# Marine Conservation Zone Assessment document: CSMMCZ-FA 006

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|---|---|
| Marine Protected Area | Coquet to St Mary's MCZ |
| Features | High energy infralittoral rock, High energy circalittoral rock, High Energy Intertidal Rock, Intertidal Coarse Sediment, Intertidal Mixed Sediments, Intertidal Mud, Intertidal Sand & Muddy Sand, Intertidal Underboulder Communities, Low Energy Intertidal Rock, Moderate energy Infralittoral Reef, Moderate Energy Intertidal Rock, Peat & Clay Exposures, Subtidal Coarse Sediment, Subtidal Mixed Sediments, Subtidal Mud, Subtidal Sand |
| Gear Type | Static Nets |
| Gear/Feature Interaction Reference | CSMMCZ-369 CSMMCZ-370 CSMMCZ-371 CSMMCZ-372 CSMMCZ-373 CSMMCZ-374 CSMMCZ-375 CSMMCZ-376 CSMMCZ-377 CSMMCZ-378 CSMMCZ-379 CSMMCZ-380 CSMMCZ-381 CSMMCZ-382 CSMMCZ-383 CSMMCZ-384 CSMMCZ-385 CSMMCZ-386 CSMMCZ-387 CSMMCZ-388 CSMMCZ-389 CSMMCZ-390 CSMMCZ-391 CSMMCZ-392 CSMMCZ-393 CSMMCZ-394 CSMMCZ-395 CSMMCZ-396 CSMMCZ-397 CSMMCZ-398 CSMMCZ-399 CSMMCZ-400 CSMMCZ-401 CSMMCZ-402 CSMMCZ-403 CSMMCZ-404 CSMMCZ-405 CSMMCZ-406 CSMMCZ-407 CSMMCZ-408 CSMMCZ-409 CSMMCZ-410 CSMMCZ-411 CSMMCZ-412 CSMMCZ-413 CSMMCZ-414 CSMMCZ-415 CSMMCZ-416 |

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Note: sections of this document have been taken directly from or modified from the MMO Fisheries Assessment Template, Flyde MCZ Fisheries Assessment and West of Walney MCZ Fisheries Assessment.

# Contents

## 1.1 Summary

Table 1 shows a summary of the outcomes of the Coquet to St Mary's MCZ static nets Assessment. For the purpose of this assessment title static nets refers to gill nets, tangle nets and trammel nets.

**Table 1:** Assessment Summary

| Features | Activity/gear | Part A outcome | Part B outcome | In-combination assessment | Confidence |
|---|---|---|---|---|---|
| High energy infralittoral rock<br>Moderate energy circalittoral rock<br>Moderate energy infralittoral rock<br>Subtidal coarse sediment<br>Subtidal mixed sediments<br>Subtidal sand<br>Subtidal mud | Gill nets<br>Trammels<br>Entangling | Capable of affecting (other than insignificantly) | Not capable of affecting (other than insignificantly) | No significant risk | M |
| High energy intertidal rock<br>Intertidal under boulder communities<br>Low energy intertidal rock<br>Moderate energy intertidal rock<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand<br>Intertidal coarse sediment | Gill nets*<br>Trammels*<br>Entangling* | Not capable of affecting (other than insignificantly) | N/A | No significant risk | H |
| Peat and clay exposures (at this time only known to be intertidal) | Gill nets*<br>Trammels* | Not capable of affecting (other than insignificantly) | N/A | No significant risk | M |

| | | | | | |
|---|---|---|---|---|---|
| | Entangling* | | | | |

*Gear/feature interaction does not occur within Coquet to St Mary's MCZ because the activity does not occur or the interaction is incapable of occurring (blue interaction).

## 1.2 Introduction

Table 2 shows the name and legal status of the site.

**Table 2:** Site details

| Name and legal Status of site(s): | **Name of site(s)** | **Legal status** |
|---|---|---|
| | Coquet to St Mary's MCZ | MCZ |

Coquet to St Mary's Marine Conservation Zone (MCZ) is an inshore site that runs along the southern half of the Northumberland Coast, within the northern North Sea in the north-east of England. The site covers approximately 192 km² of intertidal and subtidal habitats, stretching from Alnmouth in the north to Whitley Bay to the south, and from mean high water out to approximately 7.5km at its seaward-most extent. Coquet to St Mary's MCZ contains a mosaic of sediment and hard substrate benthic habitats, which in turn support a wide range of diverse communities.

The intertidal habitats range from rocky shore platforms and outcrops to large sandy bays and beaches, each supporting unique communities. Rocky shores support large abundances of red algae, fucoids and kelp, whilst intertidal boulders provides shelter and habitat for a wide variety of crustaceans, molluscs, anemones and encrusting bryozoans. Elsewhere mud and sand flats contain burrowing bivalves and worm communities, whilst amphipods dominate the strandline of sandy beaches. Rare exposures of intertidal peat and clay are found along patches of the coastline, including fossilised tree roots from millions of years ago.

Shallow sloping infralittoral rock platforms also support thriving communities of macroalgae, which in turn support species including hydroids, sponges and anemones. The infralittoral rocky seabed gives way to circalittoral rock, where light penetration is too low to support diverse faunal communities, but instead a large diversity of benthic fauna flourish, including dead man's fingers, hornwrack and sponges. Circalittoral rocky habitats are interspersed between wide areas of subtidal mud, sand and mixed sediments, each of which support their own range of species, including burrowing bivalves, bristle worms, sea pens and urchins. Sandwaves and ripples are formed by underwater currents shaping sediments on the seafloor.

The northern edge of the MCZ abuts with the Berwickshire and North Northumberland Coast SAC, and much of the northern section of the site overlaps with the Northumberland Marine SPA. The site overlaps with the intertidal parts of Coquet Island SPA and St Mary's Island Local Nature Reserve, but does not include the terrestrial parts.

These sites are important for other species too, including marine mammals and seabirds. Grey seals make extensive use of St Mary's Island in the south of the MCZ as a haul out site, whilst the area is also important for white-beaked dolphins and minke whales. The site surrounds Coquet Island SPA, which supports internationally important numbers of terns, including the largest breeding colony of roseate terns in England. These species make extensive use of the MCZ for foraging and other activities.

The conservation objectives for all MCZs are that the features:

(a) so far as already in favourable condition, remain in such condition; and

(b) so far as not already in favourable condition, be brought into such condition, and remain

in such condition.

More specific information on how to achieve the conservation objective of an MCZ is provided in the general management approach within the factsheet for each site[1].

[1] MCZ factsheets are available online: http://publications.naturalengland.org.uk/category/1721481
[2] www.gov.uk/government/publications/fisheries-in-european-marine-sites-matrix

This assessment uses an initial screen of fishing activities and designated features, based on the Matrix of fisheries gear types and European marine site protected features[2] (hereafter 'the Matrix') developed as part of Defra's revised approach to the management of commercial fishing in European marine sites (EMS)[3]. The Matrix classifies interactions between EMS features and different fishing activities as red, amber, green or blue.

All interactions classified as 'blue' are screened out of this assessment as there is no pathway for impact. Interactions classified as 'green' are considered low risk but are included in this assessment and when assessing impacts in-combination with other activities. Interactions classified as amber are subject to full assessment. A classification of 'red' indicates that an assessment is not required and the interaction should automatically be addressed through a management measure, however they are included in this assessment.

MCZs are associated with an overlapping but different set of designated features to those associated with EMS. Therefore, for the purposes of the initial screen in this assessment, the designated features have been matched with equivalent EMS features. Where there is no clear match, a precautionary (i.e. more sensitive) EMS feature has been used. This precautionary matching applies only to the initial screen, and not to the later, more detailed assessment.

Table 3 shows the features for which this MCZ has been designated and associated general management approach, while Figure 1 shows the locations of features within the MCZ.

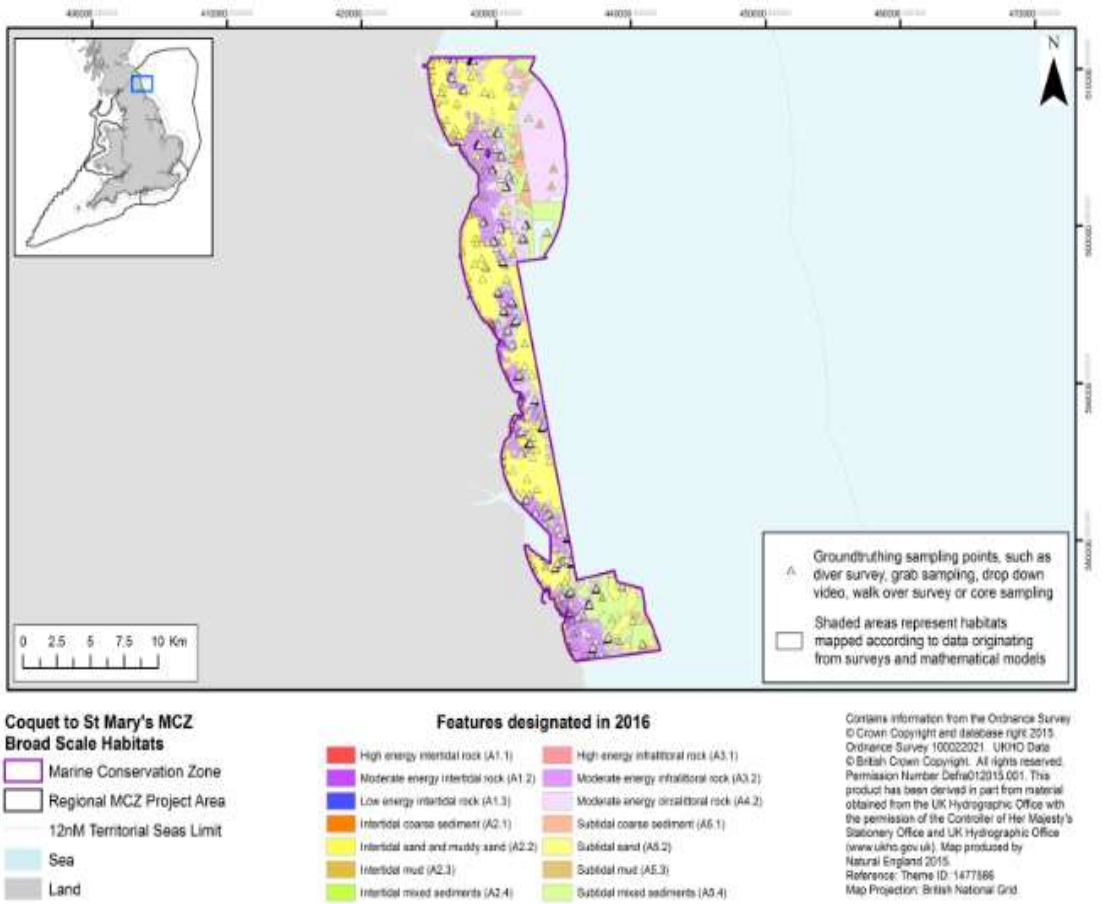


**Figure 1**: Coquet to St Mary's MCZ Feature Locations

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

**Table 3:** Designated features and general management approach

| Feature | Fisheries Matrix Sub-feature | General Management Approach |
|---|---|---|
| High energy infralittoral rock | Sub-tidal bedrock reef | Maintain in favourable condition |
| High energy intertidal rock | Intertidal bedrock reef | Maintain in favourable condition |
| Intertidal coarse sediment | Intertidal gravel and sand | Maintain in favourable condition |
| Intertidal mixed sediments | Intertidal mixed sediments | Maintain in favourable condition |
| Intertidal mud | Intertidal mud | Maintain in favourable condition |
| Intertidal sand and muddy sand | Intertidal mud and sand | Maintain in favourable condition |
| Intertidal under boulder communities | Intertidal boulder and cobble reef | Maintain in favourable condition |
| Low energy intertidal rock | Intertidal bedrock reef | Maintain in favourable condition |
| Moderate energy circalittoral rock | Sub-tidal bedrock reef | Maintain in favourable condition |
| Moderate energy infralittoral rock | Sub-tidal bedrock reef | Maintain in favourable condition |
| Moderate energy intertidal rock | Intertidal bedrock reef | Maintain in favourable condition |
| Peat and clay exposures | N/A | Maintain in favourable condition |
| Subtidal coarse sediment | Coarse Sediment | Maintain in favourable condition |
| Subtidal mixed sediments | Subtidal mixed sediments | Maintain in favourable condition |
| Subtidal mud | Subtidal mud | Maintain in favourable condition |
| Subtidal sand | Subtidal sand | Maintain in favourable condition |

### 1.2.1 High energy infralittoral rock

High energy infralittoral rock is located below the low tide water limit, but close enough to the surface for plants and algae to grow. This feature is exposed to the full force of strong tidal currents and waves. As a result, this habitat is often dominated by the hardier and current-loving kelp and red algae. This feature is formed by open bedrock shelves, shallow sloping flat reefs, rocky outcrops, gullies and ledges. Areas of boulders may also occur, but all finer sediments are stripped away by the tide and waves.

