size of mesh. Targeting predominantly cod or plaice the minimum mesh sizes allowed are 140mm and 100mm retrospectively, which is too large to catch sandeel or sprat, for which a minimum size of 10 to 30mm is required.

The European shag and common guillemot have experienced population increases, with the latter being proposed as an additional classified species within the site's designation. Great cormorants have experienced a steady decline, despite national increases. However this species exhibits low site fidelity and there is an increase in the number of breeding colonies inland. Monitoring of inland colonies has reported observing Farne Island SPA ringed individuals on these sites (Newson et al. 2006).

The feature 'Benthic feeding birds' primarily refers to the species common eider and to a lesser extent shelduck (a scarce breeder), which forms part of the breeding seabird assemblage. A CO of 'maintain' was inferred as the eider as this species has experienced a steady increase over the last three years, decreasing slightly in 2015.

There have been no reports bycatch of classified bird species in operational static nets in the vicinity of the Farnes and no nets have been observed in close proximity to the site, with nets set further south (John Walton Coastal & Marine Officer NT, pers. Comm. 2014). Bycatch attributed to ghostfishing is largely unknown. Data collected by the Marine Conservation Society Beach Litter surveys along the coastline of Northumberland over the last 10 years showed a decreasing frequency of netting recorded during surveys, but this sharply increases in 2013 to an average piece of netting recorded every 36m surveyed (Annex 4). The highest density of netting found was at surveys conducted south of the Farne Island SPA, between Craster and Boulmer (Annex 5). In addition to collecting data on

litter, records are made of any dead birds found, of which 34 incidences were recorded. Of these 19 individuals are species pertaining to the features 'pursuit and plunge diving' and 'benthic feeders' birds, these are five Atlantic puffins, 12 common guillemots and two common eiders. In all cases no cause of death was stated.

The conclusion of this appropriate assessment is that static netting within the NIFCA district at **current levels**[4], alone is **NOT** having an adverse effect on the 'Pursuit and plunge diving' birds (namely common guillemot, Atlantic puffin, great cormorant and European shag) or 'benthic feeding birds' (common eider and shelduck).

The Monitoring and Control Plan for static netting outlines the methodology and parameters NIFCA will use to collect data for the continual monitoring of static netting activity and its interaction with the classified species. All data (except NE site condition monitoring) will be collated and analysed on an annual basis to access if further management is required, unless a trigger is initiated to prompt an automatic assessment. This will ensure any risks to the site features will be addressed and management measures will remain appropriate and adaptive. Monitoring and Control Plans for Static Netting can be found on NIFCA's website (www.nifca.gov.uk) at the beginning of 2017.

8. In-combination assessment

One vessel reported operating static nets across NIFCA sector 6 and 7 (annex 2), the surrounding waters for the Farne Islands SPA during 2015 and potential risks of in combination effects have been considered in Table 3 for current and possible plans and projects and other activities within the vicinity of Farne Islands SPA.

Due to this current low levels of static netting activity in the surrounding waters of the Farne Islands SPA it is concluded it is highly unlikely to have a significant effect on pursuit and plunge diving or benthic feeding birds alone OR in-combination with other plans/projects.

Table 3 | In- combination assessments of Static netting with other plans and projects within the vicinity of Coquet Island SPA.

Plans and Projects		
Activity	**Description**	**Potential Pressure**
Fishing X fishing	Shellfish potting Trawling Dredging	No adverse effect at current levels, but potential for increase vessel activity and disturbance levels within vicinity of SPA. Fisheries permitted by NIFCA. Potting is the main fishery throughout the district with 115 commercial permit holders 2015, of which 45 operate within sectors 6 & 7. All vessels known to use static nets are shellfish permit holders and are therefore part of the same potting fleet.
	T & J Nets	This fishery operates from March through to the end of August and targets migratory species, primarily Salmon. All fishermen must gain a license to fish from the Environment Agency, who are responsible for regulating this fishery. Currently there are 21 T and J nets licensees (2 combined) and 8 drift net licensees across our district and the EA are in the process of rolling out a phasing out scheme. Low risk to pressure at current levels.

