Marine Conservation Zone Assessment

Site name:	Skerries Bank and Surrounds MCZ UKMO 20130019
Protected feature(s):	High energy infralittoral rock Moderate energy infralittoral rock Moderate energy circalittoral rock Subtidal coarse sediment Subtidal sand Subtidal mud 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

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Contents

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Date	Author/reviewer	Comment	Version
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09/09/2021	Sarah Clark	Amendments made	V2.1
13/09/2021	Lauren Parkhouse	Map amendments	V2.2

1. Introduction

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

2. MCZ site name(s), and location

The Skerries Bank and Surrounds MCZ is an inshore site located on the South Devon coast. It runs along the coast from Leek Cove at Limebury Point to Torcross and extends from the coast line out to depths of approximately 70 metres. The site overlaps with the Start Point Inshore Potting Agreement. Skerries Bank and Surrounds is an area that supports a highly diverse range of species that live on the seabed or in the water column and is also known to be an important breeding area for flat fish.

See Annex 1: Habitat Map for habitat map of the site.

Further information regarding the MCZ and its protected feature can be found in the Skerries Bank and Surrounds MCZ Factsheet[1].

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
High energy infralittoral rock	Maintain in favourable condition
Moderate energy infralittoral rock	Maintain to favourable condition
Moderate energy circalittoral rock	Recover in favourable condition
Pink sea-fan (*Eunicella verrucosa*)	Maintain in favourable condition
Subtidal coarse sediment	Maintain in favourable condition
Subtidal mud	Maintain in favourable condition
Subtidal sand	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 towed demersal gear on circalittoral and infralittoral rock are under consideration in this assessment.

[1] MCZ Factsheet http://publications.naturalengland.org.uk/category/1721481

Much of the site is already protected from the interaction of demersal fishing gear on features, including the infralittoral rock feature, via the MMO Licence Condition/Variation and D&S IFCA's Mobile Fishing Permit Byelaw, with some access under the Byelaw permit conditions as part of the Inshore Potting Agreement. See Annex 2: D&S IFCA Closed and Access Areas Under Byelaw for current closed and access areas under the Byelaw and the Inshore Potting Agreement map for 2021.

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

A majority of the site is already closed to demersal towed gear. This originated under the Inshore Potting Agreement (IPA) which placed restrictions both spatially and temporally on the site. The IPA area has been in place under both voluntary agreement and/or commercial License Variation since 1978. It is still maintained through Licence variation to date. Since 2018 the area of the IPA within 6nm is also managed under the D&S IFCA Mobile Fishing Permit Byelaw. The total area of the MCZ is 249.24km^2 and 85.76% of this is closed all year to demersal towed gear, including trawls and dredges.

The open areas of the MCZ have temporally restrictions placed on them (Annex 2: D&S IFCA Closed and Access Areas Under Byelaw):

- Zone 3 (Area B) is open to both trawling and dredging from 1st January to 31st March (inclusive),
- Zone 4 (Area D) is open 1st February to 31st August (inclusive) and
- the Corridor (Area C) is open from the 1st March to 31st March (inclusive).

Each area is fished extensively when it is open by both trawls and scallop dredges. However scallop dredging cannot take place in Zone 4 (Area D) during July and August under Mobile Fishing Permit condition, where a prohibition under a seasonal closure from 1st July to 31st September is in place.

Since 28th August 2018, there has been a requirement for all mobile gear vessels greater than 6.99m, which operate within the District, to have operational VMS or iVMS unit on board under a permit condition of the D&S IFCA Mobile Fishing Permit Byelaw. This has allowed for accurate maps of fishing activity to be produced for the MCZ. A Data Protection Act (DPA) request was made to the MMO for data of all vessels operating in the rectangle as details in Annex 3a DPA Request Chart depicting the area of the request. The area of the DPA request does not cover all of Zone 3/ Area B, only that part that lies within D&S IFCA's District inside the 6nm boundary. The DPA request asked for positions of all vessels operating in this rectangle at speeds less than 6 knots. These data were then filtered to include all vessel passages where the vessel was operating at 4 knots or under, which for demersal fishing vessels would suggest a fishing activity. Annex 3b: Fishing Activity Maps from iVMS Datadocuments the fishing effort for each year and then each month for 2019 and 2020. In both these years there were 18 vessels which operated within the open access areas. It should be noted that some of the vessel passages that have been mapped may not be vessels fishing. VMS and iVMS data acquired was for all

vessels towing less than 4 knots which would suggest a fishing speed however, there may be instances where they are traversing not fishing. The data plotted in the charts may show points where vessels were within closed areas, but these are likely to traversing rather than fishing. There were some instances when analysing the data where it was difficult to discern if the vessel was passing the area or fishing, in these cases the vessel was kept in.

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

Yes,
Evidence:
To determine whether each pressure is capable of affecting (other than insignificantly) the site's feature(s), the sensitivity assessments and risk profiling of pressures from the advice on operations section of the Natural England conservation advice package were used (Natural England, 2021). 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 in Annex 4: Pressure Audit Trail.

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

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

The relevant targets for favourable condition were identified within Natural England's conservation advice supplementary advice tables (Natural England, 2021). Table 4: Relevant activities occurring in or close to the site 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.

Table 3- Relevant favourable condition targets for identified pressures.

Feature	Attribute	Target
High energy infralittoral rock; Moderate energy infralittoral rock; Moderate energy circalittoral rock; Subtidal coarse sediment; Subtidal sand; Subtidal mud	Distribution: presence and spatial distribution of communities	Maintain (recover for circalittoral rock) the presence and spatial distribution of communities
	Structure: species composition of component communities	Maintain (recover for circalittoral rock) the species composition of component communities
Pink sea-fan (*Eunicella verrucosa*)	Presence and spatial distribution of the species	Maintain the presence and spatial distribution of the species
	Population: population size	Maintain the population size within the site.
	Population: recruitment and reproductive	Maintain the reproductive and recruitment capability of the species.

	capability	
	Supporting habitats: extent and distribution	Maintain the distribution and abundance of the following supporting habitats: reef

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

Yes,
Evidence: Monitoring and Control Arrangements

- Enforcement of current Byelaws
- Monitoring and review of current Byelaws
- The D&S IFCA Mobile Fishing Permit Byelaw can gauge where any future changes or developments may occur.
- Changes can be made to the permit conditions, via consultation, if the D&S IFCA deems it to be appropriate and necessary. This could include limitations or spatial/temporal restrictions. The permitting system allows for adaptive management.

8. Referenced supporting information to inform assessment

Site History:
During the Finding Sanctuary process to inform decision making by providing stakeholder-developed recommendations for MCZs in the south-west of England, the Skerries Bank and Surrounds MCZ was put forward by stakeholders, including the commercial fishing industry. The recommendation of this site for designation as an MCZ was conditional upon the current management being maintained in the site. The site was suggested as it is part of the Inshore Potting Agreement (IPA) area, which has been managed since 1978 under voluntary agreement and/or Commercial Licence Variation and D&S IFCA Byelaw, and has prohibited mobile demersal vessels from operating in the majority of the site. The IPA is a well-recognised, studied, and acclaimed gear conflict/resolution management system and had been acknowledged as such both nationally and internationally. The fishers informed the group of the formal management in place where mobile gear is heavily restricted spatially and temporally in 'zones' within the IPA area.

The proposal by the industry, and their ongoing support, was on the proviso that the current Inshore Potting Agreement (IPA) was maintained, and no further management was required. This understanding was reflected in pre-designation papers, the Finding Sanctuary Final Report, and the Impact Assessment that accompanied Finding Sanctuary's recommendations. Managed access was the suggested approach to mobile demersal gear vessel (NE MCZ Prioritisation Tool, 2014). Managed access has been in place in the site for decades. The access areas under the current management system are of considerable social and economic importance to the fishing communities in Devon, with 40% of the south coast in D&S IFCA's District closed to demersal towed gears. Under the Impact Assessment[2] undertaken by Finding Sanctuary to support the designation of the Skerries Bank and Surrounds MCZ, the estimated value of landings affected by the Skerries Bank and Surrounds MCZ was £0.00 (zero) because the only recommendation was for there to

[2] AnnexI2 Finding Sanctuary, Irish Seas Conservation Zone, Net Gain and Balanced seas 2012. Impact Assessment materials in support of the Regional Conservation Projects' recommendations

be no change in the existing fisheries management (IPA), including access management for trawlers and dredgers (under the MMO Licence conditions and D&S IFCA Mobile Fishing Byelaw permit conditions.)

Much of the site is already closed to demersal towed gear. This was originally under the IPA which placed restrictions both spatially and temporally on the site. The area within 6nm is now co-managed under the D&S IFCA Mobile Fishing Permit Byelaw and the MMO Licence Variation. The total area of the MCZ is 249.24km^2 and 85.76% of this is closed all year to demersal towed gear, including trawls and dredges. The remaining 14.24% of the site has access to demersal towed gear during restricted times, which differs for each Zone/Area (Annex 2: IPA Map 2021). Zone 3/Area B is open for three months from 1st January to 31st March (inclusive) and represents 9.03% of the total site. The Corridor/Area A is open for one month from the 1st March to 31st March (inclusive) and represents 1.69% of the site. Zone 4/Area D is open for seven months from the 1st February to 31st August (inclusive) (to trawling) and 1st February to 30th June to (scallop dredging) and represents 3.52% of the site.

Towed (demersal) trawl- Rock features:

Broad scale habitat maps for the site were produced by Cefas, using modelled data, a majority of which were calculated from bathymetry records, and where available backscatter data, with grab and drop-down video (DDV) surveys producing video and stills being carried out for verification. For the rock features in the access areas, the habitat map has been derived from acoustic data and there was no evidence of rock on the video or stills from the verification survey (Curtis *et al*, 2015). Of the 185 DDV stations across the site, rock was only seen in four stations, and these are within the area already protected from demersal towed gear. Therefore, modelling undertaken by Cefas has overestimated the rock feature as no rock feature was identified in the verification surveys. D&S IFCA has real concerns regarding the use of the modelled data within this assessment as the verification surveys contradict these, and therefore D&S IFCA does not regard this as the best available evidence. However, in order to carry out this assessment the habitat maps available have been used.

The area of rock features has been calculated for the site using modelled data 9. Moderate energy circalittoral rock has an area of 3.60km^2, high energy circalittoral rock is 1.152km^2 and infralittoral rock is 8.40km^2. Both the high energy circalittoral rock feature and infralittoral rock feature are located within the area of the site closed to demersal towed gear all year (Annex 5: Habitat map with access areas under Byelaw) and therefore protected. Under the current management, when including the area outside the 6nm line, 82.39% of the moderate energy circalittoral rock is protected all year. The area of moderate energy circalittoral rock currently exposed for part of the year within the 6nm line of the D&SIFCA's District is 0.56km^2, which is 15.56% of the total moderate energy circalittoral rock, including the area outside 6nm. 13.28% of this is within Zone 3/Area B which has access for towed demersal gear for a total of three months between 1st January and 31st March.

There are few studies quantifying the impact of demersal towed gear fisheries to hard bottom habitats. Part of the reason for this lack of studies is because the vast majority of trawling occurs in sandy habitats (Kasier *et al*, 2002). However, it is known that towing demersal trawls across rock substrates will cause damage or death to a significant

proportion of large, upright attached species such as sponges and corals (Løkkeborg, 2005). In the Gulf of Alaska, 67% of sponges were damaged during a single pass of a trawl. The study demonstrated that a significant number of boulders were displaced and emergent epifauna were removed. This was for hard-bottoms made up of pebbles, cobbles and boulders at depths of 206m to 274m where natural disturbance would be minimal (Freese *et al*, 1999). Other species such as hydroids, anemones, bryozoans, tunicates and echinoderms are vulnerable to mobile fishing gear (McConnaughy *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).

Dredges- Rock features:
Towed dredges may impact on reef communities by damaging and removing epifauna, and by modifying and homogenising the substrate, as soft rocks may be broken up (Attrill et al, 2011) and rolling/moving boulders (Hall-Spencer and Moore, 2000), and reducing habitat complexity. Sessile organisms and epifauna such as erect bryozoans, sponges and anemones which live on substratum; are long lived and slow growing are most likely to be negatively impacted on by dredges (Hinz *et al*, 2011). The impacts of scallop dredging can be variable depending on the intensity of the activity and the environmental conditions. Boulcott and Howell, 2011 found that experimental scalloping over uneven, rocky reef resulted in a patchy distribution of impacts. The gear can remove and move large numbers of stones and boulders from habitats, along with breaking up the integrity of reefs, which causes a loss of suitable substrate for certain epifauna species causing a reduction in biodiversity (Beukers-Stewart, 2009).

Towed (demersal) trawl- Sediment features:
The most dominate sediment feature of the site is subtidal coarse sediment (A5.1) totalling 94.46km^2, the second most dominate is subtidal mixed sediments (A5.4) totalling 59.90km^2 however this is not a designated feature of the MCZ. Subtidal sand (A5.2) totals 16.01km^2, and subtidal mud (A5.3) totals 1.30km^2. Due to limited acoustic data coverage, different sedimentary broad scale habitats could only be classified to EUNIS Level 3 for 74% of the site. Where there was no backscatter data coverage, sediment types were classified as 'A5 Subtidal sediment', and this has a spatial extent of 59.06km^2. Much of the sediment features are already fully protected, with 85.76% being closed to demersal towed gear year-round.

Subtidal coarse sediment has an area of 94.46km^2 across the site. Under the current management, when including the area outside the 6nm line, 79.15% of the subtidal coarse sediment is protected all year. When just taking into consideration the area protected by the IFCA Byelaw within 6nm, 82.31% of the subtidal coarse sediment is protected. The area of subtidal coarse sediment currently exposed for part of the year within the 6nm line of the D&SIFCA's District is 16.712km^2, which is 17.69% of the total subtidal coarse sediment, including the area outside 6nm. 12.60% of this is within Zone 3/Area B which has access for towed demersal gear for a total of three months between 1st January and 31st March, 1.56% is in Zone4/Area D which has access from 1st February to 31st August, and 3.54% of this is with the Corridor/Area C which has access from 1st March until 31st March.

Subtidal sand has an area of 16.01km^2 across the site. Under the current management, when including the area outside the 6nm line, 94.16% of the subtidal sand is protected all year. When just taking into consideration the area protected by the IFCA Byelaw within the

6mn, 95.85% of the subtidal sand is protected. The area of subtidal sand currently exposed for part of the year within the 6nm line of the D&SIFCA's District is 0.665km^2, which is 4.15% of the total subtidal sand, including the area outside 6nm. 2.95% of this is within Zone 3/Area B which has access for towed demersal gear for a total of three months between 1st January and 31st March, 0.94% is in Zone4/Area D which has access from 1st February to 31st August, and 0.27% of this is with the Corridor/Area C which has access from 1st March until 31st March.

The subtidal mud feature is fully protected by the current management system. As stated, subtidal mixed sediment is not a designated feature of the site.

