Marine Conservation Zone Assessment

Site name: Morte Platform MCZ

Protected feature(s):
Moderate energy circalittoral rock
High energy circalittoral rock
Subtidal coarse sediment

Fishing activities assessed at this site:
Stage 1 Assessment
Towed (demersal): Beam trawl (whitefish); Beam trawl (shrimp); Beam trawl (pulse/wing); Heavy otter trawl; Multi-rig trawls; Light otter trawl; Pair trawl; Anchor seine; Scottish/fly
Dredges (towed): Scallops

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

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Contents

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1. Introduction

This assessment has been undertaken by Devon & Severn Inshore Fisheries and Conservation Authority (D&S IFCA) in order to document and determine whether management measures are required to achieve the conservation objectives of marine conservation zones (MCZs). The IFCA's responsibilities in relation to management of MCZs are laid out in Sections 124 to 126, & 154 to 157 of the Marine and Coastal Access Act 2009.

2. MCZ site name(s), and location

The Morte Platform MCZ is an inshore site that covers an area of around 25 km^2. It is located in the Western Channel and Celtic Sea region and lies approximately 5 km off the coast of north Devon (Figure 1).
Morte Platform MCZ contains a mix of habitats that is rarely represented elsewhere in the UK, primarily due to the high tidal flows, high sediment content within the water column, and the mosaic of sediment and rock ridges within the site (Figure 2).

Subtidal sediment provides important nursery grounds for many ecologically and commercially important fish such as flatfish (e.g. sole and plaice), seabass and sand eel (an important prey species for seabirds such as puffin and guillemots) as well as supporting nationally rare Ross worm reefs. Circalittoral rock habitats support a range of marine life, including worms, sponges, soft and hard corals, bryozoans, small, filter feeding animals and mobile species in more sheltered areas.

Further information regarding the MCZ and its protected feature can be found in the Morte Platform MCZ Factsheet.

3. Feature(s) / habitat(s) of conservation importance (FOCI/HOCI) and conservation objectives

Table 1 - Protected features relevant to this assessment

Feature	General management approach
Moderate energy circalittoral rock	Recover to a favourable condition
High energy circalittoral rock	Recover to a favourable condition
Subtidal coarse sediment	Recover to a favourable condition

4. Gear/feature interaction in the MCZ categorised as 'red' risk and overview of management measure

The management measures for circalittoral rock are still under consideration in this assessment

5. Activities under consideration

- Towed (demersal): Beam trawl (whitefish); Beam trawl (shrimp); Beam trawl (pulse/wing); Heavy otter trawl; Multi-rig trawls; Light otter trawl; Pair trawl; Anchor seine; Scottish/fly
- Dredges (towed): Scallops

VMS and IVMS data were acquired for 2018, 2019, 2020 and the first five months of 2021 for all towed gear vessels at speeds of less than 6knots within the Morte Platform MCZ. Maps of the returned data can be seen in Annex 2: Fishing Activity Maps. Figure 3 shows the activity for vessel travelling at less than 6 knots in each year, and Figure 4 shows the same data but at speeds of 2-4 knots, which is the speed most towed gear activity takes place.

There was no activity in 2018, and for speeds of 2-4 knots there was only one vessel (Vessel 1) which passed through the site for one pass in 2021 (Figure 4). When looking at speeds of less than 6 knots (Figure 3) there were only two vessels (Vessel 1 and Vessel 2) which passed through the site in 2019 and one vessel (Vessel 1) in 2021.

Vessel 1 is an under 12m vessel which uses trawls and Vessel 2 is under 15m and uses trawls. Neither of these vessels fish with scallop dredges and no other vessels using scallop dredges entered the MCZ between 2018 and May 2021 or fished in the vicinity.

From the IVMS and VMS data, it appears that no towed (demersal) or dredging activity takes place within the site with only one passage at potential fishing speed occurring from 2018 to June 2021.

6. Is there a risk that activities are hindering the conservation objectives of the MCZ?

Yes,
Evidence:
To determine whether 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 was used (Natural England, 2021). Table 2 displays the fishing activities and pressures included for assessment. The justifications for the pressures chosen for inclusion in this assessment can be seen in Annex 3: Pressures Audit Trail.

Table 2- Fishing activities and pressures included in this assessment.

Activity	Pressures
Demersal trawls	Abrasion/disturbance of the substrate on the surface of the seabed
	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion
	Removal of target species
	Removal of non-target species
Scallop Dredges	Abrasion/disturbance of the substrate on the surface of the seabed
	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion
	Removal of target species
	Removal of non-target species

The relevant targets for favourable condition were identified within Natural England's conservation advice, supplementary advice tables (Natural England, 2021). Table 3 displays which targets were identified as relevant to the activity assessed. 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 3- Relevant favourable condition targets for identified pressures.

