Habitats Regulations Assessment document: NMSPA – tLSE 037

European Marine Site:	**Northumberland Marine SPA**
Generic sub-feature(s):	**Benthic feeding birds (part of the seabird assemblage), Water column**
Gear type(s):	**Digging with forks**
NIFCA tLSE type:	**Detailed**
Gear/feature interaction reference(s):	**NMSPA - 159** **NMSPA - 160**

Revision history		
Date	***Revision***	***Editor***
05/06/2018	Document created	NW
08/08/2018	Document revised	AA
15/10/2018	Sections 2 and 4 revised Section 6 completed.	NW
18/06/2019	Section 5	NW
10/11/2023	Revised	KO
06/12/2023	Document reviewed	AA
15/01/2024	Changes made and figures from NIFCA intertidal data updated to reflect 'patrols' rather than just observations.	KO
31/01/2024	Final QA	AA
21/02/2024	Checked through. Copied in the description of bait digging and species from BNNC SAC HRA as this was more detailed. Ready for QA from NE.	KO
08/08/2024	Added in monitoring and control comments as per NE request	SR
11/11/2024	Reviewed with NE	SR
12/11/2024	Document finalised	SR

Circulation		
Date	***Sent to***	***Comments received***
08/03/2024	Natural England	
04/11/2024	Natural England	11/11/2024

Test for Likely Significant Effect (LSE)
NMSPA – 159: 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 have been categorised as medium-high risk for this feature in draft conservation advice There is no specific mention of 'benthic feeding birds in the Advice on Operations. These sensitivities have therefore been taken from the benthic feeding seabirds in Lindisfarne SPA to 'shore-based activities'.	Removal of non-target species (Sensitive)* Visual disturbance (Sensitive)* Above water noise (Sensitive) Collision ABOVE water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures) (Sensitive) Collision BELOW water with static or moving objects not naturally found in the marine environment (Sensitive) Hydrocarbon and PAH contamination (Not-assessed) Introduction of light (Sensitive) Litter (Sensitive) Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (Not-assessed) Transition elements & organo-metal (e.g. TBT) contamination (Not-assessed)
3. Is the feature potentially exposed to the pressure(s)?	Yes
4. What are the conservation objectives for the feature? There are no specific Conservation	**Conservation objectives for benthic feeding birds:** **Maintain:** - the size of the breeding population - safe passage of birds moving between nesting and feeding areas - concentrations and deposition of air pollutants to below the site-relevant Critical Load or Level values

Objectives for 'benthic feeding birds' in the Conservation Advice. Therefore these Conservation Objectives have been taken from the listed seabird features of Northumberland Marine SPA.	given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk) - 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 extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding): baseline is not known at present - the distribution, abundance and availability of key food and prey items at preferred prey sizes - the dissolved oxygen (DO) concentration to levels equating to High Ecological Status - water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels - natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat. - **Restrict:** the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed - **Reduce:** aqueous contaminants to levels equating to High Status
5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level? ***(reference to conservation objectives)***	Bait digging is practiced to support both commercial and recreational fishing. The primary target species is *A. marina* (blow lug) as this is the most common, although *A. defodiens* (black lug) is also targeted as it has a higher value. *A. marina* is commonly found in fine sand and muddy sand, and scarcely, or not found at all, in fine mud, gravel, and coarse sand (Bruce, Colman, & Jones, 1963) (Longbottom, 1970) *A. defodiens* burrows are deeper (up to a meter) and further down the shore than *A. marina* (Cadman & Nelson-Smith, 1990) Ragworm (*Alitta virens*) are also targeted but on a much smaller scale in Northumberland (Tinlin-Mackenzie, 2018) as it occurs where sediments are finer (more muddy), for example in the Tyne and Blyth estuaries which are not in the BNNC SAC. The main method used is digging using a fork, but some individuals have been observed using a spade. More experienced or local commercial collectors may dig trenches while less experienced or recreational collectors dig more scattered holes and are less likely to backfill

