Fisheries in EMS Habitats Regulations Assessment for Amber and Green risk categories

European Marine Site: Plymouth Sound & Estuaries

Fishing activities assessed: Miscellaneous

Gear/feature interactions assessed:

D&S IFCA Interaction ID	Fishing Activity	Sub-feature(s)
HRA_UK0013111_AE39	Crab tiling	Lower-mid saltmarsh
		Mid-upper saltmarsh
		Pioneer saltmarsh
		Transition & driftline saltmarsh
		Upper saltmarsh
		Atlantic salt meadows
HRA_UK0013111_D39		Intertidal seagrass beds
HRA_UK0013111_W39		Intertidal rock

Contents

1. Introduction

1.1 Need for an HRA assessment

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS). The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive.

This approach is being implemented using an evidence based, risk-prioritised, and phased basis. Risk prioritisation is informed by using a matrix of the generic sensitivity of the sub-features of EMS to a suite of fishing activities as a decision making tool. These sub-feature-activity combinations have been categorised according to specific definitions, as red, amber, green or blue.

Activity/feature interactions identified within the matrix as red risk have the highest priority for implementation of management measures by the end of 2013 in order to avoid the deterioration of Annex I features in line with obligations under Article 6(2) of the Habitats Directive.

Activity/feature interactions identified within the matrix as amber risk require a site-level assessment to determine whether management of an activity is required to conserve site features. Activity/feature interactions identified within the matrix as green also require a site level assessment if there are "in combination effects" with other plans or projects.

Site level assessments are being carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive. The aim of this assessment is to determine whether management measures are required in order to ensure that fishing activity or activities will have no adverse effect on the integrity of the site. If measures are required, the revised approach requires these to be implemented by 2016.

The purpose of this site specific assessment document is to assess whether or not in the view of Devon & Severn Inshore Fisheries and Conservation Authority (D&S IFCA) the fishing activities crab tiling have a likely significant effect on the 'intertidal seagrass beds', 'Intertidal rock', 'lower-mid saltmarsh', 'mid-upper saltmarsh', 'pioneer saltmarsh', 'transition & driftline saltmarsh', 'upper saltmarsh' and 'Atlantic salt meadows' of the Plymouth Sound & Estuaries EMS, and on the basis of this assessment whether or not it can be concluded that crab tiling will not have an adverse effect on the integrity of this EMS.

1.2 Documents reviewed to inform this assessment

- Natural England's risk assessment Matrix of fishing activities and European habitat features and protected species[1]
- Reference list[2] (Annex 1)
- Natural England's consultation advice (Annex 2)
- Site map(s) – sub-feature/feature location and extent (Annex 3)
- Fishing activity data (map(s), etc.) (Annex 4)

[1] See Fisheries in EMS matrix: http://www.marinemanagement.org.uk/protecting/conservation/documents/ems_fisheries/populated_matrix3.xls

[2] Reference list will include literature cited in the assessment (peer, grey and site specific evidence e.g. research, data on natural disturbance/energy levels etc.)

2. Information about the EMS

The Plymouth Sound & Estuaries EMS is made up of the Plymouth Sound & Estuaries SAC and the Tamar Estuaries Complex SPA (Figure 1, Annex 3). Plymouth Sound and its associated tributaries comprise a complex site of marine inlets. The ria systems entering Plymouth Sound (St John's Lake and parts of the Tavy, Tamar and Lynher), the large bay of the Sound itself, Wembury Bay, and the ria of the River Yealm are of international marine conservation importance because of their wide variety of salinity conditions and sedimentary and reef habitats. The high diversity of habitats and conditions gives rise to communities both representative of ria systems, and some very unusual features, including abundant southern Mediterranean-Atlantic species rarely found in Britain (English Nature, 2000). This site crosses the border between Devon & Severn IFCA and Cornwall IFCA.

