Habitats Regulations Assessment document: NMSPA – tLSE 021

European Marine Site:	**Northumberland Marine SPA**
Generic sub-feature(s):	**Water column**
Gear type(s):	**Pots/creels (crustacea/gastropods)**
NIFCA tLSE type:	**Detailed**
Gear/feature interaction reference(s):	**NMSPA – 084**

Revision history

Date	*Revision*	*Editor*
05/06/2018	Document created	NW
20/60/2018	Document revised	AA
22/09/2023	Document revised and ready for review	KO
29/09/2023	Review and comments	AA
07/11/2023	Version ready to send to MMO	KO
23/11/2023	Document reviewed and ready for MMO	AA
15/01/2024	Corrected NIFCA intertidal info in the in-comb assess	KO
22/02/2024	Comments received from the MMO and incorporated	KO
08/07/2024	NE comments addressed	SR
08/08/2024	MMO nursery/spawning grounds comments addressed; refs added.	SR
01/10/2024	Approved by MMO (Charlie Wiseman)	SR
28/10/2024	Approved by NE (Pete Welby & Catherine Scott)	SR
04/11/2024	Document finalised	SR

Circulation

Date	*Sent to*	*Comments received*
05/12/2023	Marine Management Organisation	22/02/2024
08/03/2024	Natural England	11/06/2024
15/08/2024	Marine Management Organisation	01/10/2024
01/10/2024	Natural England	28/10/2024

Test for Likely Significant Effect (LSE)
(Water column)

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 have been categorised as medium-high risk for this feature. These sensitivities are identified from NE's Advice on Operations in the Conservation Advice package.	Removal of non-target species (Sensitive)* Barrier to species movement (Sensitive) Deoxygenation (Sensitive) Hydrocarbon and PAH contamination (Not-assessed) Introduction of light (Sensitive) Introduction or spread of invasive non-indigenous species (INIS) (Sensitive) Litter (Sensitive) Organic enrichment (Sensitive) Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (Not-assessed) Transition elements & organo-metal (e.g. TBT) contamination (Not-assessed) Underwater noise changes (Sensitive) Visual disturbance (Sensitive)
3. Is the feature potentially exposed to the pressure(s)?	Yes
4. What are the conservation objectives for the feature?	Conservation objectives for water column: Water column is not mentioned in the supplementary advice, therefore it is not possible to determine the Conservation Objectives for this feature.

5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level? ***(reference to conservation objectives)***	Potting for European lobster (*Homarus gammarus)* and brown crab (*Cancer pagurus)* is the principal fishery within the Northumberland IFCA district. Most fishers in the district use parlour pots of various sizes and pots are typically worked in fleets of 10-40, dependant on the size of the vessel. Potting occurs predominantly in and around rocky habitat for lobster and brown crab, with some potting on subtidal mud for *Nephrops* and mixed ground for brown crab. NIFCA have issued 85 Commercial Shellfish Permits in the District in 2023, compared to 93 in 2022, 108 in 2021 and 98 in 2020. Permit holders are required to submit monthly returns to NIFCA with details on catch and effort. From this NIFCA calculate the total number of pot hauls in the District which was 2.50 million in 2022, compared to 2.80 million in 2021 and 2.75 million in 2020. Pots are limited to 800 per shellfish permit and the fishery is governed by multiple IFCA byelaws. In the NIFCA district recreational potting also occurs and numbers are monitored through a permit system. A permit allows fishers to use 5 pots, which must be fitted with escape gaps. In 2023, 273 recreational permits were issued. Potting occurs year-round but does have a seasonal aspect. Levels are highest in the NIFCA District in the summer and autumn. At this time of year fishers are generally setting their pots closer inshore to target lobster. This is the time when breeding birds are present in the site (February – August). Towards the end of autumn fishers set their pots further offshore to target brown crab and any lobster that are still moving on the grounds. Potting sightings data from the two NIFCA Patrol Vessels (2018-22) are shown in a heatmap in Figure 1. Potting sightings are weighted by Patrol Vessel activity to give Sightings Per Unit Effort (SPUE), mapped in 1km squares. The heatmap shows potting activity is localised (to rocky habitat) and SPUE is higher in the north of the District. Vessels are recorded as potting from the time they shoot or haul their first pots until they cease fishing activity, therefore the majority of transit activity is also captured in this data.

