South Coast Dredging Association (SCDA)

SOUTH COAST REGIONAL ENVIRONMENTAL ASSESSMENT

FISHERIES ACTIVITY SURVEY

Final Report

December 2008

Emu Limited

www.emulimited.com

South Coast Regional Environmental Assessment Commercial & Recreational Fisheries			
Final Report No: J/1/06/1228/0849 Job No: J/1/06/1228 Client Name: South Coast Dredging Association (SCDA) Client Contact: Ian Taylor			
Project Manager	Steve Freeman		
Report written by	Paul English		
Report checked by	Steve Freeman		
Report Authorised by	Ian Selby		

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

1.1 The south coast region (SCR) of the UK, between Swanage in the west and Shoreham in the east, holds an important number of aggregate licence areas together with a number of other potential aggregate areas that are currently under application or that are being prospected. The region has a long history of marine dredging and is regarded as a strategic area for the continued supply of aggregates for the construction industry and coastal defence schemes. Increased demand for aggregates together with the imposition of further legislative controls regarding terrestrial won aggregates are likely to result in continued marine dredging operations within the south coast region.

1.2 In 2007, the South Coast Dredging Association (SCDA), a consortium of aggregate companies operating within the SCR, initiated a Marine Aggregate Regional Environmental Assessment (REA). This REA seeks to establish the context of the south coast region in terms of its physical and biological characteristics, heritage value and socio-economic issues within the influence of dredging and is intended to assist the management of marine aggregate extraction in a more sustainable way. The process will deliver a range of comprehensive datasets relating to the south coast region for use by regulators and stakeholders to inform and help progress site specific licence renewals and applications and in particular with regard to potential in-combination and cumulative effects due to multiple simultaneous dredging operations and other activities. Figure 1.1 below presents the extents of the SCR REA study area for which information is being collected together with sites that are currently licenced for marine dredging and sites under application.

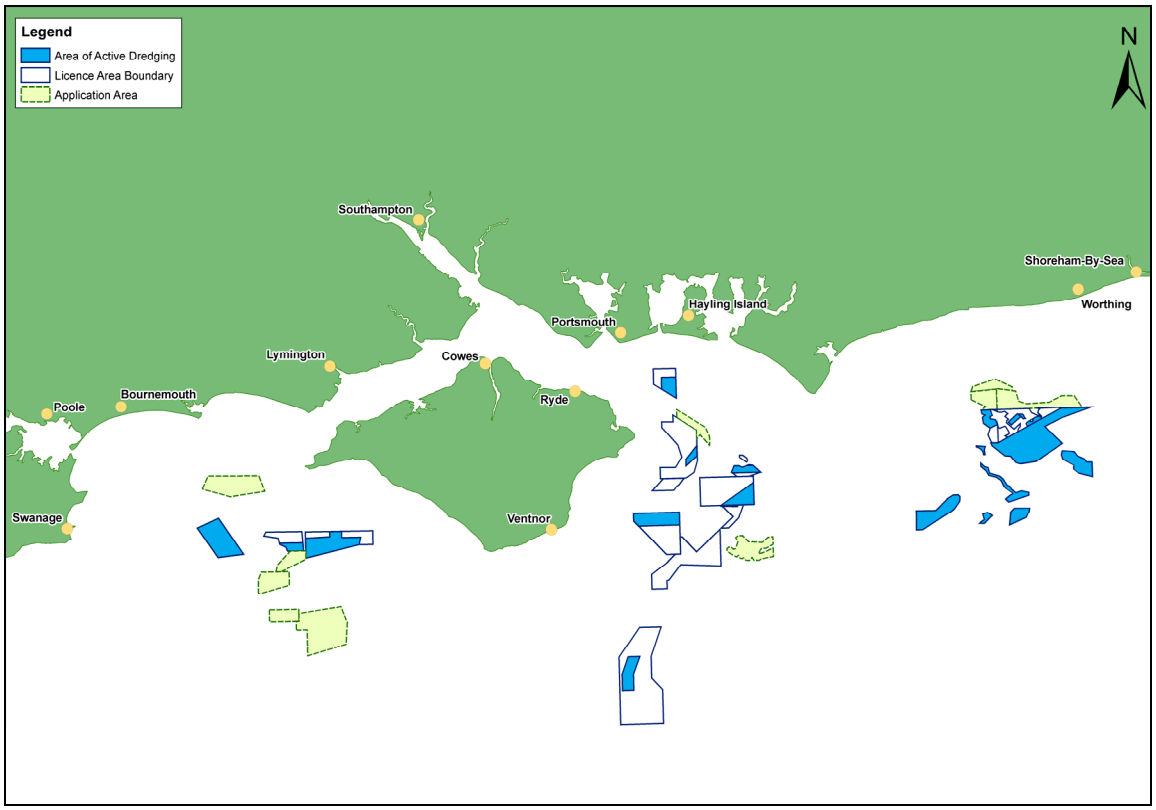


Figure 1.1 South Coast REA Study Area

1.3 It has long been recognised that commercial and recreational fisheries activities have potential to conflict with those of the SCDA. Previous consultations with the fishing community, as part of historic site level and sub-regional dredging related assessments, have identified a number of concerns associated with potential impacts on fisheries interests due to aggregate extraction. These include, but are not necessarily limited to;

- a change in the distribution of fish and shellfish and consequent impact on commercial and recreational fisheries;
- impacts on stocks of fish and shellfish through direct uptake and changes in behaviour;
- physical exclusion of fishing vessels and gear from licensed extraction areas;
- interference with established trawl tows;
- changes to sea-bed topography;
- damage to fishing gears (direct damage to nets/pots from dredgers);
- potential 'squeeze effect' on adjacent areas (increased fishing pressures) as a result of displacement of effort from aggregate extraction grounds; and
- adverse economic effects on the commercial and recreational fishing sectors.