2.1 Overview and qualifying features

Plymouth Sound and Estuaries qualifies as a SAC for the following Annex I habitats as listed in the EU Habitats Directive (Natural England, 2015a):

- Large shallow inlets and bays, the key sub-features are:
    - Intertidal rock
    - Circalittoral rock
    - Infralittoral rock
    - Subtidal mud
    - Subtidal sand
    - Subtidal seagrass beds
- Estuaries, the key sub-features are:
    - Circalittoral rock
    - Infralittoral rock
    - Intertidal mixed sediment
    - Intertidal mud
    - Intertidal rock
    - Intertidal seagrass beds
    - Lower-mid saltmarsh
    - Mid-upper saltmarsh
    - Pioneer saltmarsh
    - Subtidal mixed sediments
    - Subtidal mud
    - Subtidal sand
    - Subtidal seagrass beds
    - Transition & driftline saltmarsh
    - Upper saltmarsh
- Sandbanks which are slightly covered by seawater all the time, the key sub-features are:
    - Subtidal coarse sediment
    - Subtidal mixed sediment
    - Subtidal mud
    - Subtidal sand
    - Subtidal seagrass beds
- Atlantic salt meadows
- Mudflats & sandflats not covered by seawater at low tide, the key sub-features are:
    - Intertidal coarse sediment
    - Intertidal mixed sediments
    - Intertidal mud
    - Intertidal sand & muddy sand
    - Intertidal seagrass beds

- Reefs
    - Circalittoral rock
    - Infralittoral rock
    - Intertidal rock

Plymouth Sound and Estuaries qualifies as a SAC for the following Annex II species as listed in the EU Habitats Directive (Natural England, 2015a):

- Allis shad (*Alosa alosa*)
- Shore dock (*Rumex rupestris*)

The Tamar Estuaries Complex qualifies as a SPA under the Birds Directive for (Natural England, 2015b):

- Nationally important populations of regularly occurring Annex 1 species, Avocets (*Recurvirostra avosetta*) and Little egrets (*Egretta garzetta*), the key supporting habitats are:
    - Annual vegetation of driftlines
    - Coastal reedbeds
    - Freshwater & coastal grazing marsh
    - Intertidal mixed sediments
    - Intertidal mud
    - Intertidal sand & muddy sand
    - Intertidal seagrass beds
    - Water column
    - Saltmarsh

2.2 Conservation Objectives

The site's conservation objectives which apply to the **Special Area of Conservation** and the natural habitat and/or species for which the site has been designated are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of the qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

The site's conservation objectives which apply to the **Special Protection Area** and the individual species and/or assemblage of species for which the site has been classified are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of the qualifying features
- the distribution of the qualifying features within the site

3. Interest feature(s) of the EMS categorised as 'red' risk and overview of management measure(s) (if applicable)

- Subtidal rock and reef communities were categorised as "red" risk against all demersal towed gear and towed dredges. In January 2014 D&S IFCA introduced the Mobile Fishing Permit Byelaw, which prohibits the use of towed gear within this EMS.
- Seagrass bed communities were categorised as "red" risk against towed demersal gear, dredges, intertidal handwork, crab tiling, and digging with forks. At that time, only subtidal seagrass beds were considered as a sub-feature of the site which would not be exposed to intertidal handwork, crab tiling or digging with forks. In January 2014 D&S IFCA introduced the Mobile Fishing Permit Byelaw, which prohibits the use of towed gear within this EMS.

4. Information about the fishing activities within the site

Devon and Severn IFCA undertakes crab tile surveys every four years to determine the current number of crab tiles and to see if there have been any changes. A baseline survey of crab tiles in the EMS was undertaken in 2000/2001 and then further surveys were carried out in 2003/2004, 2012 and 2016. These surveys have identified the activity is occurring at a high level within certain areas of the EMS. The overall number of crab tiles increased by 86% in 2012 but has since decreased by 28% in 2016, see Table 1 for more information. Annex 4, Figures 2, 3 and 4 show the location of crab tiles which are namely in the Tamar and the mouth of the Tavy. The material used for the majority of crab tiles consisted of plastic piping, corrugated iron and roof tiles and most had seaweed and barnacle coverage on the tiles. Most of the crab tiles were deemed to be within recent use, with the exception of some (approximately 170) that were almost buried.

