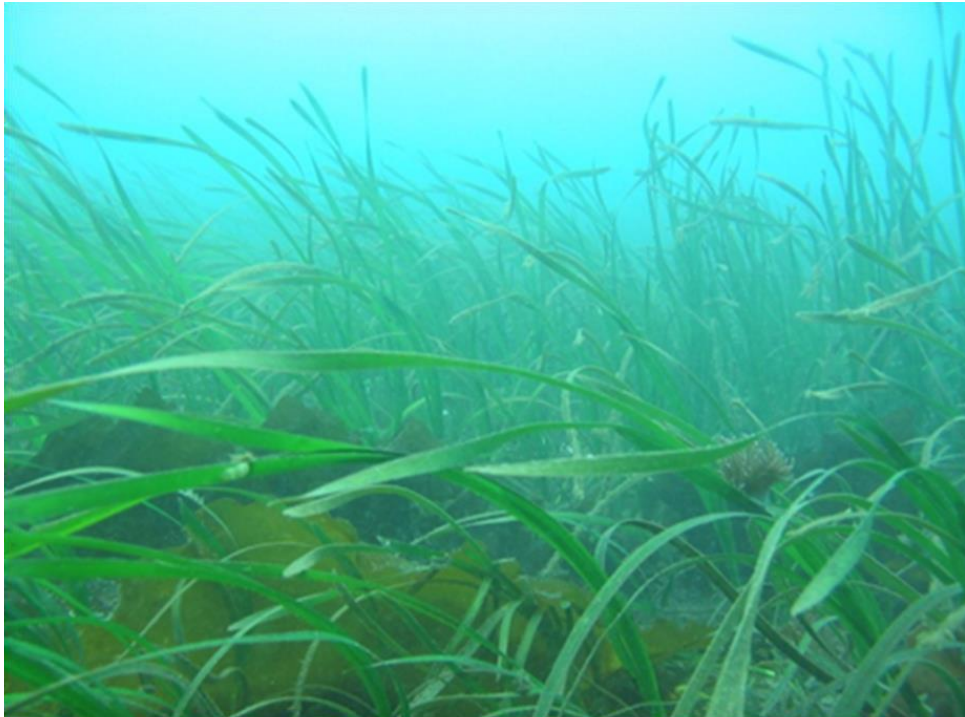




Report on the Plymouth Sound and Estuaries Potting on Seagrass Monitoring 2019-2020



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Contents

1. Introduction	4
2. Methodology	4
3. Results.....	5
4. Discussion/Recommendations	6
5. References	8
Annex 1 – Area of SAC	9

1. Introduction

The Plymouth Sound and Estuaries European Marine Site (EMS) is made up of the Plymouth Sound and Estuaries SAC and the Tamar Estuaries Complex SPA (Annex 1). 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, sedimentary and reef habitats, wave exposure and water depth. The high diversity of habitats and conditions gives rise to communities both representative of ria systems and some unusual features, including abundant southern Mediterranean-Atlantic species rarely found in Britain (English Nature, 2000).

Six different habitats were designated as protected features of the EMS. A sub-feature of four of these habitats in Plymouth Sound, and one of the reasons for the SAC designation, are seagrass (*Zostera marina*) beds. Seagrass beds provide important food for wildfowl, and nutrients to support animal communities on the seabed. Their roots catch and trap sediments, reducing coastal erosion. Submerged seagrass beds are also used as nursery areas, protecting young fish and shellfish and provide a sheltered home for many other animals, such as pipefish and seahorses (JNCC). The conservation objectives which apply to the SAC is 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.

