

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

European Marine Site: Plymouth Sound & Estuaries

Fishing activities assessed: Static – pots / traps

Gear/feature interactions assessed:

D&S IFCA Interaction ID	Fishing Activity	Sub-feature(s)
HRA_UK0013111_AJ23	Fish traps	Allis shad
HRA_UK0013111_AJ21	Pots/ creels	Allis shad

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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 pots/ traps have a likely significant effect on the ‘allis shad’ of the Plymouth Sound & Estuaries EMS, and on the basis of this assessment whether or not it can be concluded that pots/ traps 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 species¹
- Reference list² (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 (Map Annex 5).
- 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 (Map Annex 5).

4. Information about the fishing activities within the site

Fish traps are occurring in Plymouth Sound SAC. An emergent fishery for wild wrasse is developing in Plymouth for use as cleaner fish in salmon aquaculture in Scotland. The species targeted are four out of the five that are common in the south west: Ballan (*Labrus bergylta*), Goldsinny (*Ctenolabrus rupestris*), Corkwing (*Symphodus melops*) and Rock Cook (*Centrolabrus exoletus*). The fishery is thought to have begun in Plymouth around March 2015 and Devon and Severn IFCA were informed of the fishery by Cornwall IFCA in September 2016. There are four known vessels which currently fish for wrasse in D&S IFCAs District. The fishery operates between March and November. The parlour pots used are specifically deigned to catch wrasse (Figure 1), which are lightweight (3.7kg) and fitted with wrasse escape gaps. They measure 72Lx40Wx28H.



Figure 1 – Wrasse pot used by fisherman ©D.Cresswell

In 2016 and the beginning of 2017 the four vessels had 120-200 pots each. The vessels' sizes range from 5m to up to 8m and work to depths of 12m maximum. They mostly work within Plymouth Sound, south of the breakwater and along the shore from Mount Batten Breakwater down to the Mew Stone (see Figure 8 to Figure 11 for areas fished per vessel). Three of these vessels also fish within Cornwall IFCA District from Fort Picklecombe to Rame Head. There is a fifth vessel which began fishing this summer (2017) but it is only working on the Cornish side.

Devon & Severn IFCA undertook a survey within the SAC in May 2016 (prior to the wrasse fishery becoming known to the Authority) to determine the level of activity occurring (Annex 4, Figure 6). A total of 24 buoys/bottles were unmarked and of this, seven located near Batten Bay were thought

to be no longer active as were covered with seaweed and five were located outside the SAC. Commercial vessel three (Annex 4, Figure 10) was seen potting within the SAC using similar unmarked bottles to those found in the area. However, the vessels fishing for wrasse did not have potting permits at the time and therefore the unmarked buoys may have belonged to them.

A literature review and desk top research of wrasse and live wrasse fisheries was undertaken in late 2016/early 2017 (see embedded document) and the findings were reported to the D&S IFCA Byelaw and Permitting Sub-committee. The sub-committee considered options for monument of the Live Wrasse Pot Fishery and on 24th February 2017 Devon and Severn IFCA went out to consultation on a review of the Potting Permit Byelaw permit conditions to include management of the Live Wrasse Fishery within the IFCA district.



A review of wrasse
ecology and fisheries

4.1 Management

Five management measures were considered, these are listed below.

1. Fully Documented Fishery

Under Paragraph 17 of the Potting Permit Byelaw, those permit holders who wish to engage in the live wrasse pot fishery will be required to provide relevant fishery information to the Authority. This information will be provided in two formats:

- a. Permit holders will provide fisheries data through daily logbooks, to include the following information:
 - a. Date and time of deployment and recovery of each string
 - b. Start and end latitude and longitude of each string of pots hauled
 - c. Number of strings fished
 - d. Number of pots per string
 - e. Number of times per day pots are hauled
 - f. Number of each species of wrasse retained on board
 - g. Number of live wrasse supplied direct to Salmon Farm Industry/Agent
- b. D&S IFCA officers will undertake on board catch surveys on a regular basis to observe the total catches. Fishermen will enable this data collection by allowing D&S IFCA officer on board their vessels.

2. Pot Limitations

A limit on the number of pots per vessel should be set at 60 pots

3. Marking of Gear

- a. Every pot used for the capture of live wrasse must be marked with a tag that is issued by D&S IFCA, to allow for identification of the wrasse pots and aid compliance of the effort restrictions.
- b. All strings of wrasse pots to be used to capture live wrasse must be marked with a buoy or dahn, and each buoy or dahn must be marked the letter 'W' together with the vessels PLN. This is for identification purposes to differentiate wrasse pots from other potting gear used for the capture of Crustacea and Molluscs.
- c. Strings of pots used for the capture of live wrasse must be used solely for that purpose.

4. Closed Season

The period between 1st April and 31st July will be closed to the live wrasse pot fishery.

5. Minimum and Maximum Conservation Reference Sizes

Species of Wrasse	Minimum Conservation Reference Size mm	Maximum Conservation Reference Size mm
Rock Cook	120	230
Goldsinny	120	230
Corkwing	120	230
Ballan	150	230
Cuckoo	150	230

The deadline for responses was 7th April 2017. IFCA officers collated responses and produced an impact assessment on the proposed management measures. The Byelaw and Permitting Sub-Committee met on 15th May 2017 and recommended that the Full Authority consider and agree the revised proposals. The Full Authority approved the recommendations on 15th June 2017 and these were introduced to the live wrasse pot fishery for the remainder of the 2017 season, through changes to the Potting Permit conditions. Amended permits were circulated in July 2017. The new conditions are as follows:

Management Measures:

- To have a fully documented live wrasse fishery
- To limit the number of pots used by each vessel in the live wrasse fishery to 120 pot limit per permit holder
- To mark all strings of pots used in the live wrasse fishery with 'WRA' and Vessel's PLN
- To mark each pot used in the live wrasse fishery with a tag supplied by D&S IFCA
- To have a closed season from 1st April to 30th June
- To introduce minimum and maximum conservation reference sizes for five species of wrasse:
 - Ballan and cuckoo wrasse less than 150mm or greater than 230mm
 - Corkwing, rock cook and goldsinny wrasse less than 120mm or greater than 230mm

Under Paragraph 17 of the Potting Permit Byelaw, D&S IFCA can request relevant information to discharge its duties. In order to manage the Live Wrasse Fishery and as part of the fully documented fishery the following information is required:

1. The name and contact details of the Salmon Farm company, agent or associated company who the fishermen are supplying live wrasse to.
2. Name and contact details of transport company.
3. Transport documents for all those consignments sent to the Salmon Farm company.
4. Number of pots actively being used in the Live Wrasse Fishery.
5. Completion of weekly returns including information on the dates and times of hauling, location of strings, number of strings hauled, number of pots hauled, and the number of wrasse retained on board per day.

Other requirements:

Fishermen will also be required to allow D&S IFCA officers on board their vessels to collect catch data for the fishery.

Management Review Process:

- The Authority has decided that if there is an increase in the number of vessels entering the live wrasse fishery this will trigger a review of the permit conditions for the live wrasse fishery, and may lead to further changes to the permit conditions, which may include a reduction in the number of pots per vessel.

- The Authority has decided that a review of the management of the live wrasse fishery will be undertaken in November 2017. Data collected from fishermen and on-board surveys will inform the review of the permit conditions for the live wrasse fishery, and may lead to changes to these conditions.
- Failure to meet all conditions set out in this policy statement may also trigger a review of the permit conditions.
- In addition to formal management under the Potting Permit conditions, the Authority may introduce further voluntary measures to support the management of the live wrasse fishery. Failure to adhere to these voluntary measures may lead to a review of the permit conditions.

Guidance for the live wrasse fishery:

Further to the regulatory conditions, D&S IFCA has developed additional guidance to support these measures and the fishery. This guidance is in the form of voluntary measures to be adopted by those fishermen participating in the live wrasse fishery.