	them. Both species of lugworms and ragworm can be collected using a fork to dig them out of the sediment, however, only *A. defodiens* can be extracted by the use of a bait pump, which extracts with suction (Cadman & Nelson-Smith, 1990) (Brind & Darbyshire, 2015). The use of pumps by collectors has also been recorded throughout monitoring by NIFCA officers, although are less popular as they are not as flexible as hand digging, can be difficult to use and can only target one species (Tinlin-Mackenzie, 2018). There is no national description of what is commercial and what is recreational regarding bait digging. Bait digging has therefore been assessed here regardless of the end point of the catch, since it is the activity (linked to effort) that potentially impacts the features, rather than whether it is commercial or recreational. Northumberland Marine SPA (NMSPA) extends from the high water mark out to sea with two areas extending outside of the NIFCA District beyond 6nm, where intertidal fishing activity cannot occur. Digging with forks occurs along the Northumberland coast on intertidal sediment habitats. The coastline throughout this site falls completely within other MPAs including the Berwickshire and North Northumberland Coast SAC and Coquet to St Mary's MCZ (Appendix 1). Digging with forks in these two sites will therefore be assessed in other HRA and MCZ assessments carried out by NIFCA. This assessment will just consider impacts to the birds features themselves and the water column. 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. Bait digging has been observed on 19.6% of these patrols (129/657). 'No activity' was observed on - 36.2% of patrols (238/657). Some areas of the District are visited more frequently by Officers, therefore the proportion of patrols the activity has been observed on have been calculated. Sites where bait digging has been observed on 10% of patrols and there have been at least 10 patrols include; Boulmer North, Hadston, Hauxley, Blyth, Newton and Boulmer South (Figure 1). With the exception of Blyth all of these sites are coastal, whereas at Blyth bait collectors work in the estuary. Sites where less than 10 patrols have been

conducted but bait digging has been observed include; Coquet estuary, Wansbeck estuary, Cambois and Creswell. Sites are shown on map in Appendix 1.

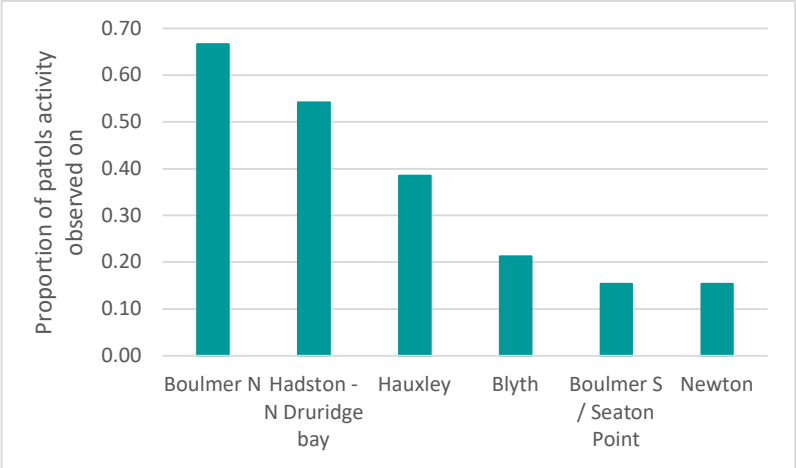


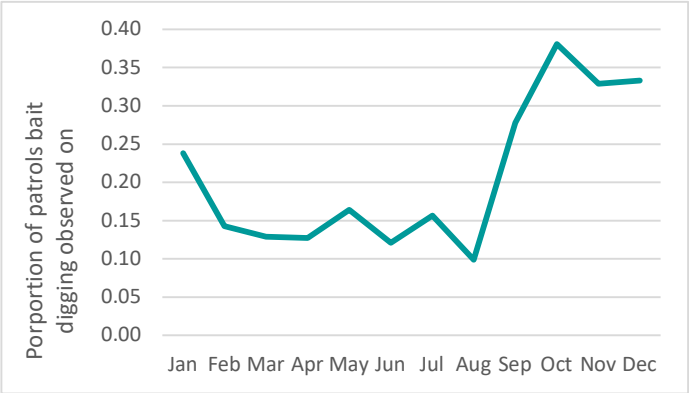
Figure 1 Proportion of patrols bait digging has been observed on (by NIFCA Officers) and partner organisations at sites in NM SPA.

The number of individuals bait digging per observation ranges from 1-14, with an average of 2.5 individuals (N.B. On some patrols more than one observation of bait digging may be recorded).

Bait digging has the potential to alter **the distribution, abundance and availability of key food and prey items at preferred prey sizes** of the benthic feeding seabird features. Shags and cormorants both have a varied diet. Shags are considered to feed primarily on benthic, schooling and demersal fish (Natural England, 2012). Long term studies of breeding shags at Canna (west coast of Scotland) show sandeels and Gadoid fish such as cod to make up the majority of the birds diet (Swann, Harris, & Aiton, 2008). Studies on the Isle of May again found sandeels to dominate adult and chick diet, with a range of finfish and fragmented remains of crustaceans (prawns and hermit crabs) also present (Harris & Wanless, 2009). Cormorants primarily feed on benthic fish species, but do also take fish from the water column and some crustaceans (Natural England, 2012).

European shags and great cormorants feed in the water column and are able to exploit a wide variety of prey, primarily benthic fish. The removal of intertidal annelids, primarily lugworms, in small areas of the Northumberland Marine SPA is therefore not considered to present a significant risk to these species.