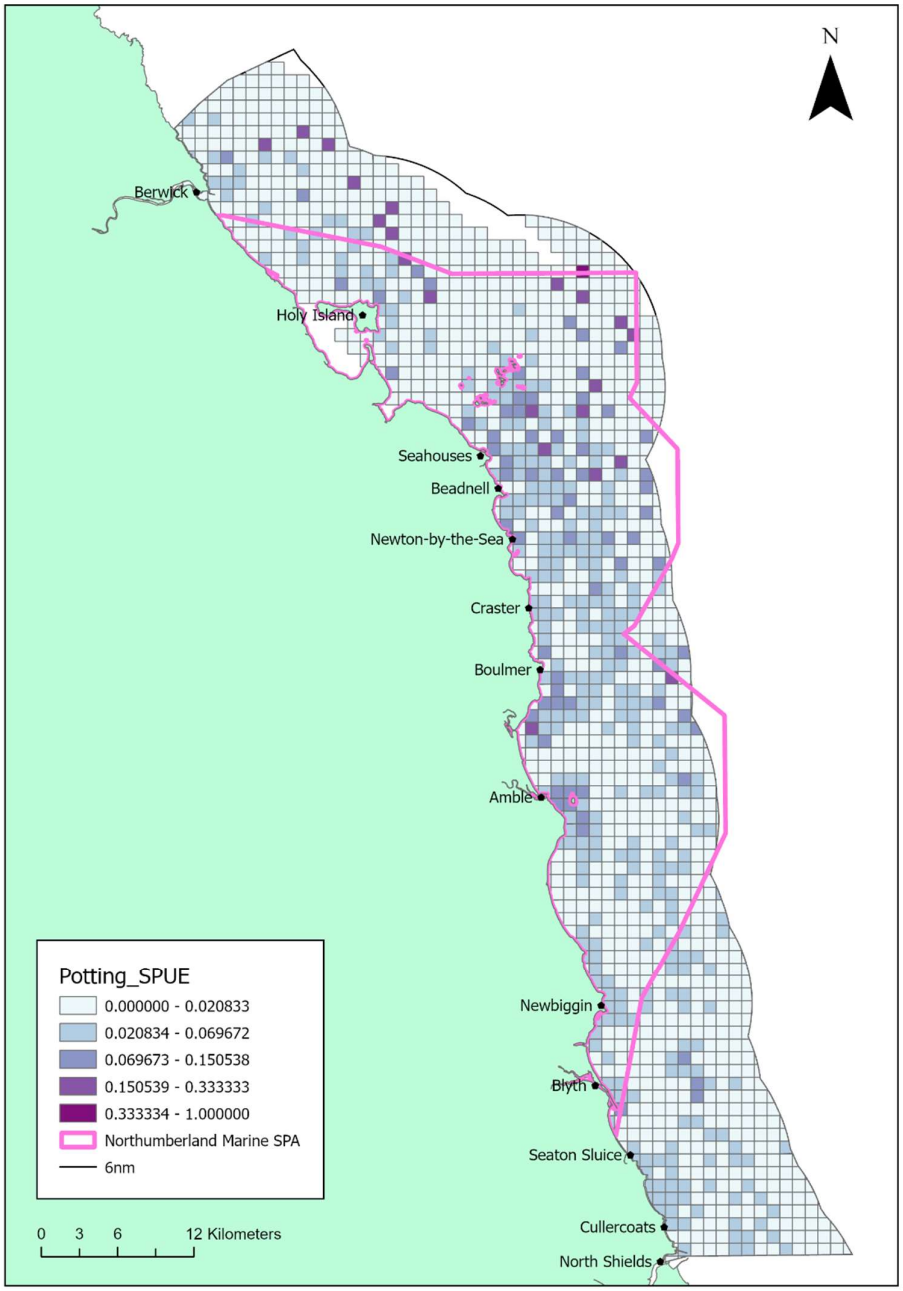


Figure 1 Heatmap showing potting sightings in the District (2018-22), weighted by NIFCA Patrol Vessel tracks to give sightings per unit effort (SPUE). SPUE is mapped in 1km squares.

