Marine Conservation Zone Assessment

Site name: Bideford to Foreland Point MCZ
UKMO 20160002

Protected feature(s):

Low energy infralittoral rock
Moderate energy infralittoral rock
High energy infralittoral rock
Moderate energy circalittoral rock
High energy circalittoral rock
Fragile sponge & anthozoan communities on subtidal rocky habitats
Pink sea-fan (*Eunicella verrucosa*)

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; Mussels, Clams, Oysters

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

D&S IFCA Reference
BFP-MCZ-002

Contents

Version	Date	Author(s)	Reviewer(s)
1	November 2018	Lauren Parkhouse	
	December 2018		Sarah Clark

1. Introduction

This assessment has been undertaken by Devon & Severn Inshore Fisheries and Conservation Authority (IFCA) 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

Bideford to Foreland Point MCZ is an inshore site located on the coast of north Devon in the south west of England. The site covers an area of 104 km². This site protects a wide range of habitats, from beaches of intertidal sand, which are exposed to the air at low tide and below water at high tide, to subtidal sediment and rock habitats, which are permanently submerged.

Further information regarding the MCZ and its protected feature can be found in the Bideford to Foreland Point 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
Low energy infralittoral rock	Maintain in favourable condition
Moderate energy infralittoral rock	Maintain in favourable condition
High energy infralittoral rock	Maintain in favourable condition
Moderate energy circalittoral rock	Maintain in favourable condition
High energy circalittoral rock	Maintain in favourable condition
Fragile sponge & anthozoan communities on Subtidal rocky habitats	Maintain in favourable condition
Pink sea-fan (*Eunicella verrucosa*)	Maintain in favourable condition

The conservation objectives for these features are that they are brought to, and remain in, favourable condition.

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

The management measures for circalittoral and infralittoral rock are 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; Mussels, Clams, Oysters

Towed demersal gear is currently used within the boundaries of the MCZ. However, this activity is not known to occur on the circalittoral and infralittoral rock features.

There is no known dredge fishery within the MCZ.

See Parkhouse (2018) for more information regarding fishing activities occurring in Bideford to Foreland Point MCZ.

The fishing activity map can be found in Annex 3.

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

Yes,
Evidence:
Table 2 shows the fishing activities and pressures included for assessment. The justifications for the pressures chosen for inclusion in this assessment can be seen below.

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

Table 3 shows 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. It should be noted that no conservation advice package is currently available (August 2018) for the Bideford to Foreland Point MCZ. Therefore, relevant advice on operations and supplementary advice tables for other sites with similar features were used (Table 4), alongside considering site specific information.

Table 3 - Relevant favourable condition targets for identified pressures.

Feature	Attribute	Target
Moderate energy infralittoral rock; High energy infralittoral rock	Distribution: presence and spatial distribution of communities	Maintain/ Recover the presence and spatial distribution of communities
	Structure: species composition of component communities	Maintain/ Recover the species composition of component communities
Moderate energy circalittoral rock; High energy circalittoral rock	Distribution: presence and spatial distribution of communities	Maintain/ Recover the presence and spatial distribution of communities
	Structure: species composition of component communities	Maintain/ Recover the species composition of component communities
Pink sea-fan (*Eunicella verrucosa*)	Presence and spatial distribution of the species	Maintain/ Recover the presence and spatial distribution of the species
	Population: population size	Maintain/ Recover the population size within the

		site.
	Population: recruitment and reproductive capability	Maintain/ Recover the reproductive and recruitment capability of the species.
	Supporting habitats: extent and distribution	Maintain/ Recover the distribution and abundance of the following supporting habitats: reef
Fragile sponge & anthozoan communities on subtidal rocky habitats	Extent and distribution	Maintain/ Recover the total extent and spatial distribution of fragile sponge and anthozoan communities on subtidal rocky habitat.
	Structure/function: presence and abundance of key structural and influential species	Maintain/ Recover the abundance of listed species, to enable each of them to be a viable component of the habitat.
	Structure: physical structure of rocky substrate	Maintain/ Recover the surface and structural complexity, and the stability of the subtidal rock structure
	Structure: species composition of component communities	Maintain/ Recover the species composition of component communities
Honeycomb worm (*Sabellaria alveolata*)	Extent of subtidal biogenic reef	When Sabellaria reef develops within the site, its extent and persistence should not be compromised by human activities, accepting that due to the naturally dynamic nature of the feature its extent will fluctuate over time.
	Structure/function: presence and abundance of key structural and influential species	Maintain/ Recover the abundance of listed species, to enable each of them to be a viable component of the habitat.
	Structure: population density	Maintain/ Recover the density of Sabellaria species across the feature.
	Structure: Species composition of the community	Maintain/ Recover the species composition of the Sabellaria reef community.

