

## **Annex J3b Groups of recommended Marine Conservation Zones**

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## 1 Introduction

J1.1 This annex sets out a summary of the impacts for a number of groups of recommended Marine Conservation Zones (rMCZs) that are expected to have cumulative impacts on the UK or specific non-UK commercial fishing sectors. Impacts for individual rMCZs can be found in Annex I. The groups of rMCZs considered in the annex were defined by the regional MCZ project economists based on information gathered through the qualitative survey consultation programme as well as through visual analysis of the MCZ Fisheries Model value of landings data layers. The groups of rMCZs considered in this annex are:<sup>1</sup>

- South-West Deeps (East), South of the Isles of Scilly, Western Channel (UK Vessels only);
- Cape Bank, South of the Isles of Scilly, South of Falmouth, South-East of Falmouth (UK vessels only);
- Torbay, Chesil Beach and Stennis Ledges (UK vessels only);
- North of Lundy, Morte Platform, Bideford to Foreland Point (UK vessels only);
- The Canyons, South-West Deeps (East), South-West Deeps (West) (Spanish vessels only);
- Cape Bank, South Dorset, South of the Isles of Scilly, South of Falmouth, South-East of Falmouth (French vessels only).

J1.2 For each group of rMCZs, the baseline is described first, followed by an assessment of the impacts, including the potential value of landings affected. Where the information presented is summarising information already presented in Annex I, references are not repeated here. The assessments are made based on the highest-cost management scenarios for each sites.

## 2 South-West Marine Area (Finding Sanctuary)

### 2.1 Group of rMCZs: South-West Deeps (East), South of the Isles of Scilly, Western Channel

J1.3 Source of costs: the following section describes the potential impacts of closing the specified group of rMCZs to UK bottom trawls. This is the most stringent management scenario for this gear type. Other gear types are also potentially impacted by the rMCZs but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.

J1.4 The group of rMCZs includes two large rMCZs (South-West Deeps (East) and Western Channel) that cover a total of over 7,400km<sup>2</sup> and are well outside the 12 nautical mile (nm) limit, and one smaller rMCZ (South of the Isles of Scilly) that covers 132km<sup>2</sup> and straddles the 12nm limit. The distance from shore means that it is generally only larger trawlers that target this group of sites, in particular beam trawlers of over 25 metres from Newlyn and Plymouth.

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<sup>1</sup> The annex includes only groups of sites for which significant combined and cumulative impacts are anticipated. As such, only a subset of the rMCZs is included in the groups presented within this annex. Other groups of sites, and combinations of the same sites may also result in significant combined and cumulative impacts.

- J1.5 The three rMCZs sit on the northern, eastern and western edges respectively of a large, traditional area of high bottom-trawl fishing effort. However, they are large distances apart – between approximately 100km (minimum distance) and 200km (maximum distance) – and, as such, can be considered to cover distinct grounds. While the group does not overlap with the most intensively fished areas, significant levels of effort occur in all three rMCZs. Many bottom trawlers work within all three of the rMCZs. The combined estimated value of landings by UK bottom trawls from the three rMCZs is £0.296 million per year (m/yr).
- J1.6 The three rMCZs are important mixed fisheries for bottom trawlers and include high-value non-quota species. Restrictions on landings of quota species has meant that such fishing grounds are increasingly important for fishers. Notably, there was a significant increase in the value of landings of cuttlefish, a non-quota species, from the Western Channel rMCZ in late 2010 and early 2011 by bottom trawlers, which may result in an increase in effort in this area in future years, if the same levels of success can be achieved.
- J1.7 None of the fishing industry representatives who were surveyed identified adaptation as a viable route to negate the impacts of the three rMCZs on vessels that bottom trawl in the sites. Adaptation to other gear types is unlikely given that the vessels are typically large trawlers; therefore, the three rMCZs may displace a high level of fishing effort.
- J1.8 The fisheries representatives could not say with any certainty how the rMCZs may affect the fishing patterns of the affected vessels, in particular where or if they might seek to increase fishing effort to compensate for the rMCZ closures. These decisions will depend on future fishing success in the remaining open areas. Any changes to the mix of species caught may affect the profitability of fishing businesses. A reduction in the value landed of non-quota species could be particularly significant.
- J1.9 The sharp increase in cuttlefish landings from the Western Channel rMCZ in 2010/11 indicates that the trawlers alter their fishing patterns to take account of changes in the abundance and distribution of species. The closure of the three rMCZs will remove the opportunity for fishers to target any future increase in the abundance of specific species in these areas.
- J1.10 Much of the effort of the vessels currently bottom trawling in the rMCZs may be redirected into the more intensively fished area in-between the three rMCZs. This may have implications for the catch rates, which in turn may affect the financial operating margins of all vessels fishing in these areas, not just those displaced from the rMCZs. The cumulative impact of displacement from the three rMCZs may be greater than the sum of the individual impacts.