Kelp forests thrive in this high energy environment, dominating the infralittoral fringe. Kelp holdfasts provide stability and shelter for a range of species, protecting them against predators, as well as strong tide and

waves. Hardy red algae, such as dulse and sea beech, also thrive in this feature, either attaching to the rock or attaching epiphytically to the kelp canopy or stipes. Kelp holdfasts form microhabitats by providing refuge from the high energy environment for a diverse community of fauna, such as chitons, hydroids, sponges and topshells. Common lobster and anemones may shelter within cracks and crevices within the bedrock, whilst the bread crumb sponge and keel worms cover stable rocky areas.

High energy infralittoral rock is found just offshore from Seaton Sluice, running down the coast to surround St Mary's Island (Natural England, 2013). This feature is observed close to the intertidal zone, where the wave action is greatest, and is surrounded by moderate energy infralittoral rock on the seaward side.

The extent of this habitat is estimated to be 21.9 ha

### 1.2.2 High energy intertidal rock

High energy intertidal rock is subject to the full force of the tide and waves. Very high exposure to the hydrodynamic forces removes all of the fine sediments, such as sand and mud, from the environment, leaving bare rock and large cobbles behind. This feature can form a wide range of different structures, including sloping bedrock, large gullies and crevices, outcrops, ledges, boulders and temporary rock pools at low tide.

The force of the tide and waves results in resilient communities of hardy plants and animals, such as limpets and acorn barnacles. Cracks and crevices in the rock support dahlia anemones, dog whelks and hermit crabs. Mid-shore rock pools, exposed at low tide, may support coralline red algae crusts, sponges, and some areas of ephemeral green macroalgae (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Wracks and red algae, such as false Irish moss, are found on the lower intertidal rock, whilst kelp dominates the infralittoral fringe. The canopy, stipes and holdfasts of oarweed and dabberlocks provides important refuge from the strong tide and waves for a wide range of species, including chitons, hydroids and anemones (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

High energy intertidal rock can be found at Amble, the eastern side of Coquet Island, between Cresswell and Lynemouth and around Newbiggin. This feature is also observed at the coastline between Seaton Sluice and St Mary's Island (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014), (Natural England, 2013).

The extent of this habitat is estimated to be 52.5 ha.

### 1.2.3 Intertidal coarse sediment

Coarse intertidal shores are comprised of shingle and gravel, sometimes interspersed with sand and empty shells. Coarse sediment beaches are found on exposed and open shores, where the force of the tide and waves wash away fine sands, silts and muds, leaving the larger material behind. This exposed and highly-mobile environment is often unstable and supports relatively low species diversity, especially during the winter months. However, hardy and resilient communities are able to thrive in this highly mobile and disturbed environment. During summer, the more stable cobbles and shells may be colonised by opportunistic macroalgae and barnacles, whilst amphipods dominate the strandline and seek shelter in decaying seaweed and debris. Harbour crabs and brittlestars may also be found within this feature.

Areas of coarse sediment can be found on beaches at Cambois, Blyth and Amble, as well as between Lynemouth and Cresswell (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). A small section of gravel is also observed at Whitley Sands (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

The extent of this habitat is estimated to be 30.9 ha.

### 1.2.4 Intertidal mixed sediments

Intertidal mixed sediment consist of a range of unsorted gravels, rocks, sands and mud. This feature is found in variable energy environments with changeable exposure to the tide and waves, resulting in the poor sorting of sediments. This allows fine sands and silts to accumulate around larger pebbles and cobbles, creating a diverse mosaic of substrates. As a result, areas of intertidal mixed sediment can support a diverse range of communities, which include polychaete worms, crabs and brittlestars, whilst talitrid amphipods dominate the upper shore and strandline. Opportunistic green macroalgae may attach to the larger and more stable pebbles and cobbles.

Isolated patches of intertidal mixed sediment are observed between St Mary's Island and Seaton Sluice.

The extent of this habitat is estimated to be 4.7 ha.

### 1.2.5 Intertidal mud

Intertidal mud is formed in very sheltered coastal inlets along the sea shore, where the weak influence of the tide and waves is insufficient to strip away fine sediments, allowing fine sand, silts and clay to accumulate. Intertidal mud is a highly hospitable and nutrient rich environment, which supports a diverse community dominated by bivalves, such as the Baltic tellin, and polychaete worms, such as the lugworm, and other burrowing infauna. This in turn provides important feeding grounds for larger species, such as wading birds, some of which feed exclusively upon burrowing invertebrates within this feature during winter. Opportunistic green macroalgae may form mats on the mud during summer.

Intertidal mudflats are located on the flanks of Seaton Burn (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

The extent of this habitat is estimated to be 2.0 ha.

### 1.2.6 Intertidal sand and muddy sand

Intertidal sand and muddy sand represents the vast majority of the intertidal sediment within the site, forming wide beaches along the Northumberland coastline. Pure sandy shores are often highly mobile and species poor, often dominated by polychaete and oligochaete worms, ephemeral green macroalgae and amphipod communities which are resilient to the clean, abrasive and mobile environment. Sandhoppers (talitrid amphipods) reside within the strandline on the upper shore, seeking refuge amongst the decomposing seaweed and debris (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Clean intertidal sand can be found at Whitley Sands, Blyth North and South Beaches, and Newbiggin Beach.

Where sandy shores occur in more sheltered locations, muds and silts can accumulate, forming muddy-sand. This allows the features to support a much wider and diverse community, including burrowing infauna such as lugworm, horseshoe worms, and the Baltic tellin. Striped venus clams and polychaete worms burrow within the sediment. Fucoid wracks and red algae grow on the lower shore of muddy-sand beaches, such as at Cresswell (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014), which also support burrowing bristleworms. Epifauna such as shore crabs and hermit crabs are also found within this feature.

Muddy sandy shores are located at the top of Whitley Sands, Newbiggin Beach, Druridge Bay, Hauxley Beach and Alnmouth Bay (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

The extent of this habitat is estimated to be 500.9 ha.

### 1.2.7 Intertidal under boulder communities

Intertidal boulders host diverse under-boulder communities as a result of the shelter they provide from the tide and waves. Micro-habitats are created underneath boulders and large rocks, and within crevices and cracks in the rock. These rocks can provide a mosaic of habitats and a refuge for life, with the boulders

providing a hard substratum for organisms to attach to, whilst also sheltering biological communities from the sun and waves.

The underneath of boulders support diverse and vibrant communities. The boulders themselves are encrusted by mussel sprat, limpets, acorn barnacles, sponges, coralline red algae and bryozoans. Other regularly occurring species include winkles, dog whelk, brittlestars and anemones (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Crabs, lobsters and small fish may also reside in cracks within or underneath the boulders, seeking refuge at low tide. Filamentous red algae and fucoids also attach to the more stable boulders, including dulse, sea beech, red rags and toothed wrack. In an intertidal verification survey for the site, 59 out of the 86 species found were recorded within underboulder communities, thereby demonstrating the biological diversity and importance of this habitat (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

Intertidal underboulder communities are found distributed throughout the site, including at St Mary's Island, Blyth beaches, Newbiggin, Lynemouth and Cresswell (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

The extent of this habitat is estimated to be 0.25 ha.

### 1.2.8 Low energy intertidal rock

Low energy intertidal rock is found on rocky shores sheltered from the full force of the tide and waves. Often in the form of shallow sloping bedrock, with the addition of rocky boulders, cobbles and gullies. When the tide goes out rockpools may form, providing temporary and highly competitive microhabitats. Due to the low energy of the tide and waves, plants and algae are able to anchor on to the rock and grow in this environment. A thin veneer of sand and mud may also accumulate where the tide and waves are weak.

Low energy intertidal rock supports a wide range of plants and algae through zonation of the intertidal area, which in turn provides a wide variety of habitats for animal communities. Spiral wrack, channelled wrack and green algae dominate the upper intertidal, whilst bladder wrack and knotted wrack dominate the mid-shore. Mussels, limpets and acorn-barnacles colonise the bare rock, whilst dog whelk and winkles reside in the cracks and crevices within the rock.

Rock pools within the mid to upper intertidal support coralline red algae crusts, with some areas of ephemeral green algae (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Rockpools also provide habitat for the beadlet anemone, hermit crab, and common starfish. Toothed wrack can be found at the lower shore and infralittoral fringe, and may host the epiphytic sea mat bryozoan (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

Low energy intertidal rock is found interspersed with other rocky habitats across the site, often on the landward side of other rock formations, which help to shelter this feature from the waves and tide. Examples of low energy intertidal rock are found at Newbiggin Beach, Cresswell and around Coquet Island.

The extent of this habitat is estimated to be 57.6 ha.

### 1.2.9 Moderate energy circalittoral rock

Moderate energy circalittoral rock is located in deep waters, below the level where light can penetrate enough for extensive plant growth. However, where the majority of plant life is unable to survive, faunal turfs and diverse animal communities can be found. This feature consists of open bedrock, shallow sloping reefs, rocky outcrops, gullies and ledges.

Circalittoral boulders, cobbles and bedrock support a wide range of species, which may differ depending on the seabed topography, depth and tidal strength. Regularly occurring species include sponges, dead man's fingers, keel worms, hydroid and hornwrack (Amec, 2011). Faunal turfs of bryozoans, sponges and hydroids coat the bedrock and are grazed by edible urchins. Other common species include edible crabs, lobsters, brittlestars and common starfish.

Moderate energy circalittoral rock is common within the site's deep water habitats, located at the eastern side of the MCZ, offshore from Blyth, Newbiggin, Lynemouth and Cresswell. Additional areas are located offshore from Druridge Bay, Amble and east of Coquet Island. This feature is often overlaid by patches of subtidal mud, which can form a thin veneer over the bedrock (EMODnet, 2016) (Environment Agency (EA) and Cefas, 2014).

The extent of this habitat is estimated to be 6118.0 ha.

### 1.2.10 Moderate energy infralittoral rock

Moderate energy infralittoral rock lies just below the low tide mark, and is constantly submerged by seawater but close enough to the surface to allow plants and algae to flourish. This feature is formed by open bedrock shelves, shallow sloping flat reefs, rocky outcrops, gullies and ledges. Areas of boulders and cobbles may also occur.

Kelp forests of cuvie, dabberlocks and oarweed dominate the intertidal-infralittoral fringe, which in turn support red seaweeds, such as dulse and red rags. Within and below the kelp canopy, red algae grow epiphytically on the kelp stipes and holdfasts, as well as on the rock face. These include sea belt, pink crustose algae and sea beech (Amec, 2011). The kelp canopy and holdfasts provide stability and shelter for a diverse community of fauna, including the dahlia anemone, winkles, top shells, chitons, hydrozoans and bryozoans, protecting them against the tide and waves. Rock gunnels and common lobster may also shelter within the cracks and crevices of the rock face, whilst urchins graze the faunal and algae turfs which grow on the rocks.