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

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

The most widespread subtidal coarse sediment biotope of the site is A5.142 *'Mediomastis fragilis, Lumbrineris spp* and venerid bivalves in circalittoral coarse sand and gravel'. This biotope appears to dominate the offshore areas of the site and the central part south of Start Point. The second most widespread was A5.145 *'Branchiostoma lanceolatum* in circalittoral coarse sand with shell gravel', found mostly in the southern part of the site alongside A5.142. A5.135 *Glycera lapidum* in impoverished infralittoral mobile gravel and sand (Natural England, 2021).

Gilkinson *et al* (1998) simulated the physical interaction of otter trawl doors on sand with infaunal bivalves present, in a laboratory test tank. They demonstrated that smaller body-sized fauna were less susceptible to physical damage, as they are pushed aside with fluidized sediments generated by the pressure wave which occurs in front of the moving trawl. However, all bivalves were seen to be displaced with many ending up in the berm created by the trawl, this could leave them susceptible to predation. The majority of the infauna in the biotope is likely to be able to rebury following the displacement (Rayment, 2001). Venerid bivalves are present within the subtidal coarse sediment of the MCZ.

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

A more recent sensitivity study has been carried out by Tillin (2016) on the habitat A5.142 *'Mediomastis fragilis, Lumbrineris spp* and venerid bivalves in circalittoral coarse sand and gravel'. When considering the pressure; Abrasion/disturbance of the surface of the substratum or seabed, the overall sensitivity was concluded to be low. This was concluded from combining the resistance which was classed as medium and the resilience which came out as high, which is full recovery within 2 years. The same conclusions were drawn when considering the pressure, penetration or disturbance of the substratum subsurface. The trawling studies reviewed by Tillin (2016) when considering the latter pressure suggested that the biological assemblage present is characterised by species that are relatively tolerant of penetration and disturbance of the sediments. Either species are robust or buried within sediments or are adapted to habitats with frequent disturbance and recover quickly. The second most dominate habitat is A5.145 *'Branchiostoma lanceolatum* in circalittoral coarse sand with shell gravel'. When looking at the pressure; Abrasion/disturbance for this habitat the sensitivity was assess as low. This is due to this ecological group generally being buried within the sediment and being provided with some protection. The resilience is thought to be high as damaged individuals can repair, and due to inward migration by adults from adjacent populations and recolonization by larvae (Tillin, 2016). There is no direct evidence for sensitivity when looking at penetration. Using expert judgement, the sensitivity was assessed as medium (Tillin, 2016).

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

Using a commercial whitefish beam trawl, Kaiser *et al*. (1998), undertook a study to examine the immediate effect of beam trawling on stable sediments with rich fauna, and mobile sediments with fewer fauna. The study aimed to fish each of six-way lines 10 or 20 times however, due to weather conditions this was only possible for three of the way lines. Therefore, the analysis only considered the main trawling effect, and not the effect of fishing intensity. With regards to the infauna it was found that in a shallow water area (approx. 30m), with high energy sand there was no detectable effect on benthic infauna 24 hours after fishing. This was attributed to the associated fauna being adapted to frequent natural disturbances Kaiser *et al*. (1998). There were, however, immediate effects on infauna in the more stable sediments with 9 out of the top 20 most common taxa showing a statistically significant decrease. Although the study was investigating the effect of beam trawling, it can still be useful in this assessment as otter trawls are seen as having a lower impact than beam trawls (Hall *et al*, 2008).

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

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

The response of a benthic community to trawling will depend on the pre-fished composition of the community. This composition is largely affected by the degree of natural disturbance, due to the currents, waves or storms. Natural disturbance may erode seabed sediment, cause re-suspension of organic matter and may affect settlement of new recruits. Such effects promote species that are adapted to natural disturbance (Denderen *et al*, 2015). Denderen *et al* (2015) used a biological trait approach to assess the effects of trawling and natural disturbance on benthic community composition and function. The results confirm their hypothesis that bottom trawling and natural disturbance have comparable effects on benthic communities and that trawl disturbance has a limited additional effect on the benthic ecosystem in areas exposed to high shear stress compared to areas exposed to low shear stress.

Blyth *et al*. (2004) investigated the large-scale chronic impacts of towed fishing gear using the Inshore Potting Agreement (IPA) in South Devon as a case study area. They used scallop dredges to sample benthic communities that were subjected to different fishing regimes within, and adjacent to the IPA. The areas sampled ranged from very coarse sand to very fine sand. The benthic communities in areas that had only been open to static gear in the year preceding sampling were richer and of greater biomass than those in areas where towed gear fishing occurred. They suggested that regular trawling disturbance will result in a community dominated by a small number of rapidly colonizing and maturing species. Occasional trawling disturbance may enhance species richness because of opportunities for slower developing species to become established in addition to the fastest colonizers. The results from the study showed that the benthic communities found at the seasonal sites were nearly the same as found at the trawled sites, only the biomass of the attached community was greater at the seasonal site. This indicates that the 6-month cessation of towed-gear in this location is insufficient for the benthic communities to recover. There were limitations in the study, the dredges used would have been unlikely to sample small species consistently. The particle size across the study sites also varied greatly which could have had an impact on the species present. The trawled area was characterised by very coarse sand whereas the other survey points consisted of fine to very fine sand. Finally, the paper does not state which towed gear methods are used in the site. The IFCA are aware of both trawling and scallop dredging taking place in the IPA.

Ocean Ecology Ltd (2015) were commissioned by D&S IFCA to undertake analysis of 112 minutes of video footage and 160 still images of the seabed collected by Cefas in January 2014 across the Skerries Bank and Surrounds (SBS) MCZ. The objective was to compare a subset of the footage collected from two area within the SBS MCZ exhibiting similar seabed substrate type (mostly coarse sediment), one of which is closed to demersal towed gear all year (Area 2) and the other open between 1st January and 31st March each year (Zone 3/Area B). This was to determine whether there were any high-level differences between the two areas that may be attributable to or exacerbated by demersal fishing activities. A total of three broad-scale habitats were identified across the survey area with most stations being characterised as Subtidal Coarse Sediment (A5.1). While both areas being compared were largely dominated by coarse sediments there were some subtle differences in the proportions of particle sizes that could potentially be indicative of alterations to the substrate surface attributable to the use of mobile gears in Zone 3. In general the sediments identified across Area 2 were constituted by greater proportions of gravel (boulders, cobbles, pebbles, shell and granules) than Zone 3. In contrast Zone 3 (Area B) had a greater proportion of sand and mud. These findings might suggest that fishing activity in Zone may be either removing or displacing coarser sediments. It should however be noted that without consideration of previous 'baseline' data the effect of natural spatial variability cannot be excluded as a possible explanation for the difference observed. Epifaunal diversity was relatively low across the two areas in comparison to the rest of the SBS MCZ. This is thought to reflect the dominance of homogenous coarse sediments recorded throughout the area as well as the sparse occurrence of bedrock and stony reef areas that support diverse epifaunal assemblages nearby. Whilst there were differences in the diversity of epifauna identified between the two areas, these were not statistically different. However, taxa known to demonstrate moderate to high sensitivities to the physical disturbance occurred more frequently in Area 2 than compared to Zone 3 whilst high sensitivity taxa were entirely absent from the video and stills footage collected across Zone 3. The high and moderate sensitivity taxa identified were mostly sedentary species commonly associated with coarser substrates (pebbles, cobbles and boulders). Therefore, whilst the results suggest that fishing activity may be having a detrimental impact on some particularly sensitive species, the effect of natural spatial variability in sediments (particularly pebbles and cobbles) cannot be excluded as a possible explanation for the differences observed. It must also be noted that the two highly sensitive taxa recorded (erect sponges), were not widespread across Area 2 and were only recorded at in two locations.

Dredges- Sediment features:

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

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

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

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

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

Large, slow growing epifauna such as sponges, and soft corals tend to be much more sensitive to damage than faster growing infauna such as polychaete worms (Kaiser *et al*. 2006). Marine benthic invertebrates generally have planktonic larval stages during their lifecycle and recruitment usually occurs in the spring/summer months. The Isle of Man scallop fishery is closed during the summer and allows certain hydroid species to start to re-establish on gravel sea beds, which are an important settlement habitat for scallop sprat (Bradshaw *et al*. 2003). Although recovery may only be for a few months, summer is also the key settlement period for many invertebrate species (Bradshaw *et al*. 2003). Similarly, seabed animal communities mostly recovered within 4 months, particularly in areas fished less than 4 times in the seasonal scallop fishery in Cardigan Bay (Lambert *et al*. 2015). Recovery coincided with summer recruitment and growth of seabed animals (Albrecht,

2013; Lambert *et al*, 2015). The access areas of the SBS MCZ are closed during the summer months allowing for some recovery, and Zone 4/Area D is closed to scallop dredging between 1st July to 31st August under D&S IFCA' Mobile Fishing Byelaw permit conditions relating to a seasonal closure for the removal of scallops.

Scallop dredging can have negative impacts on target and non-target species, including post-fishing mortality of species which come into contact with the gear, especially the teeth of the dredge. These can cause damage to the scallop shells, and to non-target species (Bradshaw, 2001; Beukers-Stewart, 2009). Fatal damage can vary from 2% to more than 20%, depending on the fishing grounds, for captured and non-captured undersized scallops (Beukers-Stewart, 2009). Along with fatal damage to discarded scallops, there is evidence of a reduced predator escape response in discarded juvenile scallops, this is coupled with an influx of predators and scavengers taking advantage of the damage caused (Craven *et a*l, 2012; Shephard *et al*, 2008; Bradshaw, 2001).

9. In-combination assessment

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

Plans and Projects		
Activity	**Description**	**Potential Pressure(s)**
No other plans or projects known to be occurring within Skerries Bank and Surrounds 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)**
Pots/ traps	Potting does occur within the site, in the area closed to demersal towed gear and in the access areas when they are closed to demersal towed gear. The activities do not happen at the same time in the same zones. It was concluded in the MCZ assessment for potting that there is no significant risk of the activities hindering the achievement of the conservation objectives.	Abrasion/disturbance of the substrate on the surface of the seabed. Removal of target species. Removal of non-target species.
Commercial diving	Due to the low level of commercial diving activity no in-combination effect thought to be possible.	
Static – fixed nets; Drift nets; Fyke nets	Netting occurs at low levels within the MCZ but not in the same areas at the same time as the towed demersal gear. At the current level of activity it is thought that no in-combination effects will lead to the conservation objectives not being met for the features assessed.	

D&S IFCA concludes there is no likelihood of significant adverse effect on the interest features from in-combination effects addressed within Table 4.

10. NE consultation response

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

11. Conclusion

The access areas within the Skerries Bank and Surrounds MCZ are of great economic importance to the towed gear fisheries in south Devon. The site was put forward as an MCZ by the fishing industry due to the Inshore Potting Agreement management system already in place, with the proviso that the management would not change, and this was agreed at the time. This understanding was reflected in the pre-designation papers, the Finding Sanctuary Final Report, and the Impact Assessment that accompanied the Finding Sanctuary's recommendations.

The section of the MCZ under consideration within this assessment is the area within 6nm, falling in the D&S IFCA's District. The majority of the MCZ and its feature are currently protected under the D&S IFCA Mobile Fishing Permit Byelaw, with 85.76% being closed to demersal towed gear at all times.

Under the current closure, the infralittoral rock, high energy circalittoral rock, pink sea fans and subtidal mud are fully protected and therefore D&S IFCA concludes, for these features, that the activity is unlikely to have a significant impact and therefore will not hinder the achievement of the conservation objectives.

Moderate energy circalittoral rock, subtidal coarse sediment and subtidal sand all have some exposure to towed demersal gear for limited times throughout the year. Within the D&S IFCA's District 15.56% of moderate energy circalittoral rock, 17.69% of coarse sediment, and 4.15% of sand have exposure for some of the year. More detail on the breakdown of this exposure can been seen in Section 8 of this assessment.

D&S IFCA has concerns on the accuracy of the modelled feature map for the moderate energy circalittoral rock that is used within Natural England's Conservation Advice Package. Within the access area of Zone 3/Area B, where most of the exposure can occur for three months of the year, the map was produced with acoustic data only (without backscatter data) using modelling techniques to predict the distribution of the broad scale habitats. However the ground truthing survey data from stills and videos showed no evidence of the presence of rock in this area which contradicts the modelled data. Of the 185 video and stills stations across the entire site, rock was only seen in four stations, all within the closed area, with coarse sediment and mixed sediments being the dominate habitat types. Therefore, the modelled data does not reflect the verification surveys carried out by video and stills. Ocean Ecology Ltd reanalysed the data produced by Cefas and confirmed that no rock was present within Zone 3/Area B. Another point that verifies the inaccuracies in the modelled data was highlighted when the circalittoral rock modelled by Cefas is mapped on a background of the UKHO Chart and all the wrecks marked on the chart are identified as reef by the habitat modelling.

While towed demersal trawling and dredging does occur in part of the site under spatial and temporal restrictions, the majority of the moderate energy circalittoral rock is currently protected under the current management system. Most of the exposure happens in Area

B/Zone 3 where 0.478km² of predicted rock is impacted for three months of the year and a total of 0.56km² of predicted rock is potentially impacted across all zones that are seasonally open. Although the evidence demonstrates that towed demersal gear can have an impact on the feature in the open area, this is a small area of the site which is of great economic importance to the fishing industry in south Devon. As 82.39% of the feature is already protected, the remaining access areas only being open for limited times, and the mapping being based on modelled data with no evidence of the presence moderate energy circalittoral rock from the verification survey, **D&S IFCA concludes that the activity is unlikely to have a significant impact on this feature of the site and therefore will not hinder the achievement of the conservation objectives with a target set to recover**.

The dominate feature of the site is subtidal coarse sediment, 82.31% of which is currently protected within the D&S IFCA's District under the Mobile Fishing Permit Byelaw. High levels of demersal towed fishing are carried out in the access areas of the site where coarse sediment is present for between one and seven months of the year. Zone 4/Area D has access for the longest time frame at seven months and has the least subtidal coarse sediment, making up 1.56% of the total. Zone 3/Area B is open for three months from 1st January to 31st March and makes up 12.60% of the coarse sediment. The Corridor/Area C is open for during March only and makes up 3.54% of the coarse sediment.

The available evidence demonstrates that demersal towed gear can have a negative impact on sediment habitats; however, the severity and recovery time from these impacts depend on a number of factors. For the main habitat types that make up the coarse sediment in the site, the sensitivity to demersal trawls has been concluded as low and medium sensitivities. When comparing videos and stills from a section of the closed area and Zone 3, both areas were largely dominated by coarse sediments but there were some subtle differences in the proportions of particle sizes that could potentially be due to the use of mobile gear in Zone 3. It was however noted that without consideration of previous 'baseline' data the effect of natural spatial variability cannot be excluded as a possible explanation for the difference observed. Epifaunal diversity was relatively low across the two areas in comparison to the rest of the SBS MCZ. However, taxa known to demonstrate moderate to high sensitivities to the physical disturbance were seen in the closed area but not Zone 3. It must also be noted that the two highly sensitive taxa recorded (erect sponges), were not widespread and were only recorded at in two locations. Evidence has suggested that summer closures to fishing can allow for some recovery and allows certain hydroid species to start to re-establish on gravel sea beds. Apart from Zone 4/Area D where only 1.56% of the coarse sediment is located, the access areas are closed in the summer months allowing for some recovery, as detailed above where recovery coincides with summer recruitment and growth of seabed animals, and zone 4/Area D is also closed to scalloping in July and August each year.