Northumberland Marine SPA does extend beyond the boundaries of the NIFCA district (6nm) in two areas (Figure 1 and map in Annex) and NIFCA byelaws do not apply in these areas. The Marine Management Organisation (MMO) have provided estimated landings data for UK vessels in these two areas, which show potting activity. In 2021, 5.56 tonnes was landed from pots by UK under 12m vessels, in 2020 5.9 tonnes was landed. Species are not listed so this likely includes lobster, crabs and *Nephrop*s. Average annual landings from UK vessels in these areas (2012-21) is 6.78 tonnes (MMO landings data, pers comm). NIFCA do not have information on the number of vessels fishing in these areas,

	or the number of pots set. However, the low level of annual catch suggests activity is limited. The water column is a feature in this MPA because of its significance to seabirds for feeding and resting, although specific Conservation Objectives for this feature have not been set. This assessment therefore considers whether potting is likely to directly affect seabirds in the water column, the prey they feed on, or alter physical/biological properties of the water column. Potting is generally considered to be one of the most selective kinds of fishing, with the design of pots preventing large individuals from entering and pot design / escape gaps allowing undersize and non-target species to escape. Although escape gaps are not mandatory for commercial fishers in the NIFCA district, many fishers choose to have them on their pots. A review of available literature by the MMO suggests seabirds are very unlikely to be caught in pots (which are set on the seabed and much more visible than nets) although it could occur occasionally, (MMO, 2023). The fish they preferentially feed on (i.e. sand eels, sprat, herring) are unlikely to be retained in traps in any significant numbers as pots target and retain Crustacea and larger fish (such as cod and wrasse). Pots are hauled every few days, therefore any fish species caught are unlikely to perish and can potentially be released alive which suggests that potting may not have a significant impact on the prey availability for NMSPA features (MMO, 2023). Northumberland Marine SPA encompasses large shallow inlets and bays in addition to the Aln, Coquet, Wansbeck and Blyth estuaries. These areas are thought to support the nursery and spawning grounds of sandeel, herring, sprat and whiting, the target prey of the qualifying seabird features in the SPA (Natural England, 2023). NIFCA studies have identified juvenile fish using the Aln Estuary, Long Nanny River and Druridge Bay as potential nursery grounds based upon the size classes of each species found in the studies (Smart & Rae, 2023) (Wallace, N, 2015). These key prey species are not targeted commercially within the SPA, however, around 13 tons of whiting is landed per annum as bycatch from nephrops trawling. Sandeel is broadly the preferred prey of the bird features within the SPA (Eglington & Perrow, 2018). The closure of the UK sandeel fishery on April 1st, 2024 in UK waters may provide potential increases in prey availability for the protected bird features within the site. However, prior to the closure in 2024 there were no records of a fishery targeting sandeel within the district. Potting is unlikely to have any significant impact on the spawning and nursery grounds of the preferred prey species of the listed seabirds. Fishing vessels below 45m are required to have permanent ballast, which reduces the risk of non-native species introduction from potting. In addition, within the NIFCA section of the MPA most boats are local to the north-east, so the introduction of new non-native species on vessels is unlikely.