1.4 In light of the overlapping of commercial interests this document has been prepared to provide a broad characterisation of fisheries activities across the south coast region. It is intended to act as a reference document for the region to facilitate the more focused research, desk reviews and consultations that will support the Environmental Impact Assessments relating to future applications as well as informing ongoing management of marine dredging on the south coast. This document defines the spatial and temporal extents of the main commercial and recreational fishing activities within the REA study area and highlights areas of particular sensitivity.

1.5 The key aims of the current study therefore are;

- To describe commercial fisheries activities within the SCR EA study area.
- the determination of the spatial and temporal extents of fishing activities and effort
- to inform an assessment of the potential relationships between marine aggregate extraction and fishing.

1.6 For the purposes of the REA project, an extensive consultation exercise with representatives of the fishing communities was not appropriate. Such exercises are more suitable as part of site specific applications and will continue to be undertaken to inform individual EIAs. Instead, this overview uses the official data derived from Defra's Fisheries Statistics Unit together with information drawn from a series of meetings with the local Sea Fisheries Committee and Marine and Fisheries Agency fisheries officers.

2.0 METHODS

2.1 The REA study area extends from Swanage in the west to Shoreham in the east and seawards to beyond the 12 mile limit, incorporating the waters of the Isle of Wight and Solent harbours, Chichester, Langstone and Portsmouth and Southampton Water. The region encompasses three main aggregate resource areas, i.e., West Isle of Wight, South and East Isle of Wight and the Owers areas, south of Selsey, as shown in Figure 1.1 above. The boundaries of the region have been chosen according to the spatial extent of physical processes, principally sediment transport processes and their interaction with the coastline as indicated in relevant Shoreline Management Plans. Importantly, the MaREA study area encompasses all of the predicted effects of marine aggregate dredging including those relating to the re-distribution of fine sediments from single and multiple point sources as illustrated in Figure 2.1 below.

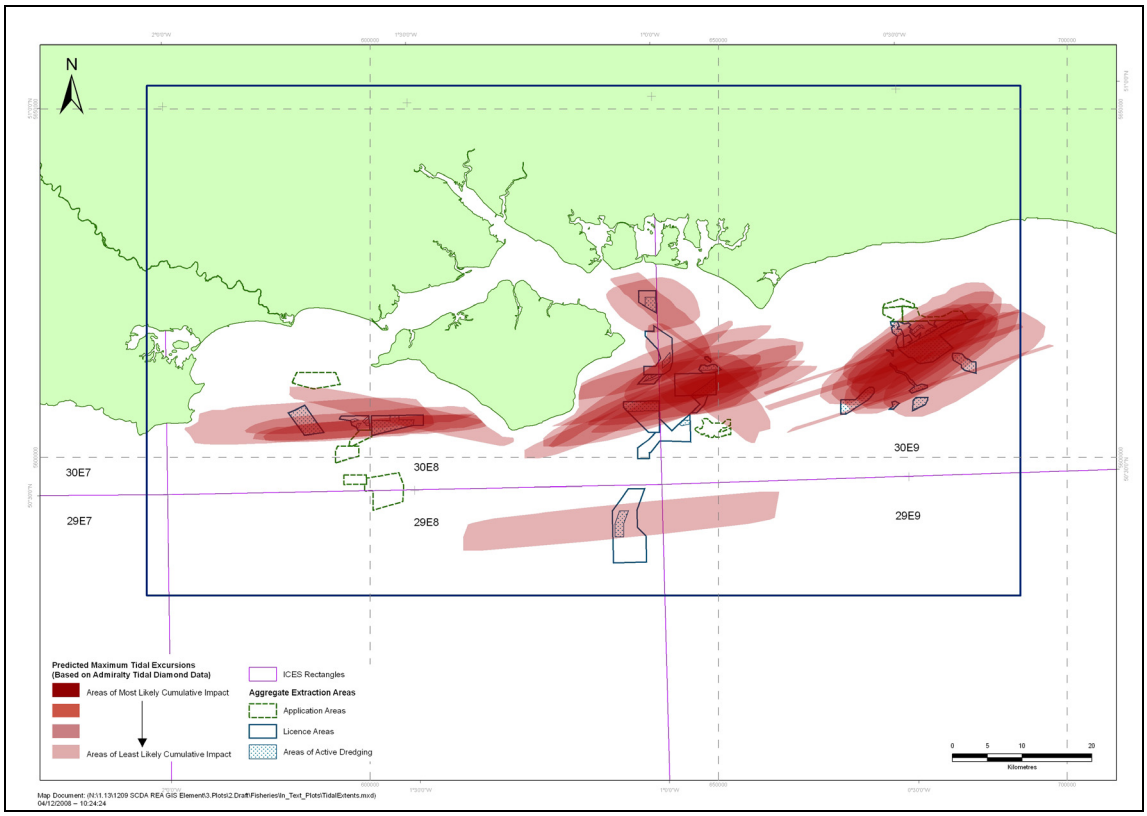


Figure 2.1 Extents of the possible influences of aggregate extraction.