Bait digging also has the potential to cause **visual and noise disturbance**, displacing birds from using areas around the collectors. Bait digging occurs at low tide, when

	the area of intertidal habitat available to both the birds and collectors is greatest. The average number of collectors per observation of bait digging was 2.5 across the SPA. Space for Shorebirds monitor bird disturbance events in Northumberland (Seaton Sluice to Berwick), recording species disturbed and activities causing disturbance. In 2020-21 they recorded 590 potential disturbance events (PDEs) of which almost half (47%) were caused by dog walkers while 39% were caused by just walkers. 3% were caused by rockpooling or exploring the intertidal, while only a single disturbance event was caused by bait gathering on the rocks. These results highlight the relative importance of recreational activities in causing bird disturbance, compared to shore-based bait collection and fishing activities. Bait digging activity is also greatest in the winter months, with the proportion of patrols bait digging is seen on significantly higher from September-January (Figure 2). Benthic feeding birds are designated as a breeding feature in this site and will therefore be present in high numbers during the breeding season (February to August) dispersing during the winter and this higher bait collection period.  **Figure 2** Proportion of patrols bait digging has been observed on (by NIFCA Officers and partner organisations) by month for sites within the SPA. Due to the large area of the SPA, lower levels of bait digging activity during the summer bird breeding season and relatively small areas affected, NIFCA do not consider that the activity will cause any significant displacement of bird features. Bait digging could **alter the extent, distribution and suitability of habitat** locally, if diggers are not backfilling holes as they work. NIFCA has produced a voluntary code of conduct for best practice bait collecting in the Blyth estuary (Appendix 2). Bait digging occurs on areas of intertidal sediment (sand/muddy sand) in the SPA. Shags

	and cormorants feed from the water column and rest and breed primarily on rocky shores and artificial structures, which means there should not be significant spatial overlap with bait digging and the preferred habitat of these birds. Bait diggers are likely to go deeper into the sediment than would naturally be bioturbated by animals, which could cause **contaminants** to be released from the sediment, entering the water column as the tide comes in. Bait digging activity is primarily coastal in the SPA, with the exception of the estuary at Blyth. 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. Bait digging is therefore considered unlikely to cause any significant contamination in the water column. Bait digging will not increase litter in the SPA, cause any significant light pollution in coastal areas or introduce items to the environment that present a collision risk with the bird features.
6. Condition and Conservation Objective Inferences	Benthic feeding birds are not specifically designated in the SPA, they make up part of the 'breeding seabird assemblage.' The following species are listed as 'main components' in the Conservation Advice: Arctic tern, common tern, roseate tern, Sandwich tern, little tern, Atlantic puffin, common guillemot, great cormorant, European shag, black-headed gull and black-legged kittiwake. Of these species European shags and great cormorants are considered benthic feeding birds.' These species are designated as breeding features in the SPA, which means birds will be present in high numbers during the breeding season (February to August) before dispersing more widely. Population numbers are from 2015 (Natural England, 2015). ▪ **European shag – 1,677** ▪ **Great cormorant – 230** The Farne Islands and the Isles of Scilly are the two largest shag breeding colonies in England (Natural England, 2012). The Conservation Advice package does not give feature condition for these species, but data on the number of active/apparently occupied nests on the Farne Islands is available from the Seabird Monitoring Program (British Trust for Ornithology and Joint Nature Conservation Committee). European shag nest numbers on the Farne Islands since 1986 are shown in Figure 3. The sharp declines between

1993/94, 2004/05 and 2017/18 correlate with severe bad weather events causing mass mortality. Since 2018 nest numbers have remained relatively stable, on a slight downward trend.

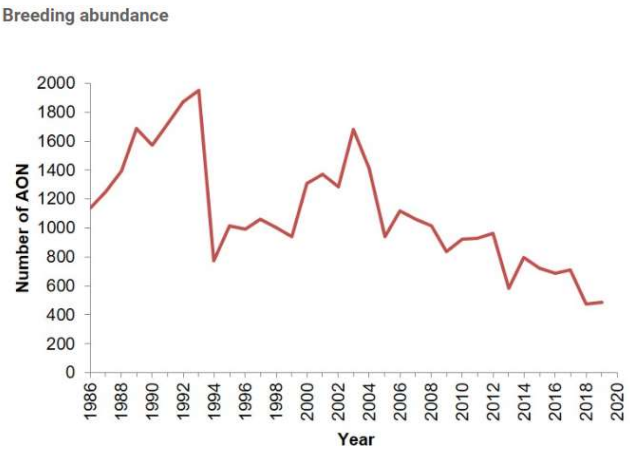


Figure 3 Number of European shag AONs on the Farne Islands, 1986–2019 **(JNCC, Accessed 15/01/24)**.