## **2.2 Group of rMCZs: Cape Bank, South of the Isles of Scilly, South of Falmouth, South-East of Falmouth**

- J1.11 Source of costs: the following section describes the potential impacts of closing the specified group of four rMCZs to UK bottom trawls and dredges. This is the most stringent

management scenario for this gear type. Other gear types are also potentially impacted by the rMCZs but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.

- J1.12 The group of rMCZs is situated off the west and south Cornwall coast and includes areas within 6nm, between 6nm and 12nm, and just outside 12nm. Between them, the four rMCZs cover a total area of 655km<sup>2</sup>. Individual bottom-trawl vessels will fish in the four rMCZs at different times of the year in different conditions. The vessels range from under 15-metre vessels to over 30-metre vessels and include beam trawlers and otter trawlers.
- J1.13 The four rMCZs cover different fishing areas, with those to the west (Cape Bank and South of the Isles of Scilly) more exposed and therefore offering more limited access. The rMCZs to the east of the Lizard (South of Falmouth and South-East of Falmouth) offer greater shelter and are on the western extreme of a large area of high fishing intensity that stretches east towards Prawle Point. Individual vessels fish in all these areas, depending on the season and conditions. The combined estimated values of UK bottom-trawl and dredge landings from the four rMCZs are £0.170m/yr and £0.013m/yr respectively (a total of £0.183m/yr).
- J1.14 None of the fishing industry representatives surveyed raised adaptation as a likely option for vessels that will be affected by the rMCZs, although there is evidence from the Lyme Bay Closed Area that inshore fishers affected by closed areas may choose to switch from bottom trawls or dredges to static gears (Mangi and others, 2011).
- J1.15 The fisheries representatives could not say with any certainty how displacement may affect the fishing patterns of the affected vessels, in particular where and if they might seek to increase fishing effort to compensate for the rMCZ closures. These decisions will depend on future fishing success in the remaining open areas.
- J1.16 If displaced trawlers increase effort in the area outside the rMCZs, and static-gear fishers do not move into the rMCZs and reduce their effort outside (either through choice or additional MCZ management), then gear conflict may intensify in the areas surrounding the rMCZs. The South of Falmouth and South-East of Falmouth rMCZs are on the edge of an area where there have been significant problems with gear conflict between static-gear and mobile-gear fishers. The successful implementation of a gentlemen's agreement has sought to manage this issue (SWPO, pers comm., 2010). The possible situation described here may threaten continuation of the existing gentlemen's agreement between static-gear and mobile-gear fishers and potentially result in a larger value of landings than that identified above being affected. Conversely, if static gear fishers do move into the rMCZs and reduce effort outside, then there may be an easing of gear conflict issues.

### **2.3 Group of rMCZs: Torbay, Chesil Beach and Stennis Ledges**

- J1.17 Source of costs: the following section describes the potential impacts of closing the specified group of rMCZs to UK dredges. This is the most stringent management scenario for this gear type. Other gear types are also potentially impacted by the rMCZs but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.
- J1.18 The two rMCZs are located on either side of Lyme Bay and are both situated close to the coast, within 6nm. Between 6 and 14 vessels (Devon & Severn Inshore Fisheries and Conservation Authority (IFCA), pers. comm., 2011; Southern IFCA, pers. comm., 2011) from south Dorset and Devon, including the ports of Brixham, West Bay, Lyme Regis and Weymouth, are thought to regularly dredge within the sites.
- J1.19 The Torbay rMCZ overlaps with one of five major scallop beds in the south Devon inshore area (Curtis & Anderson, 2008). The area of Stennis Ledges is not identified by Curtis & Anderson (2008) as a scallop bed but evidence from the MCZ Fisheries Model and consultation with fisheries stakeholders indicates that there are also scallop beds that overlap with the rMCZ. The estimated combined value of UK dredge landings from the group of rMCZs is £0.066m/yr.
- J1.20 Access to another of the south Devon scallop grounds is currently limited as a result of the Lyme Bay Closed Area. Evidence indicates that fishers displaced by the Lyme Bay Closed Area have increased effort in the remaining scalloping grounds (Mangi and others, 2011). Much of the effort has been displaced to grounds off Exmouth, but effort has also been displaced further east and west (Mangi and others, 2011), including within the area of the rMCZs. There is also evidence of vessels affected by the Lyme Bay Closed Area investing in larger vessels to allow them to access grounds that are further away (South West Fishing Industry Group, pers. comm., 2011; Southern IFCA, pers.com., 2011; Mangi and others, 2011).
- J1.21 The Lyme Bay Closed Area came into force in 2008. The MCZ Fisheries Model uses Marine Management Organisation (MMO) landings data from 2007 to 2010, FisherMap data from 2005 to 2010, and Vessel Monitoring System (VMS) data from 2007 to 2009. Therefore, some of the data input to the model will be for the spatial pattern of fishing prior to the redistribution of effort following the closure. This may have resulted in an underestimation of the value of dredge landings from the two rMCZs.
- J1.22 The management scenario will not result in the complete closure of the scallop grounds, which are only partially overlapped by the two rMCZs, but will reduce the area that is accessible by closing those parts that are inside the rMCZs. Given the evidence from Mangi and others (2011), effort displaced from inside the rMCZs is likely to be redistributed to the remainder of the grounds or to other grounds to the east and west. Scalloping grounds further from shore are less feasible as the vessels affected are typically small (less than 15