This feature is highly abundant within the MCZ, and is observed offshore from Whitley Bay and St Mary's Island, up to Seaton Sluice (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Moderate energy infralittoral rock is also found off the coast from Blyth North Beach, Newbiggin, Lynemouth and Cresswell. This feature is also present off the coast of Low Hauxley, Amble and Coquet Island (Natural England, 2013) (EMODnet, 2016) (Environment Agency (EA) and Cefas, 2014).

The extent of this habitat is estimated to be 1166.9 ha.

### 1.2.11 Moderate energy intertidal rock

This feature is moderately exposed to the force of the tide and waves, which is at a sufficient strength to strip the environment of much of the finer sediments, such as sands and silts, which may overlay the bedrock. Moderate energy intertidal rock can form a wide range of different structures which provide a range of habitats. These include sloping bedrock, large gullies and crevices, ledges, boulders and temporary rock pools at low tide.

Moderate energy intertidal rock supports a wide range of biological communities within the site. Exposed rock on the mid to upper shore support acorn barnacles, limpets, tar lichen and filter feeders, whilst the cracks and crevices in the rock face provide refuge for the beadlet anemone, dog whelks, winkles, hermit crabs, edible crabs and rock gunnels. Mid-shore rock pools, exposed at low tide, may support coralline crusts of red algae with some areas of ephemeral green algae (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014).

Bladderwrack, toothed wrack and red seaweeds, such as pepper dulse, attach to the bedrock at the lower shore, hosting a range of species including topshells and epiphytic bryozoans. Kelps dominate the infralittoral fringe, including cuvie, oarweed and dabberlocks. The stability and shelter of kelp canopies, stipes and holdfasts create microhabitats for a range of species, including crustose sponges, hydroids, anemones and the epiphytic dulse.

Moderate energy intertidal rock is found throughout the rocky shores of this site, including around Hauxley, Coquet Island, and the headlands of Druridge Bay and Blyth.

The extent of this habitat is estimated to be 62.5 ha.

### 1.2.12 Peat and clay exposures

Peat and clay exposures are rare features which occur when strata of peat and clay breach the surface sediment layers, either in the intertidal or subtidal environment. Exposures can constitute of either peat or clay, or both strata can occur together. The influence of the waves and tide can cause areas of erosion and the mobilisation of fine sediments across the site. As a result, peat and clay exposures can be ephemeral, as the local hydrodynamic regime can cover and uncover this feature in a thin veneer of sediment.

Within the site this feature takes the form of exposed intertidal banks of peat or clay. Pebbles and stones on the surface of this feature may provide a hard and stable attachment point for opportunistic green macroalgae in summer. Along the Amble coastline, fossilised peat tree roots can be observed, having been formed millions of years ago. Peat and clay exposures are vulnerable to damage from anthropogenic activities and has no recoverability due to this feature having been formed millions of years ago (Joint Nature Conservation Committee (JNCC), 2008).

Peat and clay exposures are observed within the intertidal zone near Amble and to the north of Seaton Sluice (Marine Ecological Surveys Limited (MES) and The Marine Biological Association (MBA), 2014). Peat and clay exposures within the MCZ are found close to the shore where the tide and waves strip sediments away from this feature, which is characterised by soft rock and fossilised tree roots. Some ephemeral green and red algae may be found within this feature, including Ulva spp. and false Irish moss, Mastocarpus stellatus. Exposures may also be present ephemerally within the subtidal zone, but no records are currently available (Fitzsimmons et al., 2015). Much less is known about peat and clay exposures when located in deeper waters.

The extent of this habitat is estimated to be 2.7 ha.

### 1.2.13 Subtidal coarse sediment

Subtidal coarse sediment is a high energy environment consisting of gravel, shingle, shell fragments and coarse sand. This substrate is scoured by strong tidal currents and waves, which strip away fine sediments, such as silts and clay. The regular and extensive movement of coarse sediment causes significant disturbance and abrasion, resulting in a relatively low diversity but specialised community.

The more stable areas of subtidal coarse sediment support dead man’s fingers, tube building worms, hornwrack and hydroids. Hermit crabs, common starfish and brittlestars can be found in abundance on the sea floor, whilst keel worms form tubes on stable rocks, cobbles and shells. Burrowing infauna includes bivalves and the sea potato. Flatfish, such as plaice and dab, hunt over this feature and can submerge themselves within the sediment.

Areas of subtidal coarse sediment are located in the north-eastern section of the site, offshore from the Amble coast, and offshore from Whitley Bay, in the south-eastern corner of the MCZ (Foster-Smith, 1998) (Seasearch, 2013). The confidence in the extent of this feature is low, in the initial site assessment document (SAD) the extent of this feature was reported as 1.00 $km^2$ with low confidence. A post-survey site report using the findings of a dedicated seabed survey conclude that this feature was identified as present but not included in the updated broad-scale habitat (BSH) map as there was insufficient data to reliably map it (Fitzsimmons et al., 2015).

The extent of this habitat is estimated to be 8.7 ha.

### 1.2.14 Subtidal mixed sediments

Subtidal mixed sediments are comprised of a mosaic of substratum, ranging from small rocks, cobbles and shingle, to sand, shell fragments, silts and mud. This feature can have a high diversity in substrate types depending upon the environmental conditions. Fine sands and silts will accumulate in lower energy environments, whilst stronger tides and waves can strip these fine sediments away leaving a coarser substrate composition.

The diversity of habitat types within this feature support a wide variety of plant and animal communities, including both infaunal and epifaunal. Bivalves, such as the white furrow shell, and polychaetes burrow into the mixed sediment, whilst dead man's fingers, keel worms and the bryozoan hornwrack attach to the more stable rocks and cobbles. Brittlestars, starfish, hermit crabs and harbour crabs are common mobile epifauna upon tide-swept mixed sediments.

This feature is found in the deeper offshore water in the north of the site, offshore from the Amble coast. Mixed sediment is also located offshore from St Mary's Island and Whitley Bay (EMODnet, 2016) (Environment Agency (EA) and Cefas, 2014). The confidence in the extent of this feature is low, in the initial site assessment document (SAD) the extent of this feature was reported as 2.58 $km^2$ with low confidence. A post-survey site report using the findings of a dedicated seabed survey conclude that this feature was identified as present but was not included in the updated broad-scale habitat (BSH) map as there was insufficient data to reliably map this (Fitzsimmons et al., 2015).

The extent of this habitat is estimated to be 37.0 ha.

### 1.2.15 Subtidal mud

Subtidal mud is comprised of very fine sediments which accumulate in sheltered and low energy environments. As a result, subtidal mud is often found in deeper waters where the tidal currents are weaker and are insufficient to mobilise and remove fine mud and silt sediments.

Subtidal mud can be a highly productive environment, supporting a diverse community of burrowing bivalves, including the white furrow shell, the Baltic tellin and the striped venus clam. The sea potato, lugworms, polychaete worms and the economically important Norway lobster also burrow within the muddy sediment. The slender sea-pen is also found within this habitat. The surface of subtidal mud is also used by the flatfish plaice and dab for camouflage and hunting. However, the particular community which subtidal mud supports depends on the softness and cohesiveness of the local sediment.

A large area of subtidal mud is located in the northern offshore area of the MCZ, ranging offshore from the Amble coast down to Druridge Bay. Another area of subtidal mud can be found at the southern end of the MCZ near St Mary's Island. Subtidal mud occupies 29% of the MCZ, the confidence in its extent is medium-high (Fitzsimmons et al., 2015).

The extent of this habitat is estimated to be 4643.1 ha.

### 1.2.16 Subtidal sand

Subtidal sand is one of the most dominant features across the site, extending out to sea from Northumberland's wide sandy bays. Subtidal sand is highly mobile and is shaped by the waves, currents and tides, forming underwater sandwaves and ripples.

Subtidal sand supports a wide diversity of species, especially further offshore where the stability of the seabed is greater (Amec, 2011). A rich infaunal community includes burrowing polychaete and oligochaete worms, such as bristle worms and catworms. Nematodes and bivalves are common, such as the razor clam, Baltic tellin and the striped venus clam. Hermit crabs, edible crabs, brittlestars and common starfish live on the surface of the sand, whilst flatfish, such as plaice and dab reside and hunt over subtidal sand.

Large areas of subtidal sand can be found extending offshore from the site's sandy beaches. Areas of subtidal sand are found offshore from Alnmouth Bay, Druridge Bay, Cambois, Blyth South Beach and Lynemouth (Environment Agency (EA) and Cefas, 2014) (Fitzsimmons et al., 2015) (EMODnet, 2016).

The extent of this habitat is estimated to be 6422.9 ha.

## 1.3 Scope of this assessment - fishing activities assessed

The geographic scope of the assessment covers the whole site, and therefore includes all 16 designated features. As the whole site falls within the Northumberland Inshore Fisheries and Conservation District

(Figure 2), the assessment and management of fishing activity will be carried out by Northumberland Inshore Fisheries and Conservation Authority (NIFCA).

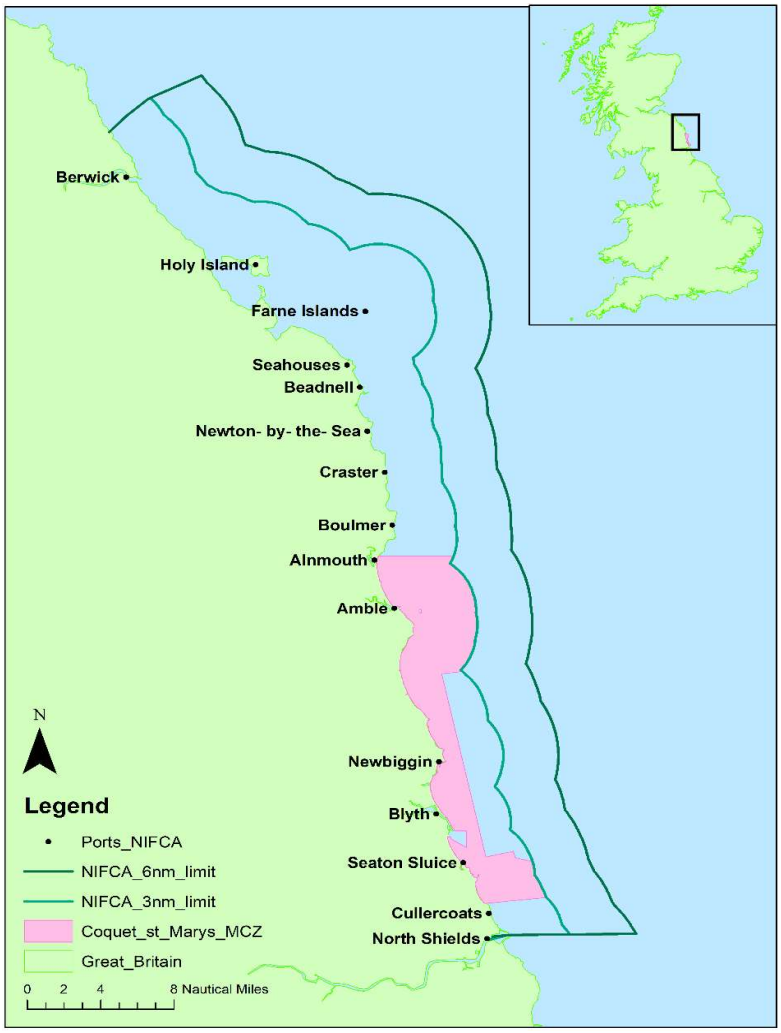


**Figure 2**. Location of Coquet to St Mary's MCZ in relation to the NIFCA District

All fishing activity/feature interactions at this site identified as 'red', 'amber' and 'green' in the Matrix of fisheries gear types and European marine site protected features[2] (hereafter 'the Matrix') were considered for inclusion in this assessment. Fishing activity-feature interactions are also assessed if there are in-combination effects with other activities. All non-occurring interactions ('blue' interactions have been screened out at a previous stage.

Table 4 shows the fishing activities with amber interactions assessed at this site. The 'Matrix gear type' column shows the categories used in the Matrix. These are matched to the 'aggregated method' categories used in Natural England conservation advice packages.