Official Landings Data

2.2 The vast majority of the SCR REA study area corresponds to International Council for the Exploration of the Sea (ICES) statistical rectangles 30E8 and 30E9. These rectangles represent the spatial unit of sea for which official fish landings data are obtained in fulfilment of the UK's obligations under the EU Common Fisheries Policy (CFP). Because licence Area 407 falls outside and to the south of these ICES rectangles, we have also obtained data for the neighbouring rectangles 29E8 and 29E9 although the spatial influence of dredging in these offshore rectangles is limited. The additional data for the offshore rectangles has, however, provided opportunity to investigate the spatial extent of the region's fishing activities and we have found that this is mostly constrained to the inshore waters, within approximately 14 nautical miles of the mainland coastline.

2.3 The official landings data for the ICES statistical rectangles have been provided by Defra's Fisheries Statistics Unit. These data include the monthly tonnage and value (first sale) of recorded fish and shellfish species taken from ICES rectangles 29E8, 29E9, 30E8 and 30E9 per month per port over the last five years (2003 – 2007 inclusive).

2.4 It has long been recognised that the official data greatly under-estimates the total amount of fish landed. This under-estimation may be as much as 50% or more (Sussex SFC, *pers comm.*). In the south coast REA study area the disparity between the official data and the actual landings made may be particularly wide. This is because the vast majority of the fishing fleet along the south coast comprises small boats of less than 10m in length which, until recently, are not obligated to declare their landings. Despite this, the landings data provided do indicate relative values of exploited fish species taken from the region as well as the seasonality of fisheries.

2.5 Since 2006, the Registration of Buyers and Sellers and Designation of Fish Auctions Regulations has required that all first sales of fish be recorded. Importantly, these new regulations require landings made by vessels of <10m in length to be declared. Consequently, the level of accuracy of official landings data for the south coast region is expected to be greater than that for any pre-2006 data. It is important to consider these improvements in the recordings of landings when comparing historic and current data and interpreting trends. For example, perceived improvements to catches over recent years may be an artefact of the greater accuracy of recordings rather than improved fishing conditions. Moreover, landings into the region for 2007 are estimated to be artificially increased by 15.5 tonnes due to the fact that Defra have recently requested that all ports clear their respective backlogs.

2.6 Some fisheries landings data do not appear n the official records. For example, full reporting of catches is not required for species for which there is no Total Allowable Catch (TAC). This currently includes shellfish, which accounted for approximately 65% of the value of landings into the region's ports, and bass (*Dicentrarchus labrax)*, which accounted for around 10%).

2.7 Landings made by recreational anglers are not required to be declared and therefore do not appear in the official data.

Surveillance Data

2.8 Defra's Fisheries Statistics Unit has also provided aerial and satellite Vessel Monitoring System (VMS) fisheries surveillance data. These data are acquired to show the locations of various fishing activities and are used in the spatial mapping of the extents of gear types throughout the south coast REA study area.

Aerial Sightings

2.9 An indication of the intensity of activity is also provided through Temporal resolution may, however, be low so that the accurate mapping of activities is presently difficult without ground verification studies and consultation.

2.10 ICES rectangles are not visited regularly or with equal frequency. The majority of flights are made between 0900hrs and 1700hrs. No sightings can be recorded at night or in poor visibility. Aerial surveillance data for the sea areas around Isle of Wight may also be particularly sparse. This is because of the practical constraints of undertaking aerial surveys across the flight corridors of a number of airports and aerodromes in the area including Bournemouth and Southampton airports, Bembridge aerodrome and the air field at HMS Daedalus, Lee on Solent.

Vessel Monitoring System (VMS) Data

2.11 Following the introduction of European legislation, the position of vessels over 15m are now recorded enabling an almost continuous record of fishing vessel movements. The VMS data acquired for the current study has been split into gear type, nationality and year quarter to assess temporal as well as spatial distributions of UK and foreign vessel activity.

2.12 Currently, vessels are not obliged to identify whether they are fishing or simply transiting through the site and so vessel speed information has been used to aid this interpretation. Vessels with mobile gears will fish at different speeds depending on their size, engine power and amount of gear being towed and the following assumptions have been used to filter out the non-fishing vessels from the VMS data.

- Scallop dredgers fishing speed = 1 – 6 knots
- Large beam trawlers (+24m) fishing speed = 3 – 6 knots
- Small beam and otter trawlers fishing speed = 3 – 8 knots
- Pelagic trawlers = up to 8 knots.
- Potter = greater than 5 knots

2.13 Whilst picking up, baiting and re-deploying pots, potters will be moving very slowly along their strings and at a maximum speed of around 4-5 knots (*pers comm*.). We have therefore assumed that any potting vessels recorded at speeds in excess of 5 knots will be transiting and not fishing.

2.14 A particular short-coming of VMS data is that only vessels of above 15m in length are tracked and recorded. This has important implications for assessments of the SCR REA area as the vast majority of the fishing fleet comprises vessels of less than 10m and will therefore not be represented by the satellite records. Also, much of the study area falls within the 6 nm limit from which the large (+15m) vessels that transmit VMS data are excluded. The VMS data will, however record the positions of the larger crab potting vessels from Poole and Selsey, for example, as well as the larger Shoreham trawlers and scallop dredgers.

2.15 Also, the VMS data will not be able to discriminate vessels that are “ghost fishing”. This is the practice whereby a vessel mimics a typical fishing pattern giving it the pretence to claim to be fishing for quota species in areas where sufficient quota exist. This avoids the vessel having to declare catches from areas where the quota is restrictive or has been reached. This practice is not legal but is thought to be quite commonly occurring within the REA study area This is because the sole quota in the adjacent ICES division to the west of the REA study area (Division VIIe) is currently very restrictive. Fishing vessels from the western Channel and that are affected by the restrictions are therefore tempted to travel eastwards into the study area so that they can declare to have caught sole from the adjacent ICES division (VIId) and in which the REA area lies. Ghost fishing, where this occurs, will have the effect of artificially increasing demersal trawling activity within the SCR.