1. A series of small closed zones to the live wrasse pot fishery or 'No Wrasse Pot Zones' have been identified through discussions with the fishermen. These areas lie within the fishery area in the Plymouth Sound and associated area and include reef habitat known to be favoured by the wrasse species fished. Figure 7 (Annex 4) shows the areas closed to the live wrasse fishery.
2. Mount Batten Breakwater is known to be a popular angling mark and in order to remove any conflict with anglers in this area, fishermen are requested to keep their pots 30m from the pier.

4.2 Data Analysis

In November 2017 a report on the analysis of the wrasse fishery data collected from on-board surveys and returns data from the fishermen (see link to PDF below) was presented to the Byelaw and Permitting Sub-Committee on 13th November 2017. At this meeting, the Byelaw and Permitting Sub-Committee recommended proposed changes to management measures for the Live Wrasse Fishery. D&S IFCA is going out to consultation to amend the current permit conditions. The recommended changes are:

- **to amend the slot size for corkwing to 140mm to 180mm**
- **to change the closed season to May 1st to 15th July.**



Live Wrasse Fishery
Data Analysis Novem

The Byelaw and Permitting Sub-committee suggested further monitoring of the areas where the fishermen are shooting and hauling their pots to demonstrate adherence to the voluntary closed areas. This may involve putting GPS locators on the vessels to monitor the vessel movements. This will be discussed as a voluntary measure with the fishermen involved in the fishery.

4.3 Fishing Activity

Pots/creels are occurring at a medium level within Plymouth Sound. D&S IFCA have a potting permit byelaw and currently twelve permits are issued for commercial vessels with the base port of Plymouth and two for the river Yealm. During D&S IFCA enforcement patrols pots are frequently hauled in this area to be checked for escape gaps. The level of activity increases slightly in the summer with recreational/visiting potters, especially towards the mouth of the Yealm, where many of the holiday makers launch from.

The South Devon Potting Effort Survey identified no potting activity within the EMS (Clark, 2008). D&S IFCA's Potting and Netting Survey 2014 (unpublished data) identified two vessels that work

within the SAC, off Yealm head. The first, a 5.8m vessel with 200 parlour pots and the second, a 6.1m vessel with 200 parlour pots, although the majority of area worked for both vessels is outside the SAC (Figure 5). A total of four other vessels responded that work from Plymouth, but outside the SAC. Target species include lobsters, brown crab and spider crab. It is worth noting that the response rate for the 2014 survey was approximately 22% (for potting and netting combined), so may not represent all activity in Plymouth Sound.

Devon & Severn IFCA undertook a survey within the SAC in May 2016 to determine the level of activity occurring (Annex 4, Figure 6). A total of six commercial vessels were found to pot within the SAC with 23 buoys between them. Four buoys near Yealm Head belonged to two recreational permit holders. A total of 24 buoys/bottles were unmarked and of this, seven located near Batten Bay were thought to be no longer active as covered with seaweed and five were located outside the SAC. Commercial vessel three (Annex 4, Figure 6) was seen outside the breakwater potting within the SAC using similar unmarked bottles to those found in the area.

Figure 3 (Annex 4) shows the MMO sightings data for potting within this site, which demonstrates a low level of activity.

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.

5.1 Table 1: 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)	<ul style="list-style-type: none"> Removal of target species (sensitive) See Annex 6 for pressures audit trail	
3. Is the feature potentially exposed to the pressure(s)?	Yes , there are currently no D&S IFCA management measures prohibiting the use of pots in Plymouth Sound and Estuaries EMS. D&S IFCA have brought in management measures for the wrasse fishery (see section 4). D&S IFCA has a potting permit byelaw and through this can gauge where any future changes or developments in this activity occur. The Dockyard Port of Plymouth Order 1999 prohibits fishing in some areas of the SAC.	
4. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level? <i>(reference to conservation objectives)</i>	Six commercial vessels are known to pot for crustaceans and four commercial vessels are known to pot for wrasse within the SAC. The river Tamar is considered to be home to an important spawning population (Hillman, 2003) and adult fish migrating to spawning grounds/ juveniles leaving could potentially interact with the fishing activity from by-catch. The selectivity of pots results in low incidental by-catch. By-catch recorded in wrasse pots has been conger eels, small crustaceans and starfish (pers. observation). All unintentionally caught shad must be returned to the water immediately. The survivability of Allis shad to catch and release is unknown. Whilst there have been some records of by-catch of shad by anglers and netters (Hillman, 2003) the IFCA is not aware of any reports of catches or by-catches of shad in recent years. The activities assessed are not thought to significantly affect the presence and spatial distribution of species, population size, recruitment and reproductive capability.	
5. Is the potential scale or magnitude of any effect likely to be significant?	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.	

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 2: Summary of Impacts

Feature/Sub feature(s)	Conservation Objective	Potential pressure ³ (such as abrasion, disturbance) exerted by gear type(s) ⁴	Potential ecological impacts of pressure exerted by the activity/activities on the feature ⁵ (reference to conservation objectives)	Level of exposure ⁶ of feature to pressure	Mitigation measures ⁷

³ Guidance and advice from NE.

⁴ Group gear types where applicable and assess individually if more in depth assessment required.

⁵ Document the sensitivity of the feature to that pressure (where available), including a site specific consideration of factors that will influence sensitivity.

⁶ 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.

⁷ 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

N/A

8. In-combination assessment

8.1 Other fishing activities

As shad is a mobile and migratory species, there is possibility for the species to be affected by accidental by-catch from fisheries outside of the Plymouth Sound and Estuaries EMS. However, these are considered outside the scope of this assessment and the fishing activities addressed below are only those occurring within the EMS.

Handworking – Activity occurs on the intertidal and not believed to interact with shad. Therefore no in-combination effect thought to be possible.

Crab tiling – Activity occurs on the intertidal and not believed to interact with shad. Therefore no in-combination effect thought to be possible.

Digging with forks – Activity occurs on the intertidal and not believed to interact with shad. Therefore no in-combination effect thought to be possible.

Shrimp push nets – Activity occurs on the intertidal and not believed to interact with shad. Therefore no in-combination effect thought to be possible.

Drift, gill, trammel & entangling nets – There are records of catches of shad from inshore drift nets, including bass and gill nets around south west England (Hillman, 2003). D&S IFCA are not aware of shad catches in recent years. Drift netting occurring on a medium level, with several small dories drift netting for herring. Fixed nets (gill, trammel and entangling) are known to occur within and close to Plymouth Sound and Estuaries SAC. Due to the level of fishing activity and likelihood of capture in pots, it is thought that no in-combination effects of by-catch will lead to the conservation objectives not being met for shad.

Cuttlepots - Activity not occurring, therefore no in-combination effect thought to be possible.

Commercial diving – Activity not believed to interact with shad. 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. Therefore no in-combination effect thought to be possible. Ring nets are occurring in Plymouth Sound with two permanent ring netters and sometimes visiting ring netters. However, the two vessels only fish in the SAC when weather prevents them going outside the breakwater. Although there are records of shad catches from anglers and inshore drift nets, D&S IFCA are not aware of shad catches in recent years. Officers spoke with a fisherman from one of the vessels who had no knowledge of shad by-catch within the fishery. Due to the level of fishing activity it is thought that no in-combination effects of by-catch will lead to the conservation objectives not being met for shad.

Purse seine – 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.

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 – Activity occurs at a very low level, with one long-liner operating around the mouth of the Tamar. Although there are records of shad catches from anglers and inshore drift nets, D&S IFCA are not aware of shad catches in recent years. Due to the low level of fishing activity it is thought that no in-combination effects will lead to the conservation objectives not being met for shad.

Handlines, Jigging and trolling – There are records of catches of shad from recreational river anglers in the area (Hillman, 2003). However, there are no records of these activities taking place commercially but they have not been able to be ruled out. Therefore, no in-combination effect thought to be possible.

D&S IFCA conclude 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.

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. Although shad by-catch in some fisheries has been recorded, the reason for their decline is thought to be factors other than any impact associated with fishing (Gubbay & Knapman, 1999; Potts & Swaby, 1993). These are considered to be obstructions (such as weirs or dams) which have restricted shad to the lower reaches of the river and prevented shad reaching historic spawning grounds (Aprahamian et al. 1998), in particular Gunnislake Weir (Gratton & Kibel, 2015). Additionally, habitat destruction through the removal of gravel beds, low water flows and poor water quality are other factors related to the decline (Aprahamian et al. 1998).