Table 4 – Conservation advice package used for MCZ features

Feature	**Conservation Advice package used**
Moderate energy infralittoral rock	Hartland Point to Tintagel MCZ
High energy infralittoral rock	
High energy circalittoral rock	
Pink sea-fan (*Eunicella verrucosa*)	
Moderate energy circalittoral rock	
Fragile sponge & anthozoan communities on subtidal rocky habitats	
Honeycomb worm (*Sabellaria alveolata*) reefs	

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

Yes,
Evidence: Monitoring and Control Arrangements

- Restriction to areas, which are not currently protected under the Mobile Fishing Permit Byelaw, through extending areas of existing byelaw.
- Enforcement of the Mobile Fishing Permit Byelaw closed areas through reporting, patrols and iVMS

8. Referenced supporting information to inform assessment

Towed (demersal trawl)
Empirical studies quantifying the impact of fisheries to hard bottom habitats are few. 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 (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 (dredges)
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.

9. In-combination assessment

Table 5 - 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 Bideford to Foreland Point 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; Beach seine/ringnets; Longlines; Fyke & stakenets.	Due to the low to no level of activities, no in-combination effect thought to be possible.	Abrasion/disturbance of the substrate on the surface of the seabed. Penetration and/or

Static nets- fixed; Drift nets demersal	At the current level of fishing activity, it is not thought there would be an in-combination effect which would lead to the conservation objectives not being met for the features assessed.	disturbance of the substrate below the surface of the seabed, including abrasion. Removal of target species. Removal of non-target species.
Static pots & traps	At the current level of fishing activity, it is not thought there would be an in-combination effect which would lead to the conservation objectives not being met for the features assessed.	
Handworking; crab tiling; bait digging; shrimp push nets	Activities occur on the intertidal, no in-combination effect thought to be possible.	

D&S IFCA concludes there is no likelihood of significant adverse effect on the interest features from in-combination effects addressed within this assessment.

10. NE consultation response

N/A Natural England has not been consulted at this stage.

11. Conclusion

The level of effort of towed (demersal) gear and dredges, in the area of the MCZ dominated by the rock features, is currently thought to be none. There are no records of this activity taking place on or close to the rock features. At the current levels of effort, i.e. no activity occurring, it can be concluded that there will be no likely significant impact from towed (demersal) gear and dredges on the MCZ features. However, if the activities were to occur on the features listed in this assessment, the evidence suggests there could be a significant impact. This impact could lead to the conservation objectives for the site not being met.

Due to the conclusions drawn, D&S IFCA will carry out a review of the Mobile Fishing Permit Byelaw conditions to bring in the appropriate management to prohibit the activity on the rock features of the site to ensure the conservation objectives are furthered. The review of the Mobile Fishing Permit Byelaw and permit conditions will take place in 2019/2020.

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 infralittoral rock; High energy infralittoral rock; Moderate energy circalittoral rock; High energy circalittoral rock	Extent and distribution Presence and spatial distribution of communities Presence and abundance of key structural and influential species Species composition of component communities	Commercial fishing; Towed (demersal) and Dredges (towed)	•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 4 for pressures audit trail	Yes, towed (demersal) and dredge fisheries can currently 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, including spatial and temporal closures
Fragile sponge & anthozoan communities on subtidal rocky habitats; Honeycomb worm (*Sabellaria alveolata*) reefs;	Presence & spatial distribution of the species/ communities Population size or density Recruitment & reproductive	Commercial fishing; Towed (demersal) and Dredges (towed)	• 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 4 for pressures audit trail	See above	See above	See above