Data Review

2.16 The official data have been refined to a certain degree by a review of the relevant data. This includes specialist fisheries studies undertaken at the sub-regional level or at the level of a specific aggregate site for the purposes of environmental impact assessment (Emu Ltd., 199a; 199b; 2002). Environmental statements for capital dredge schemes such as those at Poole Harbour and Southampton Water eastern approach channel also contain information about specific fisheries within and around Poole Harbour and the Solent and have also been reviewed as part of the current survey (Royal Haskoning 2004 & ABPmer, 2007).

2.17 Sussex Sea Fisheries Committee have completed a detailed seabed mapping involving web based GIS of the spatial distributions of the relative intensities of fishing activities, including

the different types of netting, trawling, potting and sea angling (Clarke, 2006). The spatial data for fishing activities are given for the area between Selsey and Shoreham.

2.18 The Centre for Environment, Fisheries and Aquaculture Science (Cefas) reviews the UK fisheries every 5 years or so. The most recent review stratifies fisheries activities on the basis of gear type and port and provides a description of the fisheries within the Southern SFC and Sussex SFC districts (Walmsley & Pawson, 2007).

Consultations

2.19 An exhaustive consultation is appropriate to Environmental Impact Assessments for individual aggregate licences and has not been undertaken here. For this Regional Environmental Assessment a more "broad-brush" characterisation of fisheries activities has been achieved through a limited number of in depth consultations with the following organisations.

- Sussex Sea Fisheries Committee
- Southern Sea Fisheries Committee
- Shoreham M&FA Fisheries Officer
- Portsmouth M&FA Fisheries Officer
- Poole M&FA Fisheries Officer
- National Federation of Sea Anglers

2.20 The principal aim of the limited consultations undertaken here was to refine the surveillance data, characterise the regions fishing activity including identification of key fishing areas, gear types used, target species and fishing effort throughout a typical year. Focused fisheries consultations will continue to be undertaken as part of site specific EIAs. A list of other potential fishing organisations for consultation during future assessments of fishing activity within the region is presented in Appendix I.

2.21 There are numerous websites and online fora which describe popular locations for recreational fishing and boat angling along the south coast and from which some of the following information has been derived. Other information has been supplied from consultations with M&FA and SFC fisheries officers, charter vessel skippers and a limited number of sea angling clubs. Suppliers and tackle shops are also likely to be valuable sources of information relating to important recreational fishing locations within the region for use in subsequent site level assessments.

3.0 REGULATORY CONTEXT

International Regulations

The Common Fisheries Policy (CFP)

3.1 The outline principles of CFP were initially developed in 1970 by the 6 founding member states of the European Union (EU) and were intended to give equal rights of access to fishing waters within the EU. However, it wasn't until 1983 that the EU Policy was adopted with the intentions of managing dwindling stocks and protecting the marine environment and the interests of the fishing communities and consumers. The Policy included the introduction of total allowable catches (TACs) for pressure fish stocks and which are shared out among member states as well as restrictions in gear size.

3.2 It has undergone a number of iterations since inception but essentially the CFP imposes a regime of equal access for vessels from all member states in the EU's exclusive fishing zone, 200 nautical miles from its coastline. Within this zone, member states have a 12-mile zone around their own coastlines within which their own fishing vessels have exclusive rights. Belgium, France, Germany, the Republic of Ireland and the Netherlands have limited rights between 6 and 12 miles granted under previous systems. Within the REA study area France have entitlement to fish for all species within the 6 – 12 nautical mile belt. In addition, Belgium have similar rights to fish this zone for demersal species east of Selsey Bill.

3.3 Currently, EU Council of Fisheries Ministers meet in December each year to set quotas for 130 species based on scientific evidence of stock condition. The UK's quota is then shared out between 19 producer organizations, the <10m fleet and non-sector vessels.

EC Shellfish Waters Directive & EC Shellfish Hygiene Directive

3.4 The Shellfish Waters Directive and Shellfish Hygiene Directive were adopted in 1979 and set standards for water quality in shellfisheries, and flesh quality of shellfish respectively.

3.5 The European Community (EC) Shellfish Waters Directive (79/923/EEC) (recently codified in 2006) (2006/113/EC) aims to protect or improve shellfish waters including those supporting oysters, scallops, clams, mussels and cockles. It sets water quality standards in areas where shellfish grow and reproduce. The Directive requires that certain substances, which can threaten the survival of shellfish or inhibit their growth, are monitored in the water in which the shellfish live.

3.6 The related EC Shellfish Hygiene Directive (91/492/EEC) aims to protect consumers of shellfish and require that the quality of commercially harvested shellfish meet the standards of the EU Food Hygiene Regulations (852 / 853 / 854), which took effect on 1 January 2006. It classifies shellfish harvesting areas according to the quality of shellfish populations in terms of microbiological content. Shellfish from Class A waters can be sold direct for consumption, but shellfish from Class B or C waters must be cleansed by relaying in cleaner water for varying lengths of time or, in the case of class C, heat treated. Waters below Class C are prohibited for Shellfish harvesting.