metres). However, if fishers decide to fish further from shore as a result of the rMCZs, this could compromise safety, particularly during the winter months.

- J1.23 The closure of the two rMCZs to dredging may encourage more fishers to invest in larger vessels or to invest in switching to alternative gear types, particularly when considered alongside other existing and expected additional restrictions on fisheries (South West Fishing Industry Group, 2011). The Lyme Bay Closed Area has already resulted in a small number of fishers switching gear types. The additional management for the Lyme Bay and Torbay candidate Special Area of Conservation (cSAC) may lead further vessels to switch. The investment costs of switching from mobile to static gear may be significant.
- J1.24 The displacement of effort from the rMCZs to the remaining inshore scallop grounds may result in lower catch rates by scallopers in these grounds as well as potential increases in costs. While evidence indicates that the remaining scallop grounds have been able to absorb displaced effort from the Lyme Bay Closed Area, it is uncertain whether this is likely to continue in the long term (Mangi and others, 2011). Closure of the rMCZs to dredges will add further pressure to these grounds and make their long-term sustainability less certain.
- J1.25 Displacement from the Lyme Bay Closed Area has resulted in increased gear conflict between static-gear and mobile-gear fishers outside of the closed area. Displacement from the group of rMCZs may exacerbate this trend.

#### **2.4 Group of rMCZs: North of Lundy, Morte Platform, Bideford to Foreland Point**

- J1.26 Source of costs: for the specified group of rMCZs, the following section describes the potential impacts of closing the entire area covered by the rMCZs to UK bottom trawls. This is the most stringent management scenario for this gear type. Other gear types are also potentially impacted by the rMCZs but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.
- J1.27 The three rMCZs are situated off the north Devon coast. They cover a total area of 474km<sup>2</sup>, the bulk of which lies within 12nm. The wider Bideford Bay area is a key fishing ground for the north Devon bottom-trawl fleet. Bottom-trawl vessels are active all around the bay, including within the rMCZs. Fishing effort is predominantly by otter trawls; however, there is also beam trawling. The combined estimated value of UK bottom-trawl landings from the three rMCZs is £0.157m/yr. The North Devon Fishermen's Association (NDFA) considers this to be an underestimate, and estimate the value of landings from just the North of Lundy rMCZ to be up to £1.2m/yr (NDFA, pers. comm., 2012).
- J1.28 If the proposed Atlantic Array wind farm (which overlaps the entirety of the North of Lundy rMCZ) is constructed then restrictions may be placed on fishers, potentially excluding them from the North of Lundy rMCZ. This may significantly change the distribution of fishing effort off the north Devon coast and change the future value of landings attributed to the group of rMCZs.

- J1.29 None of the fishing industry representatives surveyed thought that affected fishers are likely to be able to adapt to the closure of the three rMCZs to bottom trawls. However, there is evidence from the Lyme Bay Closed Area that inshore fishers affected by mobile gear restrictions may choose to switch from bottom-trawl or dredge gear to static gears (Mangi and others, 2011).
- J1.30 The level of displacement, as highlighted by the value of landings from the rMCZs, is likely to be significant. Vessels from north Devon are likely to be displaced to remaining grounds in Bideford Bay. Visiting vessels may be displaced to these same areas, or may choose to reduce time spent fishing in the wider area as a result of the rMCZ. If there is a high level of displacement, catch rates in the remaining grounds may be affected. In particular, seasonal fisheries, including squid and cuttlefish, may be affected for periods when the fish are predominantly found within the rMCZs. The rMCZs may have significant impacts on the viability of the businesses of some north Devon fishers (South West Fishing Industry Group, pers. comm., 2011).
- J1.31 As the level of displacement is likely to be significant, it is expected that this may lead to gear conflict between displaced trawlers and static-gear fishers off the north Devon coast (South West Fishing Industry Group, pers. comm., 2011). Based on experience from the impacts of the Lyme Bay Closed Area (Mangi and others, 2011), this is a likely possibility and may affect the value of landings or the cost of fishing for fishers outside the rMCZ.