**Table 4:** Fishing activities with amber interactions to be included for assessment if they take place:

| Features | Matrix Gear Type | Natural England Aggregated Method |
|---|---|---|
| High energy infralittoral rock | Gill nets<br>Trammel nets<br>Entangling nets | Static – fixed nets |

[2] www.gov.uk/government/publications/fisheries-in-european-marine-sites-matrix

| | | |
|---|---|---|
| High energy intertidal rock | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Intertidal coarse sediment | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Intertidal mixed sediments | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Intertidal mud | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Intertidal sand and muddy sand | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Intertidal under boulder communities | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Low energy intertidal rock | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Moderate energy circalittoral rock | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Moderate energy circalittoral rock | Gill nets<br>Trammel nets<br>Entangling nets | Static – fixed nets |
| Moderate energy infralittoral rock | Gill nets<br>Trammel nets<br>Entangling nets | Static – fixed nets |
| Moderate energy intertidal rock | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Peat and clay exposures | Unknown | N/A |
| Subtidal mixed sediments | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |
| Subtidal mud | Gill nets<br>Trammels<br>Entangling | Static – fixed nets |

Commercial and recreational sea fishing have the potential to vary in nature and intensity over time. This assessment considers a particular range of recent and likely future activity based on activity levels and type as identified in section 1.4.3 Fishing gear types used.

To ensure the achievement of the conservation objectives of the site is not hindered should future activity occur outside of this range, activity will be monitored at this site, and this assessment will be reviewed should certain limits be triggered, please see section 7. Review of this assessment.

## 1.4 Activity description: All occurring activities

### 1.4.1 Fisheries Access/existing management

UK vessels operate throughout this site. However, as the MCZ is an inshore MCZ (within 0-3nm), no non-UK vessels operate within the boundary of the site.

There are various Northumberland IFCA byelaws[3] that pertain to Coquet to St Mary's MCZ. The byelaws below are therefore relevant to this assessment:

TRAWLING

- Restricted assess: a permit is required to fish using a trawl within the NIFCA district.
- Vessel size restrictions: no vessels over 12m in length can fish in the inner area (0-3nm from shore), no vessel over 18.3m can fish in the outer area (3-6nm).
- Gear restriction: only a single trawl fitted with a single cod end and one pair of otter boards is permitted.
- This byelaw prohibits the use of bottom towed fishing gear within the Coquet to St Mary's MCZ except using specified gear in accordance with an exemption from the Authority.

DREDGING

- A person must not use a dredge for the exploitation of sea fisheries resources. within the Northumberland IFCA district and therefore the whole MCZ.
- A relevant fishing vessel transiting through the District must have all dredges onboard, lashed and stowed.

CRUSTACEA CONSERVATION

- Prohibits landing of v-notched or mutilated lobster, and soft or berried (egg bearing) edible crab and lobster, and detached parts of velvet crab, edible crab and lobster.

MINIMUM SIZES BYELAW

- This byelaw prohibits the removal from the fishery, retention on board, transhipping, landing, transporting, storing, selling, displaying or offering for sale specified marine organisms below specified sizes.

CRUSTACEA AND MOLLUSC PERMITTING AND POT LIMITATION

- Restricted assess: a permit is required to fish within the Northumberland IFCA district and therefore the whole MCZ.
- Pot limitation restricts the number of pots fished per permitted vessel to 800.
- Restricts the number of specified species that can be retained per day dependent on permit type.

MARKING OF FISHING GEAR AND KEEP BOXES

- All static fishing gear should be marked with a marker buoy or dahn that is clearly visible on the surface of the water and marked with the identification of the boat or contact details of the owner.

FIXED ENGINES

[3] https://www.nifca.gov.uk/byelaws/

- Spatial and seasonal closures for static nets.

### 1.4.2 Evidence Sources

To determine the levels of fishing activity, the following evidence sources and analyses were used:

- VMS data
- I-VMS data
- NIFCA patrol sightings, recording GPS location of vessel and potting activity.
- NIFCA shore patrol sightings of intertidal activities within two hours of low tide
- Expert opinion from inshore fisheries and conservation officers (IFCOs).
- Information from the fishing industry and stakeholders.

Table 5 summarises the description, strengths and limitations of some of the evidence sources used.

**Table 5:** Summary of generic confidence associated with fishing activity evidence (evidence used in this assessment highlighted in yellow)

| Evidence source | Confidence | Description, strengths and limitation |
|---|---|---|
| VMS data | Low | VMS data were requested from the MMO. Vessels over 12m must be fitted with VMS. VMS sends routine 'pings' to the control centre every 2 hours to track a vessel's course and speed. NIFCA has worked with the MMO to get information for every vessel operating in the district. The data has been filtered for speed (only boats travelling under 4 knots analysed). From this, officers have inferred that no mobile gear fishing activity can be detected in or around the MCZ. However, this can only be **inferred** from these data (see limitations below). The VMS data from the MMO is not fit for purpose in this case. Inferences can be made from the data available, however the infrequency of the tracking 'pings' (every 2 hours per vessel) and the lack of detail about the vessel's activity makes it unsuitable for detecting fishing activity with confidence. Further, information is only available for vessel over 12m, any activity within the MCZ will be carried out by vessels under 12 m (NIFCA Byelaw 1). Data analysed was from 2017 and 2018. |
| I-VMS | Low - Moderate | I-VMS devices monitor inshore fishing activity by under-12 metre vessels and are more accurate than VMS devices. However, I-VMS data are not available for all <12m vessels who have indicated that they fish within Coquet to St Mary's MCZ. I-VMS tracks vessel activity, location and speed every three minutes. Inferences can be made to differentiate fishing activity as either being paused or steaming to identify speeds and distances at which vessels are likely to be fishing. In this instance trawling was determined to take place if I-VMS points were between 140-310m from each other, and vessel speeds were between 1.5-4.3 knots (nautical miles per hour).<br><br>NIFCA have moderate confidence in the data for vessels fitted with I-VMS that report trawling in the MCZ via their permit returns. However, gaps lie where vessels do not have I-VMS working, and have not stated they are trawling in the MCZ.<br><br>One full year of data was analysed from March 2022 to February 2023 to identify vessels potentially fishing within the MCZ. |
| NIFCA patrol sightings<br>- At sea<br>- On shore | Moderate | At sea<br>NIFCA officers conduct routine at sea patrols throughout the district. Officers record all vessels sighted and their activity (fishing or steaming). Due to the nature of how this is recorded sightings data is estimated to be accurate to within 100m. NIFCA sightings data has a low sampling effort as it is limited by the number of patrols and the proximity of the patrol vessel to fishing activity<br><br>On shore |

| | | |
|---|---|---|
| | | NIFCA officers conduct routine shore patrols throughout the district. Officers record all sightings of individuals fishing in intertidal areas when two hours either side of low tide. Activities include periwinkle gathering, lobster potting, bait digging and other forms of collection. The location and timing of these is accurate and is now submitted via an app contemporaneously, increasing accuracy from the beginning of 2021. To calculate the proportion of patrols where activities are sighted, sightings of 'No Activity' are also recorded which are likely less accurate or well-represented, though data is checked against patrol locations to account for this. This data is impacted by variables such as patrols targeting commercial fishing locations leading to some areas being underrepresented. |
| Expert judgement (IFCOs) | Moderate | The NIFCA district is a relatively small area (~1400km$^2$) and a number of NIFCA officers have been in post for many years. Coquet to St Mary's MCZ is in the south of the district located in close proximity to the NIFCA patrol vessels and the NIFCA office. This results in a higher patrol effort in the south than the north if the district. Broad scale knowledge of fishing activity for this area is therefore very good. |
| Information from fishing industry and stakeholders | Low - Moderate | NIFCA maintain a good working relationship with the local fishing industry and through which information on fishing activity, extent and intensity can be shared.<br><br>NIFCA also have the capacity to run consultations in order to get the views of stakeholders on different topics. For example, in 2020 NIFCA sent out a Hand Gathering Call for Information, an open-ended consultation to summarise the thoughts and opinions of stakeholders in relation to bait collection and hand gathering activities throughout the district.<br><br>From this, NIFCA are able to identify that activity occurs and, with a reasonable degree of confidence, where it occurs but cannot quantify effort due to a lack of available data such as VMS, log books etc. |

### 1.4.3 Fishing gear types used

#### 1.4.3.4 Static nets (Gill net, Entangling net and trammel net)

There are three gear types of static net fishing that target sea fish: Gill, Trammel and Entangling. All three are set vertically within the column water and can be set anywhere from the surface, through the water column to the seabed to create a barrier. They hang from a top line of floats, known as the headline and are held in place by a weighted bottom line known as the footrope, made of a type of nylon filament twine. Mesh sizes for all the nets will determine what species are targeted.

**Gill nets** consist of a single layer of netting targeting pelagic, demersal or benthic species which can either be fixed or allowed to drift. They catch fish by enmeshing or entangling them usually around their head or gill covers. These nets are generally set up to 2 kilometres wide (Grieve *et al,* 2014).

**Entangling nets** tend to have a larger mesh size are set with more slack to entangle the whole fish within the netting. Entangling nets are set on the seabed to capture shellfish and large whitefish such as monk, ray and turbot (also known as ray nets).

**Trammel nets** consist of two to three parallel layers of netting with different mesh sizes which can be used to catch a much wider variety of species.

# Chapter 2 Part A Assessment

## 2.1 Introduction

Part A of this assessment was carried out in a manner that is consistent with the 'capable of affecting (other than insignificantly)' test required by section 126(1)(b) of the Marine and Coastal Access Act 2009[4].

For each fishing activity, a series of questions were asked:

1. Does the activity take place, or is it likely to take place in the future?
2. What are the potential pressures exerted by the activity on the feature?
3. Are the pressures capable of affecting (other than insignificantly) the protected features of the MCZ?

For each activity assessed in Part A, there were two possible outcomes for each identified pressure-feature interaction:

1. The pressure-feature interactions were not included for assessment in Part B if:
    a. the feature is not exposed to the pressure, and is not likely to be in the future; or
    b. the pressures are not capable of affecting (other than insignificantly) the protected features of the MCZ.

2. The pressure-feature interactions were included for assessment in Part B if:
    a. the feature is exposed to the pressure, or is likely to be in the future; and
    b. the pressure is capable of affecting (other than insignificantly) the feature; or
    c. it is not possible to determine whether the pressure is capable of affecting (other than insignificantly) the feature.

Consideration of exposure to or effect of a pressure on a protected feature of the MCZ includes consideration of exposure to or effect of that pressure on any ecological or geomorphological process on which the conservation of the protected feature is wholly or in part dependent.

Table 6 shows the Natural England conservation advice package used to inform this assessment.

**Table 6:** Advice packages used for assessment

| Feature | Package | Link |
|---|---|---|
| High energy infralittoral rock<br>High energy intertidal rock<br>Intertidal coarse sediment<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand<br>Intertidal under boulder communities<br>Low energy intertidal rock<br>Moderate energy circalittoral rock<br>Moderate energy infralittoral rock<br>Moderate energy intertidal rock<br>Peat and clay exposures<br>Subtidal coarse sediment<br>Subtidal mixed sediments<br>Subtidal mud<br>Subtidal sand | Natural England Conservation Advice for Marine Protected Areas Coquet to St Mary's MCZ | https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ0030&SiteName=coquet&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= |

[4] www.legislation.gov.uk/ukpga/2009/23/contents

## 2.2 Activities not taking place

Table 7 shows activities which are excluded from further assessment as they do not take place and are not likely to take place in the future.