D&S IFCA, along with the MMO, have implemented management measures across the Skerries Bank and Surrounds MCZ. These management measures have eliminated (through total closures to demersal towed gear) or reduced (through temporal/seasonal closures) the impact of mobile demersal gear on the designated features of the site. D&S IFCA is able to monitor the number of vessels operating in the areas opened, for parts of the year, to demersal towed gear vessels. With the current management in place, **D&S IFCA concludes that the general management approach of maintain in favourable condition for sub-tidal sand and sub-tidal coarse sediment will be met and that the activity will not hinder the conservation objective targets of maintain for the features and their attributes.**

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**
High energy infralittoral rock; Moderate energy circalittoral rock; Moderate energy infralittoral rock; Subtidal coarse sediment; Subtidal mud; Subtidal sand; Pink sea-fan (*Eunicella verrucosa*)	Extent and distribution Presence and spatial distribution of communities Species composition of component communities Presence & spatial distribution of the species Population size Recruitment & reproductive capability Supporting habitats: extent & distribution	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, demersal towed gear fisheries can still take place in three zones/areas within the site, but these have temporal/seasonal restrictions on them differing in each zone/area. However, there is no exposure or impact of demersal gear fisheries to infralittoral rock, circalittoral rock, subtidal mud or pink sea-fans feature/ habitats of conservation interest.	No, management is currently in place through MMO Licence Variation/Condition and D&S IFCA's Mobile Fishing Permit Byelaw that allows the Conservation Objective targets to be met.	Yes, Management measures are currently in place and include: 1. MMO Licence condition/variation that covers the whole site and includes large areas prohibited to trawling and scalloping all year and limited seasonal opens in smaller zones within the site 2. D&S IFCA's Mobile Fishing Permit Byelaw permit conditions that reflect the closures under the MMO Licence condition/variation but only apply in the area of the site inside the 6nm limit 3. Enforcement of Byelaws and Permit conditions through IVMS/VMS monitoring and patrols 4. Monitoring of fishing activity in the areas open to access by demersal fishing activity 5. Reviewing Permit Conditions as and when required

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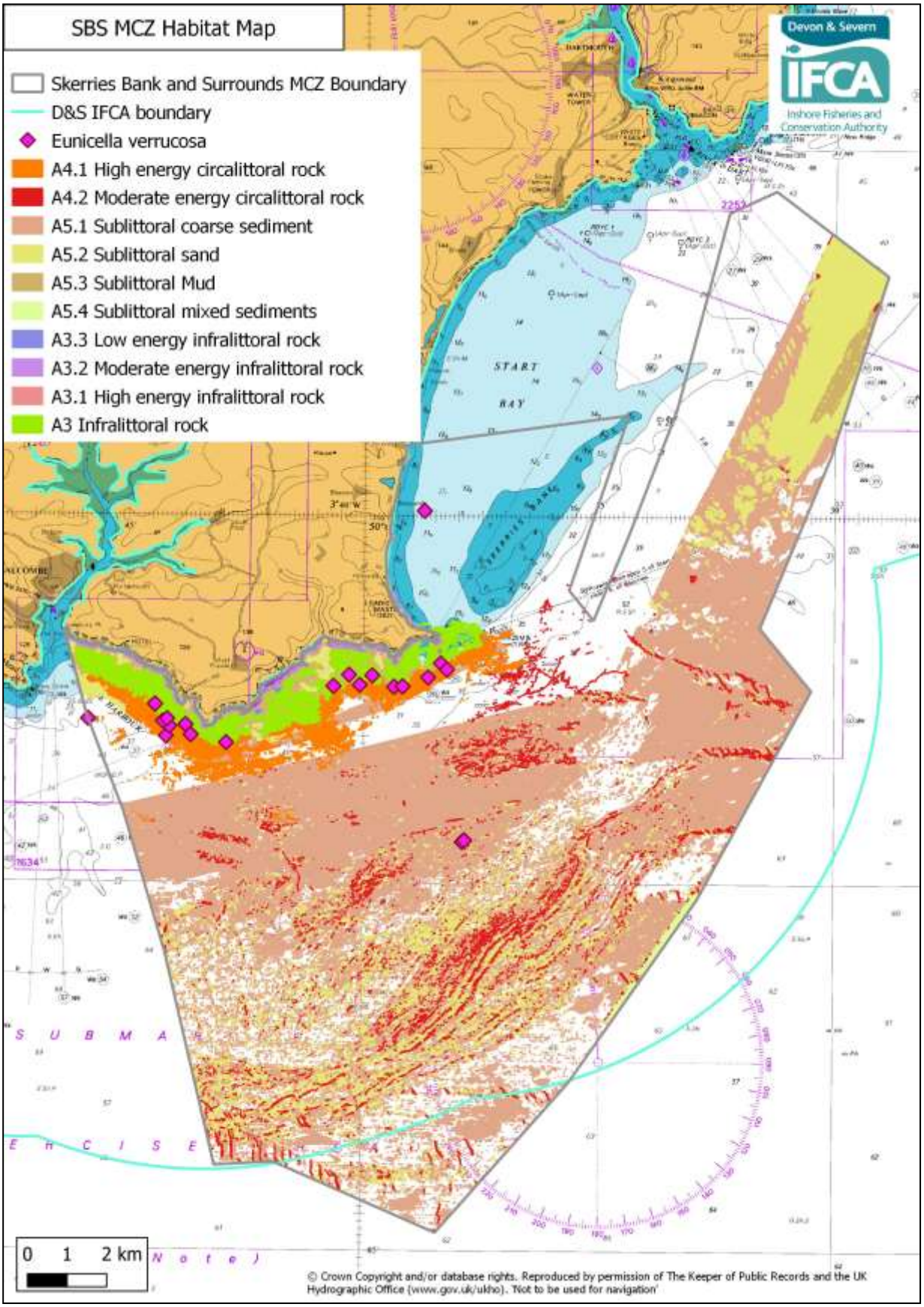
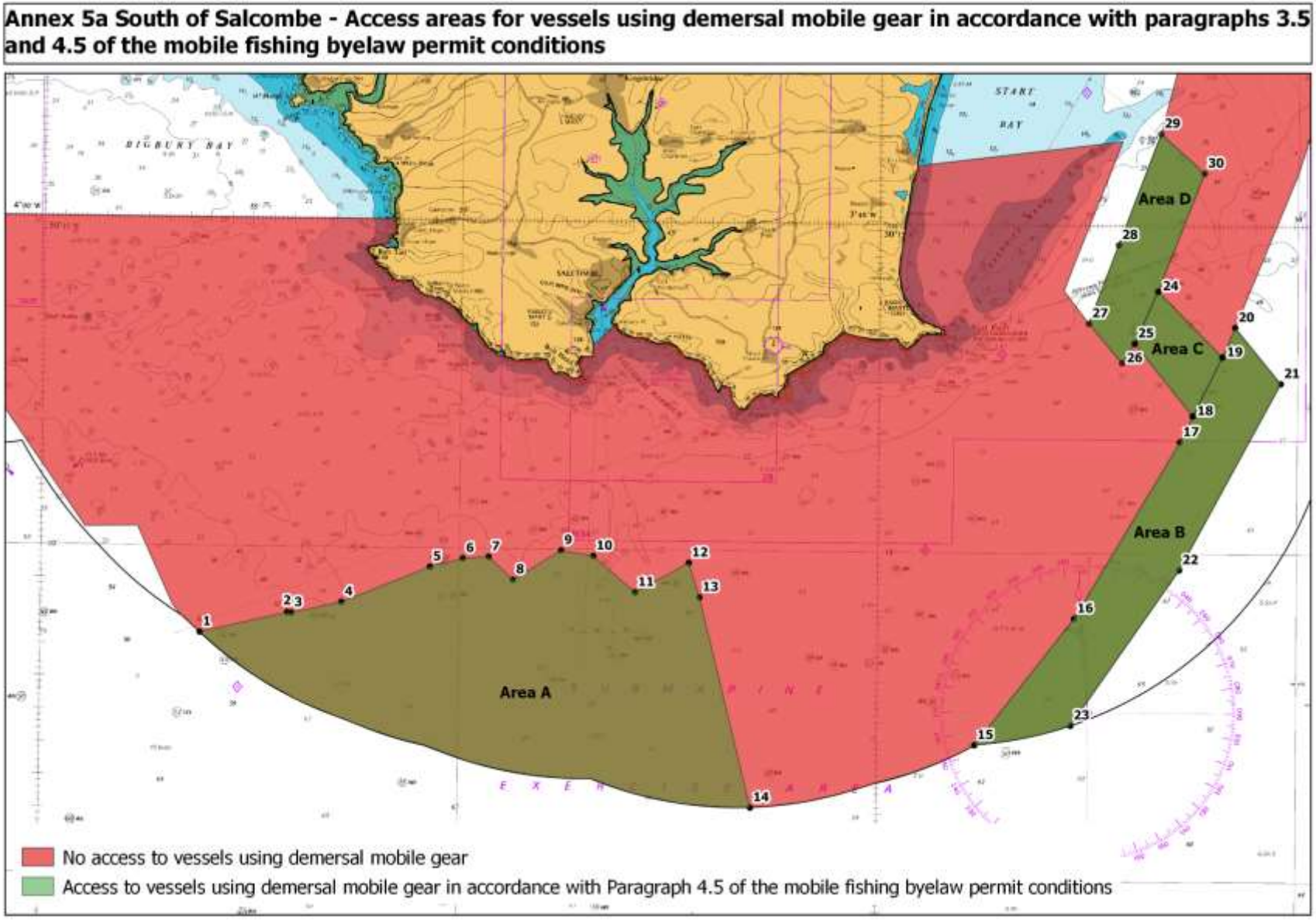
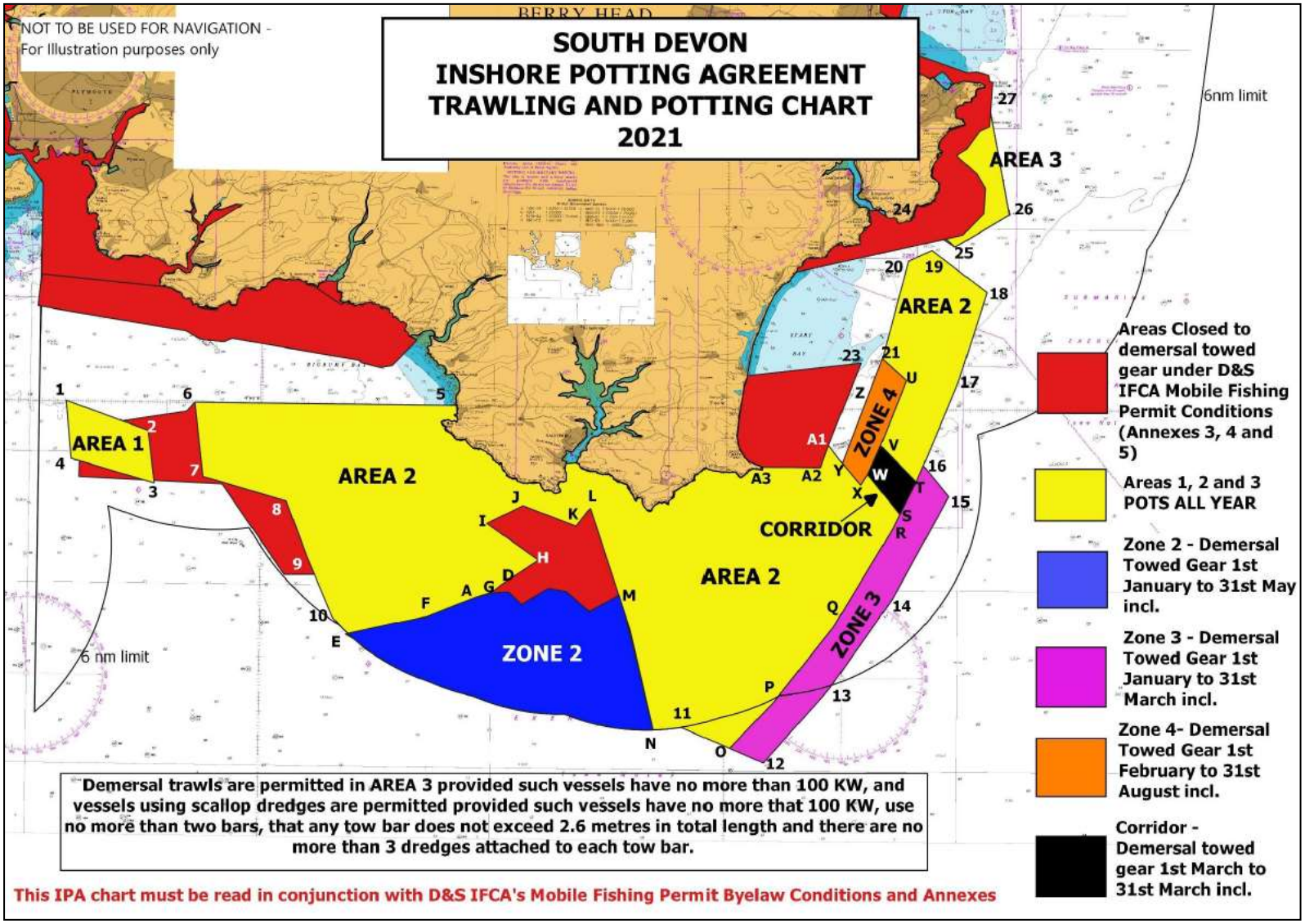
Annex 1: Habitat Map