Great cormorant numbers for the Farne Islands are not available back to 1986, but number show fluctuations over the last 8 years (British Trust for Ornithology, 2023). The UK population as a whole has shown a relatively steady trend in nest numbers since 1986, again with fluctuations (JNCC, Accessed 15/01/2024).

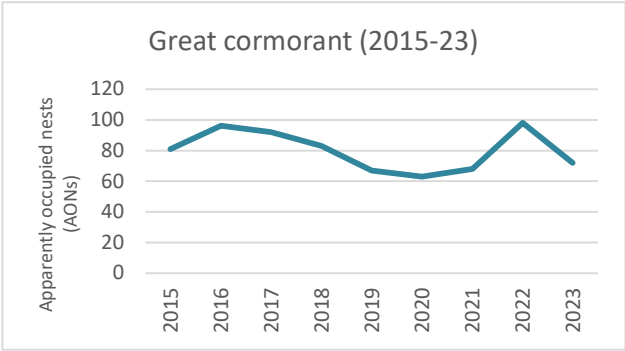


Figure 4 Number of 'apparently occupied nests' for great cormorants on the Farne Islands 2015-23 (British Trust for ornithology, 2023)

Seabird species have also been badly affected by Avian Influenza during the last two breeding seasons (2022 and 2023). The Farne Islands are home to approximately 200,000 seabirds. In the most recent breeding season (2023) the National Trust have collected 3,647 dead birds, but estimate this may only be 10% of the birds that have died. In 2022 National Trust rangers on the island collected over 6,000 dead birds. Cliff nesting birds were hit particularly badly on the Farne Islands in 2022 and kittiwakes and large gulls in 2023 (National Trust, 2023).

	Bird flu will have had impacted both population number and breeding success of multiple species in the SPA, as there has been a relatively high mortality of adult birds.	
7. Is the potential scale or magnitude of any effect likely to be significant?	**Alone: No.** Due to the varied diets of cormorants and shags, localised bait digging activity and the lower level of bait digging activity at the site during the breeding season, NIFCA does not consider that significant impacts on the bird features are likely from this activity. This will be monitored through the monitoring and control plan process which is currently under development for this activity and any significant increase in activity levels will trigger a reassessment in the SPA.	**OR In-combination** **No.** See 'in-combination' assessment below.
8. Have NE been consulted on this LSE test? If yes, what was NE's advice?		

Test for Likely Significant Effect (LSE)

NMSPA – 160: 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.	Habitat structure changes – removal of substratum (extraction) (Sensitive)* Removal of non-target species (Sensitive)* Removal of target species (Sensitive)* Visual disturbance (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) Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (Not-assessed) Transition elements & organo-metal (e.g. TBT) contamination (Not-assessed) Underwater noise changes (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 section of the Conservation Advice, therefore cannot determine the Conservation Objectives of this feature
5. What are the potential effects/impacts of the	Bait digging is practiced to support both commercial and recreational fishing. The primary target species is *A. marina* (blow lug) as this is the most common, although *A. defodiens* (black lug) is also targeted as it has a higher

pressure(s) on the feature, taking into account the exposure level? ***(reference to conservation objectives)***	value. *A. marina* is commonly found in fine sand and muddy sand, and scarcely, or not found at all, in fine mud, gravel, and coarse sand (Bruce, Colman, & Jones, 1963) (Longbottom, 1970) *A. defodiens* burrows are deeper (up to a meter) and further down the shore than *A. marina* (Cadman & Nelson-Smith, 1990) Ragworm (*Alitta virens*) are also targeted but on a much smaller scale in Northumberland (Tinlin-Mackenzie, 2018) as it occurs where sediments are finer (more muddy), for example in the Tyne and Blyth estuaries which are not in the BNNC SAC. The main method used is digging using a fork, but some individuals have been observed using a spade. More experienced or local commercial collectors may dig trenches while less experienced or recreational collectors dig more scattered holes and are less likely to backfill them. Both species of lugworms and ragworm can be collected using a fork to dig them out of the sediment, however, only *A. defodiens* can be extracted by the use of a bait pump, which extracts with suction (Cadman & Nelson-Smith, 1990) (Brind & Darbyshire, 2015). The use of pumps by collectors has also been recorded throughout monitoring by NIFCA officers, although are less popular as they are not as flexible as hand digging, can be difficult to use and can only target one species (Tinlin-Mackenzie, 2018). There is no national description of what is commercial and what is recreational regarding bait digging. Bait digging has therefore been assessed here regardless of the end point of the catch, since it is the activity (linked to effort) that potentially impacts the features, rather than whether it is commercial or recreational. Northumberland Marine SPA (NMSPA) extends from the high water mark out to sea with two areas extending outside of the NIFCA District beyond 6nm where intertidal fishing activity cannot occur. 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. Bait digging has been observed on 19.6% of these patrols (129/657). 'No activity' was observed on 36.2% of patrols (238/657). Some areas of the District are visited more frequently by Officers, therefore the proportion of patrols the activity has been observed on have been calculated. Sites where bait digging has been observed on 10% of patrols and there have been at least 10 patrols include; Boulmer North,