3.7 There are currently 12 designated shellfish waters within the REA study area all of which are located within the Solent (see Figure 3.1 below). Southampton Water together with Portsmouth, Langstone and Chichester Harbours are designated bass nursery areas (Figure 3.1) within which restrictions on bass fishing exist.

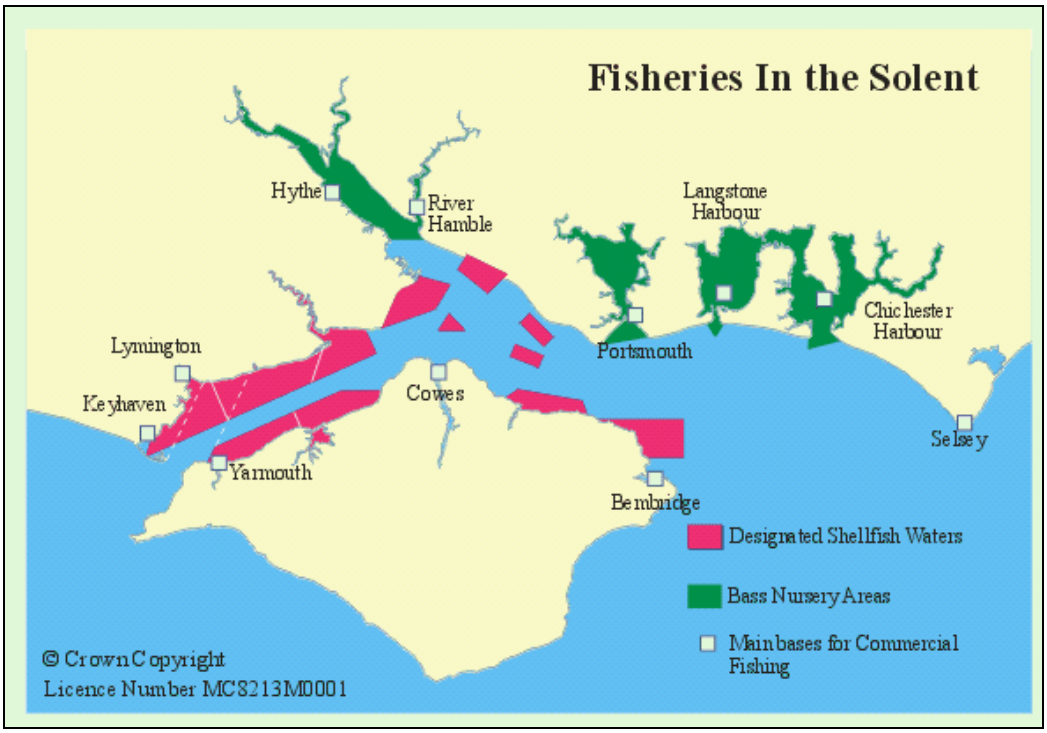


Figure 3.1. Locations of designated shellfisheries and bass nursery areas within the south coast MaREA area. (Source : www.solentforum.hants.org.uk)

National Regulations

3.8 Defra have overall responsibility for fisheries in England within 12 nautical miles of coastal baselines and within the constraints of the CFP. The Marine & Fisheries Agency (M&FA) is an executive agency of Defra and has responsibility for the enforcement of the CFP and associated regulations in the UK and Wales. It also collects fisheries statistical data for use by fisheries scientists (CEFAS) and policy makers and for the purposes of monitoring quota uptake.

3.9 M&FA also lead on the licencing of commercial fishing vessels. Licence holders are required to demonstrate a real economic link between the respective vessel and the UK.

3.10 Maritime & Coastguard Agency (MCA) have responsibility for safety standards for commercial fishing and charter angling vessels through various certificates required for both boats and their crew.

3.11 The Shellfish Waters Directive is administered in the UK by Defra and implemented by the Environment Agency. The Shellfish Hygiene Directive is implemented by the Food Standards Agency.

3.12 Designated bass nursery areas exist in Langstone, Chichester and Portsmouth in which fishing for bass from a boat or using sandeels as bait is excluded between May and October inclusive. Fishing from the shore, however, is permitted.

Sea Fisheries (Wildlife Conservation) Act 1992

3.13 The Sea Fisheries (Wildlife Conservation) Act 1992 requires central government and also local sea fisheries committees to promote marine nature conservation, and to try to achieve a reasonable balance between that and other factors when discharging their functions.

Environment Act 1995

3.14 The Environment Act 1995, empowers local sea fisheries committees and the Environment Agency to make orders or byelaws, under other existing legislation, such as the Salmon Act 1986, for the protection of the marine environment and fisheries.

3.15 Fishing for salmon and migratory trout is also regulated by the Environment Agency under the Salmon and Freshwater Fisheries Act 1975. Its jurisdiction extends throughout England and Wales, and for 6 miles from the baselines of the territorial sea (Water Resources Act 1991).

The Sea Fisheries (Shellfish) Act 1967

3.16 The Sea Fisheries (Shellfish) Act 1967, empowers the Secretary of State for Environment, Food and Rural Affairs (or the Welsh Ministers) to make orders conferring:

- the right of "several fishery" for shellfish (i.e. exclusive fishing rights); or
- the right of "regulating" a fishery (i.e. the right to manage it and license fishermen)

3.17 In the UK a several or regulating order is an Order granted by Defra which removes a shellfishery from the public fishery to a commercial company or to a Sea Fisheries Committee for the purposes of sustainable management and/or improvement of that fishery. Sea Fisheries Committees may in turn grant licenses to commercial companies or individuals.