Table 1 - Crab tile distribution, counts and comparison in D&S IFCA District only; from Noble (2013) and Black (2004)

Location	Estuary Area	2016 Tiles	2012 Tiles	2003/04 Tiles	2000/01 Tiles	Difference (2003/04 to 2012)	Difference (2012 to 2016)
Tavy	TAM07	0	0	0	20	0	0
Tavy	TAM08	184	181	360	284	-179	+3
Tavy	TAM09	726	816	980	442	-164	-90
Tamerton Lake	TAM10	1,129	938	470	490	+468	+191
Tamerton Lake	TAM11	0	0	0	112	0	0
Tamar	TAM12	701	1,581	344	1,068	+1,237	-880
Tamar	TAM13	425	810	281	475	+529	-385
Tamar	TAM14	78	191	211	227	-20	-113
Tamar	TAM15	327	412	0	294	+412	-85
	TOTALS:	**3,570**	**4,929**	**2,646**	**3,412**	**+2,283**	**-1,359**
					Percentage change:	**86%↑**	**28%↓**

Through the IFCA's Byelaw Review process, D&S IFCA will be reviewing all byelaws relating to hand-gathering. There is the intention to create a permitting byelaw that covers hand-gathering (including crab tiling activity), which would allow the IFCA to monitor levels of this activity in the future, and adapt permit conditions to changes in effort/ environmental conditions if necessary.

Other fishing activities within the Plymouth Sound and Estuaries EMS are described in the Fishing Activity Report (Gray, 2015).

5. Test for Likely Significant Effect (LSE)

The Habitats Regulations assessment (HRA) is a step-wise process and is first subject to a coarse test of whether a plan or project will cause a likely significant effect on an EMS[3].

5.1 Table 2: Assessment of LSE

1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?	**No**	
2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)	• Abrasion/disturbance of the substrate on the surface of the seabed • Removal of non-target species • Removal of target species **See Annex 5 for pressures audit trail**	
3. Is the feature potentially exposed to the pressure(s)[4]?	**Yes**, currently there are no management measures controlling crab tiling in the Plymouth Sound and Estuaries EMS.	
4. What are the potential effects/impacts of the pressure(s) on the feature[5], taking into account the exposure level?	Crab tiling occurs on the intertidal mudflats. Access points to the crab tiles are not near saltmarsh (Magic, 2016). Crab tiling does not take place on intertidal seagrass. Crab tiling has the potential to impact intertidal rock from access on the shore causing trampling. However, the level of trampling is not thought to be significant to affect the extent, distribution, species composition and communities.	
5. Is the potential scale or magnitude of any effect likely to be significant?[6]	**Alone**	**No**, there is no likelihood of significant adverse effect on the interest features, as a stand-alone project.
	In-combination	**No, see section 8 for more information**
6. Have NE been consulted on this LSE test? If yes, what was NE's advice?	**No**, not at this stage.	

[3] Managing Natura 2000 sites: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

[4] Provide overview of activity levels, including current management measures that reduce/remove the feature's exposure to the activity.

[5] Consider the sensitivity of the feature to that pressure (where available).

[6] Yes or uncertain: completion of AA required. If no: LSE required only.

6. Appropriate Assessment

An Appropriate Assessment is not required as the TLSE concluded that this activity would not have a significant effect, either alone or in-combination.

6.1 Potential risks to features

Table 3: Summary of Impacts

Feature/Sub feature(s)	**Conservation Objective**	**Potential pressure[7] (such as abrasion, disturbance) exerted by gear type(s)[8]**	**Potential ecological impacts of pressure exerted by the activity/activities on the feature[9]** *(reference to conservation objectives)*	**Level of exposure[10] of feature to pressure**	**Mitigation measures[11]**

[7] Guidance and advice from NE.
[8] Group gear types where applicable and assess individually if more in depth assessment required.
[9] Document the sensitivity of the feature to that pressure (where available), including a site specific consideration of factors that will influence sensitivity.
[10] Evidence based e.g. activity evidenced and footprint quantified if possible, including current management measures that reduce/remove the feature's exposure to the activity.
[11] Detail how this reduces/removes the potential pressure/impact(s) on the feature e.g. spatial/temporal/effort restrictions that would be introduced.

7. Conclusion[12]

N/A

8. In-combination assessment[14]

8.1 Other fishing activities

The following fishing activities are either occurring or have not been able to have been ruled out as occurring in the Plymouth Sound and Estuaries EMS.