	Potting gear may be lost during bad weather. With advance warning of bad weather potters will move their gear to less exposed areas, as there is a significant financial cost associated with losing gear. Whilst some potting 'litter' will occur in the SPA this will not significantly impact the water column or seabird features (MMO, 2023). Potting in the MPA will not alter features of the water column through deoxygenation, the introduction of contaminants or organic enrichment. In addition, the water column in Northumberland Marine SPA is a highly dynamic marine environment, with strong wave and tidal movements, making it less susceptible to any small-scale changes. Whilst vessels can cause visual disturbance to birds on the surface of the water, this activity will be very limited in time, with boats hauling fleets before moving location to the next fleet. The introduction of light from the potting vessels operating in the SPA is not considered to pose a risk to the seabird features of the SPA. These boats have small deck lights and are operating in a coastal environment where light pollution from the shore may already be present. Likewise potting will not cause any significant underwater noise changes.	
6. Condition and Conservation Objective Inferences	No evidence is available for the current condition of the water column feature within the Northumberland Marine SPA. In lieu of adequate evidence or conservation objectives, a CO of 'Maintain' has been inferred with a 'low' level of confidence.	
7. Is the potential scale or magnitude of any effect likely to be significant?	**Alone:** **No.** Potting is the main fishery in the NIFCA District. However, due to the benthic and visible nature of the fishing gear, which will not retain the bird's prey species in significant numbers, NIFCA concludes with high confidence that potting does not pose a risk to the bird features of the SPA. This will be monitored through the monitoring and control plan process and any significant increase in potting levels will trigger a reassessment in the SPA.	**OR In-combination** **No.** See below for in-combination assessment.
8. Have NE been consulted on this LSE test? If yes, what was NE's advice?	Yes, NE have been consulted throughout the process and approved this LSE.	

In-Combination Assessment

Potential risks of in-combination effects have been considered in Table 1 listing other fisheries, current and possible plans/projects and other activities within the site.

In summary, potting within Northumberland Marine SPA is not deemed to have a likely significant effect on the protected bird features in combination with other activities.

Table 1. In-combination assessment of potting with other activities within Northumberland Marine SPA.

Fishing Activity			
Activity	**Description**	**Potential Pressure**	**Assessment**
Bottom trawling on subtidal sediment	Trawling within the NIFCA District is subject to conditions in the byelaw 'Trawling,' which was updated in 2021. Only single trawls are permitted, vessel size is restricted to 12m (0-3nm) or 18.3m (3-6nm) in the District and permit holders must also submit monthly catch returns to NIFCA. Boats are mainly targeting prawns (*Nephrop*s), cod and whiting. Trawling will primarily be targeted on subtidal muddy ground for *Nephrop*s in the District. As only 'light' otter gear is permitted in the District, subtidal trawling does not occur on rock.	NIFCA have issued 45 permits to trawl in the District in 2023. However, many of these vessels fish further offshore, beyond the District boundary and the SPA. Trawling is banned in the BNNC SAC (except in three small areas) and requires an exemption in CSM MCZ. Trawling has the potential to impact the bird features through bycatch, or by removing their preferred prey species. There are two areas of the SPA that extend outside of the NIFCA District and the Marine Management Organisation (MMO) has provided activity data related to demersal trawling in these areas. Estimated landings data from the UK under 12m fleet from these areas was 3.21 tonnes in 2021 and 2.24 tonnes in 2020. Average annual landing from these areas from UK under 12m vessels (2012-21) is 3.62 tonnes (MMO data, pers comms). These catches suggest activity in the two areas is very low.	Trawling activity is unlikely to co-occur with potting activity in the SPA. Mobile gear is mainly targeted on subtidal muddy ground, where potting levels are low. Potting is primarily targeted on and around rocky ground, with some activity on subtidal mud for *Nephrops.* Potters avoid setting gear where mobile fishers operate, as conflict is likely to result in gear loss and financial consequences. Fishing gear in the District must be marked under Byelaw 5, which helps to reduce gear conflict. NIFCA do not consider that at current levels potting and trawling are likely to 'in-combination' significantly increase the pressures on bird features in the site.
Fixed nets on subtidal ground	Fixed nets (gill nets and trammel nets) are anchored to the seabed, with a floating headline and used to	Fixed netting activity occurs at a very low level for sea fish across the NIFCA District, largely due to the lack of white fish and	There is a spatial mis-match with fixed netting and potting, with the latter occurring primarily on and around rocky