In 2012 the Department for Environment, Food and Rural Affairs (DEFRA) announced a revised approach to the management of commercial fisheries within an EMS. The objective of the revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 7 of the Habitats Directive. As a result, D&S IFCA completed a Habitats Regulation Assessment (HRA) in 2018 to determine whether management measures were required in order to ensure that fishing activity, specifically pots and creels, had no adverse effects on the integrity of the site. It was concluded that the level of activity occurring at the time would result in no adverse effects from potting and the conservation objectives of the sub-feature could be reached. However, it was recommended that ongoing patrols (6 per year) be carried out in order to detect any changes in exposure, which as agreed by Natural England.

This report therefore details the outcome of the monitoring carried out in 2018 and 2019 and discusses the results.

2. Methodology

Patrols were carried out within Plymouth Sound and Estuaries EMS on the RIB David Rowe. The areas primarily monitored were Drakes Island, Jennycliff Bay, Firestone Bay, Leekbed Bay, and the mouth of the River Yealm. The GPS coordinates of any buoys/buoys in these locations were recorded and spatial distribution maps were produced in QGIS v3.4. Fishing gear in close proximity to the seagrass was hauled when possible in order to confirm whether it was pots.

Pots/Creels are occurring at a medium level within Plymouth Sound. D&S IFCA has a Potting Permit Byelaw in place and currently sixteen permits are issued for commercial vessels with the base port of Plymouth (increased from 12 in 2018) and one for the river Yealm.

Monitoring patrols were carried out in 2018 and 2019. Three patrols were carried out in 2018 with no pots being detected on the seagrass (Figure 1). Seven patrols were carried out in 2019 with one string of wrasse pots located on the seagrass beds around Drakes Island (Figure1). No pots were detected in the mouth of the Yealm (Figure 2).