Feature	Attribute	Target
High energy circalittoral rock	Distribution: presence and spatial distribution of communities	Recover the presence and spatial distribution of communities of circalittoral rock communties
	Extent and distribution	Maintain the total extent of feature and spatial distribution
	Structure and function: presence and abundance of key structural and influential species	[Maintain OR Recover OR Restore] the abundance of listed species, to enable each of them to be a viable component of the habitat
	Structure: species composition of component communities	Recover the species composition of component communities
Moderate energy circalittoral rock	Distribution: presence and spatial distribution of communities	Recover the presence and spatial distribution of circalittoral rock communities
	Extent and distribution	Maintain the total extent of feature and spatial distribution
	Structure and function: presence and abundance of key structural and influential species	[Maintain OR Recover OR Restore] the abundance of listed species, to enable each of them to be a viable component of the habitat
	Structure: species composition of component communities	Recover the species composition of component communities
Subtidal coarse sediment	Distribution: presence and spatial distribution of communities	Recover the presence and spatial distribution of subtidal coarse sediment communities
	Extent and distribution	Maintain the total extent of feature and spatial distribution
	Structure and function: presence and abundance of key structural and influential species	[Maintain OR Recover OR Restore] the abundance of listed species, to enable each of them to be a viable component of the habitat
	Structure: species composition of component communities	Recover the species composition of component communities

7. Can D&S IFCA exercise its functions to further the conservation objectives of the site?

Yes,
Evidence: Monitoring and Control Arrangements

- Enforcement of current byelaws.
- Monitoring and review of current byelaws.
- The D&S IFCA Mobile Fishing Permit byelaw can gauge where any future changes or developments may occur.

- Changes can be made to the permit conditions, via consultation, if D&S IFCA deems it to be necessary. This could include spatial/temporal restrictions. The permitting system allows for adaptive management.
- Use of iVMS to monitor activity.

8. Referenced supporting information to inform assessment

The best available evidence has been used in this assessment. The rock features have not been fully surveyed, or the spatial distribution of communities mapped (Natural England, 2021). The current GI data held by NE does not map the extent of high energy circalittoral rock however, a report provided by the EA details the extent of this feature as 486ha. Current GI data maps the extent of moderate energy circalittoral rock at 311.201ha. Existing mapped data indicates that the extent of the subtidal coarse sediment feature within the site is 0.059ha. This figure may be subject to revision based on the availability of further evidence (Natural England, 2021).

Towed (demersal)- Rock features:
There are few studies quantifying the impact of fisheries to hard bottom habitats. Part of the reason for the lack of studies is because the vast majority of trawling occurs in sand habitats (Kasier *et al*., 2002). However, it is known that towing demersal trawls across rock substrates will cause damage or death to a significant proportion of large, upright attached species such as sponges and corals (Løkkeborg, 2005). In the Gulf of Alaska, 67% of sponges were damaged during a single pass of a trawl. The study demonstrated that a significant number of boulders were displaced and emergent epifauna were removed. This was for hard-bottoms made up of pebbles, cobbles and boulders at depths of 206m to 274m where natural disturbance would be minimal (Feese et al, 1999). Other species such as hydroids, anemones, bryozoans, tunicates and echinoderms are vulnerable to mobile fishing gear (McConnaughey et al, 2000; Sewell and Hiscock, 2005). Trawling may also reduce habitat complexity as boulders and cobbles associated with the hard substrate are moved around (Engel and Kvitek, 2008; Fresse et al, 1999).

Towed (demersal)- Coarse Sediment feature:
The major sources of seabed disturbance in UK waters are near-bed currents, wind-induced waves, aggregate dredging for mineral resources, and bottom trawling/dredging for fish (Foden et al, 2010). Demersal towed gear disturbs the seabed to catch bottom-dwelling fish and benthic invertebrates. This disturbance can modify benthic habitats and lead to mortality of benthic species in the path of the gear (Denderen et al, 2015). The degree of disturbance from fishing is dependent on three main factors: the type of fishing gear deployed, the intensity of the fishing activity and the sensitivity of the habitat. If a pressure occurs too frequently for a habitat to recover, the biomass and productivity of the benthic community declines, and the sustainability may be jeopardised (Foden et al, 2010).

The current available evidence for impacts of trawling on subtidal sediment focuses on subtidal sand, with very few studies considering the effect on subtidal coarse sediments. Additionally, much of the literature has focussed on scallop dredging and beam trawling rather than otter trawling. Therefore, the best available evidence has been used throughout this assessment.

Gilkinson et al (1998) simulated the physical interaction of otter trawl doors on sand with infaunal bivalves present, in a laboratory test tank. The findings showed that smaller body-sized fauna are less susceptible to physical damage, as they are pushed aside with fluidized sediments generated by the pressure wave which occurs in front of the moving trawl. However, all bivalves were seen to be displaced with many ending up in the berm created by the trawl, this could leave them susceptible to predation.

Rayment (2001) undertook a sensitivity study of Venerid bivalves in circalittoral coarse sand and gravel and found the biotope has an intermediate intolerance to abrasion, physical disturbance and displacement, with a high recoverability rate. It was found that there would be no change to species richness due to abrasion and physical disturbance; and a minor decline due to displacement of tube worms.

Blyth et al. (2004) investigated the large-scale chronic impacts of towed fishing gear using the Inshore Potting Agreement (IPA) in South Devon as a case study area. They used scallop dredges to sample benthic communities that were subjected to different fishing regimes within and adjacent to the IPA. The areas sampled ranged from very coarse sand to very fine sand. The benthic communities in areas that had only been open to static gear in the year preceding sampling were richer and of greater biomass than those in areas that were impacted by towed fishing gear. They suggested that regular trawling disturbance will result in a community dominated by a small number of rapidly colonizing and maturing species. Occasional trawling disturbance may enhance species richness because of opportunities for slower developing species to become established in addition to the fastest colonizers. The results from the study showed that the benthic communities found at the seasonal sites were nearly the same as found at the trawled sites, only the biomass of the attached community was greater at the seasonal site. This indicates that the 6-month cessation of towed-gear in this location is insufficient for the benthic communities to recover. There were limitations in the study, the dredges used would have been unlikely to sample small species consistently. The particle size across the study sites also varied greatly which could have had an impact on the species present. The trawled area was characterised by very coarse sand whereas the other survey points consisted of fine to very fine sand. Finally, the paper does not state which towed gear methods are used in the site. D&S IFCA is aware of both trawling and scallop dredging taking place in this site. The impact of scallop dredging is known to be higher than the impact of otter trawling, the latter method is used in the areas surrounding the MCZ but there is currently no evidence of towed gear activity in Morte Platform MCZ.