	target white fish (cod) and flatfish in the NIFCA District. These nets will be set on firm sediment ground, likely near wrecks for cod, but on sandy ground for flatfish. Only one vessel is thought to set tangle nets for crustaceans. Fixed nets will not generally be set on rocky ground as there is a high risk of damage to the nets. Fixed netting is managed by the Fixed Engines Byelaw which NIFCA is in the process of updating (January 2024). Fixed netting in the District for migratory fish (sea trout) is managed and assessed by the Environment Agency.	grey seal predation from nets. NIFCA are currently aware of one vessel from Amble which may set fixed nets in the SPA area. From NIFCA shellfish permit returns data only 4-5 vessels have reported setting nets in the District each year (2020-22). Whilst this permit returns data cannot be considered a complete record (as not all boats have shellfish permits) it reflects the low level of fixed netting. Fixed netting has the potential to impact the bird features through bycatch, or by removing their preferred prey species.	ground, these activities are also targeting different species. Due to the very low levels of netting activity and the mismatch of target habitats and species, NIFCA can say with high confidence that fixed netting activity 'in-combination' with potting will not increase pressures on bird features of the SPA.
Hand work (access from land) in the intertidal	Hand work encompasses a wide variety of fishing methods, including; angling, periwinkle collection, 'cleeking' for lobster and hand gathering of mussels/crabs. These activities occur across the NIFCA district and since 2016 NIFCA officers have been collecting information on shore-based activity two hours either side of low tide, including 'no activity'. There are also a small number of patrols in the SPA from partner organisations during the same tidal periods (n=13).	Within Northumberland Marine SPA 657 patrols have been made between October 2016 and September 2023. Some areas of the District are visited more frequently by Officers, therefore sightings per unit effort (SPUE) have been calculated for each location. Sites listed are where the activity has been seen on at least 10% of patrols and there have been at least 10 patrols to the site. ▪ **Angling**; Amble, Blyth, Beadnell, Druridge Bay, Lynemouth, Newbiggin, Cresswell, Cambois and Hauxley. ▪ **Periwinkle collection**; Boulmer south, Cambois, Holy Island, Cresswell, Beadnell, Boulmer north, Hauxley, Hadston, Lynemouth	There will be very limited spatial overlap between potting and any shore-based fishing activity. Due to the mismatch of target habitats and species NIFCA can conclude with high confidence that potting and shore-based activity will not 'in-combination' increase pressures on the bird features of the SPA.

		▪ **Bait collection** has been recorded on 44 patrols in the SPA. Forty-one of these patrols were at Blyth. ▪ **Cleeking**; Boulmer south, Creswell and Newbiggin. Shore-based activity has the potential to impact the bird features through visual/noise disturbance and the removal of prey species.	
Crab tiling	Crab tiling involves placing objects (tyres, tiles, piping) into the intertidal, which crabs will use for shelter. Collectors then check these objects at low tide and remove green shore crabs. NIFCA officers record any intertidal fishing activity observed during routine patrols whenever a site visit coincides with low water (± 2 hours), as well as 'no activity.' There are also a small number of patrols in the SPA from partner organisations during the same tidal periods (n=13).	Within Northumberland Marine SPA 657 patrols have been made between October 2016 and September 2023. Crab tiling has been observed on 5% of these patrols (33/657). Crab tiling has only been recorded at three sites; Blyth, Alnmouth and the Wansbeck estuary. Of these sites the activity has been recorded 30 times at Blyth, twice in the Wansbeck and once in the Aln. However, NIFCA has also conducted surveys for crab tiling equipment in the Aln, Blyth, Wansbeck and at Amble. All sites had at least 50 tyres present in 2020.	There will be no spatial overlap between crab tiling and potting, nor are these activities targeting the same species. Due to the mismatch of target habitats and species NIFCA can conclude with high confidence that potting and crab tiling will not 'in-combination' increase pressures on the bird features of the SPA.
Digging with forks in the intertidal	Digging with forks entails collecting worms from the intertidal at low tide, primarily lugworms and ragworms. This activity occurs in estuaries across the NIFCA district. NIFCA officers record any intertidal fishing activity observed during routine patrols whenever a site visit	Within Northumberland Marine SPA 657 patrols have been made between October 2016 and September 2023. Bait digging has been observed on 19.6% of these patrols (129/657). Some areas of the District are visited more frequently by Officers, therefore sightings per unit effort (SPUE) has been	There will be no spatial overlap between bait digging and potting, nor are these activities targeting the same species. Due to the mismatch of target habitats and species NIFCA can conclude with high confidence that potting and bait digging will not 'in-combination' increase pressures on