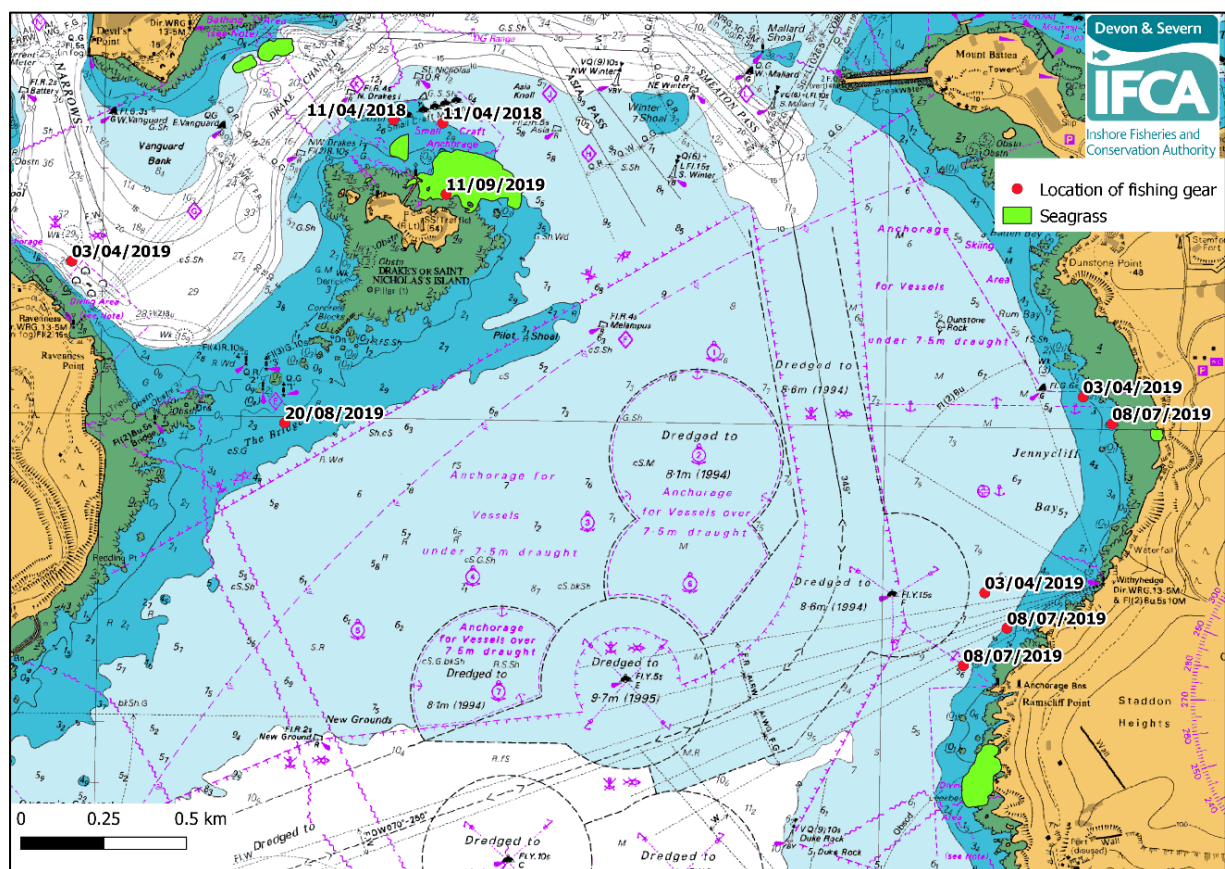


Figure 1. Spatial distribution of fishing activity observed during the monitoring patrols in Plymouth Sound.