Pink sea-fan (*Eunicella verrucosa*)	capability Extent & distribution Species composition of the community Presence & abundance of key structural and influential species					

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Annex 1: Site Map(s)

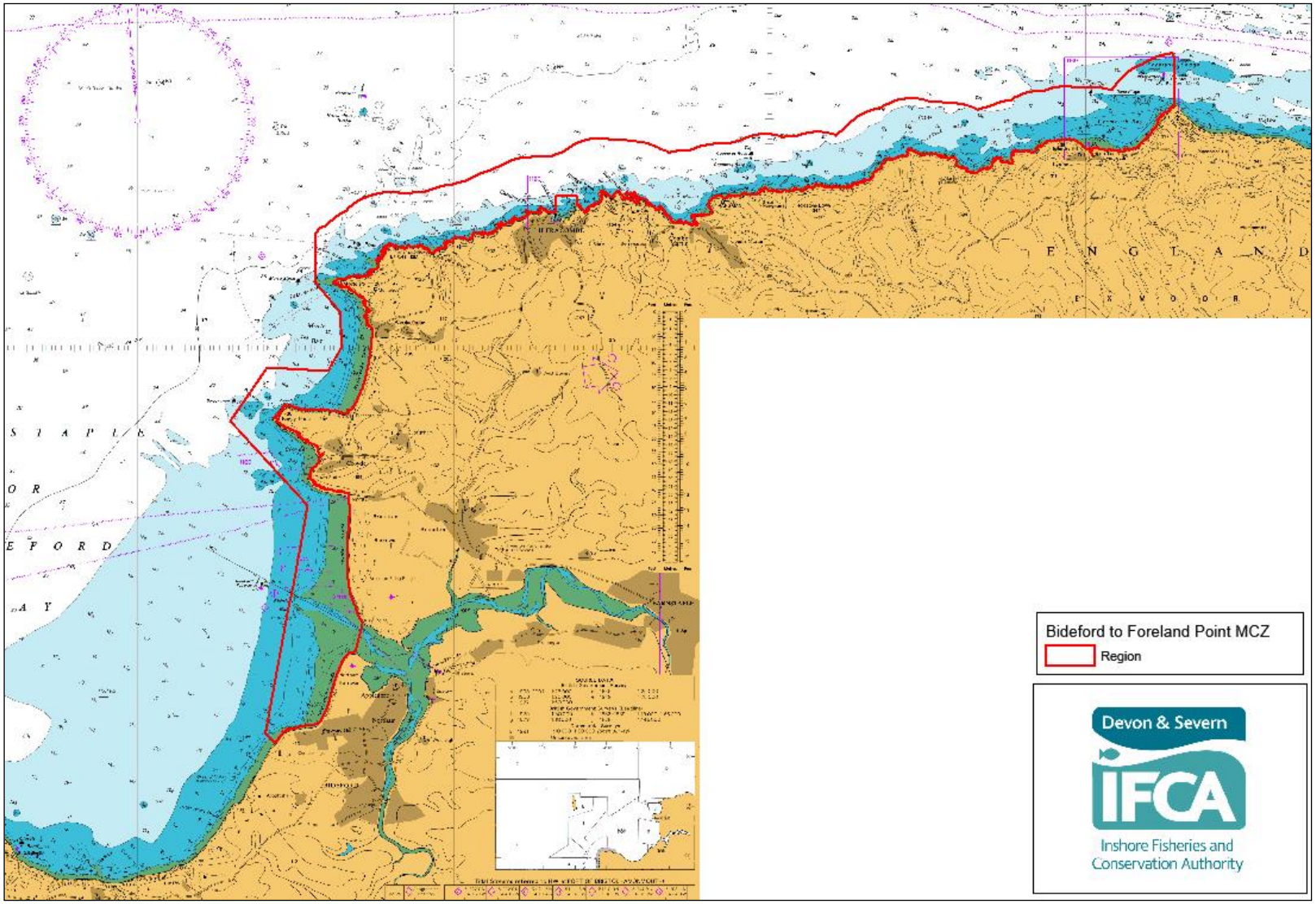

Figure 1 - Bideford to Foreland Point MCZ

Annex 2: Feature Map

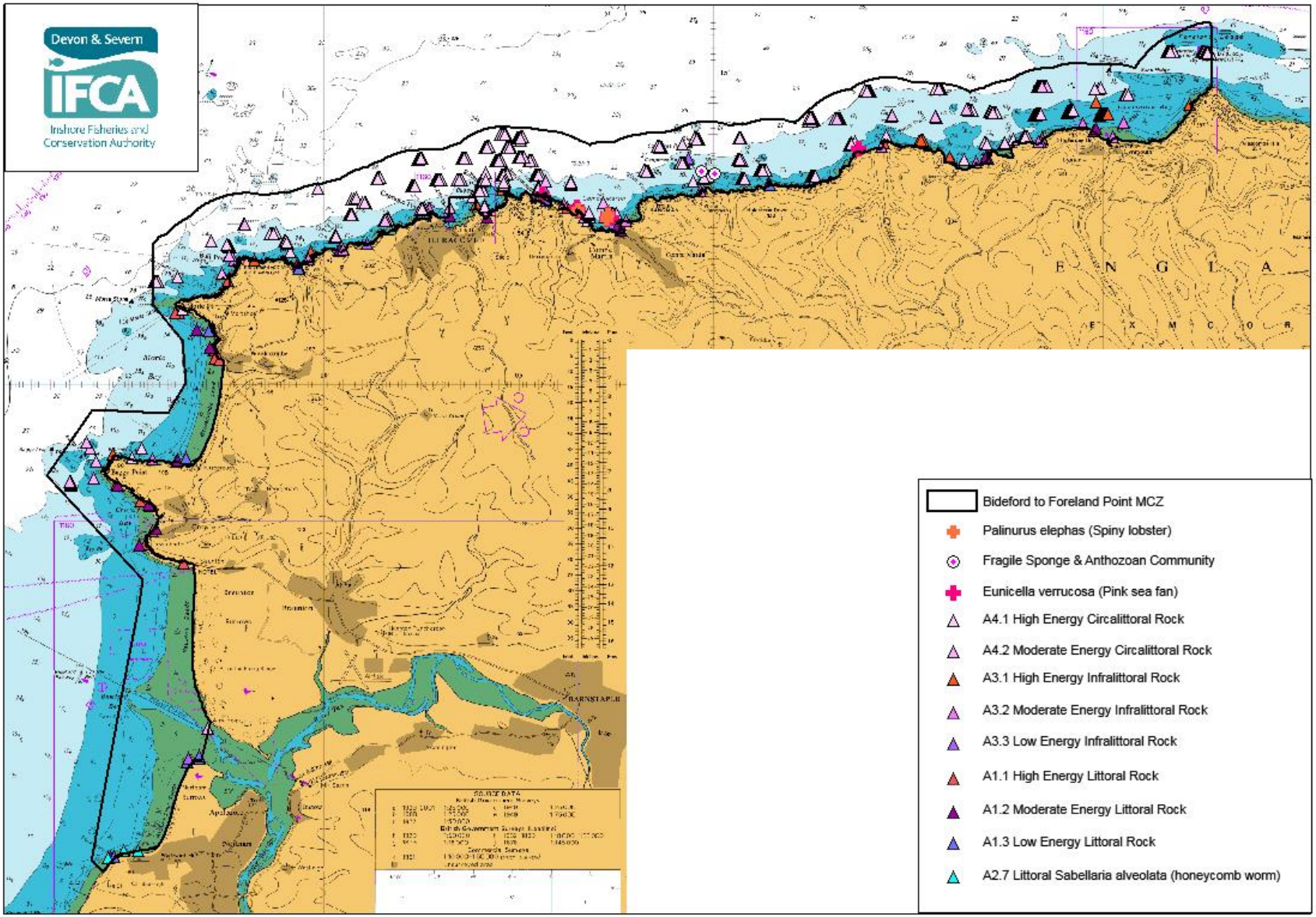

Figure 2 Rock Feature Map

Annex 3: Fishing Activity Map

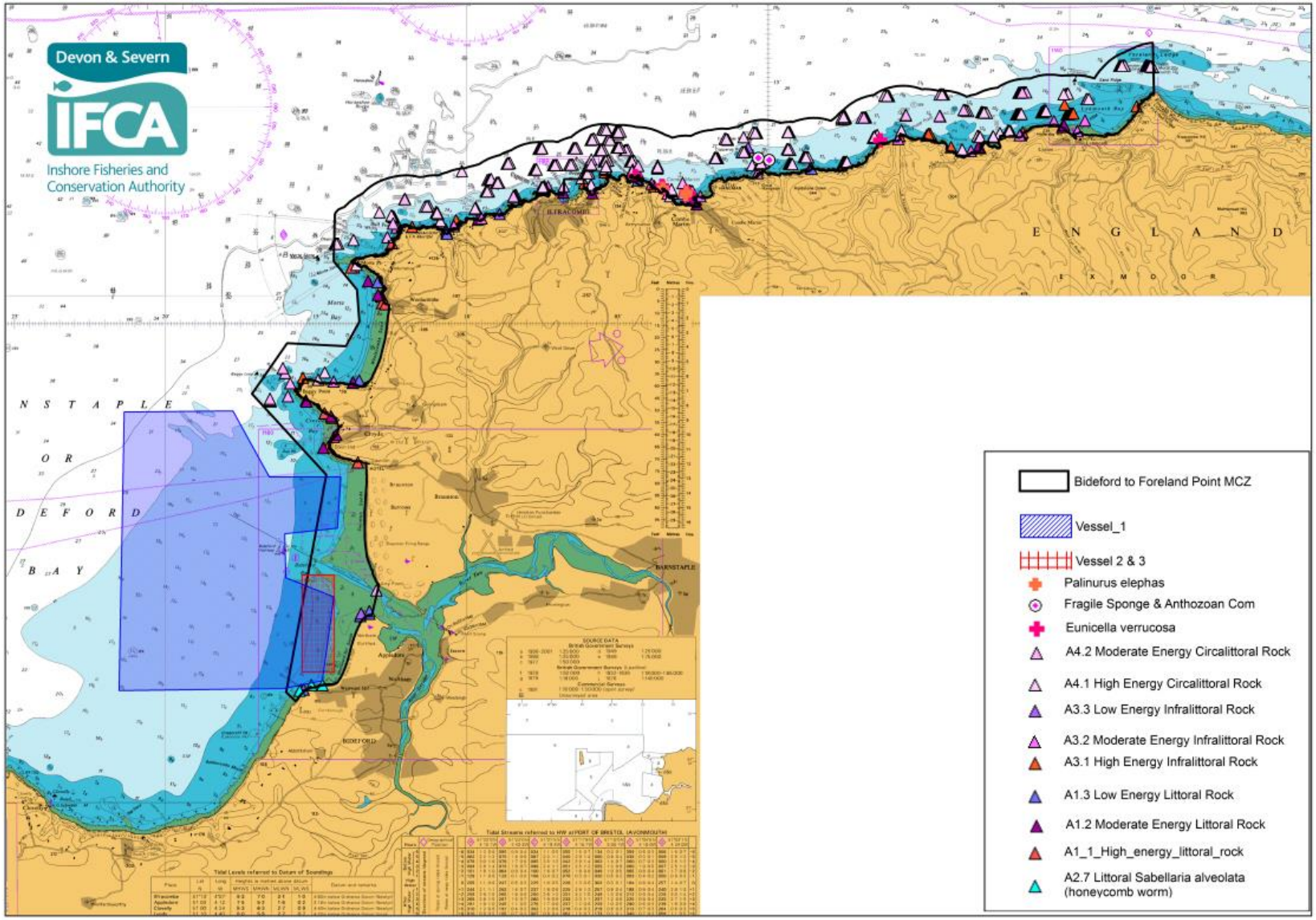

Figure 3 Towed Gear Fishing Activity

Annex 4: Pressures Audit Trail

Fishing Activity Pressures: Demersal trawls	High energy intertidal rock	Low energy intertidal rock	Moderate energy intertidal rock	Honeycomb worm reefs	High energy infralittoral rock	Moderate energy infralittoral rock	Fragile sponge and anthozoan communities on subtidal rocky habitats	High energy circalittoral rock	Moderate energy circalittoral rock	Pink sea-fan	**Screening Justification**
Abrasion/disturbance of the substrate on the surface of the seabed		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Changes in suspended solids (water clarity)		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion		S	S	S		S		S	S	S	IN – Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Removal of non-target species		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Smothering and siltation rate changes (Light)		S	S	NS	NS	S	NS	NS	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Collision BELOW water with static or moving objects not naturally found in the marine environment										NS	OUT – Not applicable