Handworking – There are no records of this activity taking place commercially but it has not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Digging with forks - Activity is occurring within Plymouth Sound and Estuaries EMS. Digging with forks has not yet been assessed by D&S IFCA however; neither activities are believed to occur on the features assessed therefore no in-combination effect thought to be possible.

Shrimp push nets - There are no records of this activity taking place but it has not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Pots/ creels – Activity thought to only occur in the subtidal and not believed to interact with features assessed. Therefore no in-combination effect thought to be possible.

Cuttlepots & fishtraps - There are no records of these activities taking place but they have not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Commercial diving - Activity not believed to be occurring/ occurring at a very low level. Therefore no in-combination effect thought to be possible.

Purse seine - Activity occurs in the subtidal and not believed to interact with features assessed. There are no records of this activity taking place but it has not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Beach seine/ ring nets - There are no records of beach seine nets but it has not been able to be ruled out. Ringnets occur in the subtidal and not believed to interact with features assessed. Therefore no in-combination effect thought to be possible.

Drift, gill, trammel & entangling nets - Activity thought to only occur in the subtidal and not believed to interact with features assessed. Therefore no in-combination effect thought to be possible.

Fyke and stakenets - There are no records of these activities taking place but they have not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Longlines - There are no records of these activities taking place in the intertidal but they have not been able to be ruled out. Therefore no in-combination effect thought to be possible.

Handlines, Jigging and trolling - There are no records of these activities taking place in the intertidal but they have not been able to be ruled out. Therefore 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 with other fishing activities addressed within section 8.1.

[12] If conclusion of adverse effect alone an in-combination assessment is not required.

8.2 Other activities

Plymouth Sound and Estuaries EMS is a busy site, with other commercial ongoing plans/projects from different sectors where impacts could combine.

However, currently there are no known proposed plans or projects in Plymouth Sound and Estuaries EMS which could theoretically interact with the intertidal sub-features addressed.

Other*:* The impact of future plans or projects will require assessment in their own right, including accounting for any in-combination effects, alongside existing activities.

D&S IFCA concludes there is no likelihood of significant adverse effect on the interest features from in-combination effects with other plans or projects addressed within section 8.2.

9. Summary of consultation with Natural England

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

10. Integrity test

N/A

Conclusion of adverse effect/non-adverse effect either alone or in-combination. This will be reliant on the consideration of mitigation measure(s) documented in the AA and summarised here in conclusion.

Annex 1: Reference list

English Nature (2000) PLYMOUTH SOUND AND ESTUARIES: European Marine Site. English Nature's advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994

Gray, K (2015) Fishing Activities Currently Occurring in the Plymouth Sound and Estuaries European Marine Site (SAC and SPA), Devon and Severn IFCA Report

MAGIC (2015) Multi-Agency Geographic Information for the Countryside interactive map http://magic.defra.gov.uk/magicmap.aspx?startTopic=magicall&chosenLayers=sacIndex&sggridref=SX472506&startscale=500000

Natural England (2015a) Marine conservation advice for Special Area of Conservation: Plymouth Sound and Estuaries (UK0013111)

Natural England (2015b) Marine conservation advice for Special Protection Area: Tamar Estuaries Complex (UK9010141)

Noble (2013) Devon & Severn IFCA report: Tamar Estuaries Complex Crab Tile Survey 2012