**Table 7:** Activities not taking place and not likely to take place in the future

| Feature | Gear type | Justification |
|---|---|---|
| High energy infralittoral rock<br>High energy intertidal rock<br>Intertidal coarse sediment<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand<br>Intertidal under boulder communities<br>Low energy intertidal rock<br>Moderate energy circalittoral rock<br>Moderate energy infralittoral rock<br>Moderate energy intertidal rock<br>Peat and clay exposures<br>Subtidal coarse sediment<br>Subtidal mixed sediments<br>Subtidal mud<br>Subtidal sand | Towed demersal:<br>- Beam trawl (whitefish, shrimp, pulse/wing)<br>- Multi-rig trawls*<br>- Pair trawl*<br>- Anchor seine*<br>- Scottish seine/fly*<br>Towed pelagic<br>- Mid water trawl (single/pair)*<br>- Industrial trawls*<br>Dredges:<br>- Mussels/clams/oysters<br>- Pump scoop (cockles/clams)<br>- Suction (cockles)<br>- Tractor<br>Intertidal handwork<br>- Access from vessel<br>Static gear – pots/traps<br>- Cuttle pots<br>- Fish traps<br>Nets<br>- Drift nets (pelagic/demersal)<br>Lines<br>- Longlines (pelagic/demersal)<br>- Handlines<br>- Jigging/trolling<br>Seine nets<br>- Purse seine*<br>- Beach seines/ring nets*<br>- Shrimp push nets<br>- Fyke and stakenets<br>Miscellaneous<br>- Commercial diving<br>- Bait dragging<br>- Crab tiling | No interaction between activity and features within the Coquet to St Mary's MCZ because:<br>- Activity does not occur<br>- Gear does not interact with feature |
| High energy infralittoral rock<br>High energy intertidal rock<br>Intertidal coarse sediment<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand<br>Intertidal under boulder communities<br>Low energy intertidal rock | Towed demersal:<br>- Heavy otter trawl<br>- Light otter trawl<br>Dredges:<br>- Scallops | No interaction between activity and features within the Coquet to St Mary's MCZ because:<br>- Gear does not interact with feature. |

| | | |
|---|---|---|
| Moderate energy infralittoral rock<br>Moderate energy intertidal rock | | |
| Intertidal coarse sediment<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand<br>Moderate energy circalittoral rock<br>Subtidal coarse sediment<br>Subtidal mixed sediments<br>Subtidal mud<br>Subtidal sand | Intertidal handwork<br>- Access from land | No interaction between activity and features within the Coquet to St Mary's MCZ because:<br>- Gear does not interact with feature. |
| Intertidal coarse sediment<br>Intertidal mixed sediments<br>Intertidal mud<br>Intertidal sand and muddy sand | Static gear – Pots / Traps<br>- Pots/creels (crustacea/gastropods) | No interaction between activity and features within the Coquet to St Mary's MCZ because:<br>- Gear does not interact with feature. |
| High energy infralittoral rock<br>High energy intertidal rock<br>Intertidal under boulder communities<br>Low energy intertidal rock<br>Moderate energy circalittoral rock<br>Moderate energy infralittoral rock<br>Moderate energy intertidal rock<br>Peat and clay exposures<br>Subtidal coarse sediment<br>Subtidal mixed sediments<br>Subtidal mud<br>Subtidal sand | Digging with forks | No interaction between activity and features within the Coquet to St Mary's MCZ because:<br>- Gear does not interact with feature. |
| Peat and clay exposures (Intertidal). | Pots/creels (crustacea/gastropods) | No interaction between features and activity within Coquet to St Mary's MCZ (NIFCA sightings data) for intertidal peat and clay. Subtidal peat and clay has not been considered in this assessment due to insufficient evidence. |

* Regulated activity and is prohibited within the NIFCA district under NIFCA Byelaw 1: Trawling.

** Regulated activity and is prohibited within the NIFCA district under NIFCA Byelaw 2: Dredging.

### 2.3 Potential pressures exerted by the activities on the feature

For the remaining activities, potential pressures were identified using the Natural England conservation advice identified in table 6 and associated advice on operations tables. All pressures identified other than those categorised as 'not sensitive' or 'not relevant' were included.

Tables 8a-f show the potential pressures identified for each feature and if each pressure is capable of affecting (other than insignificantly) the site's feature(s). The sensitivity assessments and risk profiling of pressures from the advice on operations section of the Natural England conservation advice package were used to do this.

Where a pressure from a particular gear is identified as not being capable of affecting (other than insignificantly) (N), justification is provided. Features with similar sensitivities have been considered together. Where a pressure from a particular gear is identified as being capable of affecting a feature (Y), it is taken to the next stage of assessment. Justification is given the first time a conclusion is reached about a potential pressure, after which only the decision is noted to avoid repetition.

**Table 8a:** Potential pressures for gears on High energy infralittoral rock (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Deoxygenation | N |
| | Introduction of light | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Organic enrichment | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

**Table 8b:** Potential pressures for gears on Moderate Energy Infralittoral Rock (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Deoxygenation | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Organic enrichment | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

**Table 8c:** Potential pressures for gears on Moderate Energy Circalittoral Rock (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Barrier to species movement | N |
| | Deoxygenation | N |
| | Introduction of light | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Organic enrichment | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

**Table 8d:** Potential pressures for gears on Subtidal Coarse Sediment and Subtidal Mixed Sediment (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|

| | | |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Deoxygenation | N |
| | Introduction of light | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

**Table 8e:** Potential pressures for gears on Subtidal Mud (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Barrier to species movement | N |
| | Deoxygenation | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Organic enrichment | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

**Table 8f:** Potential pressures for gears on Subtidal Sand (pressures capable of effecting other than insignificantly are in bold).

| Aggregated method | Potential pressures | Capable of affecting (other than insignificantly)? |
|---|---|---|
| Nets:<br>- Gill<br>- Trammel<br>- Entangling | **Abrasion/disturbance of the substrate on the surface of the seabed** | **Y** |
| | **Removal of non-target species** | **Y** |
| | **Removal of target species** | **Y** |
| | Deoxygenation | N |
| | Introduction of light | N |
| | Introduction or spread of invasive non-indigenous species (INIS) | N |
| | Organic enrichment | N |
| | Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion | N |

*Removal of target species pressure is not listed on Natural England DSS as a pressure for these gear feature interactions. NIFCA have included this pressure as it may impact the conservation objectives of the feature and so should be assessed.

To ensure the effects of fishing activities in-combination with other activities (including other fishing activities) are fully assessed, the pressures from amber activities which are not capable of affecting (other than insignificantly) the site's feature(s) but which do interact with the feature(s) are included in the in-combination assessment (4. In-combination Assessment).

# Chapter 3 Part B Assessment

## 3.1 Fixed nets x features

Part B of this assessment was carried out in a manner that is consistent with the 'significant risk' test required by section 126(2) of the Marine and Coastal Access Act 2009.

Table 9 show the fishing activities and pressures included for assessment in part B.

This chapter is the assessment for the interaction between fixed nets (gill / trammel/ entangling), and seven subtidal features. These features include: subtidal sand; subtidal mud; subtidal mixed sediment; subtidal coarse sediment; high energy infralittoral rock; moderate energy infralittoral rock and high energy circalittoral rock.

**Table 9:** Fishing activities and pressures included for part B assessment for subtidal rock and sediment features

| Natural England Aggregated Method | Fishing gear type | Pressures |
|---|---|---|
| Static – fixed nets | Gill nets<br>Trammel nets<br>Entangling nets | Abrasion/disturbance of the substrate on the surface of the seabed<br>Removal of target species<br>Removal of non-target species |

The important targets for favourable condition were identified within Natural England's conservation advice supplementary advice tables. 'Important' in this context means only those targets relating to attributes that will most efficiently and directly help to define condition. These attributes should be clearly capable of identifying a change in condition.

The impacts of pressures on features were assessed against these targets to determine whether the activities causing the pressures are compatible with the site's conservation objectives.

**Table 10:** Relevant attributes and targets for identified pressures to subtidal soft sediment features (subtidal coarse sediment, subtidal mixed sediments, subtidal mud, and subtidal sand)

| Potential pressures | Advice on Operations | Considered in Part B assessment? | Relevant attributes (that could be impacted by identified pressures) | Target |
|---|---|---|---|---|
| Abrasion/disturbance if the substrate on the surface of the seabed | S | Y | Distribution: presence and spatial distribution of biological communities.<br>Structure: species composition of component communities<br>Structure: sediment composition and distribution | Maintain |
| Removal of non-target species | S | Y | Distribution: presence and spatial distribution of biological communities.<br>Structure and function: presence and abundance of key structural and influential species*<br>Structure: species composition of component communities | Maintain<br><br>*Maintain or recover or restore |

**Table 11:** Relevant attributes and targets for identified pressures to subtidal rock features (moderate energy infralittoral rock, moderate energy circalittoral rock and high energy infralittoral rock).

| Potential pressures | Advice on Operations | Considered in Part B assessment? | Relevant attributes (that could be impacted by identified pressures) | Target |
|---|---|---|---|---|
| Abrasion/disturbance if the substrate on the surface of the seabed | S | Y | Distribution: presence and spatial distribution of biological communities.<br>Structure: species composition of component communities<br>Structure: surface and structural complexity, and the stability of the reef structure. | Maintain |
| Removal of non-target species | S | Y | Distribution: presence and spatial distribution of biological communities.<br>Structure and function: presence and abundance of key structural and influential species*<br>Structure: species composition of component communities | Maintain<br><br>*Maintain or recover or restore |
| Removal of target species | S | Y | Distribution: presence and spatial distribution of biological communities.<br>Structure and function: presence and abundance of key structural and influential species*<br>Structure: species composition of component communities | Maintain<br><br>*Maintain or recover or restore |

## 3.2 Fishing gear types

Gill nets, tangle nets and trammel nets are all static fishing nets which are anchored on the seabed to catch demersal fish or shellfish. Each of the nets can vary in mesh size, depending on the species being targeted, and are commonly set in ‘fleets’ or ‘tiers’, nets joined end to end.

### 3.2.1Gill nets

Anchored gill nets are single layers of net set on the seabed, with floats on the headline to keep the net upright in the water, a weighted footrope, and anchors at each end (Figure 3). Gill nets are set depending on the target catch, with mesh size an effective way to select for species (Seafish, n.d.). Fishers in the NIFCA District are known to set T-nets or J-nets, a particular type of coastal gill net for migratory fish, with the Environment Agency responsible for managing and assessing this fishery. NIFCA are responsible for managing and assessing gill net fisheries for sea fish, which are primarily targeting cod. Gill nets are likely to be set on subtidal mixed sediment ground for cod, as well as very occasionally used as ‘wreck nets’, where they are set close to wrecks with slack in the net, similar to tangle nets.