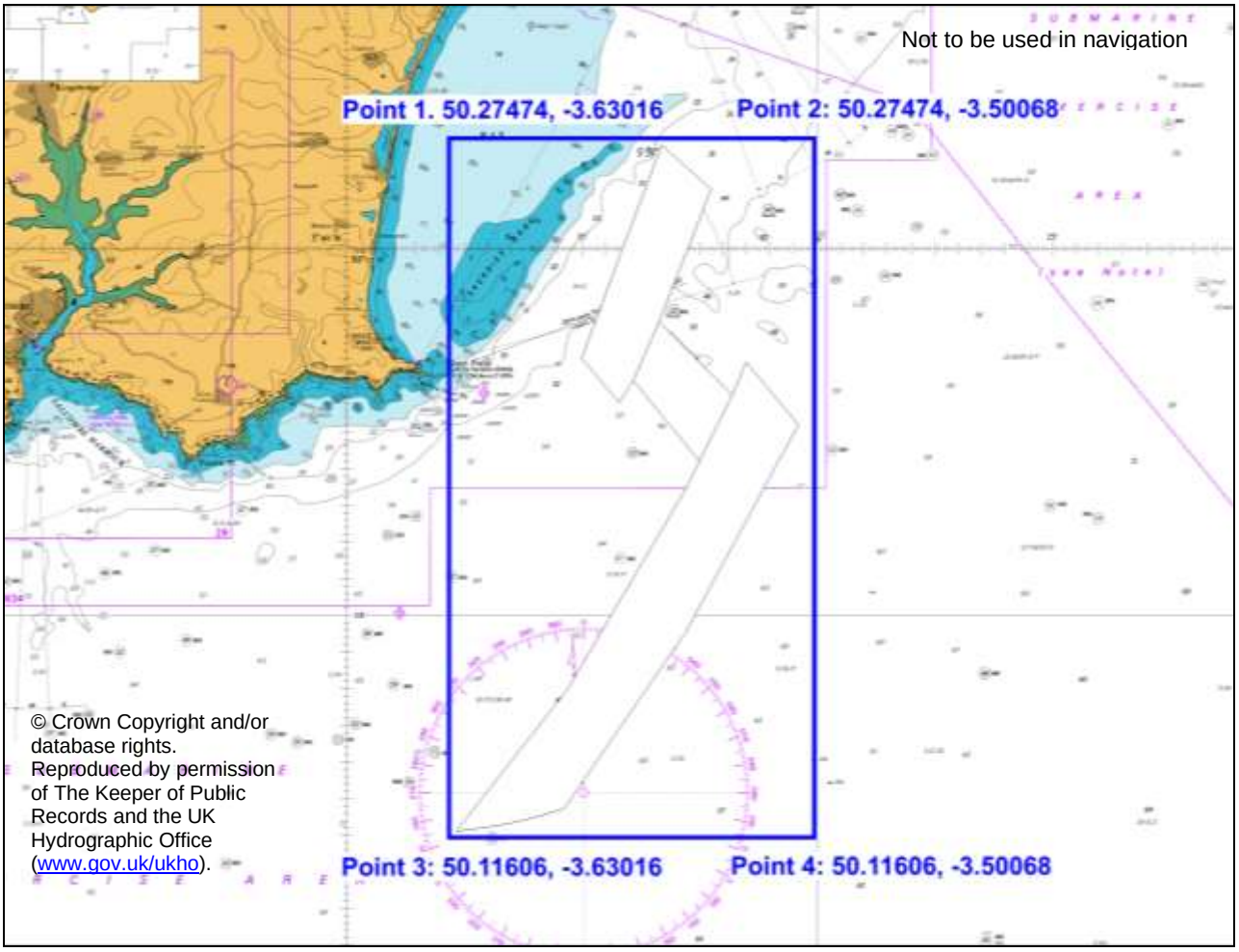
Annex 2: D&S IFCA Closed and Access Areas Under Byelaw