Currently there are proposed plans or projects in Plymouth Sound and Estuaries EMS which could theoretically interact with the sub-features addressed. These activities have been included following informal advice from Natural England.

Description: Maintenance dredging within Western Mill Lake and North Yard at HMNB Devonport which is carried out on an annual basis. Includes trailer suction hopper dredging carrying out the majority of maintenance and additional small scale dredging techniques: plough, grab and submersible pump dredging. A maximum amount of 63,448m³ of predominantly silt from the dredge areas will be removed over 14 month period.

Pressures:

- Barrier to species movement
- Changes in suspended solids (water clarity)
- Collision BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures)
- Deoxygenation
- Habitat structure changes - removal of substratum (extraction)
- Hydrocarbon & PAH contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Introduction of other substances (solid, liquid or gas)
- Introduction or spread of non-indigenous species
- Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals). Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Transition elements & organo-metal (e.g. TBT) contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Underwater noise changes
- Vibration

- Visual disturbance

In-combination assessment: Current levels of activity is not believed to restrict shad migration, therefore, it is thought that no in-combination effects will lead to the conservation objectives not being met for shad.

Description: Thanckes Oil Jetty demolition and construction of Yonderberry Jetty on River Tamar, including capital dredging for a berth pocket and navigational channel.

Pressures:

- Barrier to species movement
- Changes in suspended solids (water clarity)
- Collision BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures)
- Deoxygenation
- Habitat structure changes - removal of substratum (extraction)
- Hydrocarbon & PAH contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Introduction of other substances (solid, liquid or gas)
- Introduction or spread of non-indigenous species
- Removal of non-target species
- Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals). Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Transition elements & organo-metal (e.g. TBT) contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.
- Underwater noise changes
- Vibration
- Visual disturbance

In-combination assessment: Current levels of activity is not believed to restrict shad migration, therefore, it is thought that no in-combination effects will lead to the conservation objectives not being met for shad.

Description: Dispensation for annual Marine Biological Association (MBA) scientific survey work on research vessel Sepia within the EMS to fish for scientific purposes. Activity involving 4m beam trawl in West Mud (Tamar) and Yealm Mouth, demersal otter trawl in Bigbury bay, and rectangle dredge in New Ground (Plymouth Sound), Mewstone and Stoke Point.

Pressures:

- Barrier to species movement
- Litter
- Removal of non-target species
- Removal of target species
- Visual disturbance

In-combination assessment: No previous catches of Allis Shad have occurred in these trawls. Current levels of activity is not believed to restrict shad migration, therefore, it is thought that no in-combination effects will lead to the conservation objectives not being met for shad.

Description: Dispensation for Cefas to carry out scientific survey work on research vessel Sepia within the EMS to fish for scientific purposes. Activity involving otter trawling in the Tamar to collect smelt samples for tagging.

Pressures:

- Barrier to species movement
- Litter
- Removal of non-target species
- Removal of target species

- Visual disturbance

In-combination assessment: Current levels of activity is not believed to restrict shad migration, therefore, it is thought that no in-combination effects will lead to the conservation objectives not being met for shad.

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 conclude 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

The original assessment (version 1) was formally signed off by Natural England on 03/05/2016. The activities (cuttlepots and fishtraps) were not believed to be occurring at that time. However, new information has revealed an emergent fishery for wrasse using fish traps and has therefore prompted a re-assessment of the fishing activity. Cuttlepots have been assessed in a separate HRA. A re-assessment for fishtraps was sent for informal advice to Natural England in April 2017 (version 2) and this assessment (version 3) contains amendments from the advice received and updated management measures.

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

- Aprahamian, M.W., Lester, S.M., and Aprahamian, C.D. (1998) Shad conservation in England and Wales. Environmental Agency Research and Development Technical Report W110
- Clark, S (2008) South Devon potting effort survey. Devon Sea Fisheries Committee Research Report 200802
- 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
- Gratton, P. and Kibel, P. (2015) Allis shad fish passage options appraisal – Gunnislake weir. Fishtek Consulting Ltd report.
- Gray, K (2015) Fishing Activities Currently Occurring in the Plymouth Sound and Estuaries European Marine Site (SAC and SPA), Devon and Severn IFCA Report
- Gubbay, S. and Knapman, P.A. (1999) A review of the effects of fishing within UK European marine sites. English Nature (UK Marine SACs Project). 134 pages
- Hillman, R. (2003) The distribution, biology and ecology of shad in South-West England. Environment Agency Research and Development Technical Report W1-047
- MAGIC (2015) Multi-Agency Geographic Information for the Countryside interactive map <http://magic.defra.gov.uk/magicmap.aspx?startTopic=magicall&chosenLayers=sacIndex&sqgridref=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)
- Potts, G.W. and Swaby, S.E. (1993) Marine Fishes on the EC Habitats and Species Directive. Confidential report to the Joint Nature Conservation Committee.

Annex 2: Natural England's consultation advice

N/A

Annex 3: Site Map

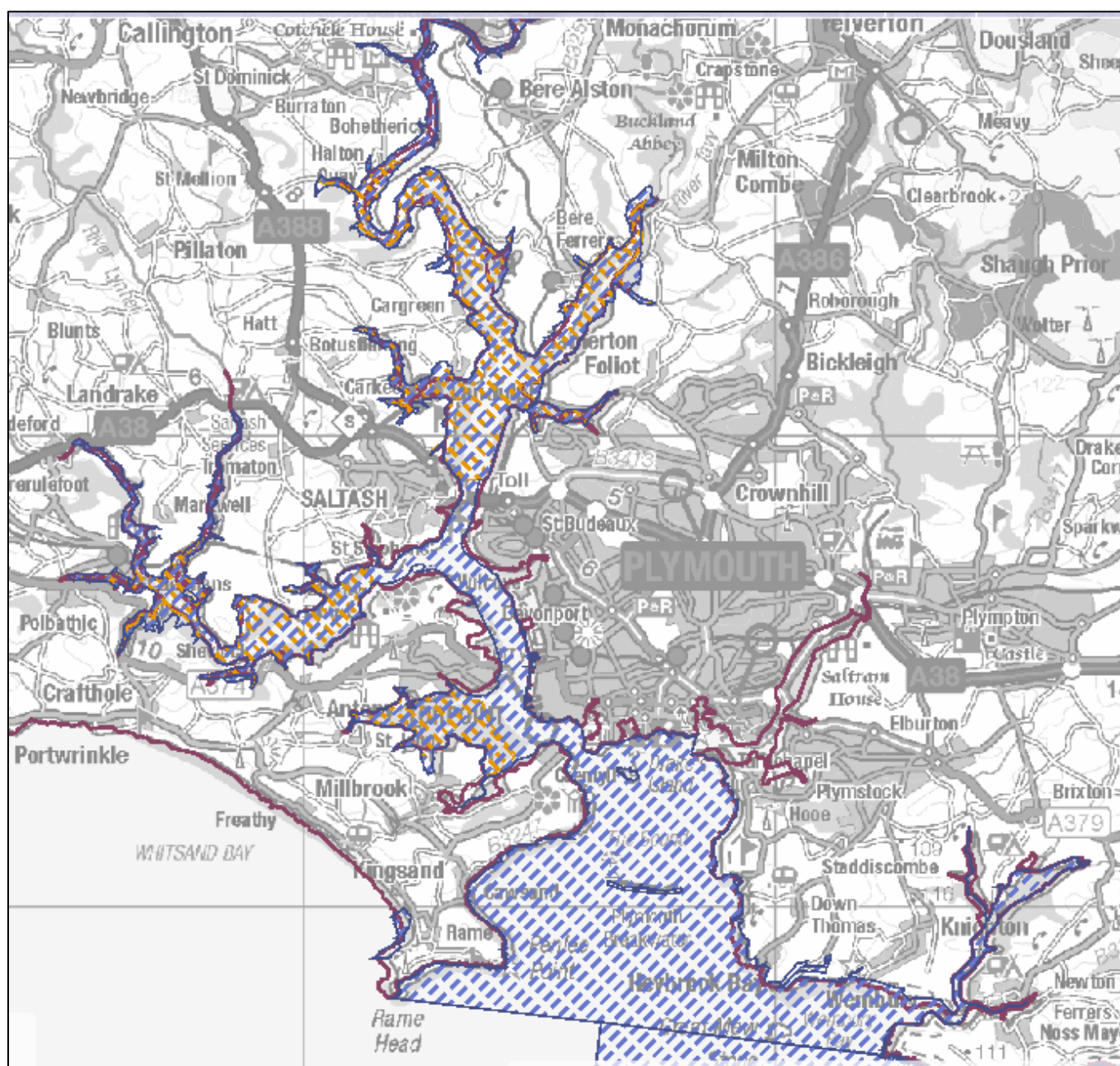


Figure 2 - Area of SAC (blue hatched) and SPA (Orange hatched) (MAGIC, 2015)