Hadston, Hauxley, Blyth, Newton and Boulmer South (Figure 1). With the exception of Blyth all of these sites are coastal, whereas at Blyth bait collectors work in the estuary. Sites where less than 10 patrols have been conducted but bait digging has been observed include; Coquet estuary, Wansbeck estuary, Cambois and Creswell. Sites are shown on map in Appendix 1.

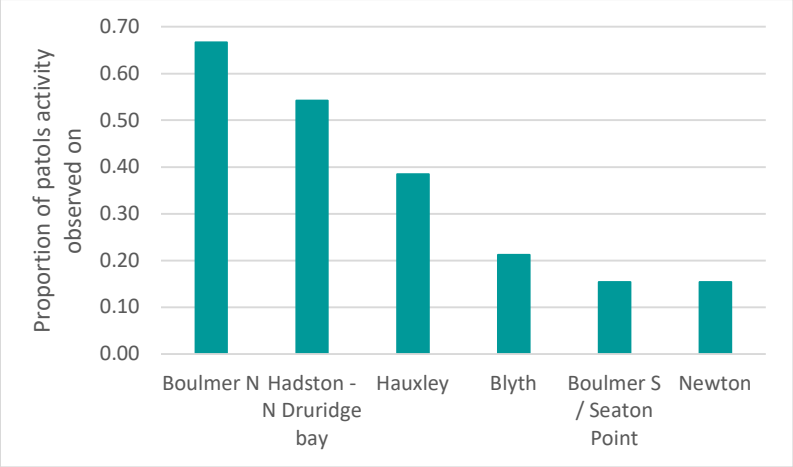


Figure 1 Proportion of patrols bait digging has been observed on (by NIFCA Officers) and partner organisations at sites in NM SPA.

The number of individuals bait digging per observation ranges from 1-14, with an average of 2.5 (N.B. On some patrols more than one observation of bait digging may be recorded).

Bait digging has the potential to alter **the distribution, abundance and availability of key food and prey items** available in the water column at high tide. However, all of the seabird features in the SPA feed in the water column (surface feeders, pursuit and plunge feeders and benthic feeding seabirds). The benthic feeding seabirds (shags and cormorants) do not feed in the sediment, but rather on demersal fish. Therefore, the removal of lugworms and ragworms from the sediment will not impact the available preferred prey of the seabird features.

Bait diggers are likely to go deeper into the sediment than would naturally be bioturbated by animals, which could cause **contaminants** to be released from the sediment, entering the water column as the tide comes in. Bait digging activity is primarily coastal in the SPA, with the exception of the estuary at Blyth. 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. Bait digging is therefore considered unlikely to cause any significant contamination in the water column.

	There is not a high risk of introduction of non-native species from bait digging. A large number of collectors will be local, and those that aren't will still be from relatively close areas in the UK. Bait digging activity occurs in the intertidal and will not therefore cause any significant visual disturbance to birds in the water column, create any underwater noise or introduce light pollution. Likewise the activity does not involve placing permanent objects in the environment so will not cause any litter.	
6. Condition and Conservation Objective Inferences	No evidence is available for the current condition of the water column feature within the Northumberland Marine SPA.	
7. Is the potential scale or magnitude of any effect likely to be significant?	**Alone:** **No.** Due to the localised nature of bait digging, the animals being targeted and the mismatch of peak activity with the seabird breeding season NIFCA does not consider that at current levels bait digging activity will significantly impact the water column and therefore seabird features of Northumberland Marine SPA. This will be monitored through the monitoring and control plan process which is currently under development for this activity and any significant increase in activity levels will trigger a reassessment in the SPA.	**OR In-combination** **No.** See 'in-combination' assessment below.
8. Have NE been consulted on this LSE test? If yes, what was NE's advice?		