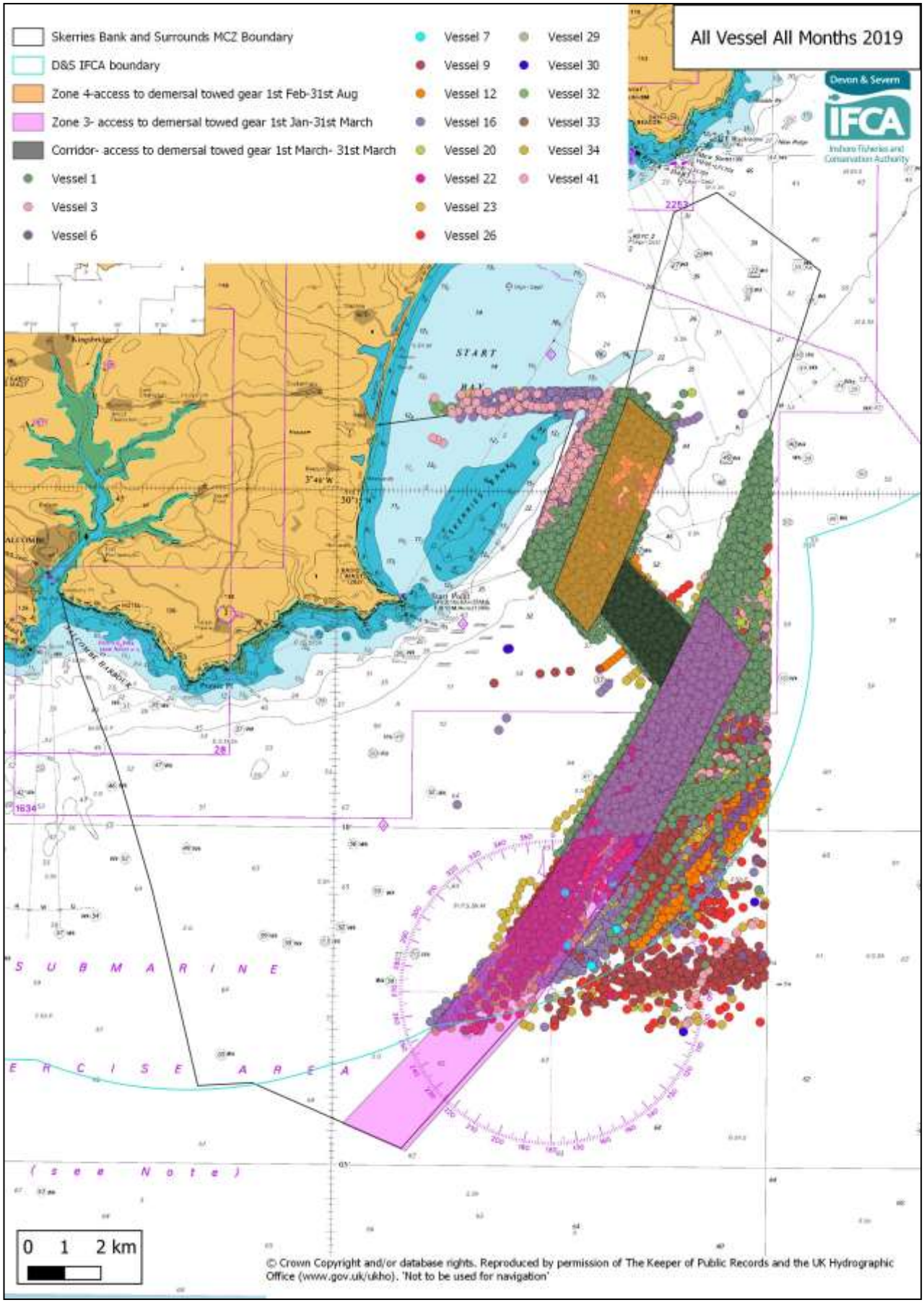
Annex 2: IPA Map 2021

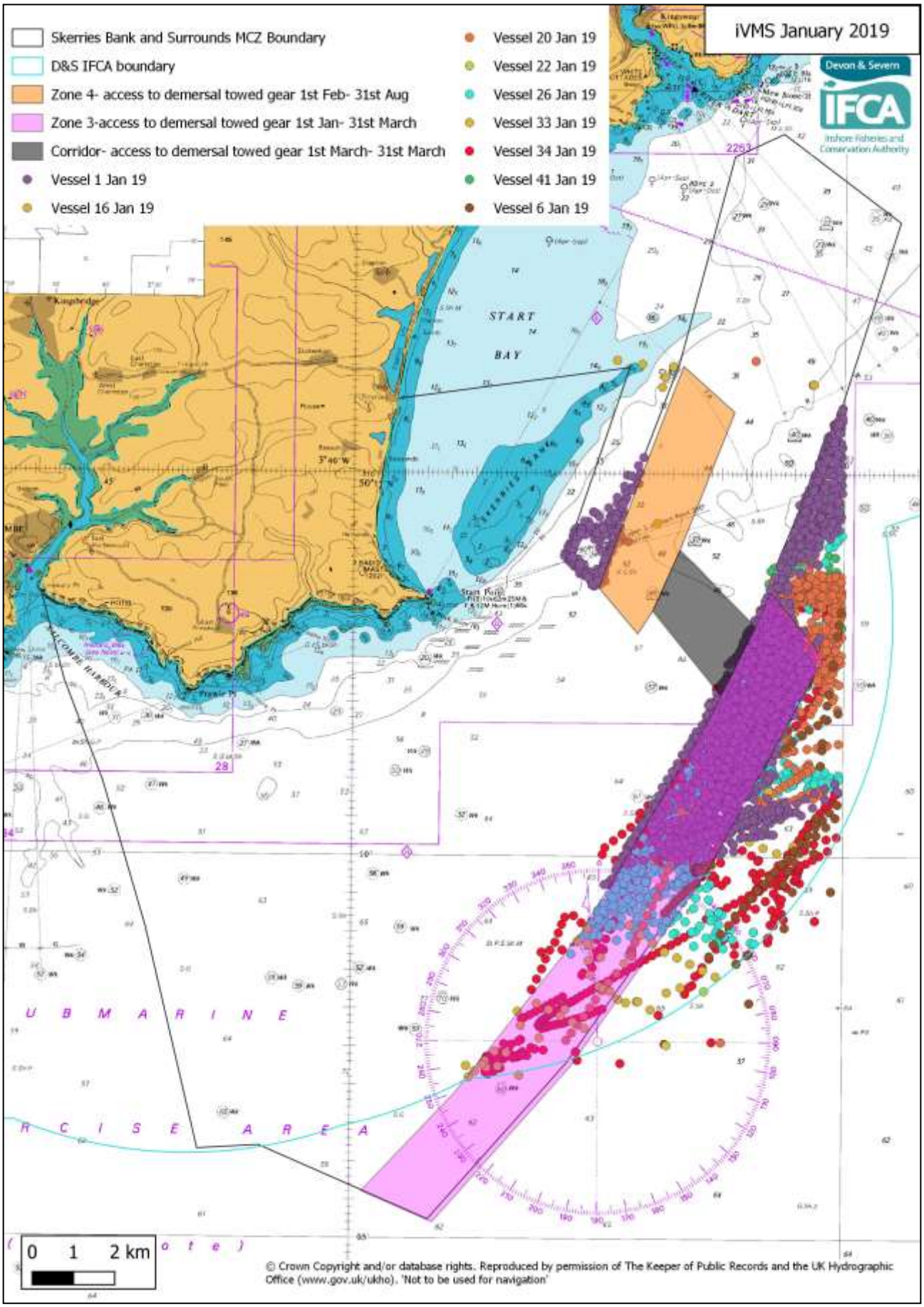


Annex 3a DPA Request Chart depicting the area of the request



Annex 3b: Fishing Activity Maps from iVMS Data




Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3-access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 1 Jan 19
Vessel 16 Jan 19
Vessel 20 Jan 19
Vessel 22 Jan 19
Vessel 26 Jan 19
Vessel 33 Jan 19
Vessel 34 Jan 19
Vessel 41 Jan 19
Vessel 6 Jan 19
iVMS January 2019
Devon & Severn IFCA Inshore Fisheries and Conservation Authority
START BAY
U B M A R I N E
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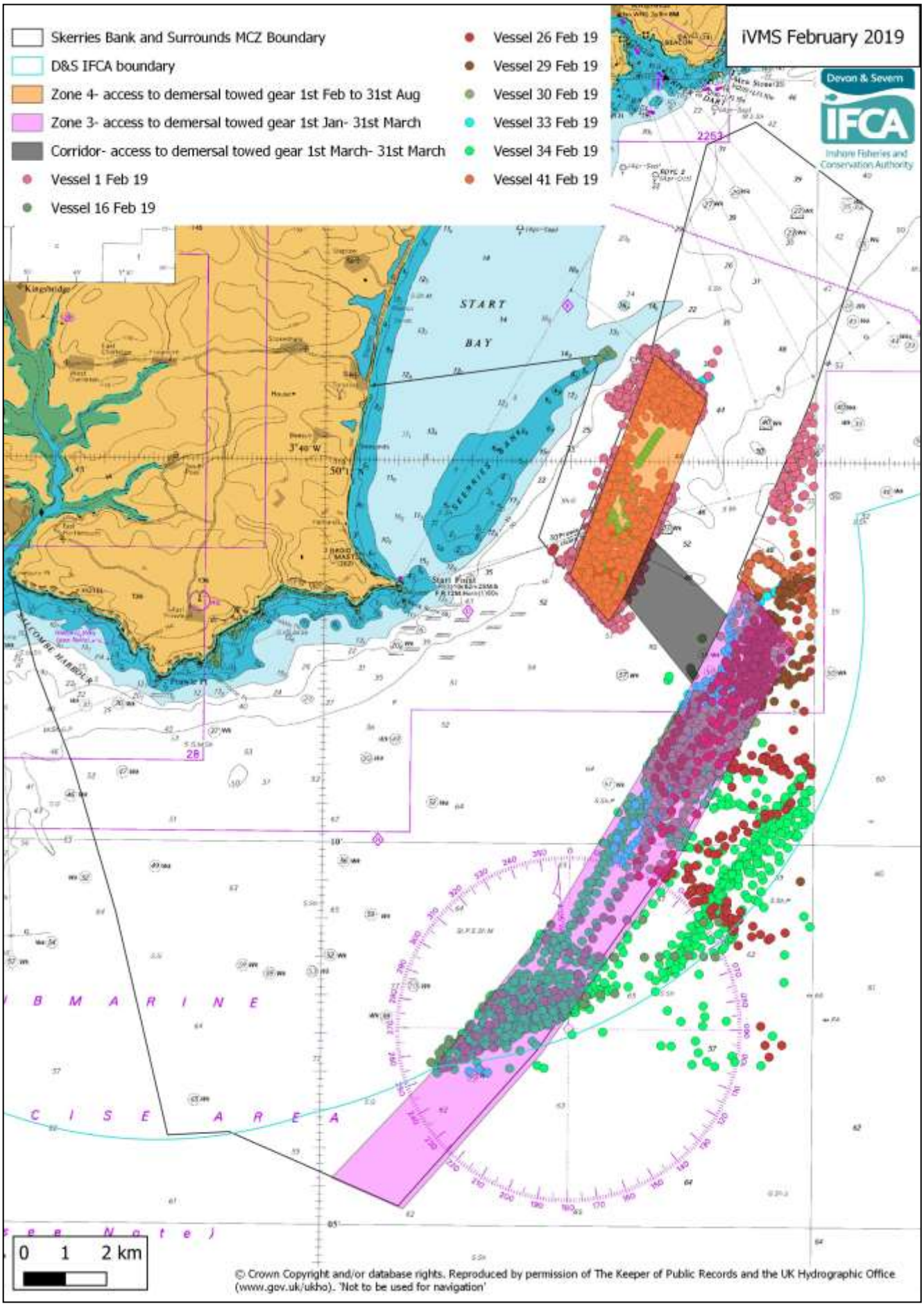
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
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Corridor- access to demersal towed gear 1st March- 31st March
Vessel 1 Feb 19
Vessel 16 Feb 19
Vessel 26 Feb 19
Vessel 29 Feb 19
Vessel 30 Feb 19
Vessel 33 Feb 19
Vessel 34 Feb 19
Vessel 41 Feb 19
iVMS February 2019
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START BAY
SKERRIES BANK
Kingsbridge
Start Point
3° 40' W
50° 13'
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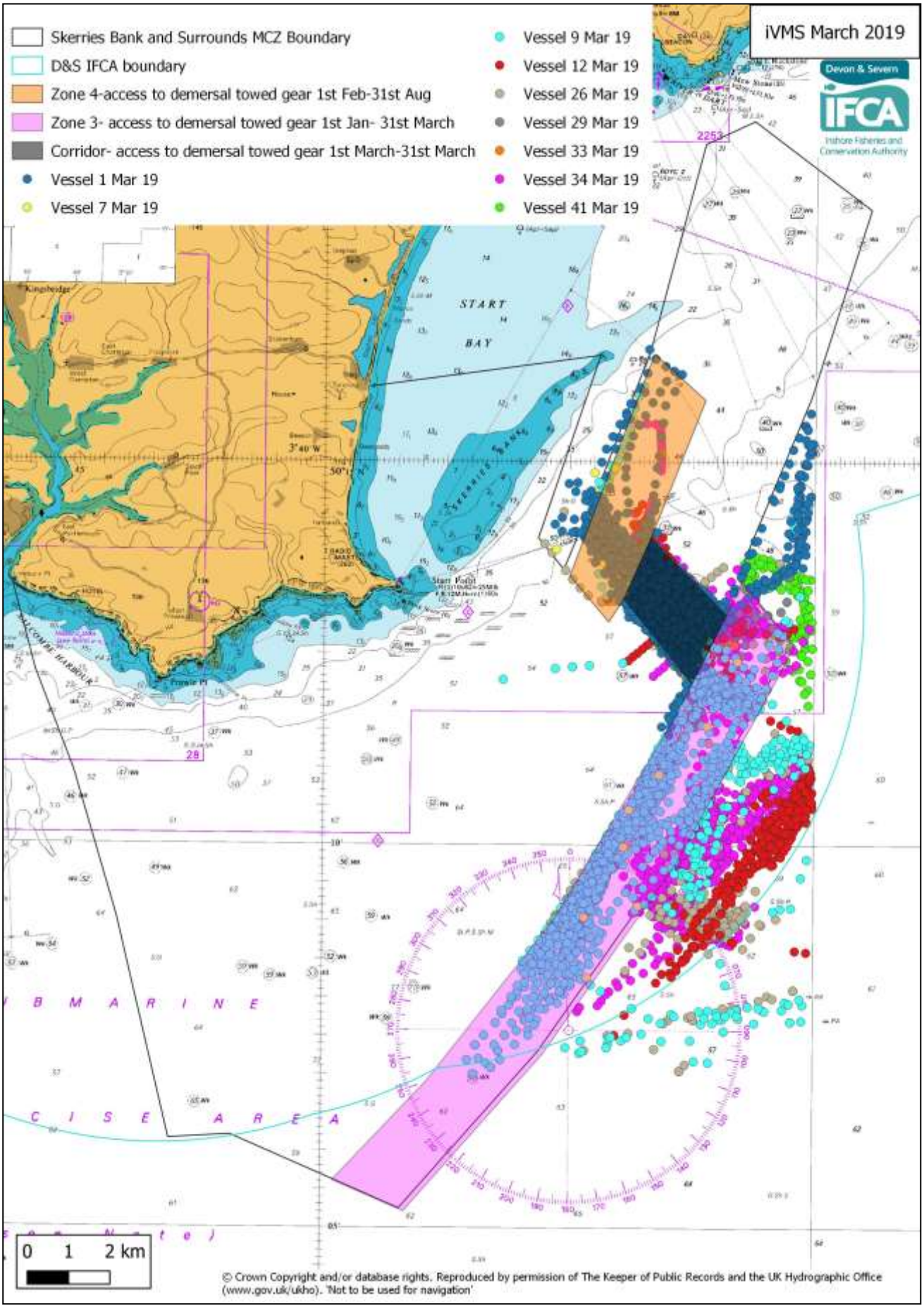
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4-access to demersal towed gear 1st Feb-31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 1 Mar 19
Vessel 7 Mar 19
Vessel 9 Mar 19
Vessel 12 Mar 19
Vessel 26 Mar 19
Vessel 29 Mar 19
Vessel 33 Mar 19
Vessel 34 Mar 19
Vessel 41 Mar 19
iVMS March 2019
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START BAY
SKERRIES BANK
Start Point
2253
28
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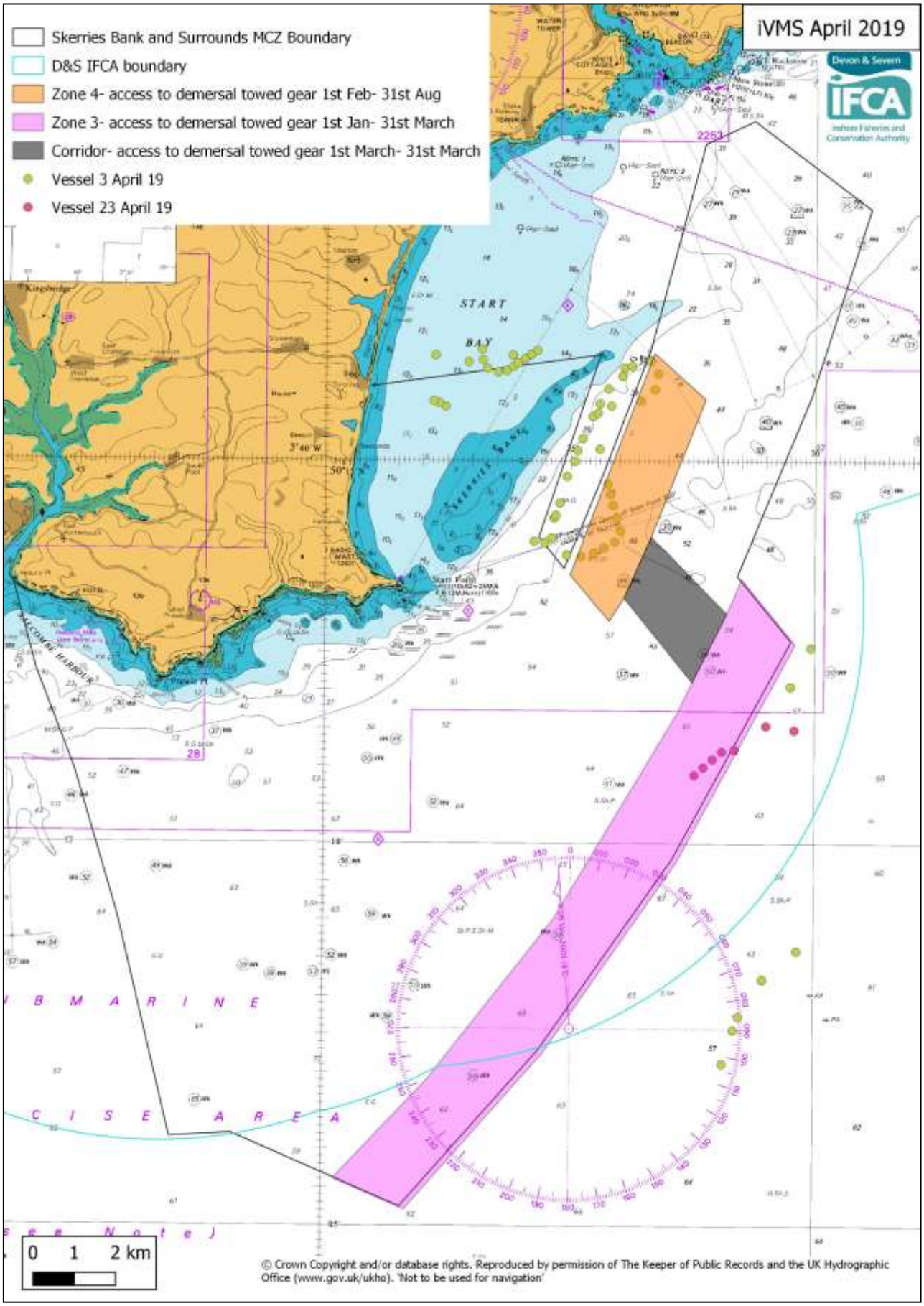
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 3 April 19
Vessel 23 April 19
iVMS April 2019
Devon & Severn IFCA
Inshore Fisheries and Conservation Authority
START BAY
SKERRIES BANK
3°40'W
50°13'N
2253
28
MALCOMBE HARBOUR
Start Point
0 1 2 km
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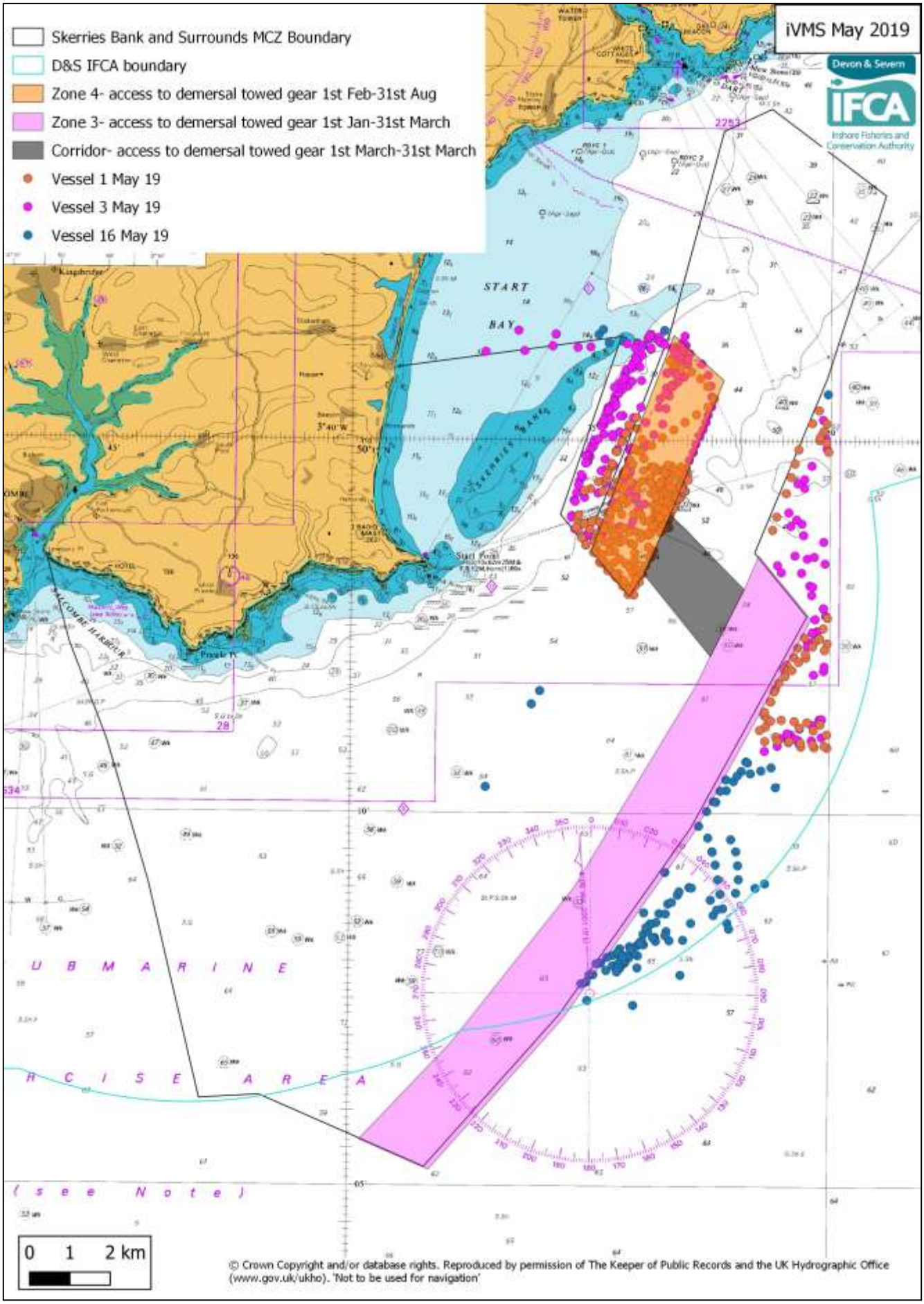
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb-31st Aug
Zone 3- access to demersal towed gear 1st Jan-31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 1 May 19
Vessel 3 May 19
Vessel 16 May 19
iVMS May 2019
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START BAY
SKERRIES BANK
U B M A R I N E
R C I S E A R E A
(s e e N o t e)
0 1 2 km
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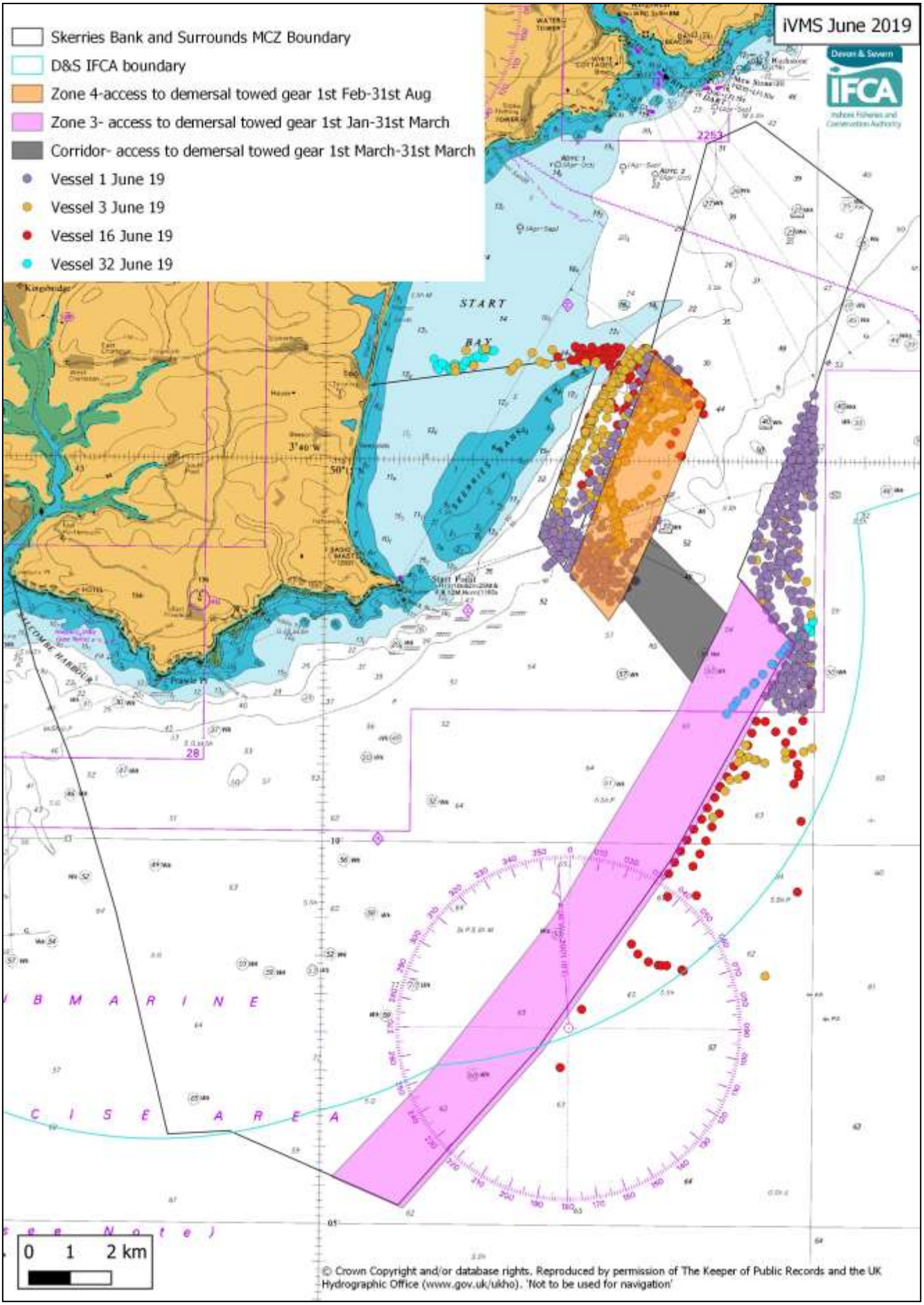