Annex 4: Fishing activity maps

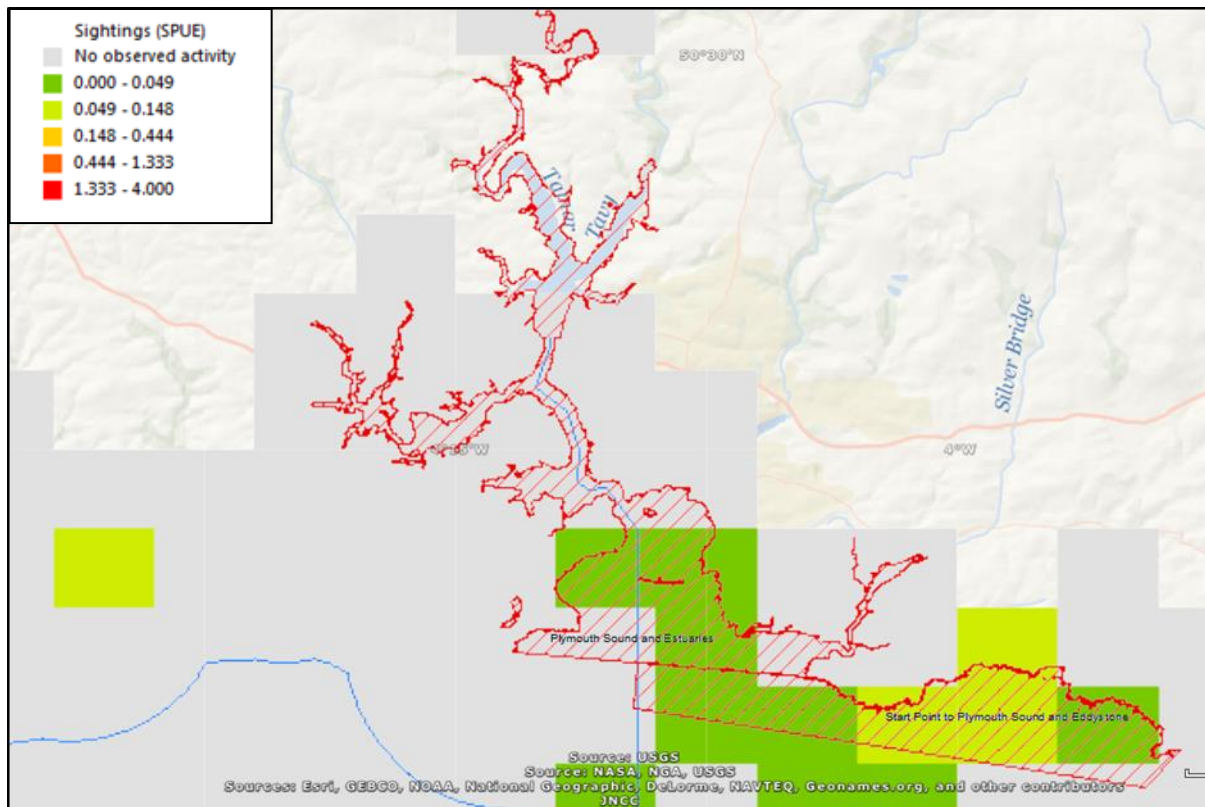


Figure 3 - MMO sightings data for potting, 2007-2009

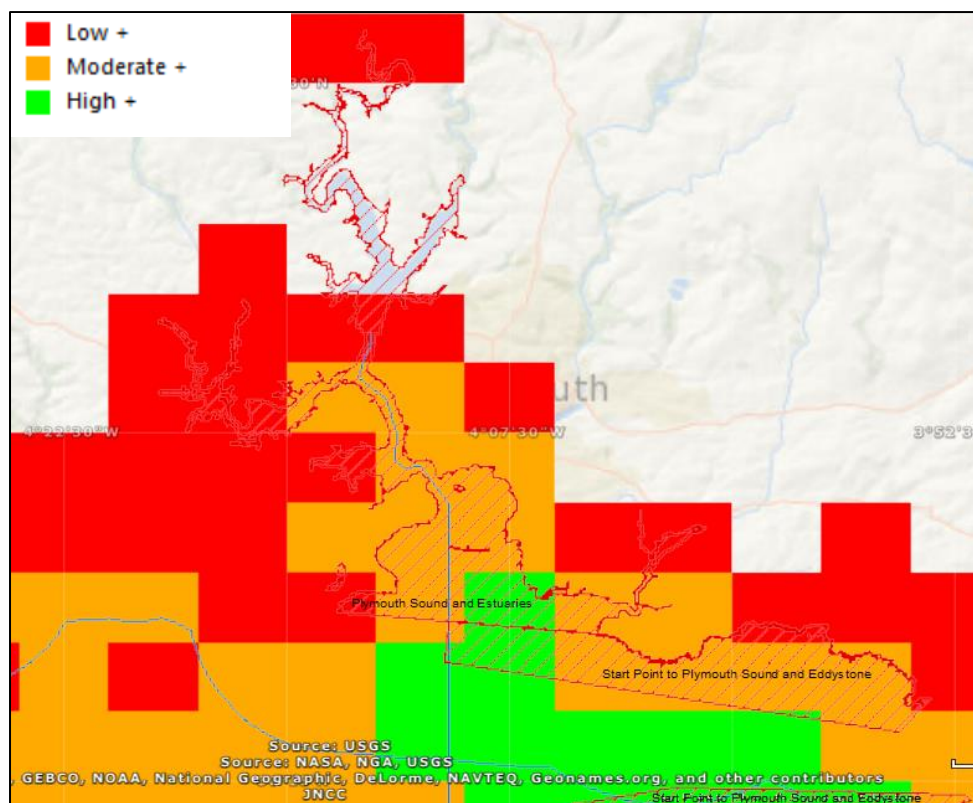


Figure 4 - MMO Sightings Data confidence 2007-2009