Annex 2: Natural England’s consultation advice

N/A

Annex 3: Site Map

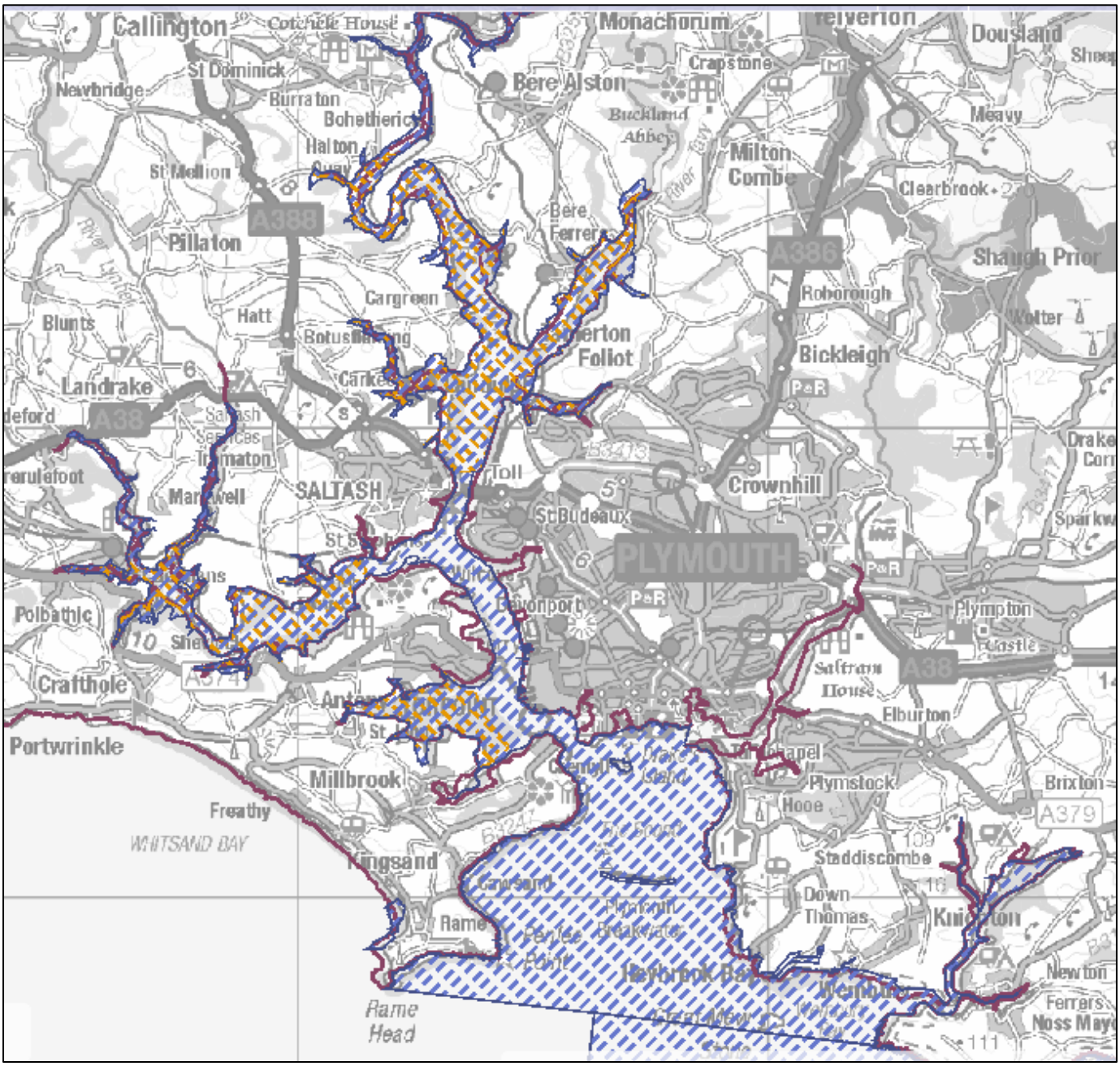

Figure 1 Area of SAC (blue hatched) and SPA (Orange hatched) (MAGIC, 2015)