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4-access to demersal towed gear 1st Feb-31st Aug
Zone 3- access to demersal towed gear 1st Jan-31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 1 June 19
Vessel 3 June 19
Vessel 16 June 19
Vessel 32 June 19
iVMS June 2019
Devon & Severn IFCA
START BAY
SKERRIES BANK
0 1 2 km
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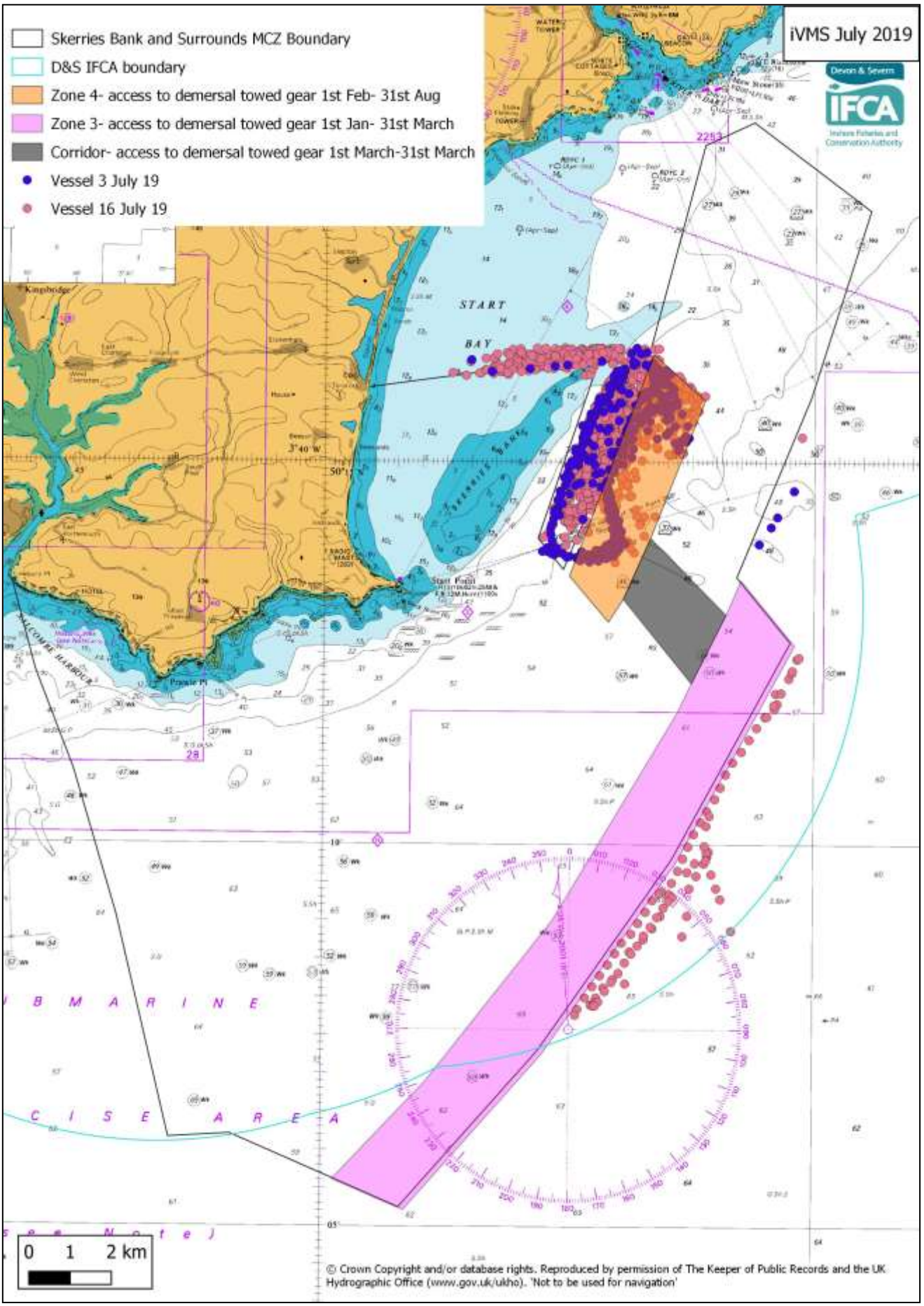
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 3 July 19
Vessel 16 July 19
iVMS July 2019
Devon & Severn IFCA
Inshore Fisheries and Conservation Authority
START BAY
SKERRIES BANK
Start Point
Prawle Pt
2253
2a
3°40 W
50°13
0 1 2 km
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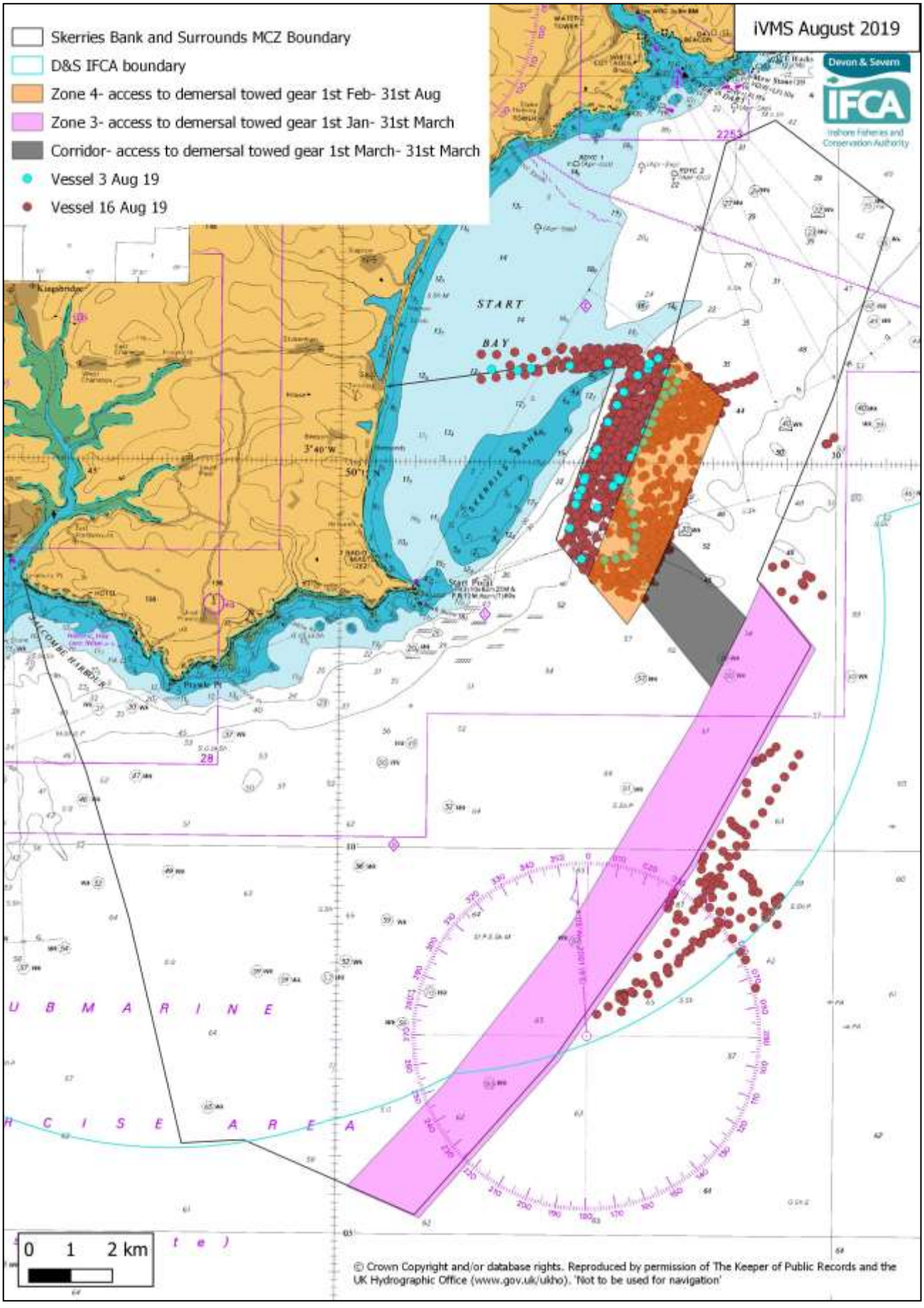
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 3 Aug 19
Vessel 16 Aug 19
iVMS August 2019
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START
BAY
SKERRIES BANK
U B M A R I N E
R C I S E A R E A
0 1 2 km
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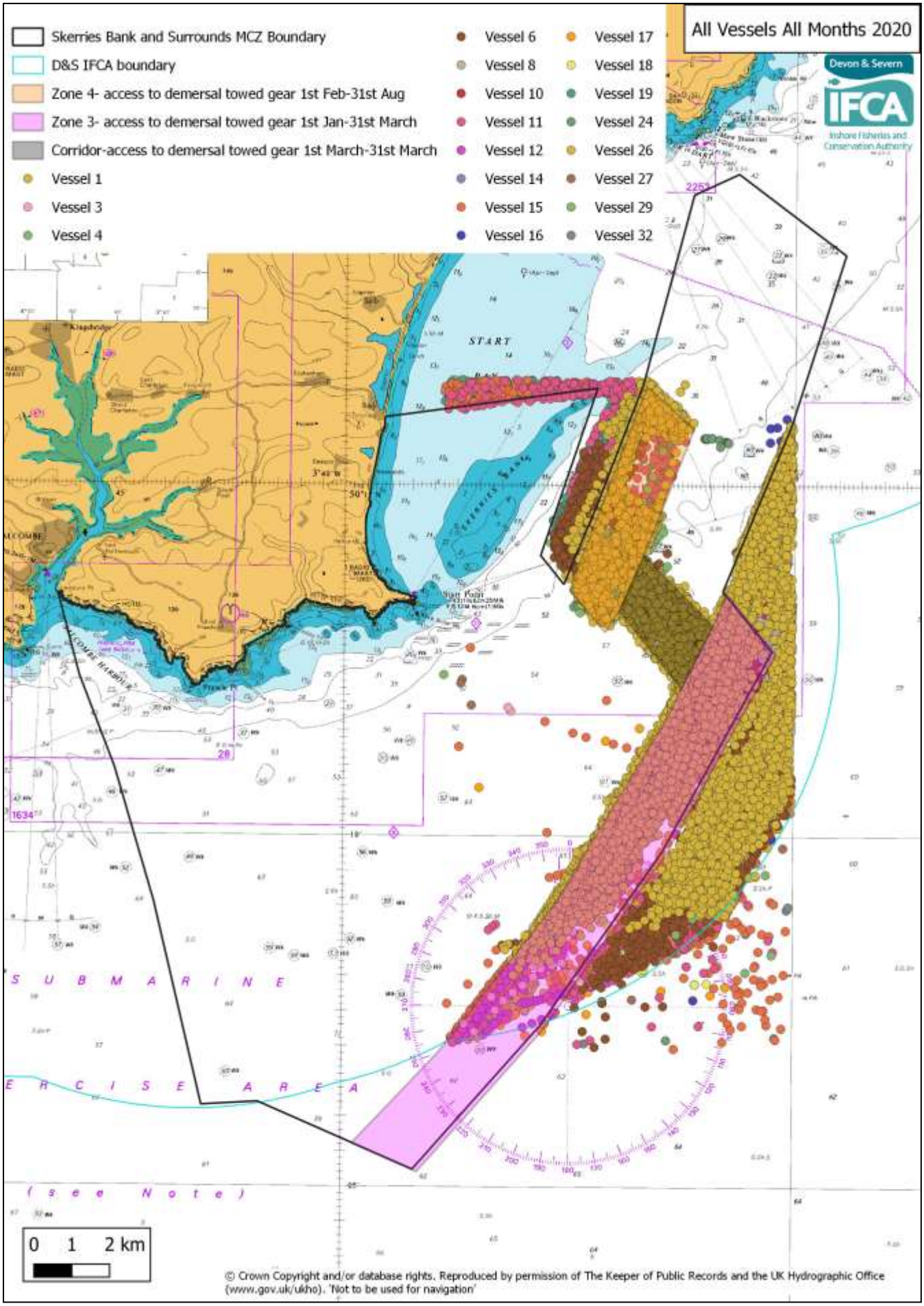
All Vessels All Months 2020
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
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Zone 3- access to demersal towed gear 1st Jan-31st March
Corridor-access to demersal towed gear 1st March-31st March
Vessel 1
Vessel 3
Vessel 4
Vessel 6
Vessel 8
Vessel 10
Vessel 11
Vessel 12
Vessel 14
Vessel 15
Vessel 16
Vessel 17
Vessel 18
Vessel 19
Vessel 24
Vessel 26
Vessel 27
Vessel 29
Vessel 32
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START
SUBMARINE
EXERCISE AREA
(see Note)
0 1 2 km
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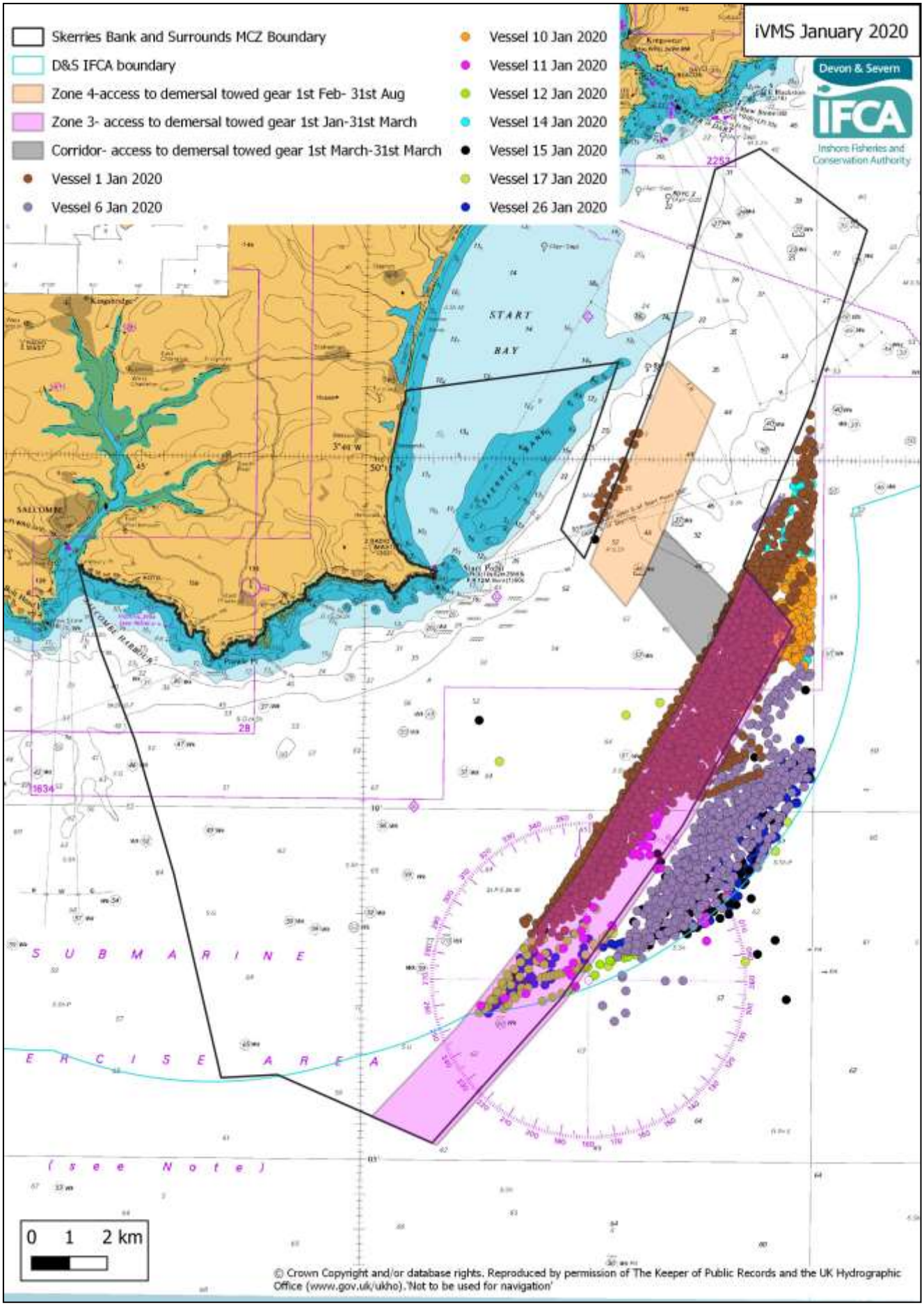
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4-access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan-31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 1 Jan 2020
Vessel 6 Jan 2020
Vessel 10 Jan 2020
Vessel 11 Jan 2020
Vessel 12 Jan 2020
Vessel 14 Jan 2020
Vessel 15 Jan 2020
Vessel 17 Jan 2020
Vessel 26 Jan 2020
iVMS January 2020
Devon & Severn IFCA
Inshore Fisheries and Conservation Authority
START BAY
SALCOMBE
SUBMARINE
EXERCISE AREA
(see Note)
0 1 2 km
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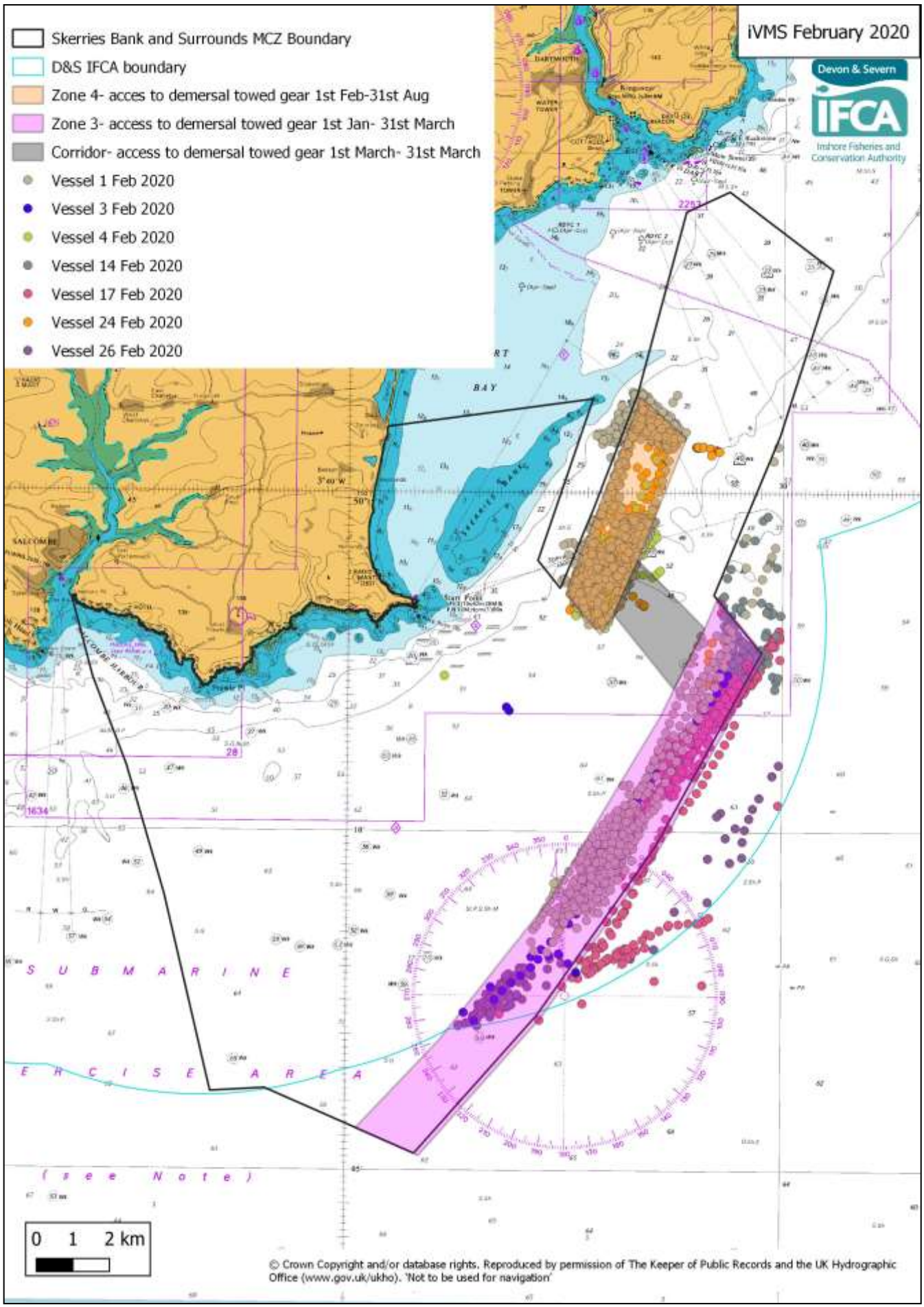
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- acces to demersal towed gear 1st Feb-31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 1 Feb 2020
Vessel 3 Feb 2020
Vessel 4 Feb 2020
Vessel 14 Feb 2020
Vessel 17 Feb 2020
Vessel 24 Feb 2020
Vessel 26 Feb 2020
iVMS February 2020
Devon & Severn IFCA