## **2.5 Group of rMCZs: The Canyons, South-West Deeps (East), South-West Deeps (West)**

- J1.32 Source of costs: for the specified group of rMCZs, the following section describes the potential impacts of closing the entire area within the rMCZs to Spanish bottom trawls and longliners. This is the most stringent management scenario for these gear types. Other gear types and vessels from other countries are also potentially impacted by the rMCZ but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.
- J1.33 The three rMCZs are situated offshore in the far south-west of the UK's Exclusive Economic Zone (EEZ). They cover a total area of 8,493km<sup>2</sup>. Spanish longliners target hake and are active in all three rMCZs, with effort focused along the areas of continental shelf break. It is estimated that, in 2010, Spanish longliners spent 1,340 fishing days within the group of sites, taking landings equating to €1.7m (£1.5m).<sup>2</sup> Spanish bottom trawlers target hake, megrim and monkfish and are active in South-West Deeps (East) and South-West Deeps (West) rMCZs. It is estimated that in 2010 Spanish bottom trawlers spent 2,000 fishing days within the two rMCZs, taking landings equating to €2.7m (£2.3m).<sup>3</sup> In total, landings by Spanish vessels from the group of rMCZs totalled €4.4m (£3.8m) in 2010 (ANASOL, OPPAO, OPP-7 and Puerto de Caleiro, pers. comm., 2011).

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<sup>2</sup> Based on the 2010 annual average exchange rate of £1 = €1.1664 (Bank of England, 2012).

<sup>3</sup> Based on the 2010 annual average exchange rate of £1 = €1.1664 (Bank of England, 2012).

J1.34 It is thought that effort displaced from the rMCZs will need to move to other areas, and this may have a knock-on effect (ANASOL, OPPAO, OPP-7 and Puerto de Caleiro, pers. comm., 2011). It was not possible to estimate the proportion of the value of landings affected that may be replaced by landings from increased effort outside the rMCZs. Effort displacement and any reduction in landings could result in negative impacts on fleet-dependent services, suppliers and fish marketing (ANASOL, OPPAO, OPP-7 and Puerto de Caleiro, pers. comm., 2011).

## **2.6 Group of rMCZs: Cape Bank, South Dorset, South of the Isles of Scilly, South of Falmouth, South-East of Falmouth**

J1.35 Source of costs: for the specified group of rMCZs, the following section describes the potential impacts of closing the entire area within the rMCZs to French bottom trawls. This is the most stringent management scenario for these gear types. Other gear types and vessels from other countries are also potentially impacted by the rMCZs but are not discussed here. Full details of the management scenarios for each rMCZ and the potential impacts of each rMCZ on commercial fishing can be found in Annex I.

J1.36 The five rMCZs are situated between the far west of Cornwall and Dorset on or around the 12nm limit. They cover a total area of nearly 850km<sup>2</sup>. There are 14 French bottom trawlers of over 15 metres that work in these areas year round (Bass Normandie, pers. comm., 2011). They typically target species including rays, squid, flounder, red mullet, cod, cuttlefish, pollack and bass. The vessels typically spend a total of 240 days/year at sea (each), an unknown proportion of which is within the rMCZs. Rising fuel costs mean that the vessels tend to fish in the south-west area more frequently than they used to (Bass Normandie, pers. comm., 2011). The value of landings from the group of pMCZs by French bottom trawlers averaged £0.588m/yr between 2008 and 2009 (Finding Sanctuary calculations based on DPMA, 2012), with a present value of £8.353. (The 'best estimate', based on the relative probabilities of the high or low cost scenarios occurring, for French bottom trawlers is £0.294m/yr, with a present value of £4.176. 8.353m).

J1.37 Due to the cost involved, it is considered unlikely that any vessel owners would choose to adapt their fishing practices, and as a result effort would be displaced to non-rMCZ areas (Bass Normandie, pers. comm., 2011). A decline in the size of the Normandy fleet has weakened economic activity associated with fishing, and it is considered that coastal area economies could not support any further declines in landings (Bass Normandie, pers. comm., 2011).

## **3 References**

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