[4] Potential activities will be monitored within the relevant NIFCA static netting monitoring and control plan.

Harbour dredging [vicinity of SPA]	Harbour dredging	Small scale Appropriate licence conditions/monitoring has been incorporated to mitigate any impacts.
Coastal management scheme	Flood and erosion risk management	Northumberland and North Tyneside Shoreline Management Plan 2 (05/2009) covers the coastline from the Scottish border to the river Tyne. As stated in Section (2) of the document projects and plans within the SMP are subject to its own Appropriate Assessment for proposed work, which accesses any impacts to Farne Island SPA.
Other activities being considered (which are not plans or projects by definition)		
Activity	**Description**	**Potential Pressure**
Recreational angling	Activity levels unknown. NIFCA participating in MMO MCSS MPA activity monitoring trial begin 09/16.	Small scale. Low risk of bycatch and increase of vessel activity and disturbance levels within vicinity of SPA.
Yachting, sailing, wildlife cruises	Currently activity levels unknown. NIFCA participating in MMO MCSS MPA activity monitoring trial begin 09/16.	Increase of vessel activity and disturbance levels within vicinity of SPA. Farne Island SPA sits entirely within BNNC SAC which has a Marine Wildlife Watching Boating Code of Conduct implemented by through the BNNC EMS partnership. Wildlife cruisers have signed up to the code, which includes approaching nesting cliffs with caution and avoiding birds resting at the sea surface.
Other activities with potential to occur		
Windfarm (MCZ)	Platform build/infrastructure, Cables laying /infrastructure Cable repair	Appropriate licence conditions/monitoring has been incorporated to mitigate any impacts. Low risk of physical loss, damage or biological disturbance.
Aggregate dredging	Aggregates dredge	No dredging in vicinity
Coastal Infrastructure	Outflow pipes Maintenance	Small scale Appropriate licence conditions/monitoring has been incorporated to mitigate any impacts

9. Summary of consultation with Natural England

Monthly meetings have been held with Natural England's Lead Advisor for the Northumberland East region from the outset of this process. The creation of this document was supported by ongoing consultation with Natural England and they agree with the conclusions of this assessment. Formal advice was received on 30th March 2017.

10. Integrity test

It can be concluded that static netting activities, alone or in-combination in the surrounding waters of Farne Islands SPA do not adversely affect the pursuit and plunge diving birds and benthic feeding birds conservation objectives at this site at existing low levels.

11. Adaptive risk management

Assessments will be periodically reviewed should activity levels change above existing levels or if new evidence relating to this gear/feature interaction emerges. To monitor activity levels and gear /feature interactions Monitoring and Control Plan documents have been produced; one of which outlines the continual assessment of static netting activity which incorporates the monitoring of the feature condition of SPA bird species, within the NIFCA district. These documents describe the parameters which are to be monitored and the mechanisms in which the data is to be collected. Clear triggers/ thresholds are defined within section 3 of the document, which if reached will initiate action to either mitigate or modify the trigger. Section 4 outlines all possible management tools, which are to be assessed on their ecological and socio-economic outcomes for both the fishery and the feature. These options will be subject to scrutiny through NIFCA's byelaw working group and committee. Any management options decided through this process would be subject to public consultation.

Annex 1: Reference list

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JNNC.defra.gov.uk 'Impacts of fishing' http://jncc.defra.gov.uk/page-5407 Access date: 05.11.2016

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Stuart E Newson, Graham R. Ekins, John H. Marchant, Mark M.Rehfisch & Robin M. Sellers 2006 ' The status of inland and coastal breeding Great Cormorants *Phalacrocorax carbo* in England' BTO research Report No. 433

For Detailed tLSEs

1. ICES (International Council for Exploration of the Sea), 2013; Stillman et al., 2007; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Whilst activity would cause pressure, impact considered better captured by 'visual disturbance". **706 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

2. Davenport and Davenport, 2006. "Collision can occur as a result of this activity in instances where a vessel in used". **150 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

3. ICES (International Council for Exploration of the Sea), 2009 'The introduction and movement of invasive non-indigenous species may occur as a result of vessel movements, hull fouling and fishing activities.' **619 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

4. Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Discarded/lost lines, hooks and nets which could be problematic for mobile species. Other types of litter generated by activity generally not considered to occur at level that would cause concern.". **190 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

5. Gubbay and Knapman, 1999; ICES (International Council for Exploration of the Sea), 2013; Kaiser et al., 2001; Sewell and Hiscock, 2005; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Pressure may be exerted by by-catch associated with fixed nets and lines. However, vulnerability of feature to pressure will need to be considered on a case-by-case basis." **543 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

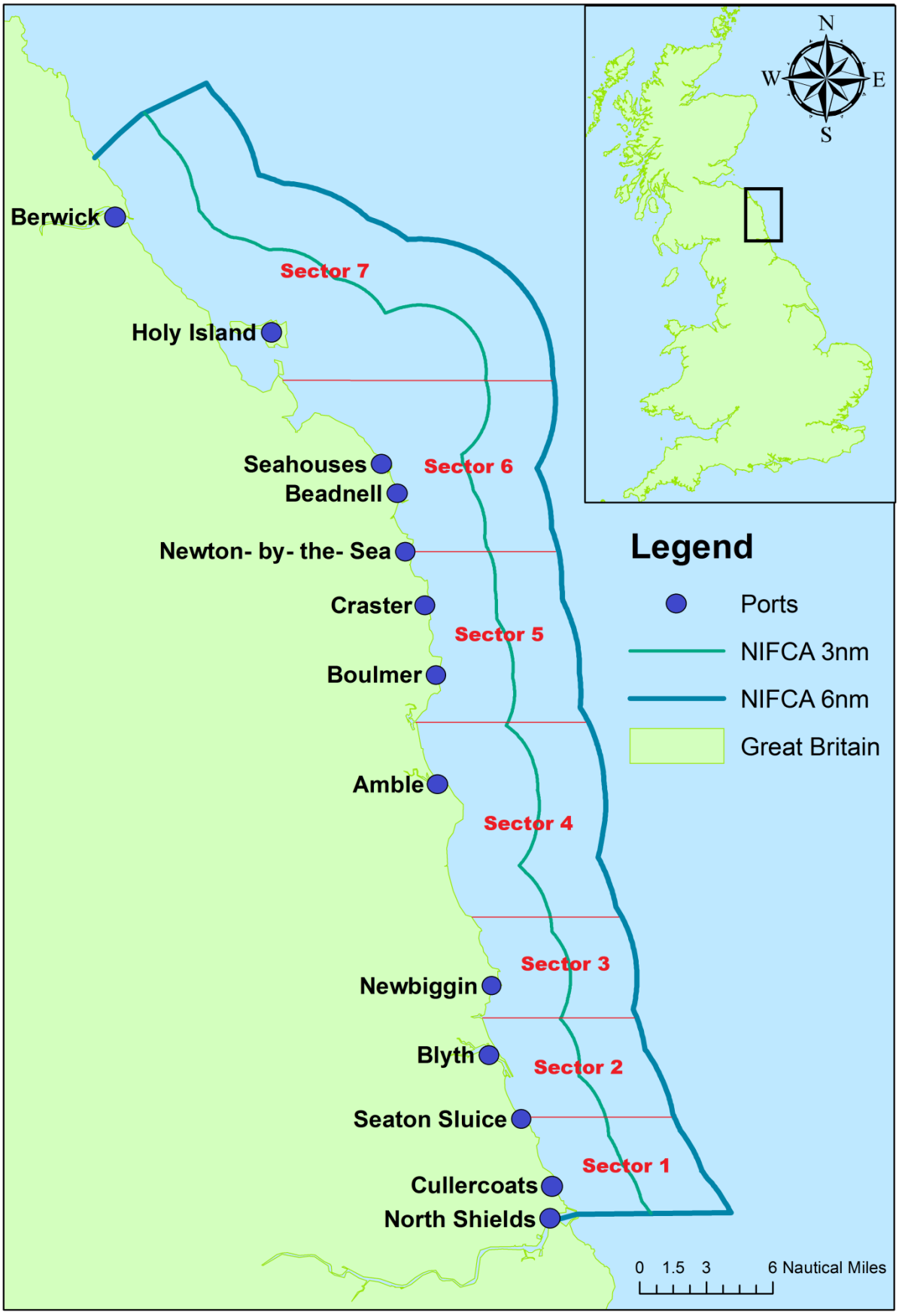
6. Thomsen and Intersessional correspondence group on underwater noise (2007 - 2009), 2009. "Pressure (e.g. increase in noise above ambient level) would be exerted via vessel movement, gear deployment/towing/hauling and the use of fish finding sonars.". **536 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