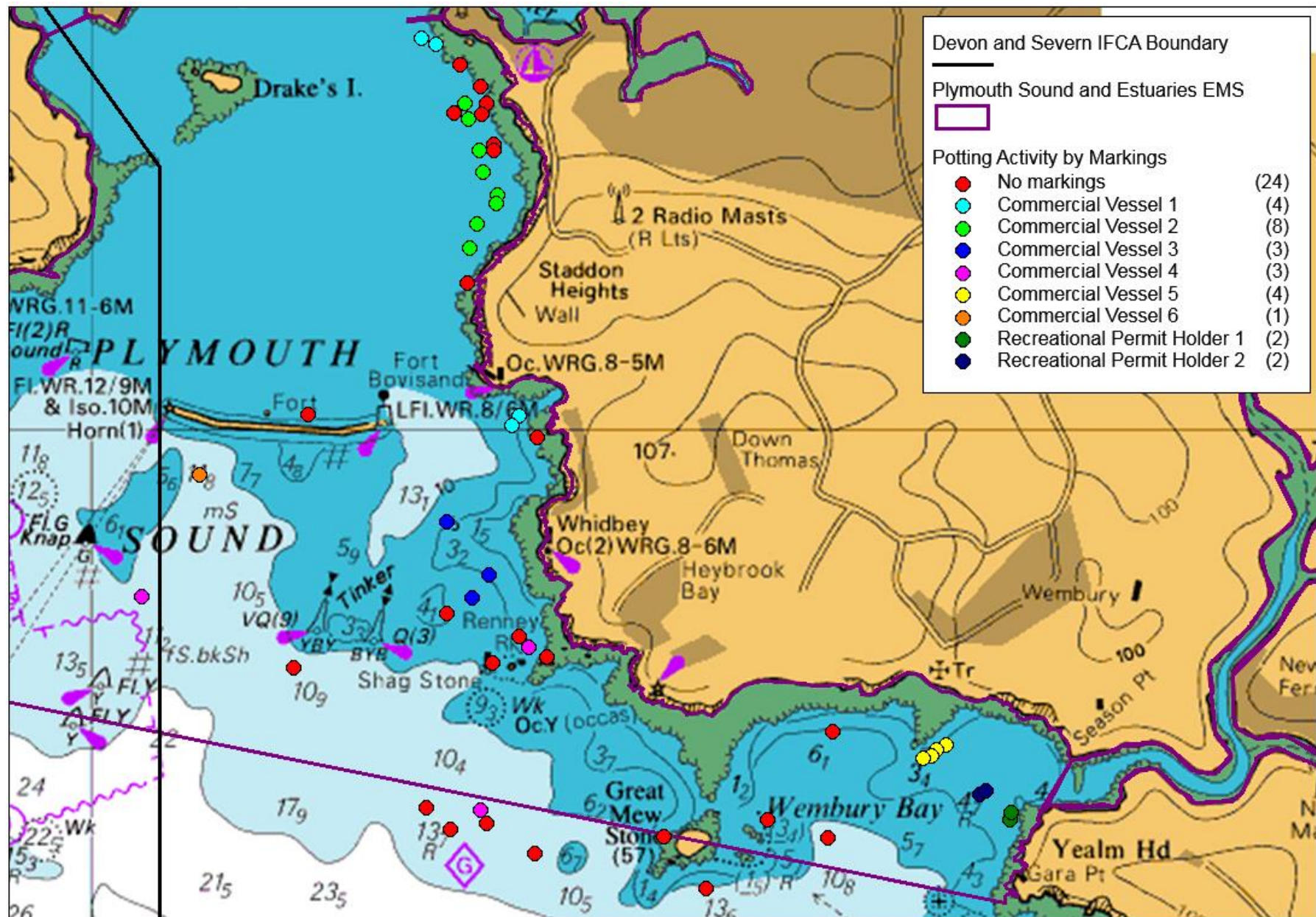
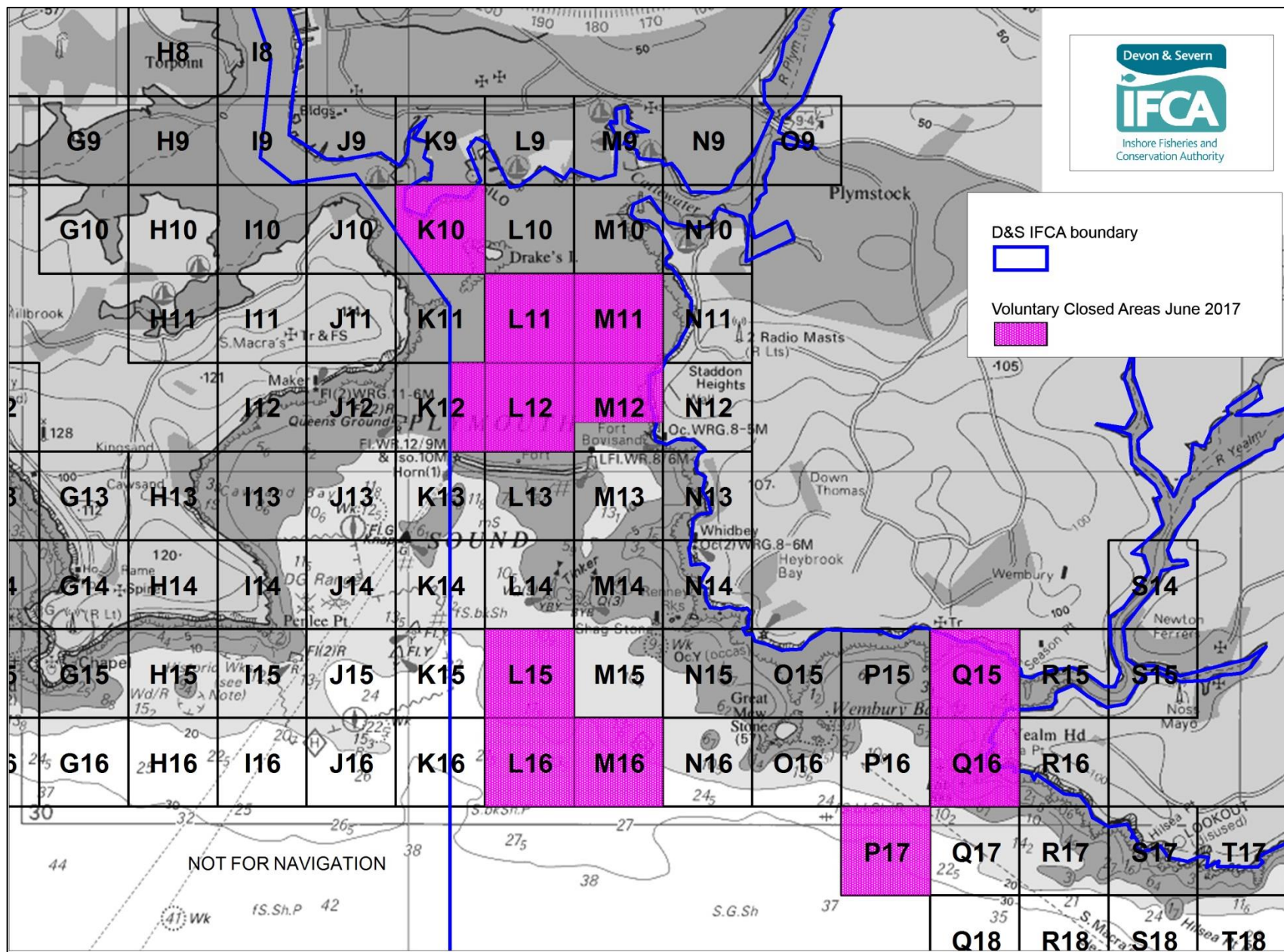


Figure 6 - Potting activity (markings on buoys) recorded within and near Plymouth Sound and Estuaries EMS in May 2016.