A review of experimental studies of the impact of towed fishing gears on benthic communities found that furrows and berms created by the trawl doors are the most conspicuous physical impact caused by otter trawls on soft sediments, creating an irregular bottom topography (Løkkeborg 2005). The area disturbed by the trawl doors comprises only a small proportion of the total area swept by the trawl. Because no or only faint marks are created by the other parts of an otter trawl, the physical impacts on the sea bed are likely to be marginal in most otter trawl fisheries. The consequences of physical disturbance of the sea bed topography for benthic community structure are poorly understood and have not been investigated greatly. Løkkeborg (2005) noted that, with the available evidence, when considering the biological impacts of otter trawls, it is difficult to attribute changes in the benthic community to fishing effort at a spatial scale that is representative of commercial fishing activities. Only subtle effects from otter trawls were demonstrated on soft bottom habitats without tall sessile invertebrates, and impacts were less pronounced on mobile sediments due to the high levels of natural disturbance which makes them better adapted to general disturbance Løkkeborg (2005).

Using a commercial whitefish beam trawl Kaiser et al. (1998), undertook a study to examine the immediate effect of beam trawling on stable sediments with rich fauna, and mobile sediments with fewer fauna. The study aimed to fish each of six way-lines 10 or 20 times however, due to weather conditions this was only possible for three of the way lines. Therefore, the analysis only considered the main trawling effect, and not the effect of fishing intensity. With regards to the infauna it was found that in a shallow water area (about 30m depth) with high energy sand there was no detectable effect on benthic infauna 24 hours after fishing. This was attributed to the associated fauna being adapted to frequent natural disturbances Kaiser et al. (1998). There were however immediate effects on infauna in the more stable sediments with 9 out of the top 20 most common taxa showing a statistically significant decrease. Although the study was investigating the

effect of beam trawling, it can still be useful in this assessment as otter trawls are seen as having a lower impact than beam trawls (Hall et al, 2008).

Collie et al (2000) carried out a meta-analysis of 39 fishing impact studies. The study found that otter trawling had the least impact on species richness when compared to beam trawling, scallop dredging and inter-tidal dredging. In general, the recovery time was rarely less than 100 days if damage occurred, with sand habitats recovering most rapidly (Collie et al, 200). It was however clear that intensively fished areas are likely to be maintained in a permanently altered state, inhabited by fauna adapted to frequent physical disturbance (Collie et al, 2000).

Kaiser et al (2006), carried out a meta-analysis of 101 experimental fishing impact studies. They found no detectable initial impact from otter trawling on communities in sand habitats, in terms of species richness or total number of individuals. Examining deposit feeders and suspension feeders separately similarly showed no detectable impact. Meta-analysis can suffer from a degree of publication bias and should be interpreted with care. What such analyses lose in specificity and consistency of experimental format, they gain in the generality of findings and scale of observations that can be assembled. The habitats are generalised and do not offer a more localised study of habitats.

The response of a benthic community to trawling will depend on the pre-fished composition of the community. This composition is largely affected by the degree of natural disturbance, due to the currents, waves or storms. Natural disturbance may erode seabed sediment, cause re-suspension of organic matter and may affect settlement of new recruits. Such effects promote species that are adapted to natural disturbance (Denderen et al, 2015). Denderen et al (2015) used a biological trait approach to assess the effects of trawling and natural disturbance on benthic community composition and function. The results confirm their hypothesis that bottom trawling and natural disturbance have comparable effects on benthic communities and that trawl disturbance has a limited additional effect on the benthic ecosystem in areas exposed to high shear stress compared to areas exposed to low shear stress. The site is characterised by moderate to high exposure. The majority of the coast is west facing, exposed to the prevailing wind and wave direction, including storm waves generated in the Atlantic. There is a long fetch across the Atlantic Ocean. Mean windspeed in the region ranges from 17 and 18m/s. Inshore, wave height ranges from 2 to 3m (Natural England, 2021).

Wave-induced mortality is known to impact community structure to a water depth of approximately 50m (Sciberras et al, 2013). The features of the Morte Platform MCZ are at depths of less than 40m (chart datum), and the site is characterised by moderate to high energy/exposure. The tidal range in this location is very high with tides of over 8m on springs. This wave and tidal scour may lead to natural morality of some species (Sciberras et al, 2013). Lambert et al (2014) observed when assessing the recovery of fished areas around the Isle of Man, using seabed energy as a determinant, that areas of higher seabed energy showed notably shorter recovery times.

Dredges-Rock features:
Towed dredges may impact on reef communities by damaging and removing epifauna, and by modifying and homogenising the substrate, as soft rocks may be broken up (Attrill et al, 2011) and rolling/moving boulders (Hall-Spencer and Moore, 2000), and reducing habitat complexity. Sessile organisms and epifauna such as erect bryozoans, sponges and anemones which live on substratum; are long lived and slow growing are most likely to be negatively impacted on by dredges (Hinz et al, 2011). The impacts of scallop dredging can be variable depending on the intensity of the activity and the environmental conditions. Boulcott and Howell (2011) found that experimental scalloping over uneven rocky reef resulted in a patchy distribution of impacts.