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, digging with forks 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 bait digging with other activities within Northumberland Marine SPA.*

Fishing Activity			
Activity	**Description**	**Potential Pressure**	**Assessment**
Fixed nets on subtidal ground	Fixed nets (gill nets and trammel nets) are anchored to the seabed, with a floating headline and used to 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 (salmon, sea trout) is managed and assessed by the Environment Agency.	This activity occurs at a very low level for sea fish across the NIFCA District, largely due to the lack of white fish and 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). Fixed netting has the potential to impact the bird features through bycatch, or by removing their preferred prey species.	There will be no spatial overlap between bait digging and fixed netting, nor are these activities targeting the same species. NIFCA can therefore conclude with high confidence that bait digging and netting will not 'in-combination' increase pressures on the bird features of the SPA
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.	NIFCA issued 45 permits to trawl in the District in 2023. However, many 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 Coquet to St Mary's MCZ (CSM MCZ). Trawling has the potential to impact the bird features through bycatch, or by removing their preferred prey species.	There will be no spatial overlap between bait digging and trawling, nor are these activities targeting the same species. NIFCA can therefore conclude with high confidence that bait digging and trawling will not 'in-combination' increase pressures on the bird features of the SPA.

	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.	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.	
Potting on subtidal rocky ground, with low levels on subtidal sediment ground and intertidal rocky ground	Potting for European lobster (*Homarus gammarus)* and brown crab (*Cancer pagurus)* is the principal fishery within the NIFCA 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 brown crab.	In 2023 NIFCA issued 85 Commercial Shellfish Permits to fishers, compared to 93 in 2022, 108 in 2021 and 98 in 2020. The total number of pot hauls in the District was 2,464,412 in 2022, compared to 2,766, 681 in 2021 and 2,750,768 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. There are two areas of the SPA that stretch outside of the NIFCA District and the Marine Management Organisation (MMO) has provided activity data related to potting in these areas. 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 *Nephrops*. Average annual	There will be no spatial overlap between bait digging and potting, nor are these activities targeting the same species. NIFCA can therefore conclude with high confidence that bait digging and potting will not 'in-combination' increase pressures on the bird features of the SPA.

		landings from UK vessels in these areas (2012-21) is 6.78 tonnes (MMO landings data, pers comm).	
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) has 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 ▪ **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.	Whilst shore-based activity and bait digging both occur in the intertidal, these activities are not targeting the same species. There is a possibility that any disturbance to the bird features could be increased if both activities are occurring at the same time in the same location, however, this is still likely to be at a low level during the bird breeding season. NIFCA can therefore conclude with high confidence that bait digging and shore-based activity will not 'in-combination' increase pressures on the bird features of the SPA.
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.	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	Whilst digging with forks and crab tiling could co-occur, these activities are not targeting the same species. There is a possibility that any disturbance to the bird features could be increased if both activities are occurring at the same time

	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).	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.	in the same location, however, this is still likely to be at a low level during the bird breeding season. NIFCA can therefore conclude with high confidence that crab tiling and bait digging will not 'in-combination' significantly increase pressures on the bird features of the SPA.
Non-fishing activity			
Activity	**Description**	**Potential Pressure**	**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.
Coastal management scheme - Northumberland and North Tyneside Shoreline Management Plan 2 (05/2009) covers the coastline from the Scottish border to the River Tyne.	Flood and erosion risk management	Any coastal management works along the coast under the aegis of a Coastal Management Scheme.	As stated in Section (2) of the document projects and plans within the SMP are subjected to its own Appropriate Assessment for proposed work, which assesses any impacts to NMSPA.
Coastal Infrastructure and Cable Laying.	Any project in the marine area requiring a marine licence.	Any development in the marine environment with an intertidal element, that may impact features of the site as part of	All marine licence applications are assessed to ensure appropriate licence conditions/monitoring are in place.

		the marine licencing process. Assessments for any development must be carried out in consultation with statutory nature conservations bodies.	These assessments must consider impacts to Marine Protected Areas, with an aim to preferably avoid, then minimise and mitigate impacts to the protected features. NIFCA are consulted on all relevant marine applications, as are other bodies such as Natural England.

Conclusion

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

No. NIFCA do not consider that bait digging currently poses a significant risk to the bird features of the SPA. Work to improve understanding of bait digging and intertidal activity is ongoing and if levels change in the future then this activity will be re-assessed.

Have the MMO been formally consulted on this tLSE (and do they agree)?	Not applicable as refers to intertidal assessment.
Has Natural England been formally consulted on this tLSE (and do they agree)?	Yes, collaborative discussions have occurred with NE and NIFCA since 2018.