7. Stillman et al., 2007; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "May result from the presence/movement of the vessel and potentially also the presence/movement of the gear. Magnitude of pressure would depend on nature and scale/intensity of activity." **362 (UK9006021_Farnes_Islands_SPA_Advice_on_Operations)**

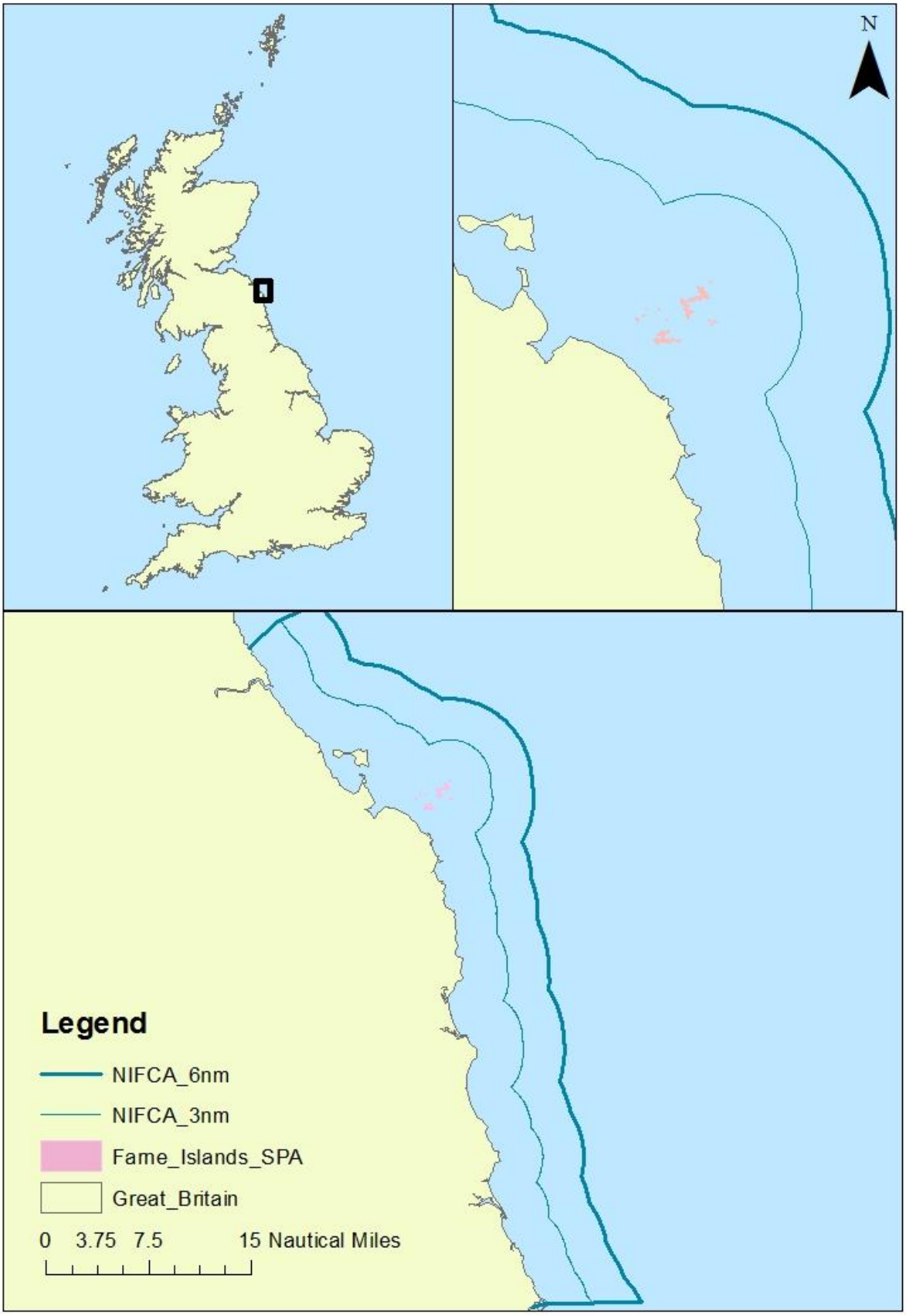
8. Sewell, J., & Hiscock, K. 2005. Effects of fishing within UK European Marine Sites: guidance for nature conservation agencies. Report to the Countryside Council for Wales, English Nature and Scottish Natural Heritage from the Marine Biological Association.