Dredges- Coarse Sediment feature:

Dredging for scallops can have a number of impacts on benthic systems, including a reduced seabed habitat complexity and heterogeneity, shifts in community structure and trophic interactions, alterations to the physical structure of the sea floor, and an impact on by-catch species (Sciberras et al, 2013). Scallop dredges can cause homogenization of sediments and the seabed topography by penetrating, mixing and flattening the sediment. This mixing reduces spatial heterogeneity in benthic communities, altering the density of megafauna and therefore affecting recruitment in a population (Collie et al, 2000; Craven et al, 2012; Kaiser et al, 2002; Beukers-Stewart, 2009). Scallop dredges have teeth on them which are designed to dig into the sediment, and therefore have been considered to be potentially among the most damaging (Veale et al, 2000).

Gravel, mixed sand and mud habitats tend to support diverse benthic communities of high biomass and are the main focus of the scallop fisheries in the UK. These habitats are known to be relatively sensitive to disturbance by scallop fisheries. The degree of disturbance is dictated by; the fishing gear used, the intensity of fishing effort, the type of species present, the natural stability and energy levels of the seabed (Beukers-Stewart, 2009). Benthic communities in gravel and mixed sand substrates will recover if closed to fishing, with recovery times varying. Summer closed seasons can allow certain hydroid species to start to re-establish and provide an important settlement habitat for invertebrate species (Beukers-Stewart, 2009).

Bradshaw et al (2001) studied the effect of scallop dredging on benthos off the coast of the Isle of Man. The seabed in the study area comprises a mixture of mud and sand with a variable amount of dead shell and stone. Twice yearly grab samples were taken from experimentally dredged plots inside and outside the closed area to compare benthic infauna and epifauna. The results showed evidence that scallop dredging alters benthic communities and can lead to reduced habitat complexity. They found that the closure of areas to commercial dredging allows the development of heterogeneous communities and habitat complexity. They did however hypothesis that although upright sessile species are more prone to be directly damaged; sponges and encrusting bryozoan on stones can recolonise if turned over. The response to dredging depends on variables related to species, local hydrography, intensity, frequency and time of year of the dredging.

The benthic communities most resilient to scallop fisheries are those in shallow sand areas which are subjected to high levels of natural disturbance. Although benthic species do suffer negative effects from fishing disturbance, the relative impact tends to be lower and recovery quicker than in other habitats (Beukers-Stewart, 2009). Løkkeborg (2005) found that impacts of bottom trawling are less pronounced on mobile sediments due to the high levels of natural disturbance which makes them better adapted to general disturbance.

Sciberras et al (2013) undertook underwater camera surveys and Hamon grab samples in an area closed to scallop dredging, and a seasonally fished area in Cardigan Bay to investigate any differences in scallop abundance and epibenthic community structure between the two management areas. They did not detect differences in the abundance of scallops and the epibenthic community composition between the permanently closed area and the seasonally fished area. They discuss there could be several reasons for the lack of fishing effect. Firstly, the natural seasonal fluctuations in species abundance. Another possible explanation that they give is due to the relatively high level of natural disturbance at the study area, which may obscure the effect of fishing on the benthic community.

Scallop dredging can have negative impacts on target and non-target species, including post-fishing mortality of species which come into contact with the gear, especially the teeth of the dredge. These can cause damage to the scallop shells along with non-target species (Bradshaw, 2001; Beukers-Stewart, 2009). Fatal damage can vary from 2% to more than 20%, depending on

the fishing grounds, for captured and non-captured undersized scallops (Beukers-Stewart, 2009). Along with fatal damage to discarded scallops, there is evidence of a reduced predator escape response in discarded juvenile scallops, this is coupled with an influx of predators and scavengers taking advantage of the damage caused (Craven et al, 2012, Shephard et al, 2008; Bradshaw, 2001).

9. In-combination assessment

Table 4- Relevant activities occurring in or close to the site

Plans and Projects		
Activity	**Description**	**Potential Pressure(s)**
No other plans or projects known to be occurring within Morte Platform MCZ.	The impact of future plans or projects will require assessment in their own right, including accounting for any in-combination effects, alongside existing activities.	N/A
Other activities being considered		
Activity	**Description**	**Potential Pressure(s)**
Commercial diving	At the current level of fishing activity, it is thought that no in-combination effects will lead to the conservation objectives not being met for the features assessed.	Abrasion/disturbance of the substrate on the surface of the seabed. Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. Removal of target species. Removal of non-target species.
Pots/creels	At the current level of fishing activity, it is thought that no in-combination effects will lead to the conservation objectives not being met for the features assessed.	
Static and passive nets, lines.	At the current level of fishing activity, it is thought that no in-combination effects will lead to the conservation objectives not being met for the features assessed.	

D&S IFCA conclude there is no likelihood of significant adverse effect on the interest features from in-combination effects addressed within Table 4- Relevant activities occurring in or close to the site.

10. NE consultation response

Natural England has not been consulted at this stage.

11. Conclusion

Towed (demersal) and dredges- Rock features:

The level of effort for towed demersal trawls and dredges within the site is currently thought to be none. At current levels of effort, i.e. no activity occurring, it can be concluded that there will be no adverse effects from this gear type of the rock features of the MCZ. However, if the activities were to occur on the rock features listed in this assessment, the evidence suggests there could be an

adverse effect, and this could hinder the achievement of the conservation objectives of the features.

Due to the conclusion drawn, D&S IFCA will carry out a review of the Mobile Fishing Permit Byelaw conditions, through its Byelaw and Permitting Sub-Committee to bring in the appropriate management to prohibit the activity on the rock features of the site to ensure the conservation objectives are furthered.