Date of document completion/'sign-off':	11/11/2024 (Pete Welby)

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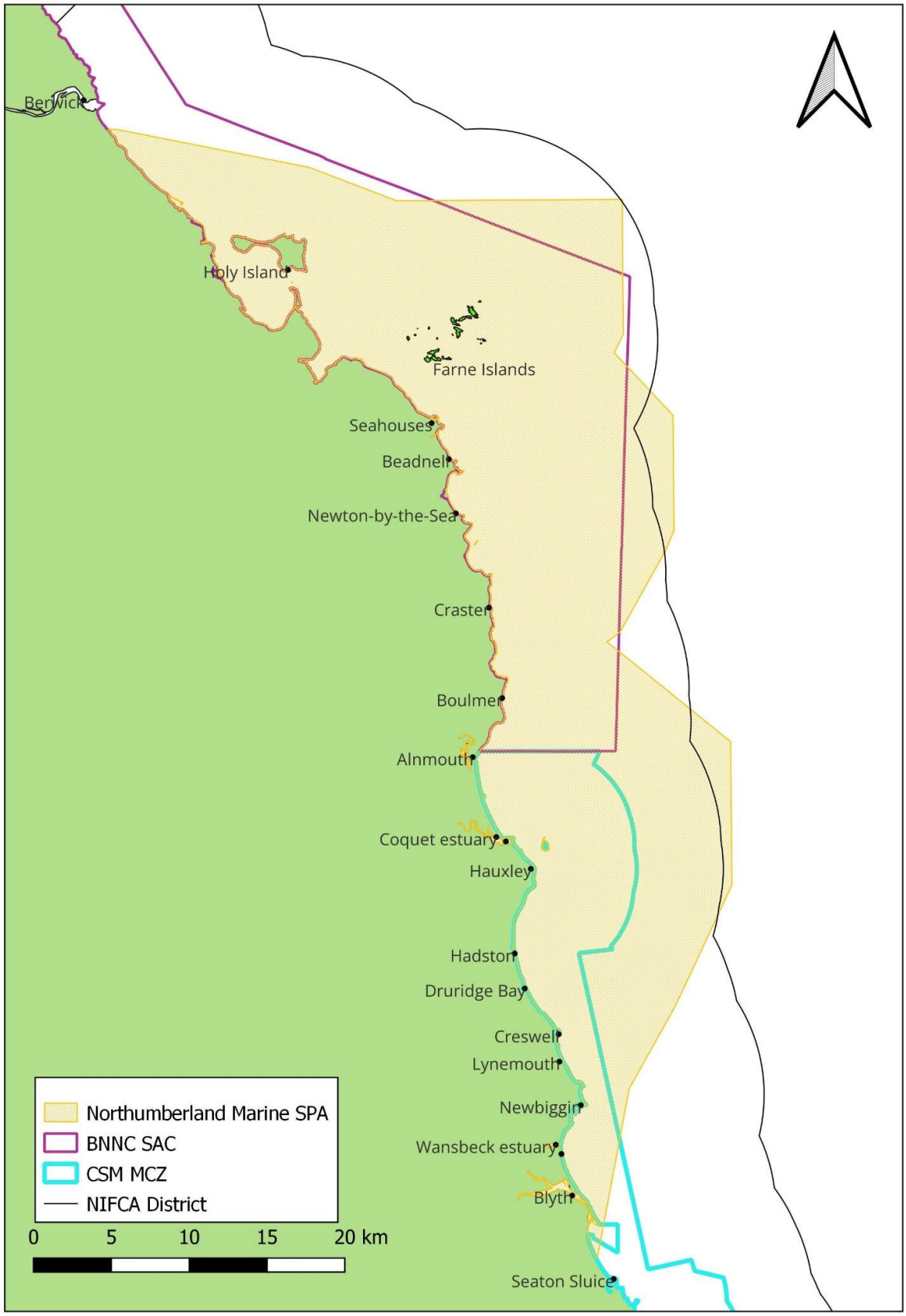
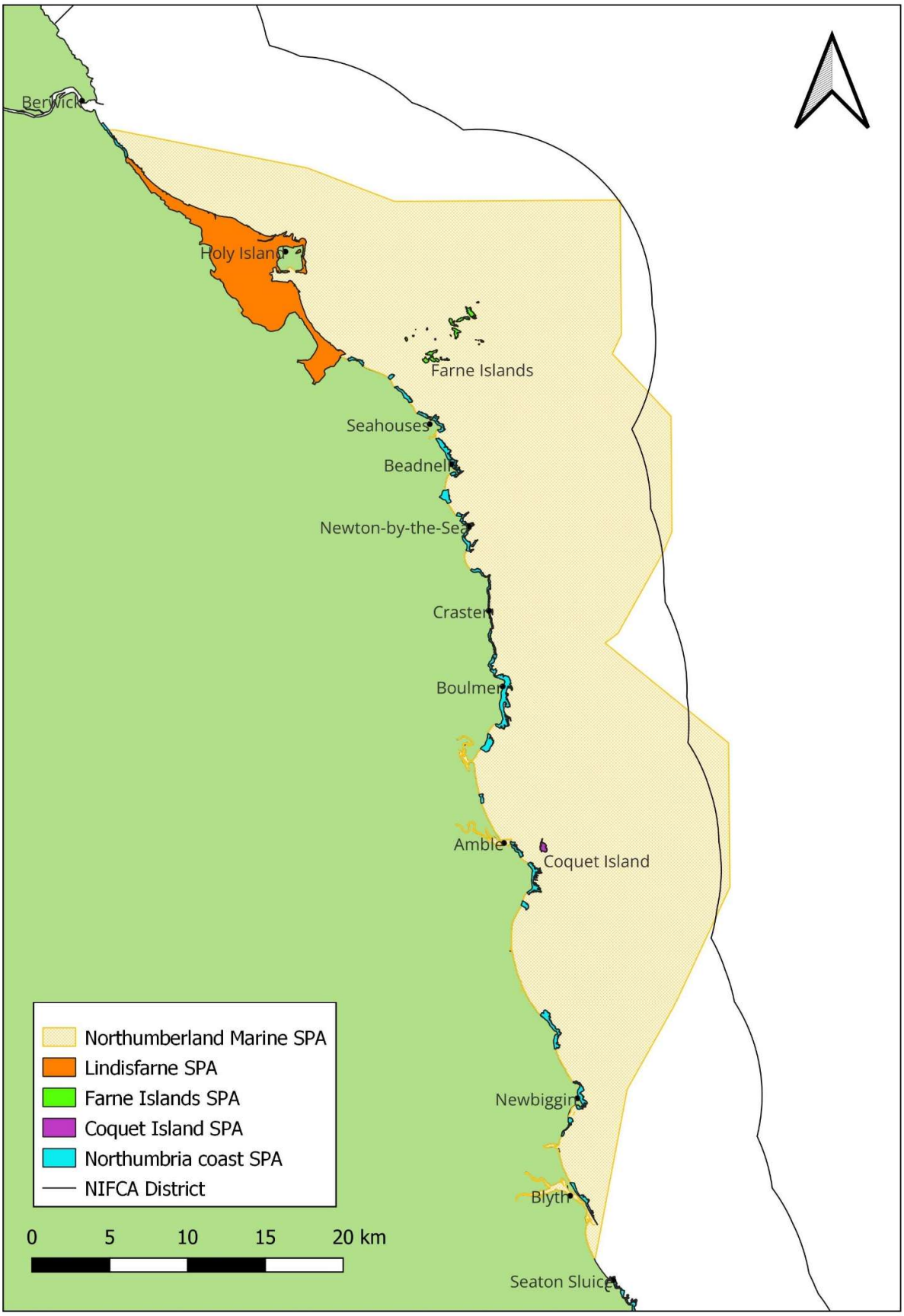
Appendix 1 Northumberland Marine SPA with intertidal fishing sites, Coquet to St Marys (CSM) MCZ and Berwick and North Numberland Coast (BNNC) SAC shown