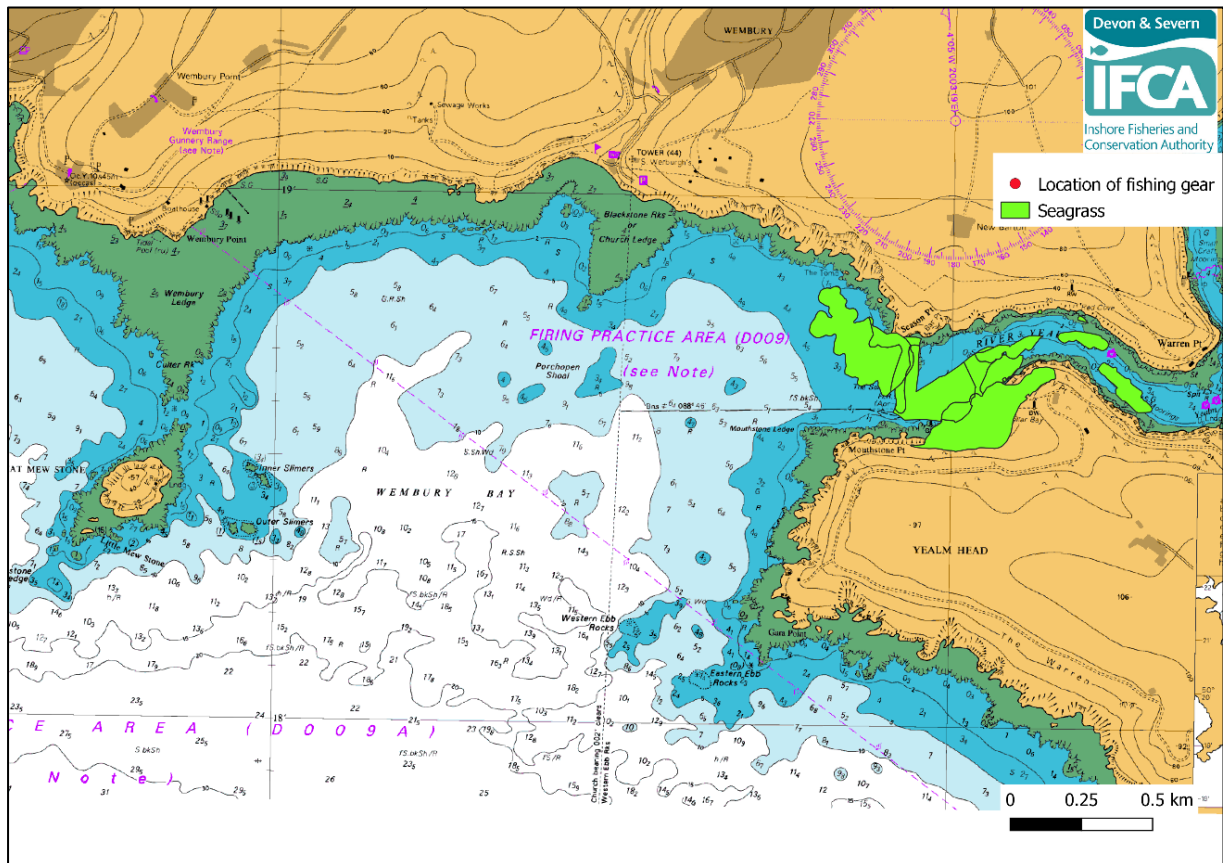


Figure 2. Spatial distribution of fishing activity observed during the monitoring patrols in the mouth of the Yealm.

4. Discussion/Recommendations

Potting is a fishing activity which often occurs where seagrass is found. Although potting activities are considered to be generally low impact when compared to demersal towed gear, there is potential for this activity to damage the seagrass, which is not physically robust (D'Avack et al., 2015). Previous studies have shown that potting can cause surface abrasion which damages or removes the rhizomes, leaves and stems of the seagrass plant which are above the surface and damages the roots which are only shallowly buried (D'Avack et al., 2015; Morgan and Chuenpagdee, 2003). Damage can be caused during the setting of pots, movement of gear on the benthos due to tide, current and storm activity and as the gear is hauled if dragged laterally when lifted (Walmsely et al., 2015).

Although the amount of commercial potting permits has increased since the HRA was completed from 12 to 16 permits the spatial distribution of fishing activity observed during patrols only detected one string of wrasse pots on the seagrass beds around Drakes Island.

Sensitivity assessments have shown that when pots are continuously set and hauled they can cause damage by leaf shearing, damaging meristems (reducing growth) (Marba et al., 2004), uprooting plants and cause damage by smothering and light attenuation if soak times are particularly long (Roberts, et al., 2010). Hall et al., (2008) reported that seagrass beds have a medium sensitivity to moderate and low levels of potting (pots lifted daily, less than 4 pots per ha). Wrasse pots are left to soak for 24 hours, therefore soak times are minimum

and would not result in any smothering or light attenuation effects. Although strings of wrasse pots are set and hauled daily, fishers move their pots after each haul reducing the impact caused from continuous setting and hauling in the same location. Wrasse pots are also very light, weighing on 3.7kg each, which would reduce likely impacts. In addition, Eno et al., (2001) and Coleman et al., (2013) undertook studies on the impact of potting on reef features. They concluded epifaunal assemblages suffered little impact from pots and traps and could be considered generally insensitive to commercial potting.