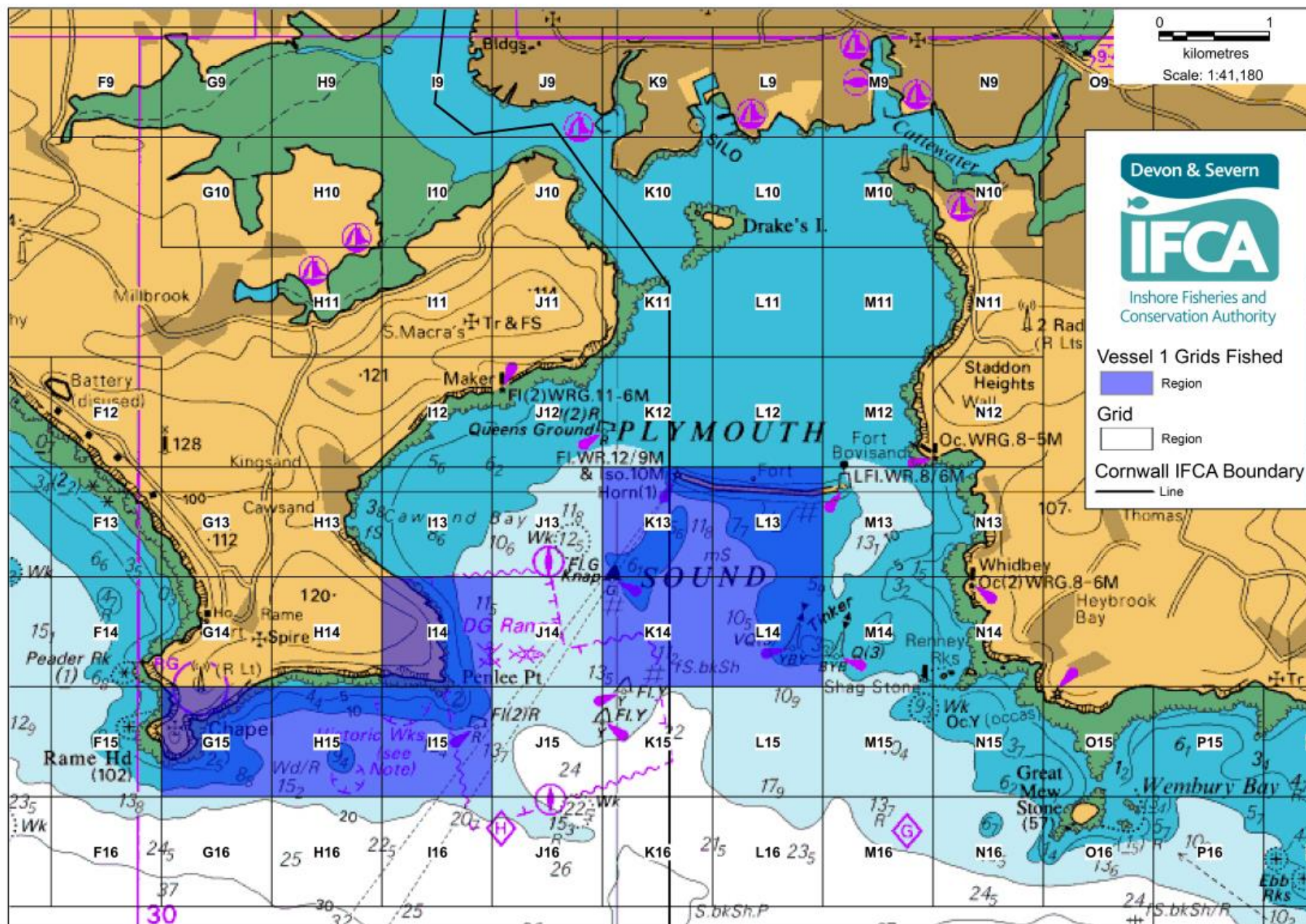


Figure 8 - Vessel 1 areas fished (April 2017 to August 2017)

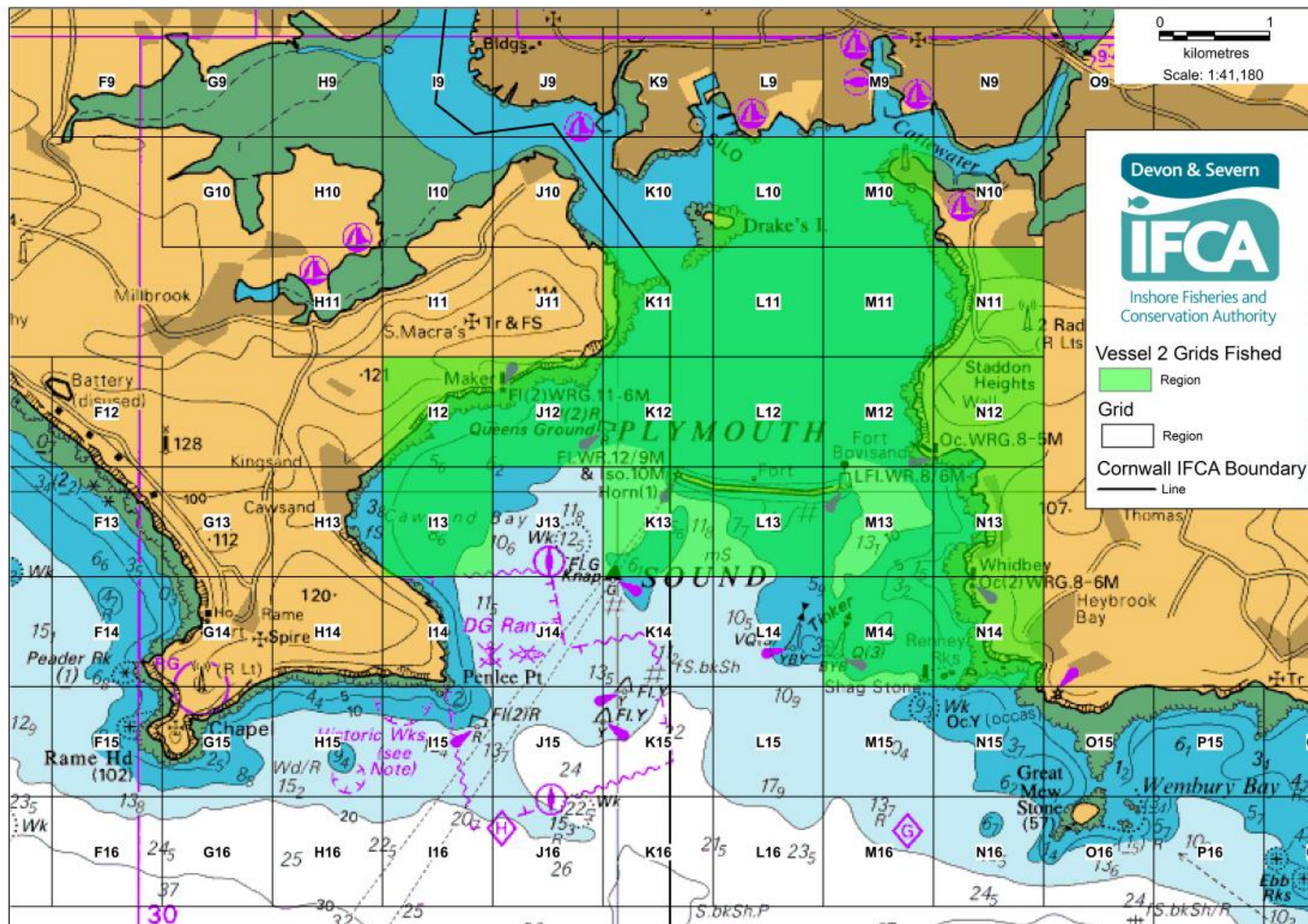


Figure 9 - Vessel 2 areas fished (May 2017 to August 2017)