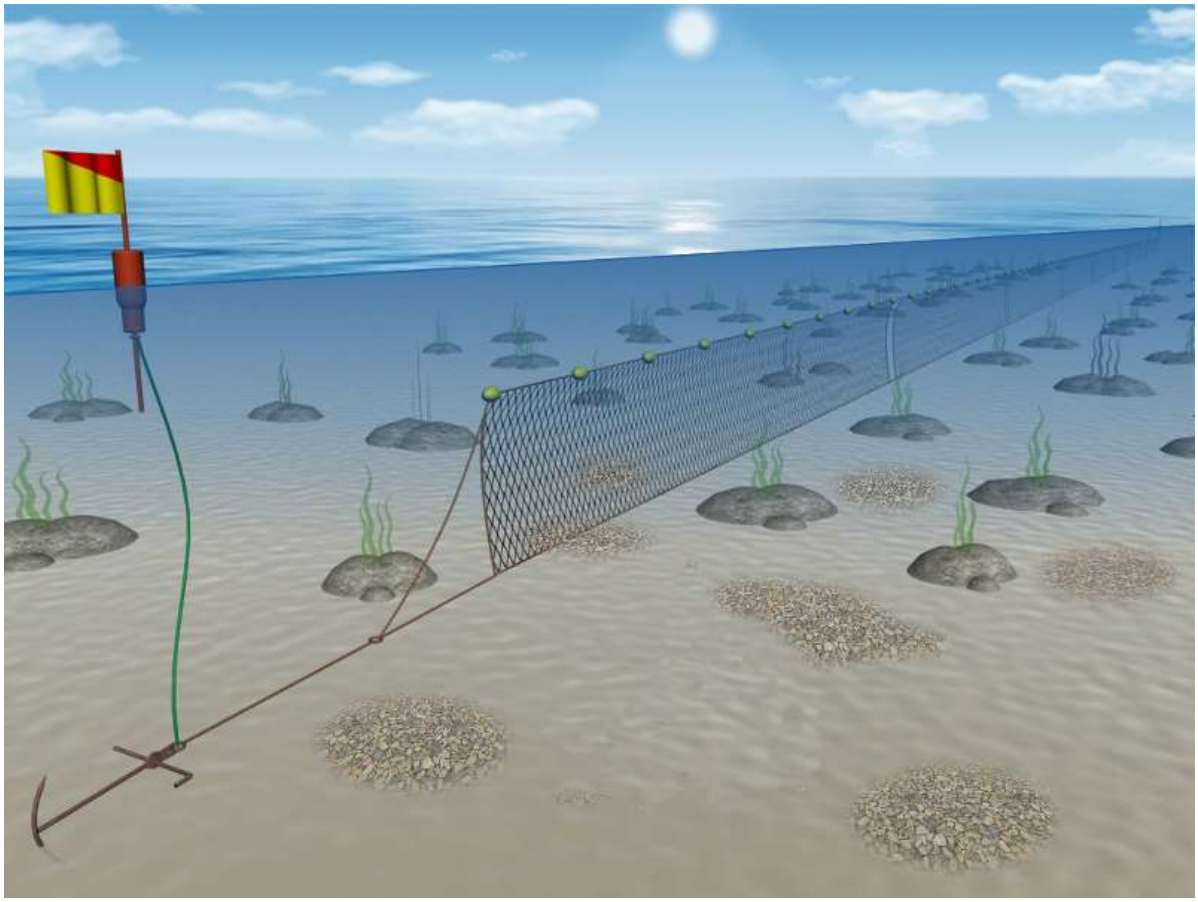

**Figure 3** Example of a gill net set up (Image from Seafish ©)

### 3.2.2 Tangle nets

Tangle nets are similar to gill nets, but set with more slack in the net both lengthways and depth wise. They have a larger mesh size and are less selective than standard gill nets. These nets are likely to be targeted at shellfish and flatfish.

### 3.2.3 Trammel nets

Trammel nets are again set on the seabed, but have three layers of mesh. The two outside layers of mesh are a larger size to let fish through, with the middle layer consisting of a smaller mesh to catch the target species. Species targeted by trammel nets in the NIFCA district will include white sea fish (such as cod) and potentially flatfish (turbot, brill and monkfish). Nets targeting flatfish will be set on subtidal sandy ground.

Of the six respondents to NIFCA's 'Call for Information' in 2022 regarding netting management, four reported commercially using nets in the District. This will be alongside their main method of fishing, with three of these fishers reporting that they pot commercially and the fourth reporting that they trawl. All fishers reported using a mixture of fixed net types.

## 3.3 Fishing activity levels in Coquet to St Mary's MCZ

Levels of static netting activity within the District have declined considerably in recent years and are currently considered by NIFCA to be very low. This decline in netting has been attributed by local fishers to the introduction of TACs and quotas in 1983, cessation of dumping sewage sludge off the Tyne and Blyth (which cod fed from) and grey seal predation of fixed nets (per comms. with NIFCA, 2023).

Three types of evidence have been used to assess current levels of fixed netting activity in the District:

- Knowledge from NIFCA Officers regarding netting (High data confidence)
- Data from the 2022 'Call for information' on netting management (High data confidence)
- Netting data from NIFCA shellfish permit returns (Moderate data confidence – as not all netters have shellfish permits)
- Sightings data from NIFCA patrol vessels (High data confidence)

NIFCA is currently in the process (November 2023) of updating the Fixed Engines Byelaw, which sets conditions for fixed nets in the District. Proposals for the update include a requirement to apply for a permit to set nets in the District, with a condition of this to submit monthly permit returns and report any bird bycatch. Looking forward NIFCA should therefore have more accurate information on fixed netting in the District.

### 3.2.4 Knowledge from NIFCA Officers regarding netting over the past 5 years to November 2023

Netting in the District is considered to occur at a very low-level for white sea fish by NIFCA Officers. The lack of netting is attributed to both declines in white fish stocks and grey seal predation (particularly around the Farne Islands) from fixed nets. Fishing for white fish is mainly historic, with no regular fishery.

- One vessel in the south of the District (outside of the MCZ) nets for cod and turbot, alongside their main fishing activity.
- One Amble boat very occasionally gill nets, mentioned twice in recent years to NIFCA, not much return from this netting.
- From the north side of St Mary's Island into Hartley Bay there have been attempts to target cod with gills nets by approximately five fishers over the last five years. This has not resulted in a regular fishery.
- One vessel has targeted the south end of Whitley Bay in winter, looking for cod.

Recreational netting has been mentioned as a possibility by Wansbeck boat club, but never seen by NIFCA Officers.

NIFCA Officers have also seized a number of illegal gill nets in the District over the last 5 years, including in the MCZ. Nets have been seized from both the north end of Newbiggin near Lynemouth, and the south end, also from Cambois beach. These nets are thought to have been set primarily for salmon. There have also been suggestions nets have been set for bass by one boat, very sporadically, at the north end of Druridge Bay. NIFCA have never found evidence of nets here.

### 3.2.5 NIFCA 2022 'Call for information' on netting management

During NIFCA's call for information four out of six respondents reported using nets in the NIFCA District, alongside their main method of fishing. Fishers provided information on the nets they use in the District, with all four reporting a mixture of gill, trammel and tangle nets. This data is not specific to the MCZ and applies to the whole District. Species targeted were: cod; turbot; brill; monkfish; and shellfish and fishers reported fishing in water depths from 0-30+m. Fleet lengths ranged from 500m-1,000m and number of fleets ranged from 1-10. Netting activity is reported over summer and winter, with fishers likely targeting cod over the winter and turbot and shellfish over the summer months.

### 3.2.6 Data from shellfish permit returns

Whilst netting does not require a shellfish permit, the majority of vessels fishing in the NIFCA district do have commercial shellfish permits, with an option to record any netting activity. The number of vessels reporting using nets on shellfish permit returns is therefore an indication of the number of vessels netting in the District, although it cannot be considered complete as not all boats have shellfish permits. Between 2015 and 2022 the number of vessels has ranged from 4-9 (Figure 4) in the District. One of these vessels

is targeting shellfish with tangle nets, as well as white fish with gill nets. This vessel works in Sector 7 (map in Annex), the area from Longstone to the Scottish border, outside of this MCZ.

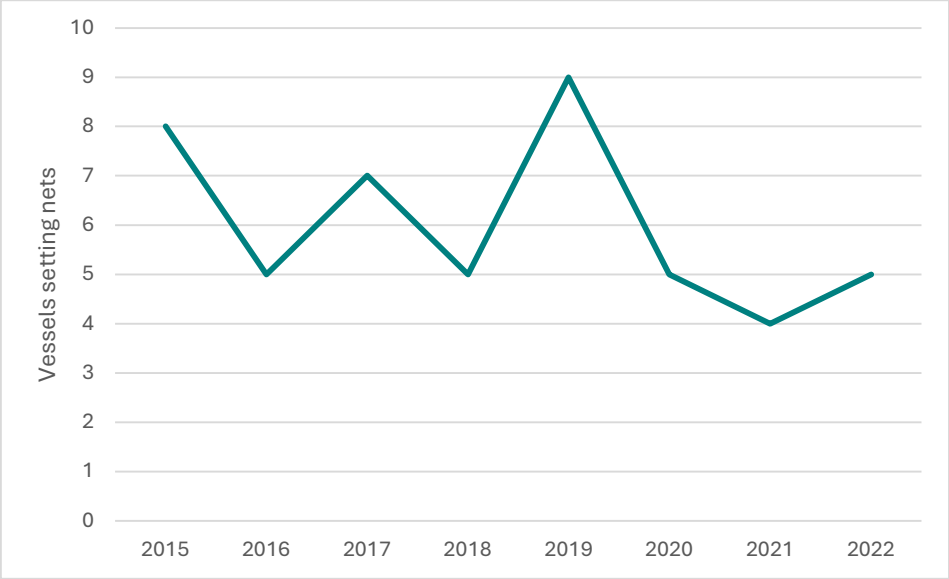


**Figure 4** Number of vessels reported setting nets in the NIFCA District from 2015-22 (NIFCA shellfish permit returns). Not all vessels deploying nets will have a shellfish permit

In 2022, three vessels reported setting nets in Sectors 1-4 (within the area of the MCZ), in 2021 two vessels reported setting nets and in 2020 four vessels reported setting nets in this area (Table 12).

**Table 12** Vessels reporting setting nets in Sectors 1-4 on NIFCA shellfish permit returns (2020-22)

| Vessel | 2020 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| A | | | | | | | | | | | | |
| B | | | | | | | | | | | | |
| C | | | | | | | | | | | | |
| D | | | | | | | | | | | | |
| E | | | | | | | | | | | | |
| F | | | | | | | | | | | | |
| G | | | | | | | | | | | | |
| | 2021 | | | | | | | | | | | |
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| A | | | | | | | | | | | | |
| B | | | | | | | | | | | | |
| C | | | | | | | | | | | | |
| D | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | | | | | | | | | | | | |
| F | | | | | | | | | | | | |
| G | | | | | | | | | | | | |
| | 2022 | | | | | | | | | | | |
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| A | | | | | | | | | | | | |
| B | | | | | | | | | | | | |
| C | | | | | | | | | | | | |
| D | | | | | | | | | | | | |
| E | | | | | | | | | | | | |
| F | | | | | | | | | | | | |
| G | | | | | | | | | | | | |

### 3.2.7 Sightings data from NIFCA patrol vessels

Officers on NIFCA patrol at sea record all fishing vessels encountered and the fishing activity they are engaged in. This sightings data for the District 2015-2022 is shown in Figure 5. Almost all of these sightings are netting for migratory fish (managed by the Environment agency), with one record of gill netting in 2015 and two records of trammel netting in spring 2021. The trammel netting sightings were off the coast at Cullercoats, with one outside the MCZ and one on the MCZ boundary.