Annex 4: Fishing activity maps

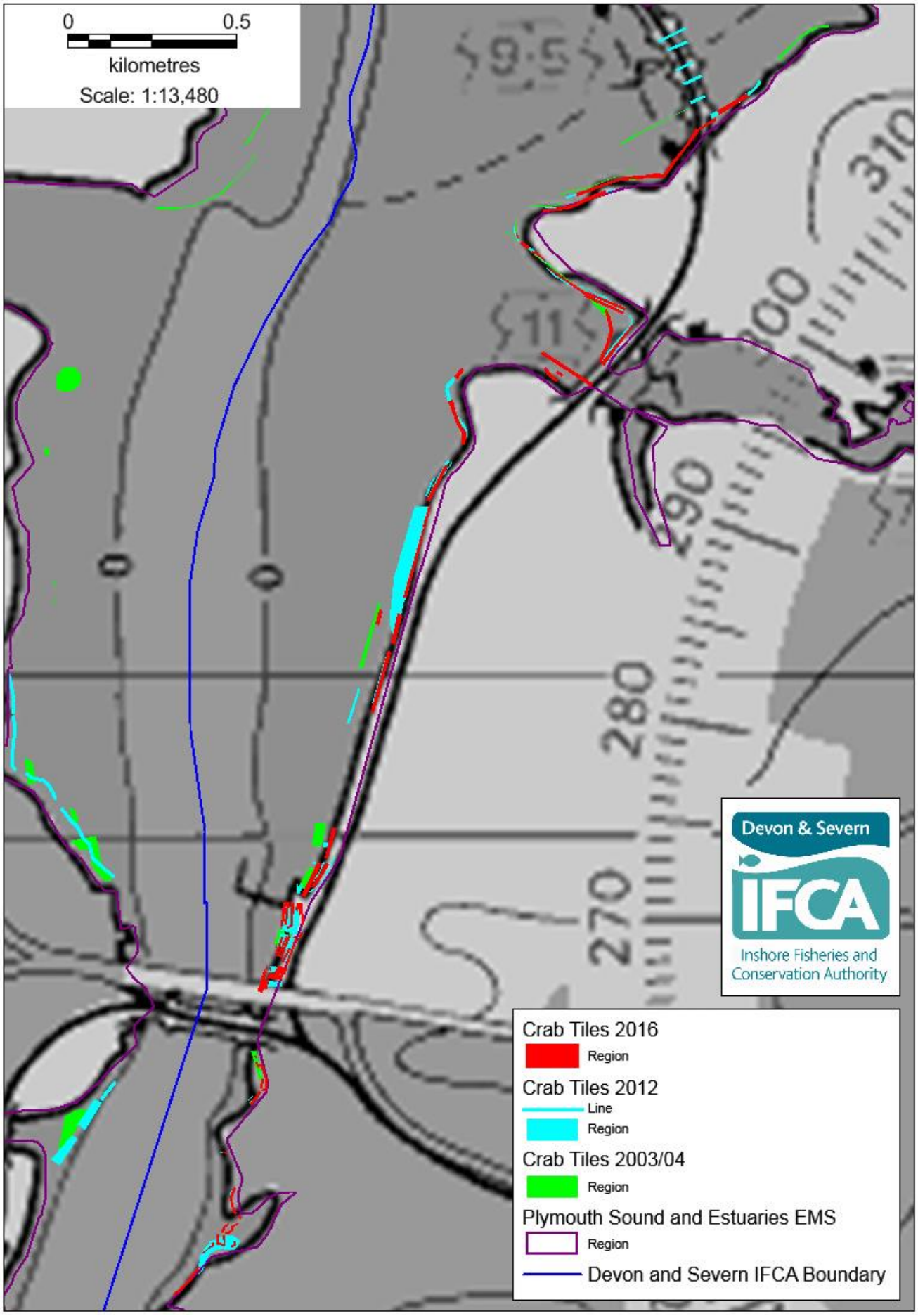

Figure 1 - Crab tile locations on the Tamar (data from Noble (2013) and Black (2004)).