Towed (demersal)- Sediment features:

The available evidence demonstrates that demersal trawling can have a negative impact on benthic features; however, the severity and recovery time from these impacts depend on a number of factors including; gear type, intensity of activity, and the environmental influences. The evidence suggests that less stable, mobile sediments in shallow waters are more resilient to the effects of trawling than stable sediments. The MCZ is west facing, exposed to the prevailing wind and wave direction, including storm waves generated in the Atlantic (Natural England, 2021) with a large tidal range of up to 8m, and has depths of less than 40m. These environmental factors can lead to benthic communities that are more resilient to trawl disturbance. The subtidal coarse sediment is very sparse, totalling 0.059ha of the 2545ha MCZ.

Taking into account the information detailed in this assessment, the current level of activity i.e., no activity occurring, and the moderate to high energy levels and changeable environment in which the activity occurs, D&S IFCA concludes that towed (demersal) gear is not likely to hinder the conservation objectives of the feature. However, with the review of management for the rock features, the subtidal coarse sediment may be protected due to the close proximity and interspersed nature of the features.

Dredges- Sediment features:

The level of effort within the Morte Platform MCZ is currently none, there has been no known historic dredging within the MCZ. However, this does not rule out the activity taking place in the future. No scallop dredging can occur from 1st July until the 1st of October due to a district wide temporal closure.

The evidence demonstrates that dredging for scallops can have a negative impact on benthic features including a reduced seabed habitat complexity and heterogeneity, shifts in community structure and trophic interaction, alterations to the physical structure of the sea floor, and an impact on by-catch species. However, the severity and recovery time from these impacts depend on a number of factors including; intensity of activity, and environment influences. The evidence suggests that less stable, mobile sediments in shallow waters are more resilient to the effect of dredging than stable sediments.

At the current levels of effort (i.e.no activity), it can be concluded that dredges are not likely to hinder the conservation objectives of the feature. However, if the activity were to occur on the subtidal coarse sediment feature, the evidence suggests there could be an adverse effect on the feature and the magnitude of this is currently unknown. This could hinder the achievement of the conservation objectives of the features.

Due to the conclusion drawn, D&S IFCA will carry out a review of the Mobile Fishing Permit Byelaw conditions to bring in the appropriate management to ensure the conservation objectives are furthered.

12. Summary table

Feature or habitat of Conservation interest	**Conservation objectives/ Target Attributes** (Natural England, 2015)	**Activity**	**Potential pressures from activity and sensitivity of habitats to pressures.** (Natural England, 2015)	**Potential exposure to pressures and mechanism of impact significance**	**Is there a risk that the activity could hinder the achievement of conservation objectives of the site?**	**Can D&S IFCA exercise its functions to further the conservation objectives of the site?** **If Yes, list management options**
Moderate energy circalittoral rock High energy circalittoral rock	Extent and distribution Presence and special distribution of communities Presence and abundance of typical species Species composition of component communities.	Towed (demersal)	• Abrasion/disturbance of the substrate on the surface of the seabed • Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. • Removal of target species. • Removal of non-target species. See Annex 3: Pressures Audit Trail for pressures audit trail.	Yes, although the activity does not currently occur, towed (demersal) fisheries can take place within the MCZ.	Yes, D&S IFCA will review permit condition of the Mobile Fishing Permit Byelaw to bring in the appropriate management to ensure the conservation objectives are met.	Yes, Management measures could include: 1. Monitor activity levels 2. Enforcement of byelaws 3. Monitoring and review of current byelaws
Subtidal coarse sediment	Extent and distribution Presence and special distribution of communities Presence and abundance of typical species Species composition of	Towed (demersal)	• Abrasion/disturbance of the substrate on the surface of the seabed • Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. • Removal of target species. • Removal of non-target species. See Annex 3: Pressures Audit Trail for pressures audit trail.	Yes, although the activity does not currently occur, towed (demersal) fisheries can take place within the MCZ.	No, taking into account the information detailed in this assessment, the current level of activity, and the moderate to high energy levels and changeable environment in which the activity occurs, D&S IFCA concludes that towed (demersal)	Yes, Management measures could include: 1. Monitor activity levels 2. Enforcement of byelaws 3. Monitoring and review of current byelaws

	component communities.				gear is not likely to hinder the achievement of the conservation objectives.	
Moderate energy circalittoral rock High energy circalittoral rock Subtidal coarse sediment	Extent and distribution Presence and special distribution of communities Presence and abundance of typical species Species composition of component communities.	Dredges	• Abrasion/disturbance of the substrate on the surface of the seabed • Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. • Removal of target species. • Removal of non-target species. See Annex 3: Pressures Audit Trail for pressures audit trail.	Yes, although the activity does not currently occur, dredge fisheries can take place within the MCZ.	Yes, D&S IFCA will review permit condition of the Mobile Fishing Permit Byelaw to bring in the appropriate management to ensure the conservation objectives are met.	Yes, Management measures could include: 1. Monitor activity levels 2. Enforcement of byelaws 3. Monitoring and review of current byelaws