Inshore Fisheries and Conservation Authority
0 1 2 km
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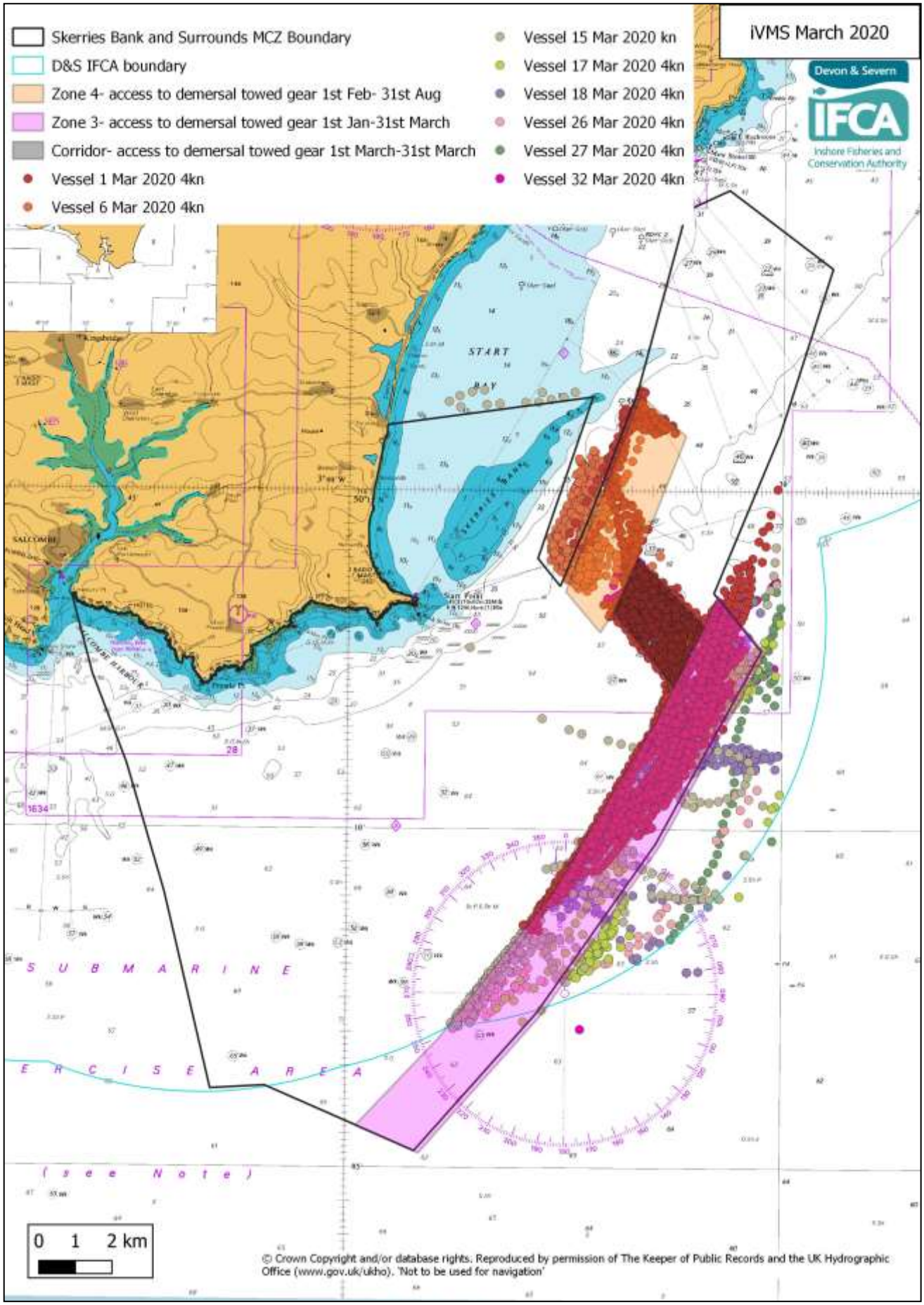
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D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan-31st March
Corridor- access to demersal towed gear 1st March-31st March
Vessel 1 Mar 2020 4kn
Vessel 6 Mar 2020 4kn
Vessel 15 Mar 2020 kn
Vessel 17 Mar 2020 4kn
Vessel 18 Mar 2020 4kn
Vessel 26 Mar 2020 4kn
Vessel 27 Mar 2020 4kn
Vessel 32 Mar 2020 4kn
iVMS March 2020
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START
BAY
SALCOMBE
S U B M A R I N E
E R C I S E A R E A
(s e e N o t e)
0 1 2 km
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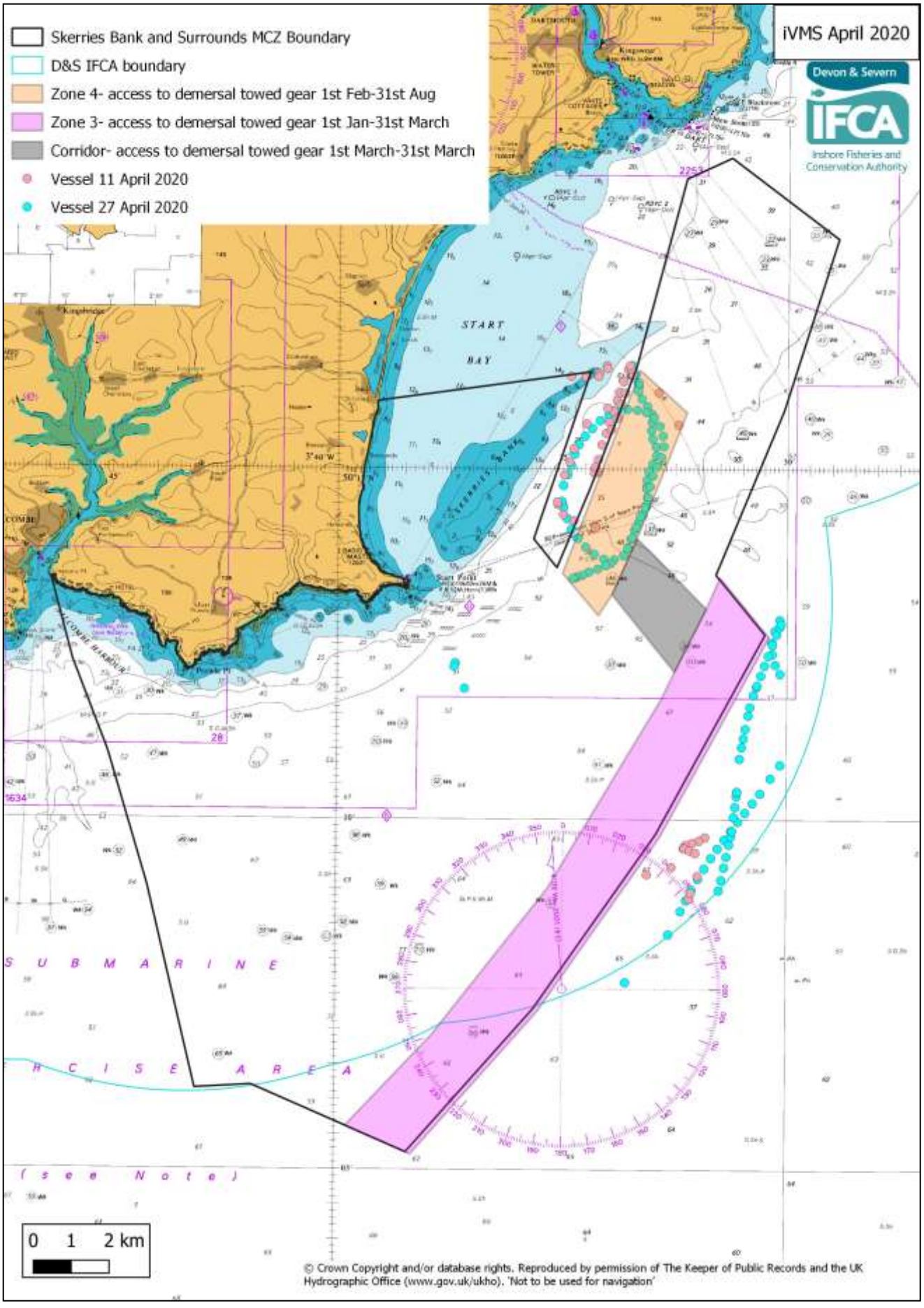
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D&S IFCA boundary
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Corridor- access to demersal towed gear 1st March-31st March
Vessel 11 April 2020
Vessel 27 April 2020
iVMS April 2020
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START BAY
SUBMARINE
RCISE AREA
(see Note)
0 1 2 km
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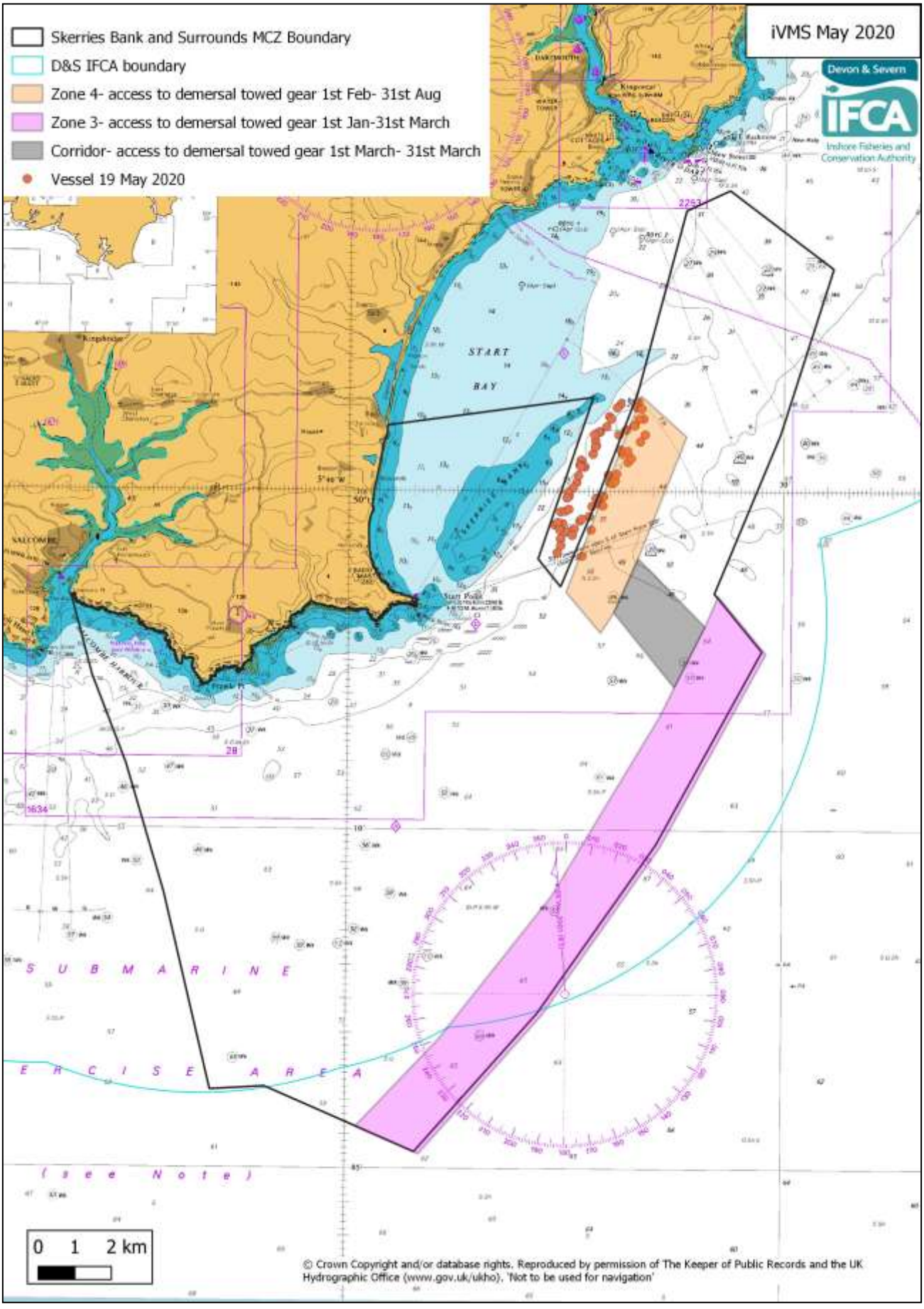
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Zone 4- access to demersal towed gear 1st Feb- 31st Aug
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Corridor- access to demersal towed gear 1st March- 31st March
Vessel 19 May 2020
iVMS May 2020
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START BAY
SUBMARINE
EXERCISE AREA
(see Note)
0 1 2 km
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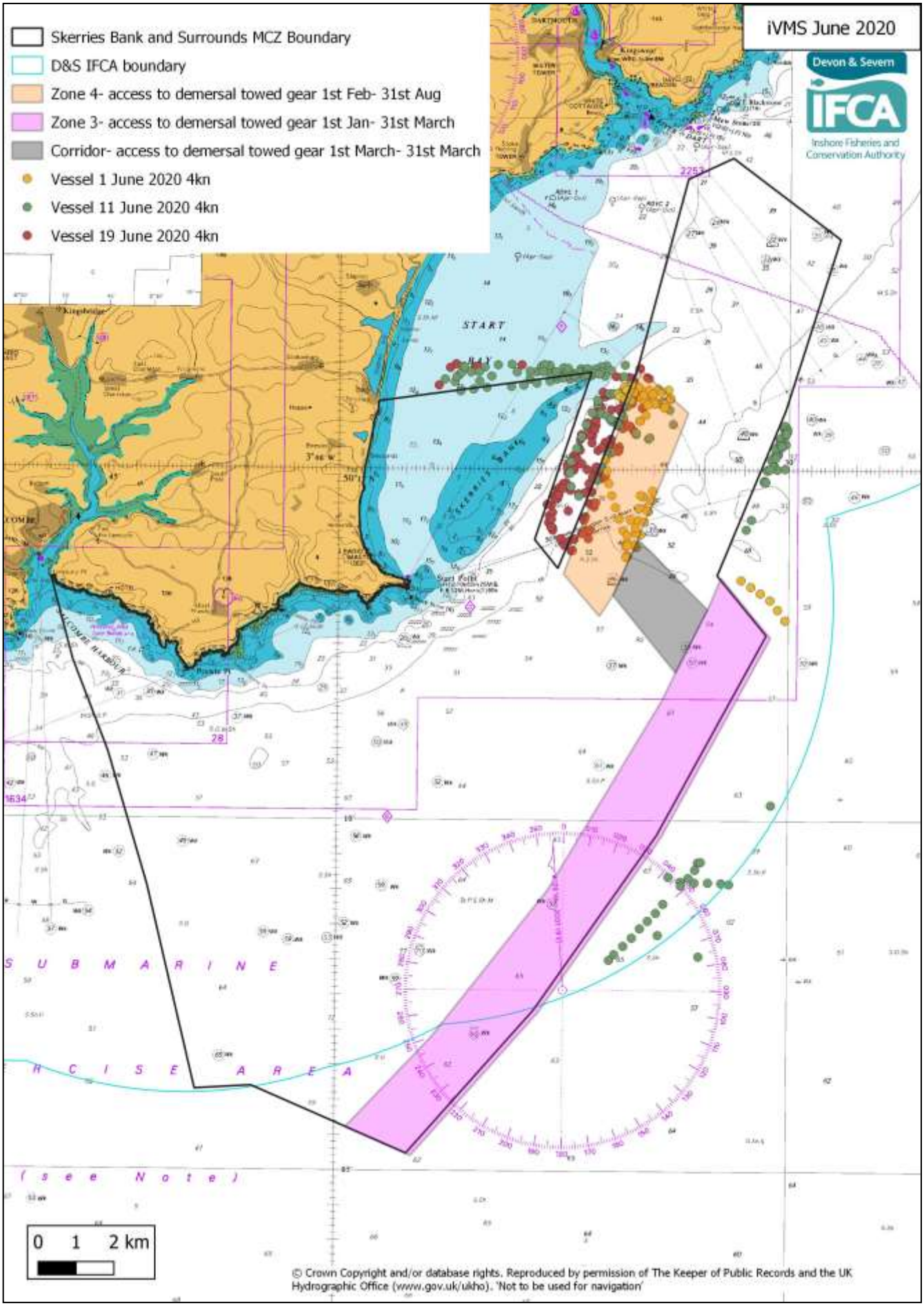
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
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Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 1 June 2020 4kn
Vessel 11 June 2020 4kn
Vessel 19 June 2020 4kn
iVMS June 2020
Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
START
SUBMARINE
RCISE AREA
(see Note)
0 1 2 km
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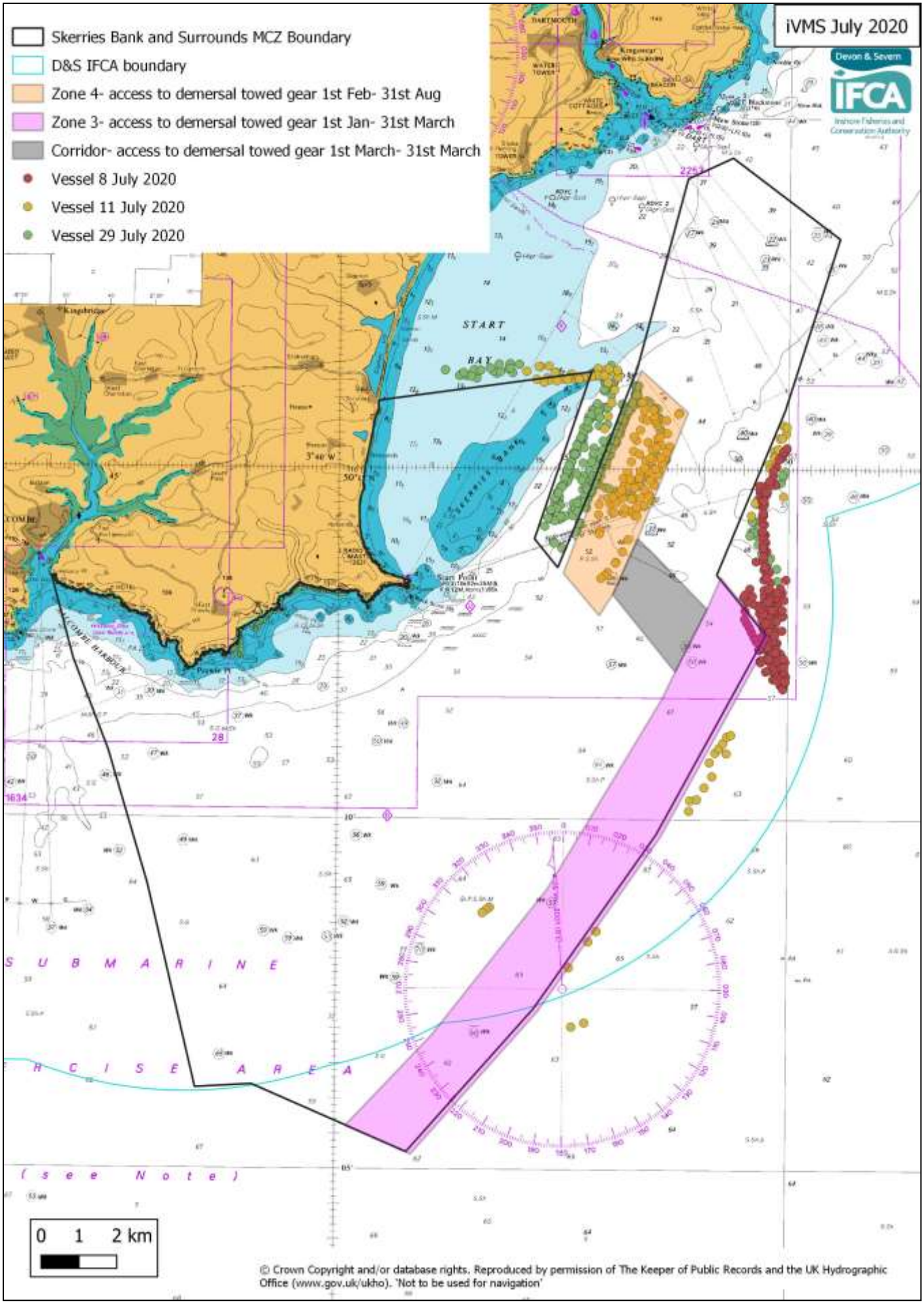
Skerries Bank and Surrounds MCZ Boundary
D&S IFCA boundary
Zone 4- access to demersal towed gear 1st Feb- 31st Aug
Zone 3- access to demersal towed gear 1st Jan- 31st March
Corridor- access to demersal towed gear 1st March- 31st March
Vessel 8 July 2020
Vessel 11 July 2020
Vessel 29 July 2020
iVMS July 2020
Devon & Severn
IFCA
START BAY
SUBMARINE
CRUISE AREA
(see Note)
0 1 2 km
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Annex 4: Pressure Audit Trail