Deoxygenation		S	S	S	IE	S	S	S	S	NS	OUT - Insufficient activity levels to pose risk at level of concern
Hydrocarbon & PAH contamination		NS	NS	NS	NS	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction of light		S	S	IE	S	S	NS	NS	IE	NA	OUT – Not applicable
Introduction or spread of invasive non-indigenous species (INIS)		S	S	S	S	S	S	S	S	S	OUT – Activity operates in local area only so risk considered extremely low
Litter		NA	NA	NA	NA	NA	NA	NA	NA	NA	OUT - Insufficient activity levels to pose risk at level of concern
Nutrient enrichment		IE	NS	NS	S	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Organic enrichment		S	S	NS	S	S	NS	S	S	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Physical change (to another seabed type)		S	S	S	S	S	S	S	S	S	OUT - Insufficient activity levels to pose risk at level of concern

Physical change (to another sediment type)										S	OUT - Insufficient activity levels to pose risk at level of concern
Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)		NS	NS	NS	NS	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Transition elements & organo-metal (e.g. TBT) contamination		NS	NS	NS	NS	NS	NS	NS	NS	NA	OUT - Insufficient activity levels to pose risk of large scale pollution event
Underwater noise changes		IE					NS	NS		NS	OUT – Not applicable
Visual disturbance									NS	NA	OUT – Not applicable

Fishing Activity Pressures: Dredges	**High energy intertidal rock**	**Low energy intertidal rock**	**Moderate energy intertidal rock**	**Honeycomb worm reefs**	**High energy infralittoral rock**	**Moderate energy infralittoral rock**	**Fragile sponge and anthozoan communities on subtidal rocky habitats**	**High energy circalittoral rock**	**Moderate energy circalittoral rock**	**Pink sea-fan**	**Screening Justification**
Abrasion/disturbance of the substrate on the surface of the seabed		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Changes in suspended solids (water clarity)		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion		S	S	S		S		S	S	S	IN – Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Removal of non-target species		S	S	S	S	S	S	S	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Removal of target species					NA	NA		NA	NA		IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Smothering and siltation rate changes (Light)		S	S	NS	NS	S	NS	NS	S	S	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Visual disturbance									NS	NA	OUT – Not applicable
Collision BELOW water with static or moving objects not naturally found in the marine environment										NS	OUT – Not applicable