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Annex 1: Site Maps

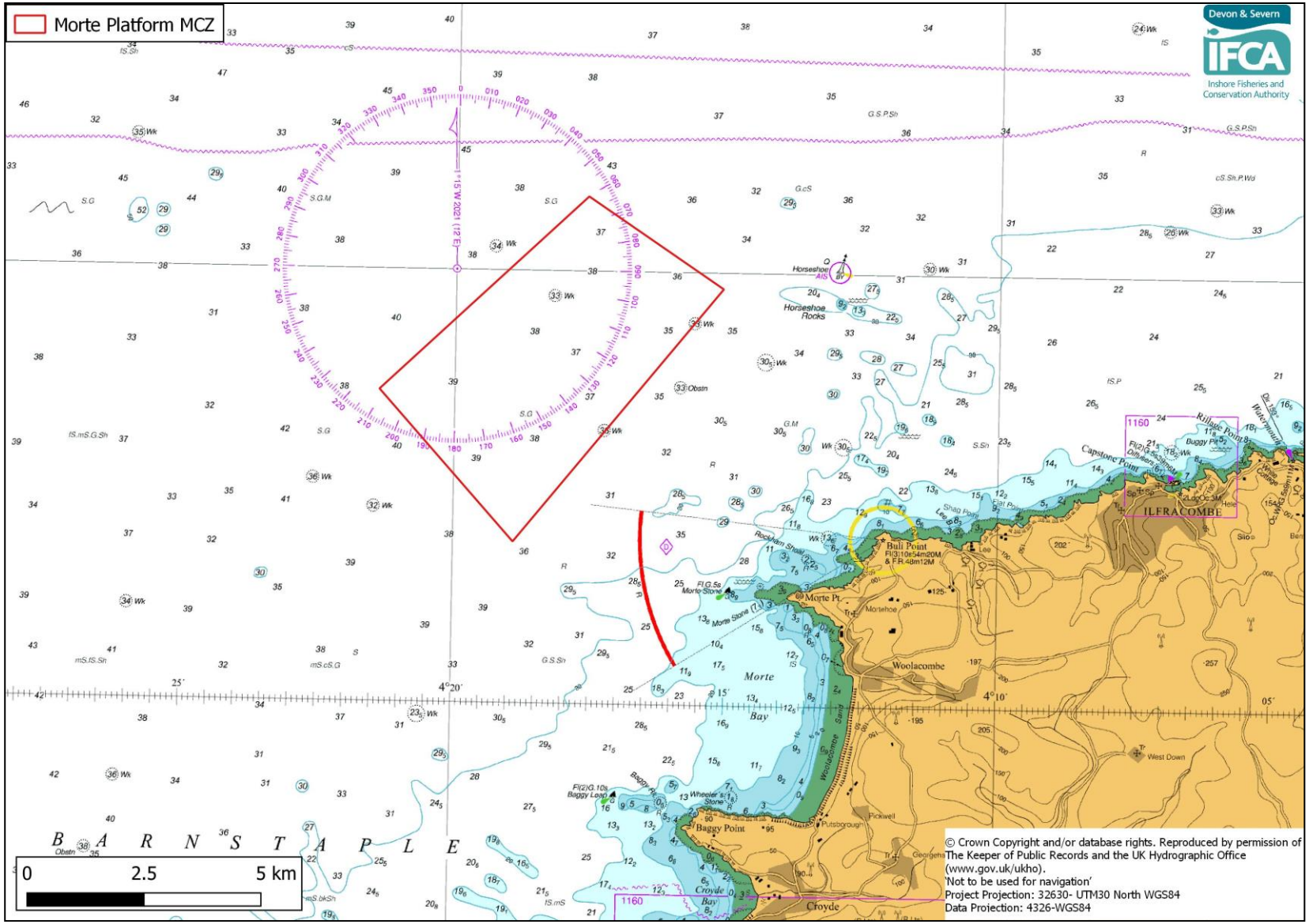

Figure 1 Morte Platform MCZ Boundary

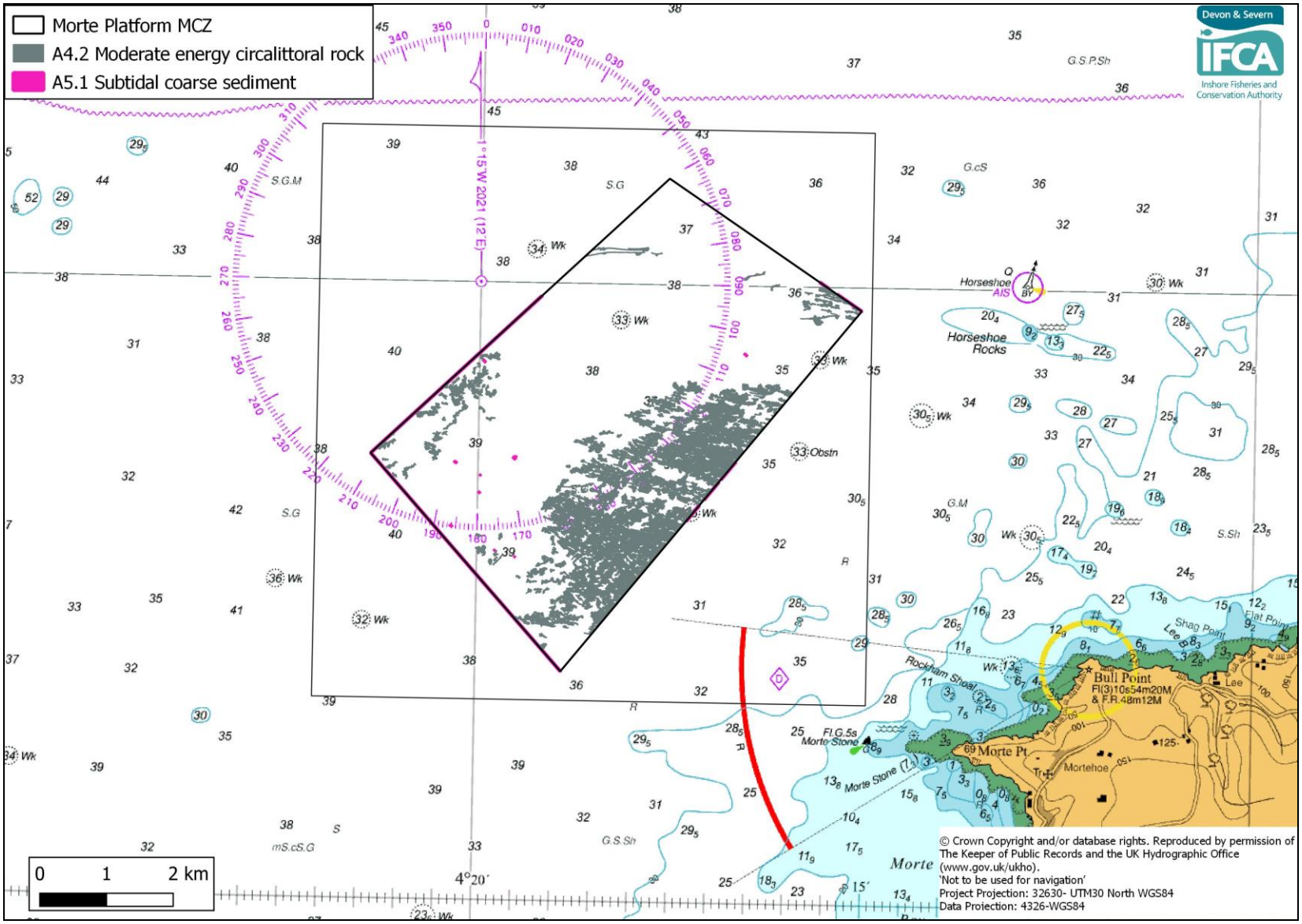

Figure 2 Morte Platform MCZ Broad Scale Habitat Map