	coincides with low water (± 2 hours), as well as 'no activity.' There are also a small number of patrols in the SPA from partner organisations during the same tidal periods (n=13).	calculated for each location (no. of times activity observed/site visits). Sites where bait digging has been observed on over 10% of patrols and at least 10 patrols occurred include; Boulmer North, Hadston, Hauxley, Blyth, Newton and Boulmer South. Bait digging activity has a seasonal aspect and SPUE is highest from September-January, outside of the seabird breeding season. Digging with forks has the potential to impact the bird features through visual/noise disturbance and the removal of prey species.	the bird features of the SPA.

Non-fishing Activity

Activity	Description		Assessment
Mine water discharge	Abandoned mines are one of the biggest sources of water pollution by metals. There is a mine water treatment scheme at Lynemouth and groundwater upwellings have occurred at Hauxley/Hadston as well as water pumped from a mine, discharged through an existing outfall at Hauxley.	Sediments and invertebrate communities could be negatively impacted by mine water discharges. This could occur where mine water is not treated before release into the marine environment. In the majority of cases significant mine water outflow is identified and treated by the Coal Authority.	Appropriate licence conditions/monitoring has been incorporated to mitigate any impacts.

Active Marine Licences

Project number	Brief description	Assessment
MLA/2023/00158	Hydrophone deployment for monitoring cetaceans	All marine licence applications are assessed to ensure appropriate licence conditions/monitoring are in place. These assessments must consider impacts to Marine Protected Areas, with an aim to preferably avoid, then
MLA/2023/00017	Deployment of cetacean acoustic monitoring device off Craster	
MLA/2023/00094	Bore hole back-filling	

MLA/2020/00458	Construction of telecommunications pipeline	minimise and mitigate impacts to the protected features. NIFCA are consulted on all relevant marine applications, as are other statutory bodies such as Natural England.
MLA/2019/00109	Maintenance of Newbiggin coastal wave buoy	
MLA/2019/00319	Rock installation	
MLA/2019/00521	Maintenance and upgrade of pontoon at Amble	
Multiple licenses	Blyth windfarm (construction of 15 turbines). Work is set to continue after the installation of the initial five.	

Conclusion

Is the proposal likely to have a significant effect 'alone or in combination' on the Northumberland Marine SPA?

No. At the current level of potting NIFCA does not consider that this activity will have a significant effect on the protected bird species. This will be monitored through the monitoring and control plan process and any significant increase in potting levels will trigger a reassessment in the SPA.

Have the Marine Management Organisation been consulted on this tLSE (and do they agree)?	**Yes, MMO been formally consulted on this tLSE and agree with the conclusions.** **Charlie Wiseman, Principal Marine Conservation Manager, MMO**
Has Natural England been formally consulted on this tLSE (and do they agree)?	Yes, NE have been consulted throughout the process and approved this LSE.

Date of document completion/'sign-off':	**04/11/2024**

References

Eglington, S.M & Perrow M.R. (2018). *Literature review of tern (Sterna & Sternula spp.) foraging ecology.*