Deoxygenation		S	S	S	IE	S	S	S	S	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Hydrocarbon & PAH contamination		NS	NS	NS	NS	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction of light		S	S	IE	S	S	NS	NS	IE	NA	OUT – Not applicable
Introduction of microbial pathogens		S	S	IE	S	S	S	S	S	NS	OUT - Insufficient activity levels to pose risk at level of concern
Introduction or spread of invasive non-indigenous species (INIS)		S	S	S	S	S	S	S	S	S	OUT - Insufficient activity levels to pose risk at level of concern

Litter		NA	NA	NA	NA	NA	NA	NA	NA	NA	OUT - Insufficient activity levels to pose risk at level of concern
Nutrient enrichment		IE	NS	NS	S	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Organic enrichment		S	S	NS	S	S	NS	S	S	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Physical change (to another seabed type)		S	S	S	S	S	S	S	S	S	OUT - Insufficient activity levels to pose risk at level of concern
Physical change (to another sediment type)										S	OUT - Insufficient activity levels to pose risk at level of concern
Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)		NS	NS	NS	NS	NS	NS	NS	NS	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Transition elements & organo-metal (e.g. TBT) contamination		NS	NS	NS	NS	NS	NS	NS	NS	NA	OUT - Insufficient activity levels to pose risk of large scale pollution event
Underwater noise changes		IE					NS	NS		NS	OUT – Not applicable