3.18 The majority of the Solent and its associated harbours are designated as a regulated fishery under the Solent Oyster Fishery Order and is regulated by the Southern Sea Fisheries Committee.

3.19 Two several orders have been granted for oyster beds in the study area at Stanswood Bay and Calshot. These are administered by the Stanswood Bay Oystermen Limited and the Calshot Oyster Fishermen Limited respectively.

3.20 Southern Sea District Fisheries Committee administers the Poole Fishery Order which covers the whole bay. This allows the Committee to lease sections of the sea bed for the cultivation of shellfish and to regulate the fishing of mussels, oysters and clams.

The Tope (Prohibition of Fishing) Order 2008

3.21 The Tope (Prohibition of Fishing) Order 2008 came into force on the 6th April and allows sea fisheries officers to board vessels that are suspected of killing tope. The order does, however, allow for the taking of tope by recreational anglers. Commercial vessels may only catch tope as by-catch.

District

Sea Fisheries Committees (SFC)

3.22 There are 12 local sea fisheries committees (SFC) established around the coast of England and Wales all of which have their origins in the Sea Fisheries Regulation Act 1966. SFCs make byelaws designed for the sustainable management of commercial species and appoint fishery officers to enforce them. Byelaws made by local sea fisheries committees under the

Sea Fisheries Regulation Act 1966 may be used for any purpose within the regulation of sea fisheries, even if they were originally made for a different purpose.

3.23 Sea fisheries districts formerly extended only to 3 miles from the baselines of the territorial sea, but they were increased to 6 miles in 1993 by the Sea Fisheries Districts (Variation) Order 1993. The Environment Act 1995 made amendments to the Sea Fisheries Regulation Act 1966 and enabled SFCs to make byelaws for environmental reasons. In June 2006, the Department for Environment, Food and Rural Affairs announced that the powers of sea fisheries committees would be modernised in the forthcoming Marine Bill. This will include the replacement of Sea Fisheries Committees with Inshore Fisheries and Conservation Authorities (IFCAs) with a greater extension of the marine nature conservation remit.

3.24 The REA study area extends over the marine jurisdiction of both the Southern Sea Fisheries Committee (SFC) to the west and the Sussex SFC to the east. The dividing line between the two statutory areas bisects Hayling Island.

3.25 Both SFCs have issued byelaws relating to the sustainable management of fisheries within their respective districts. Table 3.1 provides a summary of the byelaws within each district.

Table 3.1 Summary of Sussex and South SFC Byelaws (Source: Sussex and Southern SFCs).

Southern Sea Fisheries Committee	Sussex Sea Fisheries Committee
Exclusion of trawling within 1 nautical mile of baselines between May and August.	Exclusion of trawling within 1 nautical mile of baselines between May and August.
Poole Harbour prawn close season (January – July)	Exclusion of oyster fishing between May and October. Prohibition in the collection of oysters and clams using suction dredge methods.
Exclusion of cockle fishing between February and April within 3 miles of baselines and limits on cockle collecting equipment (hand rakes and dredges). Temporary closures of depleted oyster fisheries.	Limits on the size and configuration of fishing equipment.
Exclusion of the collection of periwinkles between the 15th May and 15th September.	Exclusion of the collection of periwinkles between the 15th May and 15th September.
Limits on dredge equipment for native oysters and scallop	Licencing of lobster fishermen
Limits on the use of stake and/or stop nets in Langstone Harbour	Exclusion of scallop fishing within 6 miles of baselines between June and October.
Limits on the night collection of bivalves.	Limits on the night collection of bivalves.
Limits on the size of landed fish and shellfish species.	Limits on the size of landed fish and shellfish species.
Limits on the use of fixed engines.	Limits on the use of fixed engines.
Limits on fishing by vessels of >12m in length within 6 miles of baselines.	Limits on fishing by vessels of >14m in length within 6 miles of baselines.
Registration of commercial vessels	Limits on bass fishing within designated bass nursery areas.

Recreational Sea Angling

3.26 In most cases no licence is required for recreational sea fishing in England and Wales within tidal waters. This excludes migratory fish, such as salmon and trout, for which a licence is required from the Environment Agency. Depending on the port or harbour a licence may also be required from the relevant harbour authority to fish off some piers and jetties. Digging for bait in the vicinity of shellfish beds and sites of nature conservation importance may be restricted.

3.27 Recreational fishermen are required to comply with the minimum landing sizes that are set for fisheries as a whole under the Sea Fish (Conservation) Act 1967 as amended by the Fisheries Act 1981. The National Federation of Sea Anglers (NFSA) also set their own minimum sizes below which fish must be returned. Also, if the monthly non-sector catch limit for quota species has been reached then Defra are empowered to prohibit "fishing for pleasure for that species from a vessel (excludes shore angling.

3.28 The restrictions regarding fishing activities in the Solent harbours designated bass nursery areas apply to recreational anglers. Defra is also currently considering increasing the minimum landing size for bass from 36cm to 45cm (Tingley *et al*, 2006).

4.0 OVERVIEW OF FISHING ACTIVITIES

Introduction

4.1 This Chapter gives a brief introduction to commercial, charter angling and recreational fisheries activities within the region with further Chapters below providing greater detail concerning the distributions of effort by gear types and home port.

4.2 Commercial fishing activities throughout the south coast REA study area involve a variety of static and mobile gear types targeting a range of high value seasonal fisheries, principally sole, lobster, crab, bass, whelk, oyster and cuttlefish. Activities are temporally and spatially complex involving seasonal variations in the distribution of effort and gear types relating to species availability, substrate type, conflicts between mobile and fixed gears, local byelaws and market demand. It is clear that consultation with regulators and stakeholders will continue to be a vital part of EIAs to accurately record and assess the region's dynamic commercial and recreational fisheries activities at site level.