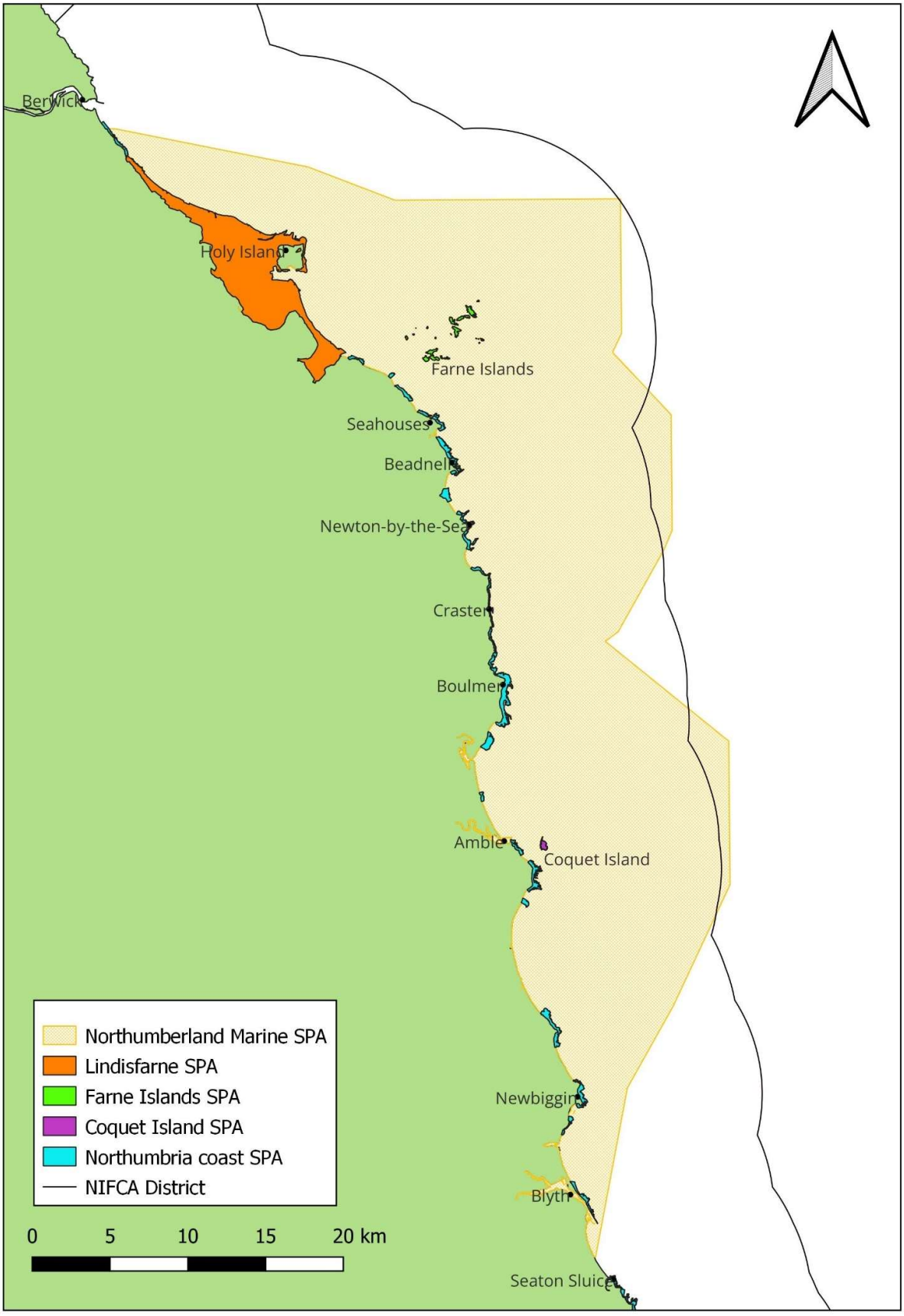
Marine Management Organisation. (2023). Stage 4 Fishing Gear MPA Impacts Evidence: Marine Birds.

Natural England. (2023). *Northumberland Marine SPA Conservation Advice Package.*