Fishing Activity Pressures: Demersal trawl and dredges	High energy infralittoral rock	Moderate energy circalittoral rock	Moderate energy infralittoral rock	Pink sea-fan (*Eunicella verrucosa*)	Subtidal coarse sediment	Subtidal mud	Subtidal sand	**Screening Justification**
Abrasion/disturbance of the substrate on the surface of the seabed	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	NS	S	S	S	
Deoxygenation	IE	NS	NS	NS	NS	NS	NS	
Genetic modification & translocation of indigenous species		IE						OUT – 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	IE	NS	IE	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction of other substances (solid, liquid or gas)	IE	IE	IE	IE	IE	IE	IE	OUT - Insufficient activity levels to pose risk of large scale pollution event
Introduction or spread of non-indigenous species	S	S	S	S	IE	S	S	OUT – Activity operates in local area only so risk considered extremely low
Litter	IE	IE	IE	IE	IE	IE	IE	OUT - Insufficient activity levels to pose risk at level of concern
Nutrient enrichment	NS	NS	NS	NS	NS	NS	NS	
Organic enrichment	S	S	S	NS	S	S	S	
Penetration and/or disturbance of the substrate 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	IN - Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Removal of target species	Revised pressure – no sensitivity currently unavailable							IN – Need to consider spatial scale/intensity of activity to determine likely magnitude of pressure
Siltation rate changes (low and high) including smothering (depth of vertical sediment overburden)	S	S	S	S	S	S	S	
Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals). Includes those priority substances listed in Annex II of Directive 2008/105/EC.	NS	NS	NS	IE	NS	IE	NS	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.	NS	NS	NS	IE	NS	IE	NS	OUT - Insufficient activity levels to pose risk of large scale pollution event

Annex 5: Habitat map with access areas under Byelaw