Appendix 2 Northumberland Marine SPA and co-located SPAs



Appendix 3 – Blyth estuary voluntary code of conduct

Northumberland IFCA
Inshore Fisheries and Conservation Authority
PORT OF BLYTH

BLYTH ESTUARY BAIT COLLECTION CODE OF CONDUCT

GUIDELINES

MUSSEL COLLECTION:

- Mussels should be collected for **personal use only**.
- Take a recommended maximum of **one small-medium sized bucket** per day and avoid collecting on every suitable tide.
- Only take mussels above a minimum size of 45mm shell length.
- Disposal of mussel shells on the shore is prohibited without a licence. Take them with you and dispose responsibly, along with other litter.

To size

BAIT DIGGING:

- Backfill holes.
- Avoid walking or digging on live mussel.

CRAB COLLECTION:

- Ensure you have landowner permission before depositing tiles/tyres (or any other item).
- Materials such as stones and tiles are better for the environment than artificial objects such as tyres which may degrade and leach chemicals over time.

PURPOSE

The Blyth Estuary is part of Northumberland Shore Site of Special Scientific Interest (SSSI) and is an important habitat for mussels, birds and mammals such as otters. These guidelines are in place to protect the mussel beds and the wildlife dependent on them, and to enable limited bait collection for personal use as it is damaging and unsustainable to the mussel beds to collect on a commercial scale.

Please note that these guidelines will be kept under review by NIFCA.

For more information please scan the QR code or get in touch at:

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