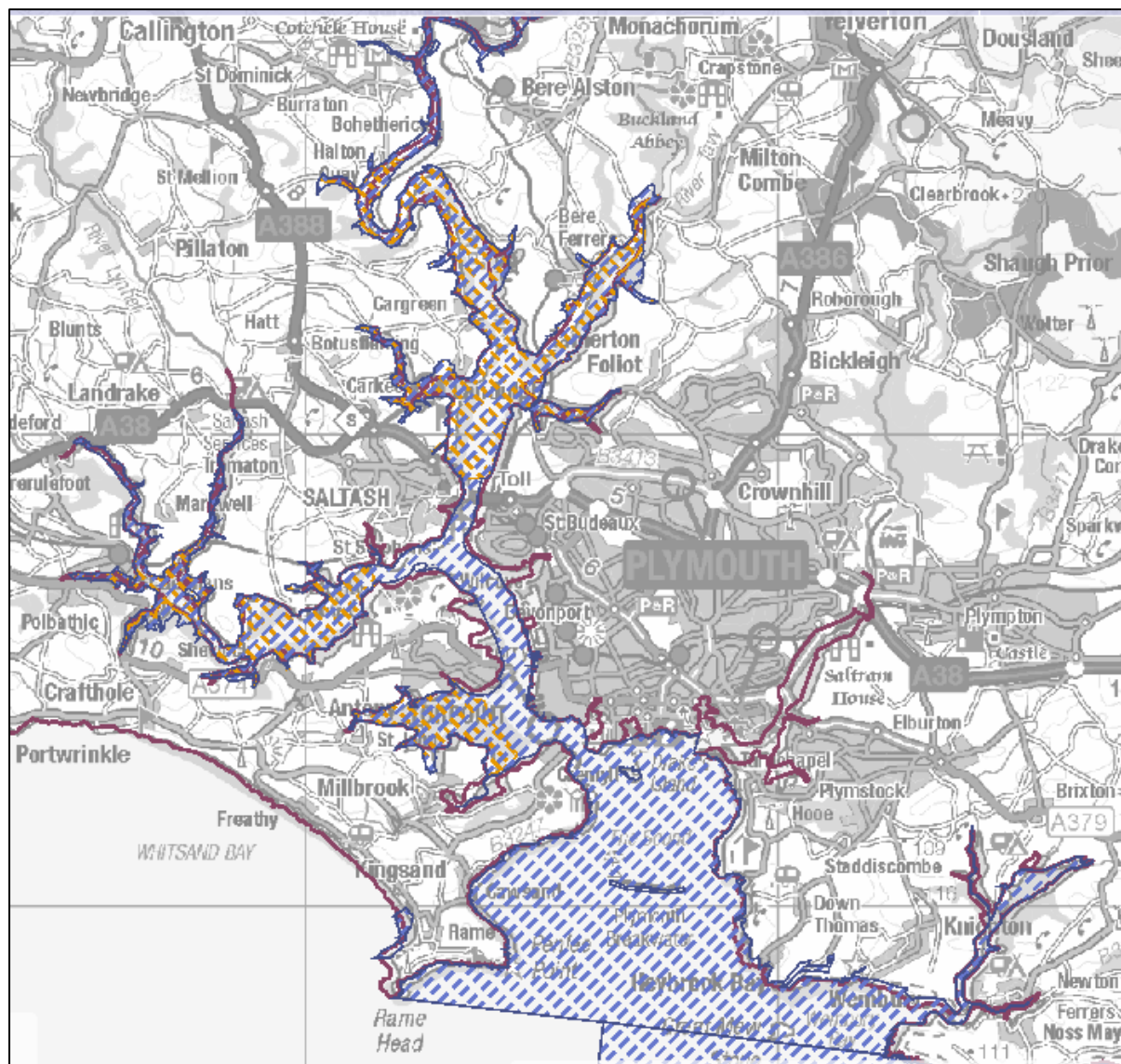
The use of pots is not the only vector for impact on seagrass, other factors such as anchoring will also have an effect. An anchor landing on a patch of seagrass can bend, damage and break shoots (Montefalcone et al., 2004). When an anchor and chain is pulled up and dragged over the bottom following the movement of the boat it cuts seagrass leaves and pulls the rhizomes from the seabed, forming an anchor scar and damage is further elevated by wave action. Chains attached to anchors from moored boats leave bare patches typically 1-4m² (Collins et al., 2010). Impacts from pots would be from the end weights attached to the surface marker. The weights used for pots are thought to have less of an impact than anchors used for mooring, as they do not penetrate into the seabed and dislodge seagrass rhizomes.

The monitoring patrols from 2019 would suggest that potting on seagrass is rarely occurring, however, it is recommended that the minimum of 6 patrols a year are repeated in 2020 to monitor fishing activity levels in proximity to seagrass within Plymouth Sound EMS.

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Annex 1 – Area of SAC



SAC=Blue Hatched and SPA=Orange Hatched