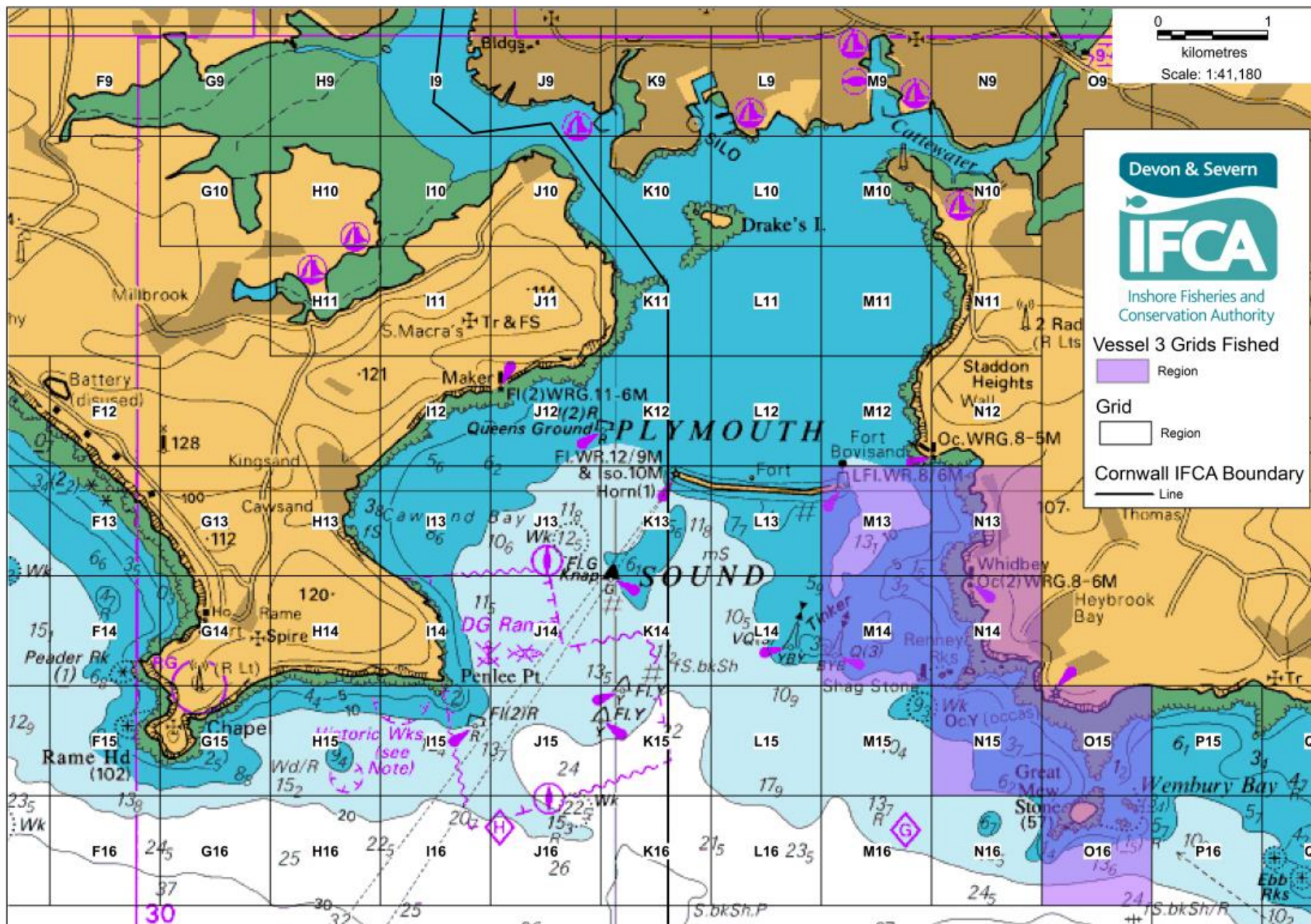


Figure 10 - Vessel 3 areas fished (April 2017 to August 2017)

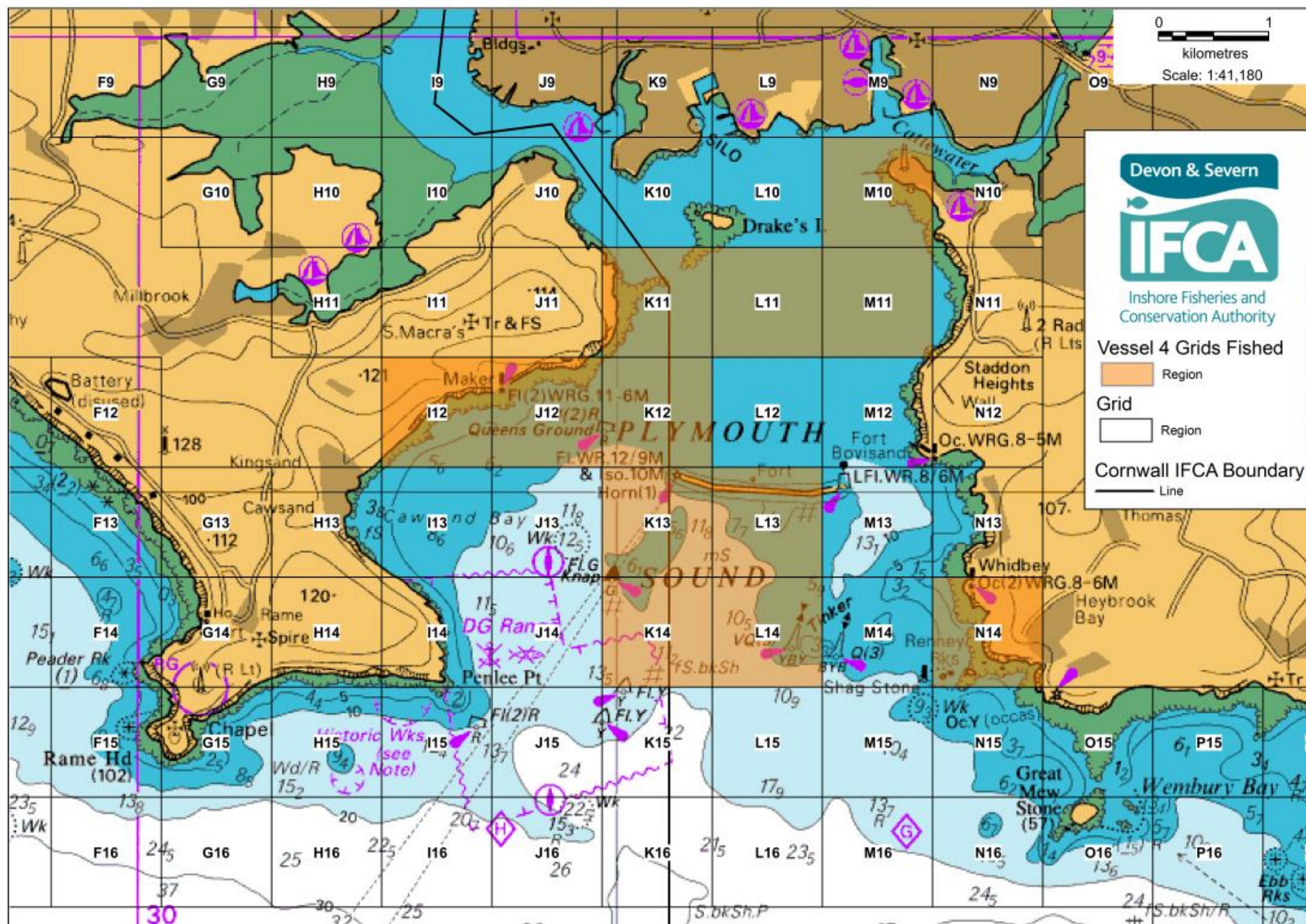


Figure 11 - Vessel 4 areas fished (June 2017 to August 2017)