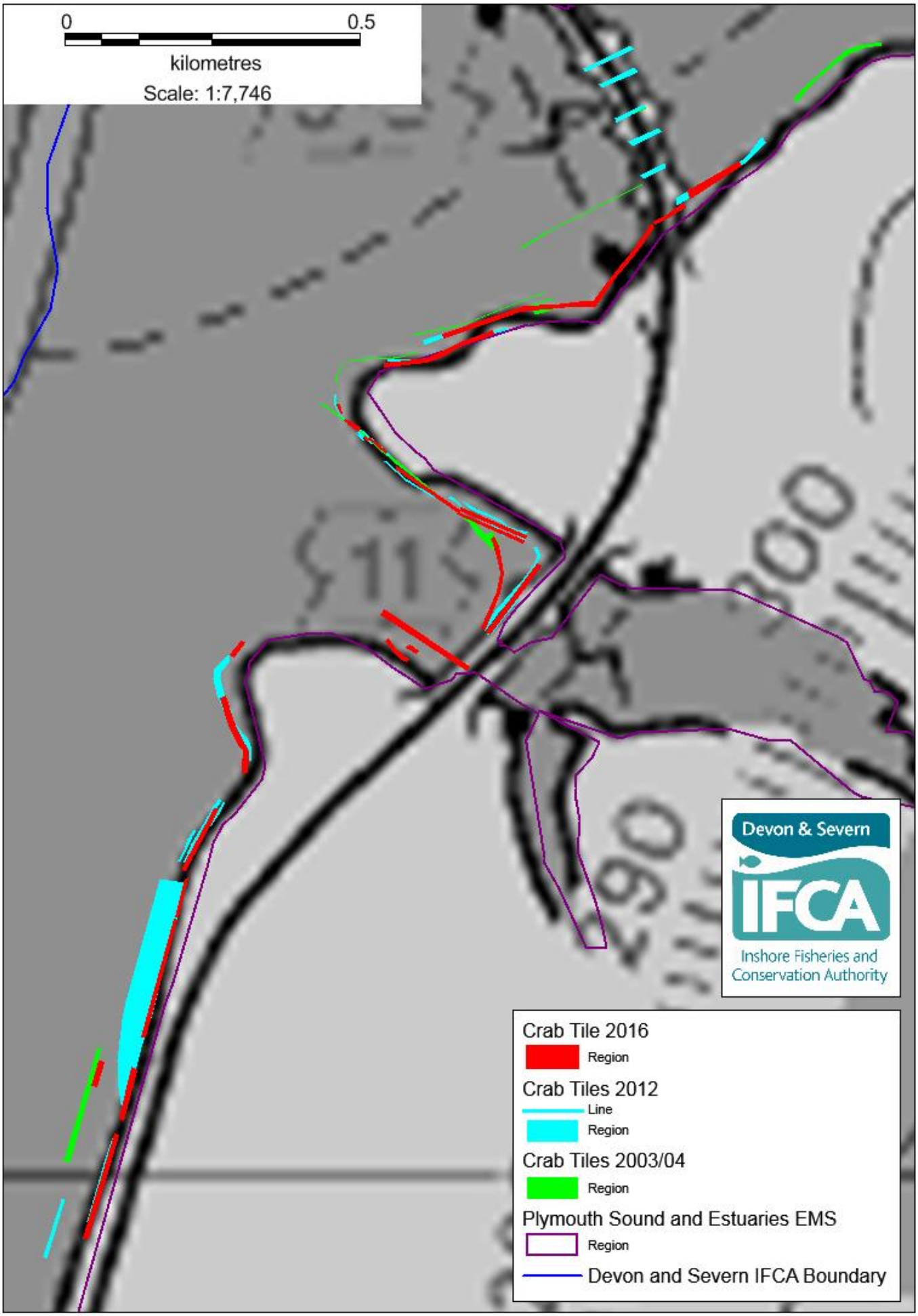

Figure 2 - Crab tile locations on the Tamar

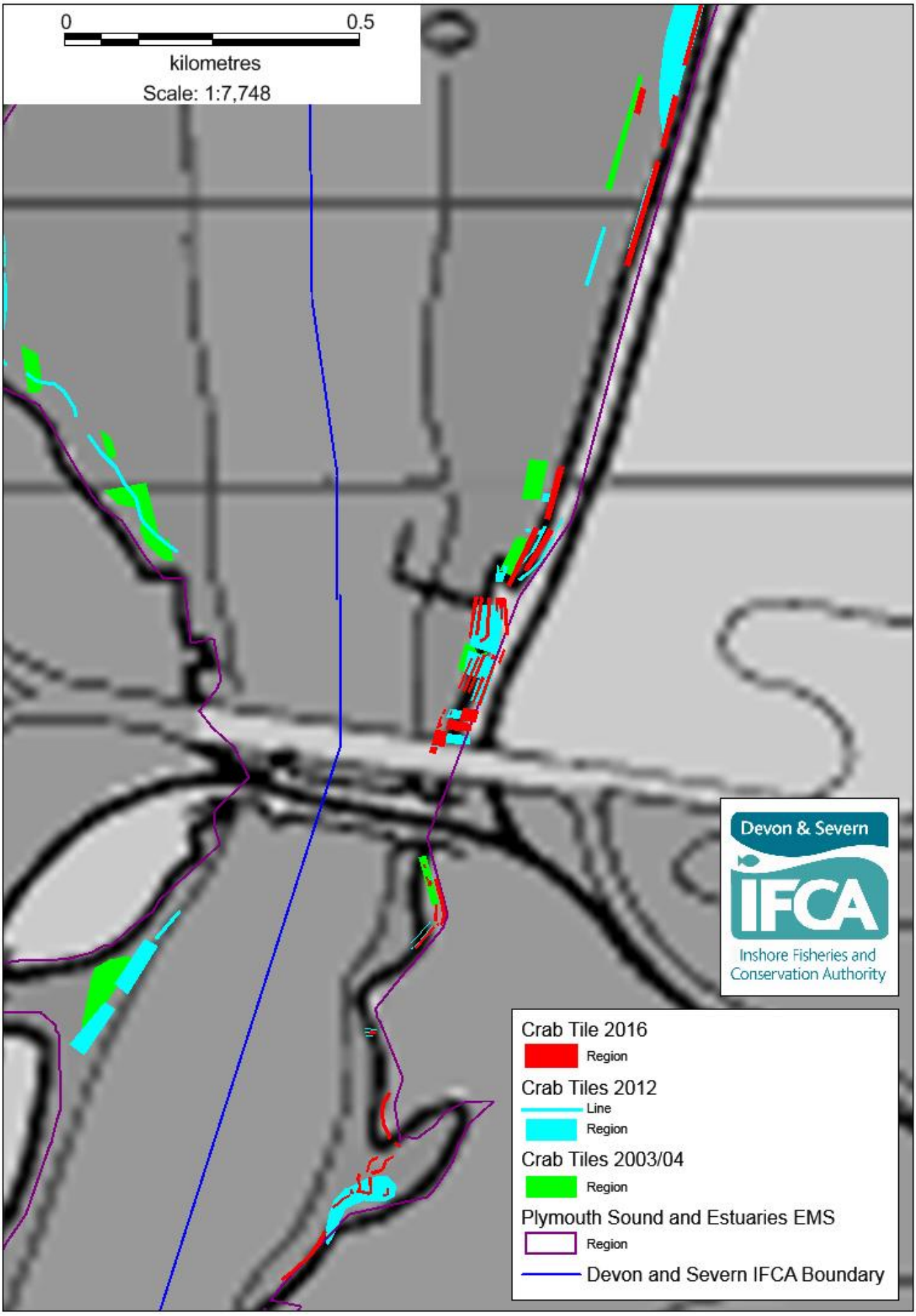

Figure 3 - Crab tile locations on the Tamar

Annex 5: Pressure Audit Trail

Fishing Activity Pressures: Shore-based activities	**Atlantic salt marsh meadows**	**Lower-mid saltmarsh**	**Upper-mid saltmarsh**	**Pioneer saltmarsh**	**Transition and driftline saltmarsh**	**Upper saltmarsh**	**Intertidal seagrass beds**	**Intertidal rock**	**Screening Justification**
Abrasion/disturbance of the substrate on the surface of the seabed	S	S	S	S	S	S	S	S	**IN** – Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Deoxygenation	NS	NS	NS	NS	NS	NS	NS	IE	**OUT** – Insufficient activity levels to pose risk at level of concern
Genetic modification & translocation of indigenous species	S	S	S	S	S	S	S	IE	**OUT** - the activity operates in local area only so risk considered extremely low
Hydrocarbon & PAH contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.	NS	NS	NS	NS	NS	NS	NS	IE	**OUT** - Insufficient activity levels to pose risk of large scale pollution event
Introduction or spread of non-indigenous species	S	S	S	S	S	S	S	S	**OUT** - the activity operates in local area only so risk considered extremely low
Litter	IE	IE	IE	IE	IE	IE	IE	S	**OUT** – Insufficient activity levels to pose risk at level of concern
Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	S	S	S	S	S	S	S	S	**OUT** – Insufficient activity levels to pose risk at level of concern, trampling from crab tiling not believed to penetrate saltmarsh habitat.
Physical change (to	S	S	S	S	S	S	S	S	**OUT** – Insufficient

another seabed type)									activity levels to pose risk at level of concern
Removal of non-target species							S	S	**IN** – Mortality from trampling
Removal of target species	S	S	S	S	S	S	NS	S	**IN** – Removal of target species associated with activity & trampling