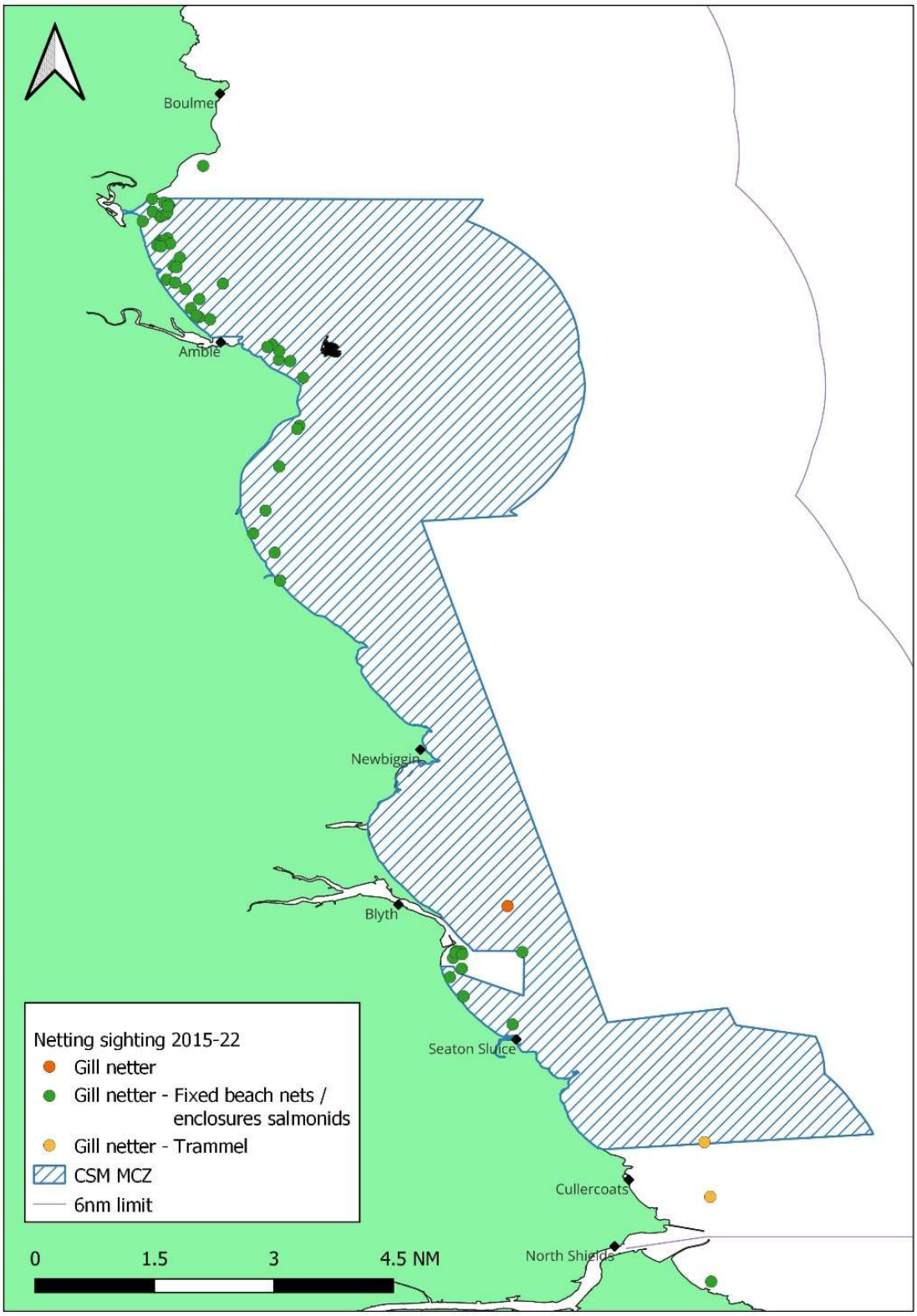


**Figure 5** Sightings of vessels netting from NIFCA patrol vessels 2015-2022. One sighting has been corrected for position

## 3.4 Fisheries Management Measures

There are a number of byelaws in place in the NIFCA District which apply to the netting fishery. Byelaws can be viewed in full on the NIFCA website (Byelaws - NIFCA).

### 3.4.1 Minimum Sizes Byelaw

This byelaw states the minimum conservation reference sizes for fish, molluscs and crustaceans in the NIFCA district, including 14 species of finfish. The byelaw makes it illegal to remove, retain, land or sell species below the stated conservation sizes.

### 3.4.2 Fixed Engines Byelaw (An update to this byelaw is in progress)

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.

(c) In specified conservation areas

A person must not use a fixed engine to fish for or take sea fish at any time during the period 1st November to 25th March inclusive in the restricted areas where the headline of the fixed engine is less than 4 metres below the surface of the water at any state of the tide.

*These depth restrictions and the conservation areas are specified to protect migratory salmon and sea trout.*

### 3.4.3 Marking of Fishing Gear and Keep Boxes

This byelaw puts in place the requirement to mark with buoys or dahns fishing gear and keep boxes.

### 3.4.4 Seagrass Protection Byelaw within the English section of the Berwickshire and North Northumberland SAC

This byelaw prohibits fishing activity where seagrass is situated in the Berwickshire and North Northumberland SAC.

## 3.5 [Pressure 1] Abrasion/disturbance of seabed surface substrates

Abrasion/disturbance to the sediment can be caused by static nets themselves, footropes on the net and anchors (Natural England, Updated May 2023). Polet et al. (2010) suggest most benthic effects happen during retrieval, when the nets and leadlines can snag benthic species, with anchors also capable of damaging benthic species and substrates if they are dragged.

In the NIFCA district nets are not set on rocky ground, as this would cause damage to the nets themselves. Likewise nets are not set on subtidal mud. NIFCA can therefore conclude with high confidence that the conservation objectives of subtidal rocky features and subtidal mud will not be impacted by abrasion/disturbance from fixed netting.

Nets in the NIFCA District will be set on subtidal mixed sediments, subtidal coarse sediment and subtidal sand. Fishers in the NIFCA District are unlikely to set nets in bad weather, as there is a high financial cost to losing nets. Setting nets in good weather reduces the likelihood of the nets themselves and anchors dragging across the substrate, causing damage to these habitats or species associated with them. Direct effects of fishing gear have been found to be strongly habitat specific, sediment with larger grain is

generally more resilient to external pressures with subtidal mud the most sensitive and coarse sediment and sand less sensitive (Kaiser, 2006).

Due to the very low level of fixed netting in the district and on the MCZ subtidal sediment habitats NIFCA does not currently consider that fixed netting poses a risk to the Conservation Objectives of the subtidal sediment features through abrasion/disturbance (high confidence).

### 3.6 [Pressures 2] Removal of target species

Gill nets and trammel nets in the District are targeting white sea fish and flatfish. NIFCA are only aware of one vessel using tangle nets for crustaceans and this vessel works in Sector 7, outside of CSM MCZ.

All white finfish species being targeted (cod/pollack/saithe) as well as flatfish (turbot, brill) are highly mobile. Despite being highly mobile these fish could be considered component species of the habitats being assessed. The sustainability of their removal should be considered when taking a more site-level approach to MCZ assessments. Levels of netting in the District are very low and therefore very unlikely to have any significant impact on the stocks of these species. Stock assessments for north sea finfish can be found here (https://www.cefas.co.uk/data-and-publications/dois/international-ices-and-national-uk-fish-stock-and-shellfish-stock-data-from-2021-assessment-year/).

NIFCA therefore conclude with high confidence that the removal of target species by fixed netting activity does not pose a risk to the Conservation Objectives of CSM MCZ.

## 3.7 [Pressure 3] Removal of non-target species

### 3.7.1 Fish bycatch

Gill and trammel nets can both catch non-target fish species (bycatch), although most species of commercial value will be landed. NIFCA does not have data about the bycatch from net fisheries in the District, although when the Fixed Engines Byelaw is updated this should change, subject to decisions being made on the byelaw conditions.

NIFCA do not believe that there are significant bycatch issues with finfish from static netting which will affect the Conservation Objectives of the subtidal rocky features and subtidal mud due to a lack of activity and therefore feature interaction on this habitat. Due to the very low level of netting, NIFCA do not believe that there are significant bycatch issues on subtidal sediment habitats (subtidal mixed sediments, subtidal coarse sediment and sand) in the MCZ (high confidence). Looking forward data on netting bycatch will be improved when the Fixed Engines Byelaw update comes in, requiring permit returns data.

### 3.7.2 Effects on other species

There are bird and mammal species present in the MCZ which could be caught as bycatch in fixed nets. There are five SPAs for seabirds and shorebirds along the Northumberland coast: Farne Islands; Lindisfarne; Coquet; Northumbria Coast; and Northumberland Marine SPA). In these four breeding site SPAs and one foraging/loafing SPA netting activity has been assessed for its impact on the protected bird features in the following documents:

- Farne Islands SPA Appropriate Assessment 001 static nets
- Lindisfarne SPA Appropriate Assessment 001 static nets
- Coquet Island SPA Appropriate Assessment 001 gill nets
- Northumbria Coast Appropriate Assessment 001 static nets
- Northumberland Marine SPA dtLSE (024 gill nets, 025 trammel nets, 026 tangle nets)

These assessments have not found netting to have a significant impact on the protected seabird features. In addition, NIFCA have recently had feedback from a gill netter in the District, who reports very little bird interaction with his nets and no interaction with dolphins. Bird species that have occasionally been caught as bycatch include guillemots and cormorants. If new information comes to light about significant seabird bycatch then this will be re-assessed through the Monitoring and Control plan process.

The impact of netting on grey seals specifically has been assessed in BNNC SAC (BNNC SAC Appropriate Assessment 001 static nets) where grey seals are a feature. Netting is also assessed annually through the NIFCA Monitoring and Control plan. The Farne Islands population of grey seals is growing, with the National Trust estimating around 3,000 pups are born each year (2023). Grey seal interaction with nets is a primary reason levels of static netting are very low in the District, multiple fishers report to NIFCA that netting is not economically viable as catch is taken by the seals. One of the only fishers currently netting in the District is very keen to trial new seal deterrents on their nets, both to improve catch and prevent bycatch, and has made this known to the MMO, NIFCA and other organisations.

### 3.7.3 Ghost netting

Static nets can also be lost in bad weather and in these instances can continue to fish, known as ghost fishing. This can result in finfish, shellfish and marine mammals becoming entangled. A study by Kaiser and Bullimore (1996) over a 9-month period in Welsh waters repeatedly visited the same ‘lost’ gill and trammel nets with divers. Initially, the catch in both nets was mainly fish (whose weight caused collapse of the nets) but within a few days the main catch was scavenging crustaceans, with crustacean catch peaking approximately 43 days after deployment. When nets were removed from the water after 9 months they were very damaged, with the loose end rolled up and net clumped around the floats. The authors conclude that the catching potential of ghost nets will depend upon local fauna, habitat type and environmental

conditions. They also suggest that nets lost on rocky ground are likely to fish for longer as they can become snagged and held open on reef features, as opposed to potentially rolling up on smoother ground (Kaiser & Bullimore, 1996).

There have been nets of various types washed up on the coast occasionally. It is difficult to know the source of these and they may not necessarily be nets from local fishers. Since 2015 no lost net has been reported on shellfish permit returns, but 39m of lost net in 2015 and 240m in 2018 (after the 'Beast from the East' storm) have been reported to NIFCA. The 2018 net contained 10 dead guillemots and one Eider duck. Since this incident no significant net losses have been reported to NIFCA.

Due to the very low level of netting in the Northumberland District and CSM MCZ, NIFCA can conclude with high confidence that the removal of non-target species is unlikely to hinder the Conservation Objectives of the MCZ features. If there is any change to this, either a significant increase in netting levels, or an increase in reports of bycatch, then this will be re-assessed through the Monitoring and Control plans.

### 3.8 Knowledge gaps

There are a number of knowledge gaps about fixed netting, both generally and in respect to activity within the NIFCA district. For example, currently there is a paucity of studies (including FIED) about the abrasion effect of netting on subtidal sediment and rock features. Due to the fact that netting levels are so low in the NIFCA District, this will not change the outcome of this assessment. Regarding activity within the NIFCA District, whilst activity levels are well understood, they are not documented in the same way as potting levels. Going forward the updates to the Fixed Engine byelaw plans to introduce a permit system and permits return scheme for fishers in the District. This will give NIFCA much more detailed information about netting in the District including: species targeted; weights landed, and bycatch species. This information will improve confidence in future netting assessments.

## 3.9 Pressures conclusion

NIFCA conclude, with moderate-high confidence, that netting activity will not adversely impact the conservation objectives of the site, through the pressures listed above, at current levels of the activity.

**Table 13.** Summary of pressures assessment – October 2023

| Pressure | Interest feature | Favourable condition target | Activity | Compatible with conservation objectives? | Confidence |
|---|---|---|---|---|---|
| Abrasion and disturbance | Low, moderate and high energy intertidal rock<br><br>Moderate and high energy infralittoral rock, high energy circalittoral rock<br><br>Sublittoral coarse sediment, mixed sediments, mud and sand | Maintain the presence and spatial distribution of biological communities | Fixed nets | Y | High |
| | | Maintain the species composition of component communities | | Y | |
| | | Maintain the surface and structural complexity, and the stability of the reef structure | | Y | |
| | | Maintain the sediment composition and distribution | | Y | |
| Removal of target species | Low, moderate and high energy intertidal rock<br><br>Moderate and high energy infralittoral rock, high energy circalittoral rock<br><br>Sublittoral coarse sediment, mixed sediments, mud and sand | Maintain the presence and spatial distribution of biological communities. | Fixed nets | Y | High |
| | | Maintain the species composition of component communities. | | Y | |
| Removal of non-target species | Low, moderate and high energy intertidal rock<br><br>Moderate and high energy infralittoral rock, high energy circalittoral rock Sublittoral coarse sediment, mixed sediments, mud and sand | Maintain the presence and spatial distribution of biological communities. | Fixed nets | Y | High |
| | | Maintain the species composition of component communities. | | Y | |

## 3.10 Part B conclusion (fishing alone)

NIFCA concludes that fixed netting at current levels, assessed alone, will not pose a significant risk to the conservation objectives of Coquet to St Mary's MCZ (moderate-high confidence).