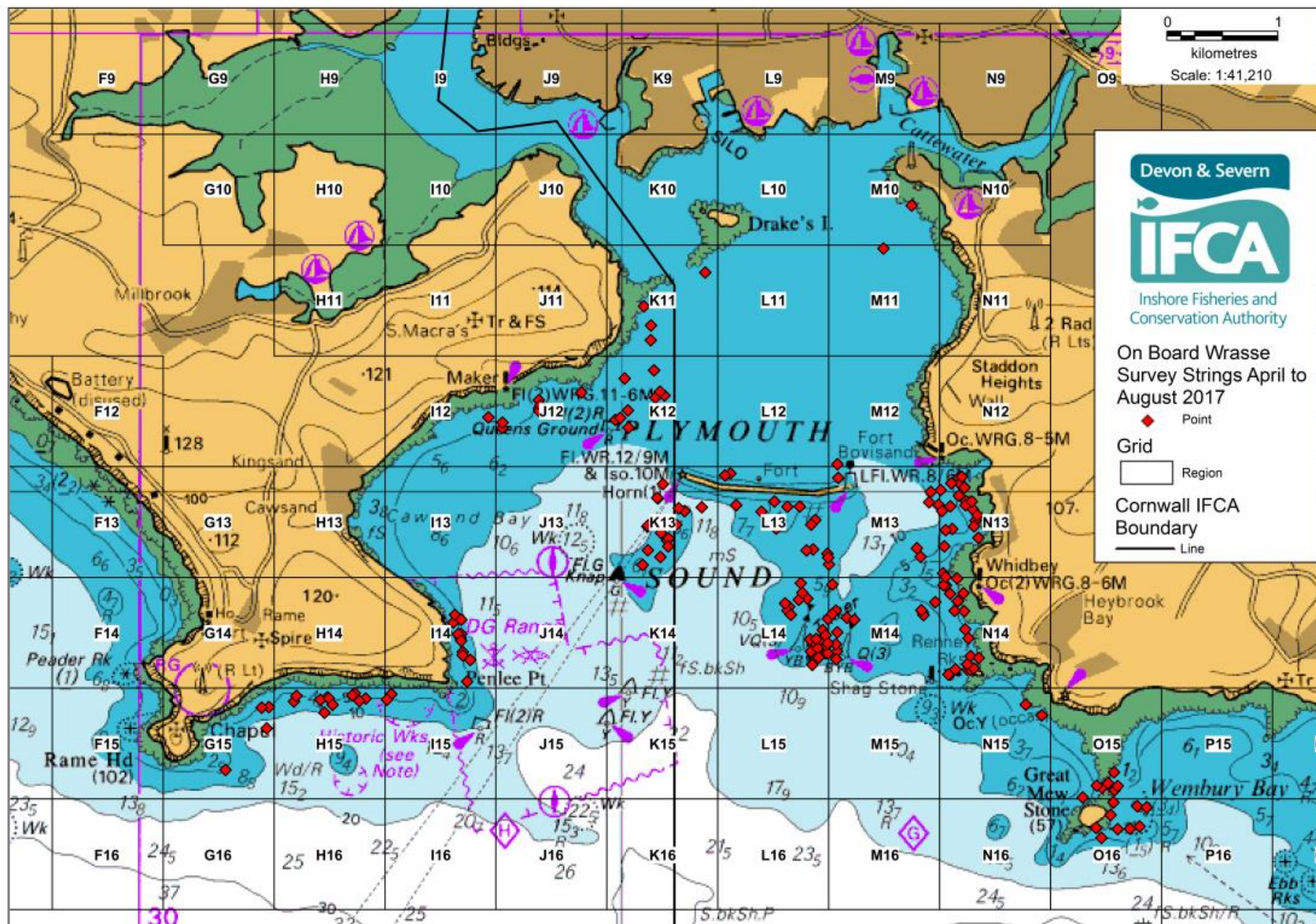
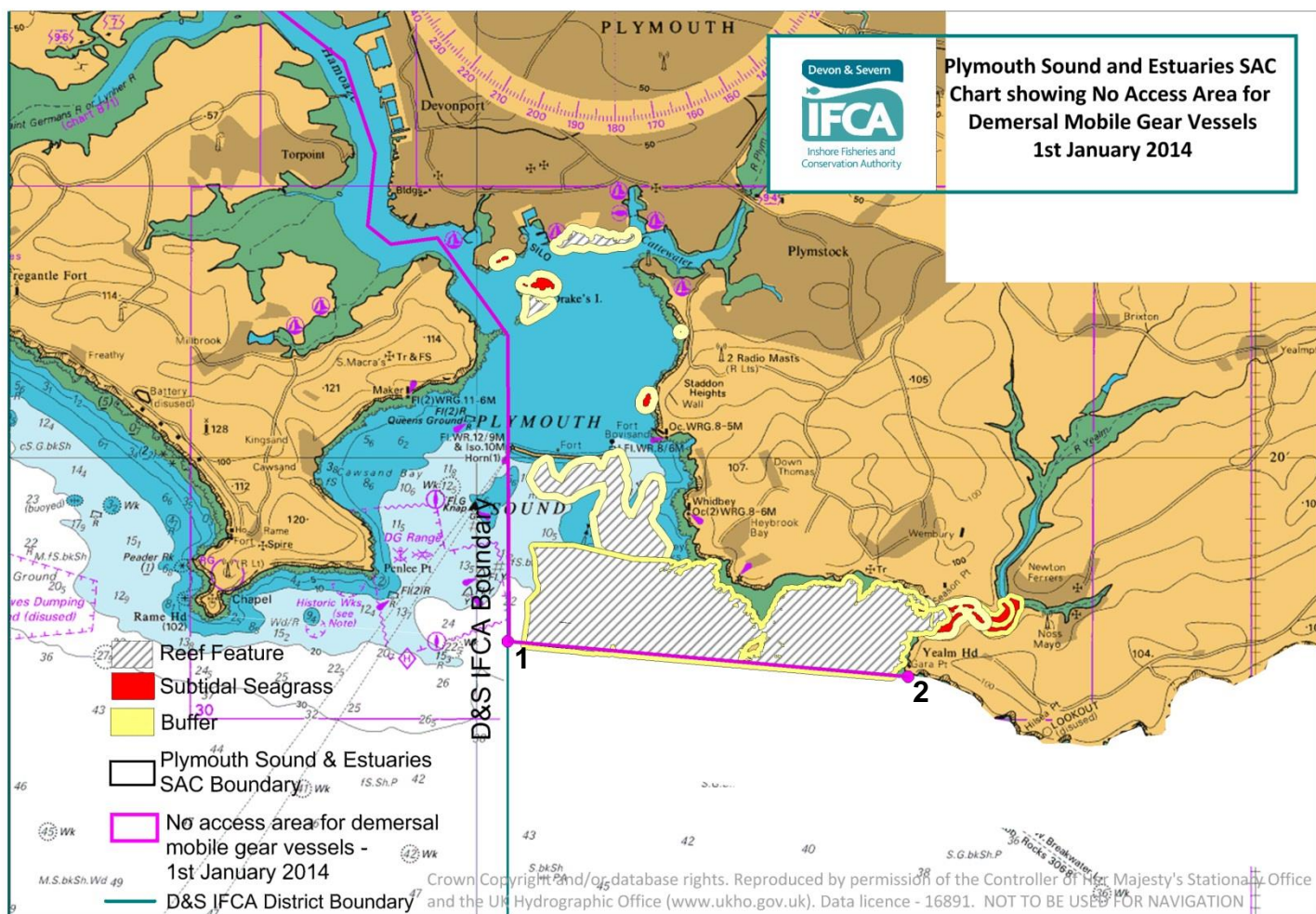


Figure 12 - Strings surveyed during on board wrasse surveys April to August 2017

Annex 5: Mobile Fishing Permit Byelaw map

No demersal mobile gear is permitted landward (up to High Water Mark) of a line following the western extent of the Devon and Severn IFCA district boundary and drawn between points 1 and 2 across Plymouth Sound.

Point Number	Latitude		Longitude	
1	50 ⁰	18.484' N	004 ⁰	09.600' W
2	50 ⁰	18.192' N	004 ⁰	04.458' W



Annex 6: Pressures Audit Trail

Traps Fishing Pressure(s)	Sub-feature	Screening Justification
	Allis shad	
Barrier to species movement	S	OUT – Insufficient activity levels to pose risk at level of concern
Collision BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures)	S	OUT – Insufficient activity levels to pose risk at level of concern
Deoxygenation	S	OUT - Insufficient activity levels to pose risk of large scale pollution event
Genetic modification & translocation of indigenous species	IE	OUT – Hybrid shad are known to occur at mixed spawning grounds between allis and twaite shad, but by no impact from the activity and the fleet 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.	IE	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction of other substances (solid, liquid or gas)	IE	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction or spread of non-indigenous species	IE	OUT - Fleet operates in local area only so risk considered extremely low
Litter	IE	OUT - Insufficient activity levels to pose risk at level of concern
Removal of non-target species	S	OUT – Other species removed by fishing activity not thought to effect shad
Removal of target species	Revised pressure – no sensitivity currently available	IN – Potential mortality of shad from low incidental by-catch.
Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals). Includes those priority substances listed in Annex II of Directive 2008/105/EC.	IE	OUT - Insufficient activity levels to pose risk of large scale pollution event
Transition elements & organo-metal (e.g. TBT) contamination. Includes those priority substances listed in Annex II of Directive 2008/105/EC.	IE	OUT - Insufficient activity levels to pose risk of large scale pollution event
Underwater noise changes	S	OUT - Insufficient activity levels to pose risk at level of concern
Visual disturbance	IE	OUT - Insufficient activity levels to pose risk at level of concern