4.3 The REA study area supports a rich and diverse and highly accessible coastal fishery in easy reach of a number of harbours, particularly in the east and centre of the study area. Soft inshore sediment provide feeding grounds for flatfish and regularly attracts valuable sole (*Solea solea*) and plaice (*Pleuronectes platessa*). Coarser, rocky areas off the south and east coasts of the Isle of Wight and off Selsey provide habitat for lobsters (*Homarus gammarus*). The gravels and coarse sands of the area hold large quantities of brown crab (*Cancer pagurus*) the females of which undergo large westward migrations through the study area. Welks (*Buccinum undatum*) are abundant throughout the region especially, on sands and in muddy areas. Cuttlefish migrate inshore throughout the region and provide a welcome, albeit brief, spring/early summer fishery for many specialist trappers and trawlers. The strong tides off headlands and over offshore banks, as well as the intertidal flats, provide feeding grounds for bass (*Dicentrarchus labrax*), and the inner Solent and harbours support self-sustaining native oyster (*Ostrea edulis*) beds.

4.4 Typical gears used include netting (trammel, gill and drift) and trawling (beam, stern and pair) for demersal and semi-demersal species, scallop and oyster dredging and potting for whelks, crabs and lobsters. Several of the harbours within the study area support important seasonal clam fisheries as well as cockle beds which are harvested all year round.

4.5 Overlying the complex commercial activity is a well established and highly popular recreational fishery. The highly accessible and sheltered nature of much of the south coast together with the different types of fishing available regularly attracts numerous recreational shore and boat anglers to the region and many popular onshore and offshore fishing marks are visited by mainly rod and line anglers throughout the study area and virtually all year round. The region attracts major national and international events, the key places being Southsea and Poole together with venues just outside the study area at Weymouth and Brighton.

4.6 There are over 70 commercial charter angling vessels that regularly operate from local ports and harbours in the area each one accommodating up to 12 fishermen and targeting popular marks both inshore and further afield for bass and rays and other sport fish such as smoothound, tope and conger. As well as the commercial charter vessels, the region supports many berths, marinas and slipways from which hundreds of small motor boats are launched by hobby fishermen. Shore angling is also extremely popular throughout the length of the region with the most accessible locations such as beaches, piers, seawalls and harbour walls attracting the greatest concentrations of these fishermen.

4.7 Much of the study area is exploited to some degree by either commercial or recreational fisherman with the possible exception of deep water anchorages, actively dredged areas, disposal sites and naval practice areas. Poor fishing together with a perceived risk of losing expensive commercial gear (i.e. pots and set nets) due to the activities of dredgers and large

ships are often cited as reasons why fishermen avoid these areas. Nevertheless, even these areas may be commercially fished by mobile gears, such as trawlers and drift netters whilst whelk fishermen set pots in areas of active dredging.

4.8 Fishermen within the REA region tend to belong to local associations which address the issues pertinent to the local activities. Appendix II presents a list of fishermen's associations within the Southern district. A number of these local associations are themselves affiliated with the South Coast Fishermen's Council with representation at district level.

4.9 In January 2008, the New Under Ten Fishermen's Association (NUTFA) was formed to provide national and international representation to the <10m fleet and non-sector.

Commercial Activity

Inshore

4.10 A key characteristic of the commercial fisheries activity along the south coast region is the wide variety of fisheries pursued by many individuals. Many fishermen switch gear types at different times of the year to target different species depending on availability, local byelaws and market prices. Table 4.1 below uses official landings data to identify the periods of important landings of key target species.

Table 4.1. Seasonality in Fishing Effort by Principal Species

	Month											
Species	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Sole												
Whelk												
Lobster												
Oyster												
Bass												
Scallop												
Cuttlefish												
Edible Crab												
Spider Crab												
Cod												
Black Bream												
Tope												

Peak Activity
Reduced Activity

4.11 As well as seasonal variation, many fishers may also pursue different fisheries on a daily basis. Fisheries officers highlight the multi-task nature of the majority of the vessels and point to instances where vessels are known to deploy two, three or four different gear types in a single day, including a mix of static and mobile gears. Anecdotal evidence suggests that it is not possible to depend on a single fishery due to variations in species availability, declines in exploited species and changes in weather conditions resulting. .

4.12 The local fleet is therefore highly versatile in nature and it is this resourceful characteristic has also allowed fishermen to respond rapidly to exploit new species and adapt to variable market conditions (Walmsley & Pawson, 2007). Typical examples cited include the expansion of the spider crab market, increased demand for whelk and cuttlefish, expansion of the velvet crab fishery, and reduced prices for oysters.

4.13 Restrictions on certain quotas mean that many fishers are now increasingly turning their attention to non-quota species such as black bream, cuttlefish, squid, bass and red mullet. Cuttlefish, in particular, have become an important spring fishery over recent years and are taken with the use of specialist traps set close inshore and also with nets and trawls. In addition, there has been a recent whelk boom fuelled by high demand from Korea so that now much of the REA study area is heavily fished with cheaply constructed whelk pots. Softer sand and gravel sediment tend to be the prime target sites for the setting of whelk pots.