## 4. In-combination Assessment

Potential risks of in-combination effects have been considered in Table 14 listing other fisheries, current and possible plans and projects and other activities within the site.

In summary, fixed netting within Coquet to St Mary's MCZ is not deemed to have a likely significant effect on intertidal rock features, subtidal rock features or subtidal sediment features in combination with other plans/projects.

**Table 14.** In-combination assessment of netting with other plans and projects within and around Coquet to St Mary's MCZ, occurring on intertidal and subtidal habitats**.**

| Fishing Activity | | | |
|---|---|---|---|
| **Activity** | **Description** | **Potential Pressure** | **Assessment** |
| Bottom trawling on subtidal rock and subtidal sediment | An exemption is required to trawl within Coquet to St Mary's MCZ using specified gear from a vessel <12m in length. Specified gear' means a single trawl fitted with a single cod-end and one pair of otter boards rigged for fine ground fishing using either: (i) grass rope with lead rings; (ii) light single chain ground gear, with a chain link diameter of less than or equal to 10 millimetres; or (iii) rubber leg ground gear with rubber discs less than 70 millimetres in diameter. i.e. light otter gear which can only be used in soft sediment areas to prevent its use on rocky reefs. | In 2023 NIFCA issued 22 exemptions to permit holders, allowing them to trawl within the MCZ. However, this is a new 2021 byelaw and some people have applied for a permit but will be highly unlikely to trawl within the MCZ, the actual number of trawlers will therefore be much smaller.<br><br>In 2022 only four vessels (out of 22 with an exemption) reported trawling in the MCZ. There is only one known permit holder who trawls inshore in the sandy bays and this vessel did not report any activity in the MCZ in 2022. | Netters will not set their fishing gear where they know mobile gear to operate as there is a significant financial cost associated with losing fishing gear. In addition, fixed netting activity is very low.<br><br>NIFCA therefore does not consider that a significant interaction is likely to occur between these two activities, increasing pressure on the protected features of the MCZ (high confidence). |
| Potting on subtidal rock and at lower levels on intertidal rock and subtidal sediment | Potting for European lobster (**Homarus gammarus)** and brown crab (**Cancer pagurus)** is the principle 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 | 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 Sectors 1-4 (corresponding with CSM MCZ) was 754,95 in 2022, compared to 961,778 in 2021 and 909,762 in 2020.<br><br>Pots are limited to 800 per shellfish permit and the fishery is governed by multiple IFCA byelaws. In the NIFCA district recreational | Nets are not set on rocky ground, as this causes damage to them. This means there will be very little spatial interaction with potting, which primarily targets rocky areas. Fishers are obliged to mark their fishing gear, which helps prevent gear conflict. Fixed netting activity in the district is also very low.<br><br>NIFCA can say with high confidence that fixed netting activity 'in-combination' with potting |

| | | | |
|---|---|---|---|
| | *Nephrops* and brown crab. | 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 (so far) 268 recreational permits have been issued. | will not increase pressures on the protected features in CSM MCZ. |
| Hand work (access from land) in the intertidal | Hand work encompasses a wide variety of fishing methods, including; angling, periwinkle collection, hand gathering of mussels/bait, 'cleeking' and crab tiling. 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'. | The main pressure from shore-based activities is the removal of target species. Any interaction with potting will be from the additional removal of shellfish by 'cleeking' for lobsters at low tide. Shellfish can be considered component species of the intertidal and sub-tidal rocky habitats protected in the MCZ. | Fixed netting activity in the district is very low and due to its demersal nature will not spatially overlap with hand work from land.<br>NIFCA do not consider therefore that fixed netting, in combination with hand work from the land, will interact to increase the pressures on protected features in the MCZ. |
| 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 and since 2016 NIFCA officers have been collecting information on shore-based activity two hours either side of low tide. | Bait digging activity has a seasonal aspect and SPUE is highest from September-January.<br><br>Digging with forks could cause pressure to intertidal sediment habitats in the MCZ through penetration of the substrate and the removal of target species. | Fixed netting occurs at a very low level in the District and due to it's demersal nature will not spatially interact with bait digging, nor is it targeting the same species.<br><br>NIFCA do not consider therefore that fixed netting, in combination with bait digging from the land, will interact to increase the pressures on protected features in the MCZ. |
| **Projects and Plans** | | | |
| **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 | Sediments and invertebrate communities could be negatively impacted by mine water discharges. This could occur where mine water is not treated | Appropriate licence conditions/monitoring has been incorporated to mitigate any impacts. |

| | | | |
|---|---|---|---|
| | groundwater upwellings have occurred at Hauxley/Hadston as well as water pumped from a mine, discharged through an existing outfall at Hauxley. | before release into the marine environment. In the majority of cases significant mine water outflow is identified and treated by the Coal Authority. | |

**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 minimise and mitigate impacts to the protected features. NIFCA are consulted on all relevant marine applications, as are Natural England. |
| MLA/2023/00017 | Deployment of cetacean acoustic monitoring equipment | |
| MLA/2023/00094 | Bore hole back-filling | |
| MLA/2020/00458 | Construction of telecommunications pipeline | |
| MLA/2019/00109 | Maintenance of Newbiggin coastal wave buoy | |
| MLA/2019/00319 | Laying of sub-sea cable | |
| MLA/2012/00122 | Blyth windfarm (construction of 15 turbines). Work is set to continue after the installation of the initial five. | |

# Chapter 5 Conclusion

## 5.1 Assessment Result for Fixed nets

### 5.1.1 Fishing alone

NIFCA consider that fixed netting alone will not affect (other than insignificantly) the protected features of this site.

### 5.1.2 In-combination

NIFCA consider that fixed netting will not affect (other than insignificantly) the features of the site from the following in-combination factors:

- Pressures from netting combined with all other commercial fishing activity
- Pressures from netting combine with existing licenced activity within the site

## 5.2 Proposed Management

Option 1: Nothing is required.

Option 2: No additional management is foreseen. Introduce a monitoring and control plan within the site to document fishing effort.

Option 3: Reduce/limit pressures. Due to the potential impacts of bottom towed gears on the sub-tidal reef features, gear restriction management will be introduced to stop the interaction to ensure the achievement of the conservation objectives. A limit on the number of bottom towed vessels will be introduced to ensure fishing levels are maintained at current levels.

Option 4: Remove/avoid pressures (site closures). Prohibit bottom contacting towed gears in all areas of the site.

NIFCA has ascertained that fixed netting does not pose a significant risk to the site's Conservation Objectives, therefore Option 2 is the most appropriate management action. NIFCA have already written a netting Monitoring and Control plan which is updated and reviewed each year. In addition NIFCA are currently in the process of updating the Fixed Engines Byelaw (January 2024) and introducing a permit returns scheme for netting. This will improve knowledge about netting in the District.

## 5.3 Review of Assessment

To coordinate the collection and analysis of information regarding activity levels, and to ensure that any required management is implemented in a timely manner, a monitoring and control plan has been implemented.

NIFCA will review this assessment every year through the monitoring and control plans, into which these assessments feed, or more frequently if significant new information is received.

Such information could include:

- updated conservation advice;
- updated advice on the condition of the feature;
- significant change in activity levels.

## 5.4 Conclusion

NIFCA have, with regard to the best available evidence and through consultation with relevant advisors and the public, concluded that fixed netting activity in CSM MCZ is compatible with the site's objectives.

| | |
|---|---|
| **Has Natural England been formally consulted on this document (and do they agree)?** | **Catherine L. Scott** |

| | |
|---|---|
| **Date of document completion/signature:** | **29/01/24** |

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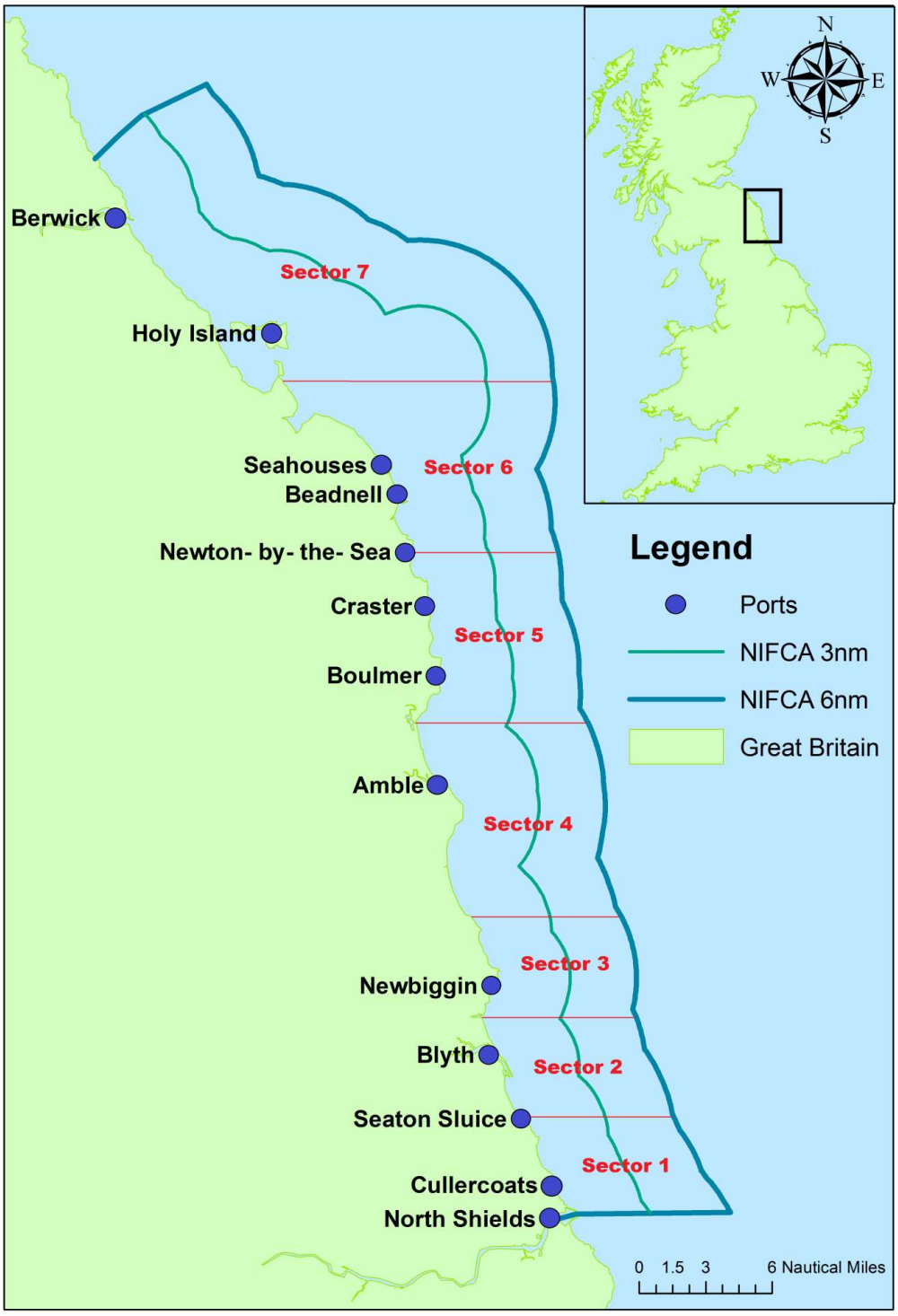
## Annex 1 – NIFCA District's Sectors



## Annex 2 – Habitat Map of Coquet to St Mary's MCZ