9. 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.

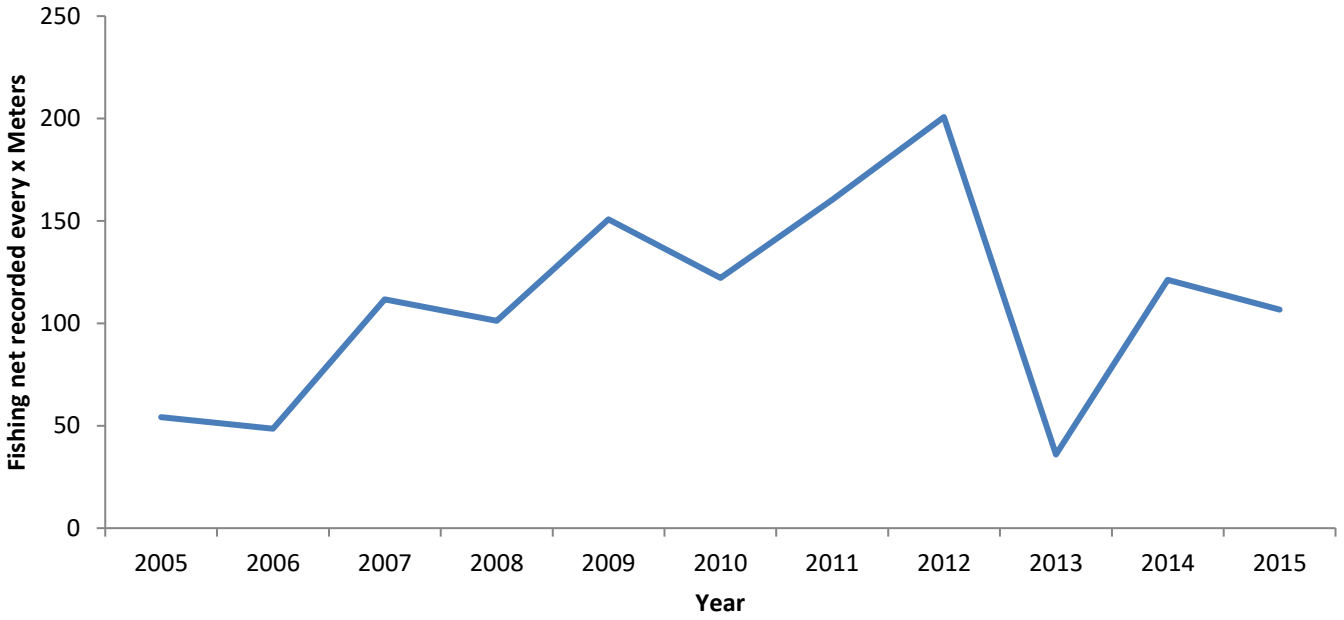
Annex 2: NIFCA district sectors



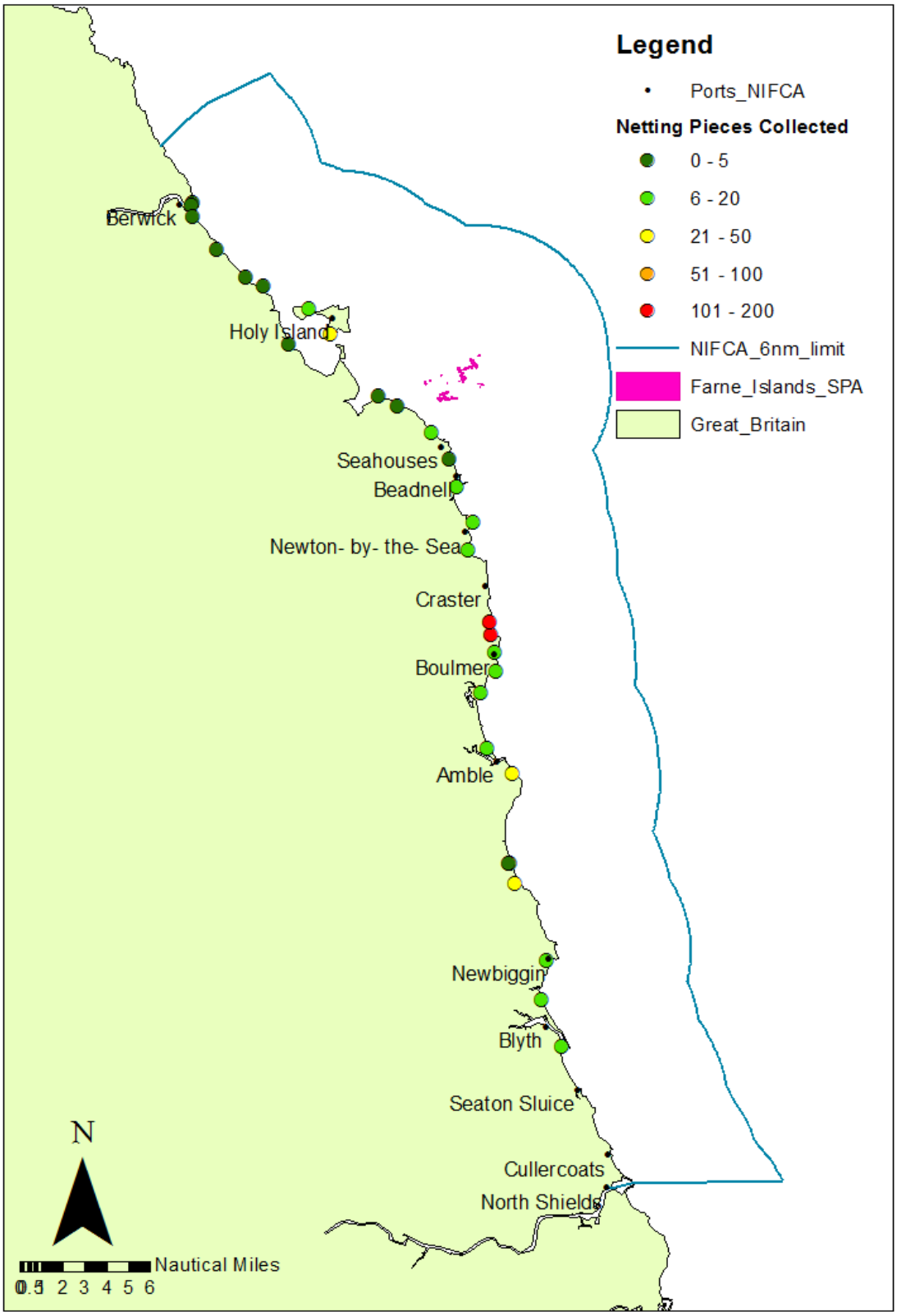
Annex 3: Site boundary map



Annex 4: Graph showing the frequency a piece of fish netting (per meter) was collected during beach litter surveys conducted by the Marine Conservation Society across the NIFCA district. Surveying effort was standardised in the analysis of this data to account for varying number of surveys conducted and length of beach.



Annex 5: Map displaying levels of fishing net recorded in Marine Conservation Society beach litter surveys along NIFCA district coastline over 10 year period. Size of pieces of netting found is classed as small (<50cm) or large (>50cm) and have been grouped together for the purposes of this map.



Annex 6: Extent of supporting habitats for classified birds of the Farne Islands SPA. Broad scale Arc GIS habitat data files provided by Natural England, projected Dec 2016.