Annex 2: Fishing Activity Maps

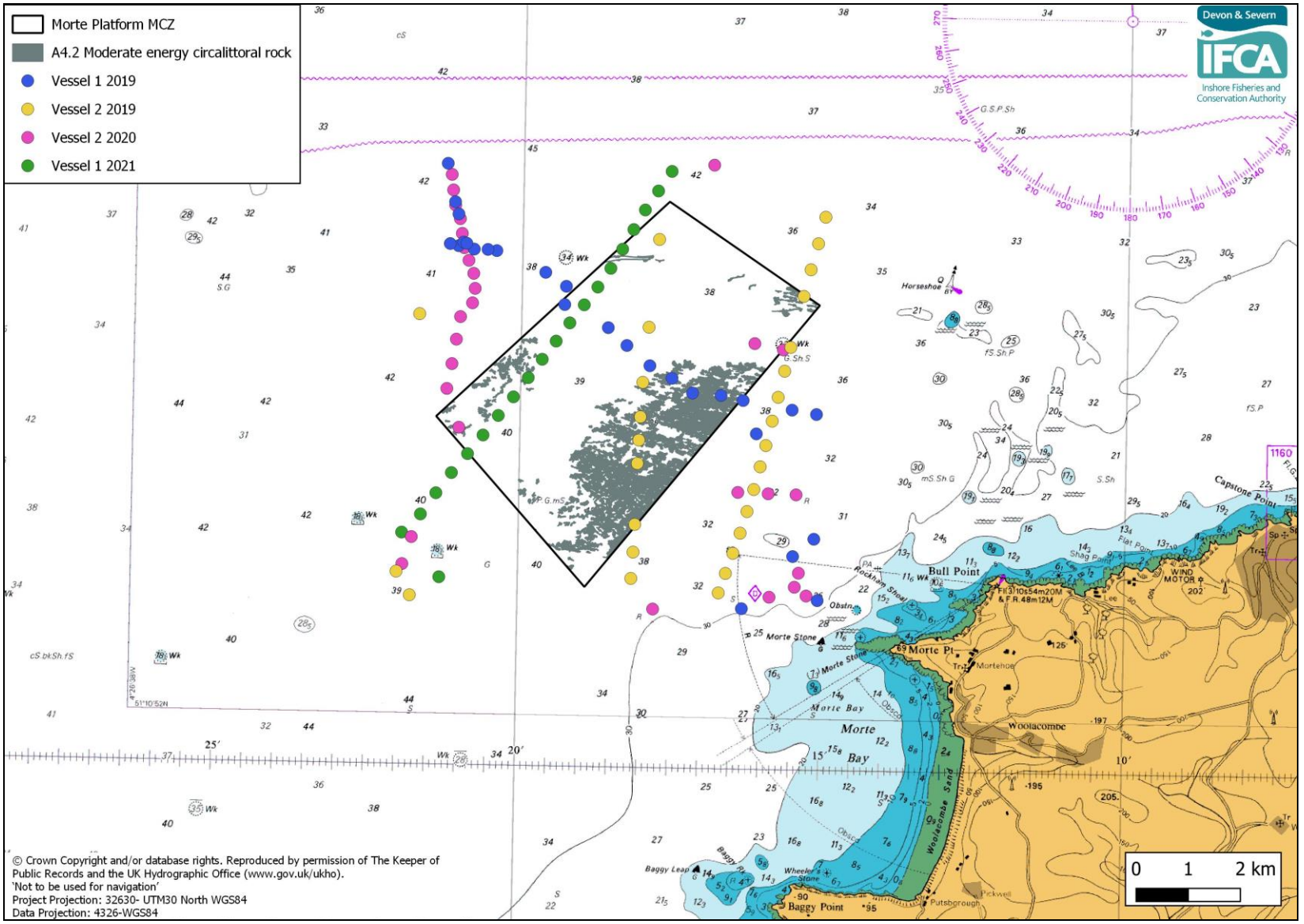

Figure 3 iVMS and VMS for all towed demersal gear vessels travelling at speeds of under 6 knots from 1st January 2018 to 31st May 2021.