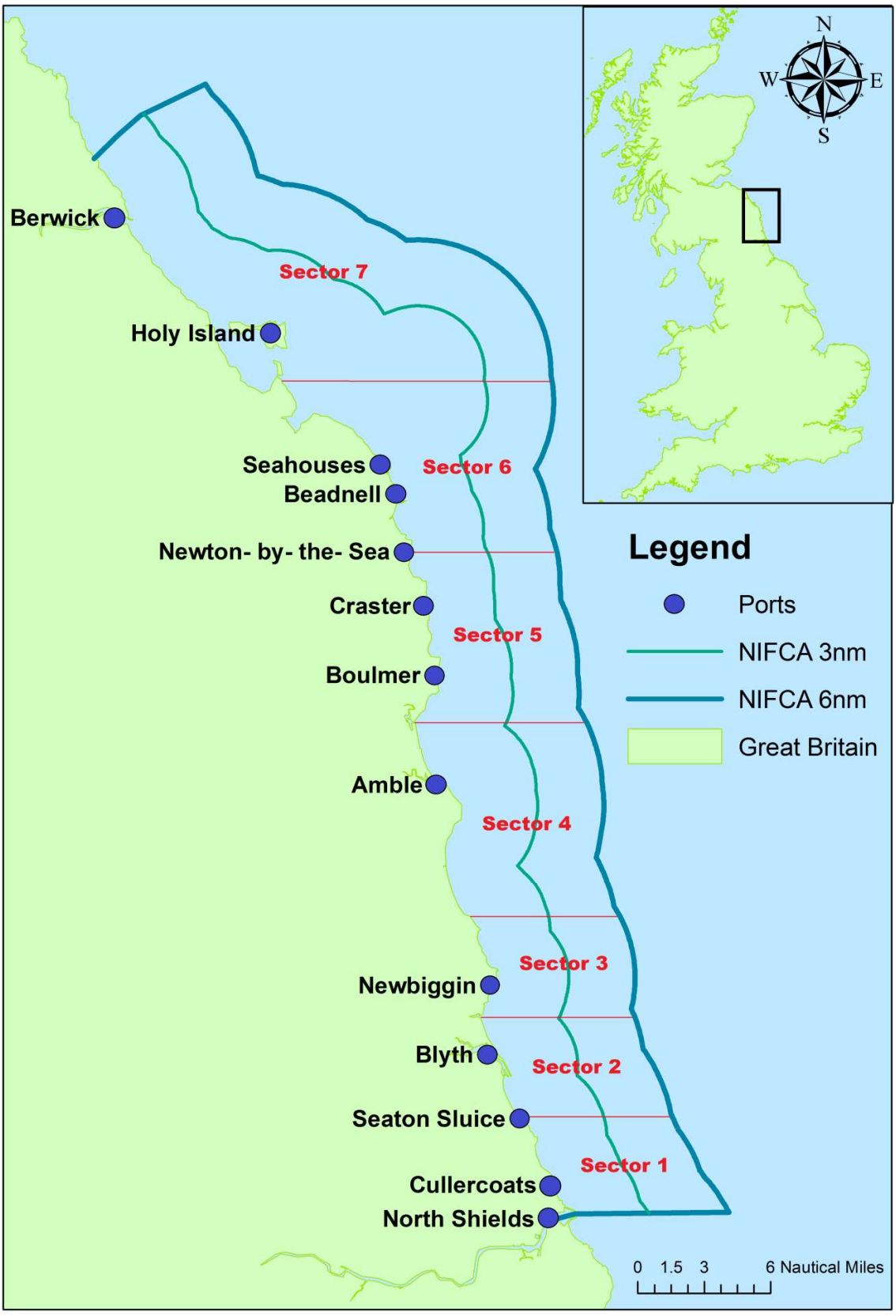
Smart, K., Rae, V. (2023). *Northumberland Inshore Fisheries and Conservation Authority, Aln Estuary Fish Survey Report (2015 - 2023)*

Wallace, N. (2015). *Northumberland Inshore Fisheries and Conservation Authority*, Druridge Bay Surveys.

Annex 1 Location of Northumberland Marine SPA and co-located SPAs



Annex 2 Sectors of the NIFCA district used on shellfish permit returns


N
W
E
S
Berwick
Sector 7
Holy Island
Seahouses
Sector 6
Beadnell
Newton- by- the- Sea
Craster
Sector 5
Boulmer
Amble
Sector 4
Sector 3
Newbiggin
Blyth
Sector 2
Seaton Sluice
Sector 1
Cullercoats
North Shields
Legend
Ports
NIFCA 3nm
NIFCA 6nm
Great Britain
0 1.5 3 6 Nautical Miles