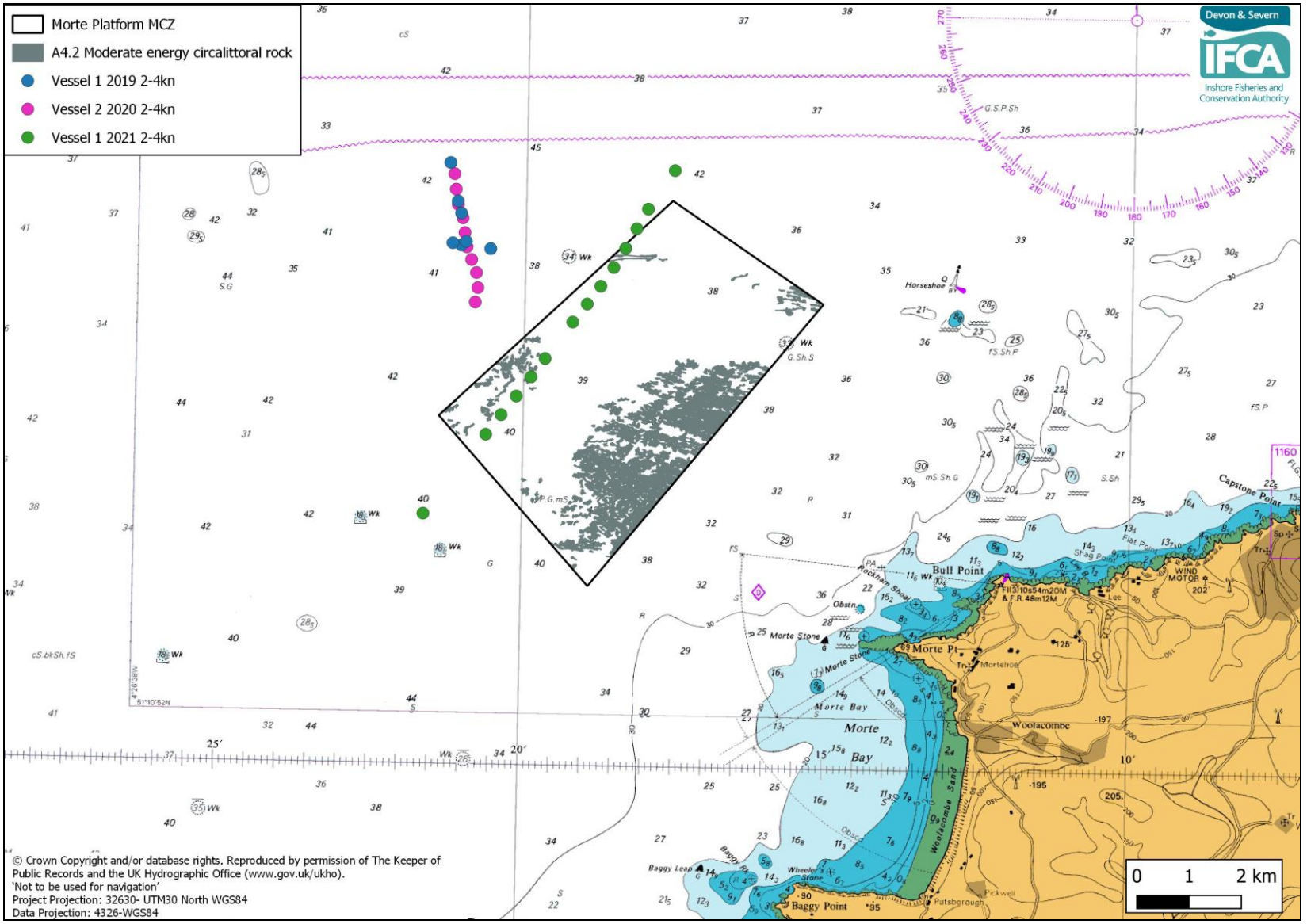

Figure 4 iVMS and VMS for all towed demersal gear vessels travelling at speeds of 2-4 knots from 1st January 2018 to 31st May 2021.

Annex 3: Pressures Audit Trail

PRESSURE	SCREENING JUSTIFICATION
Abrasion/ disturbance	**IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Subsurface penetration	**IN** - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Removal of target species	**IN-** Need to consider intensity of activity to determine likely magnitude of pressure
Removal of non-target species	**IN-** Need to consider intensity of activity to determine likely magnitude of pressure
Changes in suspended solids	OUT - Insufficient activity levels to pose risk at level of concern
Smoothing and siltation rate changes	OUT - Insufficient activity levels to pose risk at level of concern
Deoxygenation	OUT - Insufficient activity levels to pose risk at level of concern
Hydrocarbon contamination	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction of microbial pathogens	OUT - Insufficient activity levels to pose risk at level of concern
Introduction or spread of non-natives	OUT - Fleet operates in local area only so risk considered extremely low
Organic enrichment	OUT - Insufficient activity levels to pose risk at level of concern
Physical change	OUT - Insufficient activity levels to pose risk at level of concern
Synthetic compound contamination	OUT - Insufficient activity levels to pose risk of large scale pollution event
Transition elements & organo-metal contamination	OUT - Insufficient activity levels to pose risk of large scale pollution event