4.14 On average 73% of the catch declared from the inshore most ICES rectangles (30E8 and 30E9) is made into the region' ports. Of the remainder, 11% is landed into ports on the west coast, notably Brixham, Plymouth, Penzance and Newlyn and a small amount is landed into other UK ports around the country including Hartlepool, Grimsby, Lowestoft, Liverpool, Milford Haven and Swansea. In contrast, only 15% of the catch from the two offshore most ICES rectangles (29E8 and 29E9) are landed into the study area.

Offshore

4.15 The study area beyond the 6 nautical mile (nm) limit is generally fished by beam trawlers for demersal stock, such as sole, plaice, brill and turbot, potting vessels with vivier capabilities and also by scallop dredgers. Local vessels may often compete with larger visiting vessels from other ports, most noticeably from the south west and Wales but also occasionally from Lowestoft and Grimsby as well as French and Belgium vessels which have historic entitlement to fish within the 6 – 12 mile zone. Such larger vessels are usually excluded from fishing within 6 miles of the coast due to local SFC byelaws which restrict vessels of over 12m and 14m from fishing within the Southern and Sussex Sea Fisheries Committee districts respectively. National legislation excludes vessels of 70 tonnes or 300bhp from fishing within 12 miles of the coast. Some larger foreign trawlers, notably Dutch trawlers, are now buying UK licences and operating under flags of convenience enabling them to operate close inshore.

4.16 Activity further offshore beyond the 12 nm limit is dominated by the Dutch pelagic trawlers. These target mackerel, horse mackerel, herring and sprat, when available. French trawlers also predominate in this area where they exploit bass with smaller catches of red mullet, cuttlefish and squid. The official landings data indicate that peak activity by French and Dutch boats in the region occurs between September and January. Larger UK demersal trawlers are also very active offshore in the pursuit of sole and plaice whilst scallop vessels from Shoreham and Newhaven compete with other UK visiting scallopers. French vessels are known to fish the Overfalls area (south east of the Isle of Wight) albeit intermittently.

Value of Landings

4.17 Over the last 3 years there has been an overall trend of increased landings in terms of tonnage and value of fish and shell fish taken from the combined ICES rectangles 29E8. 29E9, 30E8 and 30E9 into the region's ports as illustrated in Figure 4.1 below. Based on the official fisheries data, over 8,500 tonnes of fish and shellfish from the local rectangles worth nearly £10M was landed into the region's ports in 2007 alone. It should be noted that figures provided by Defra for 2007 have increased by 15.5 tonnes. This is because Defra have requested that all ports clear any backlog data for 2007 (*pers comm.*) and accounts in part for the enhanced landings statistics for the last year.

4.18 The perceived improvement in recent landings could also be an artefact of the greater accuracy of recordings of landings following the introduction in 2006 of legislation associated with the Register of Buyers and Sellers (RBS). This now obligates vessels of less than 10m in length to record their landings resulting in less under-recording and a greater accuracy in the official landings data. It is therefore envisaged that future EIAs will be able to use much improved landings data enabling a more accurate assessment of commercial activity within the SCR REA study area.

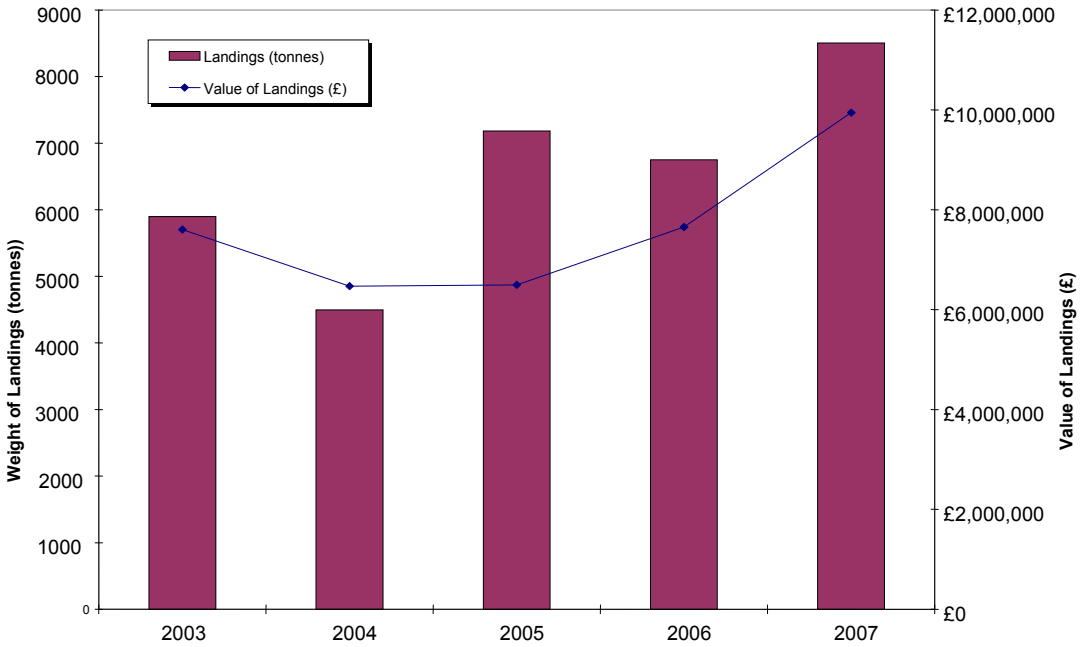


Figure 4.1. Total weight and value of all fish and shellfish from ICES rectangles 29E8, 29E9, 30E8 and 30E9 and landed into ports within south coast REA study area between 2003 and 2007. (Source: Defra Fisheries Statistics Unit).

Key Commercial Fish Species

4.19 Table 4.1 below uses official landings data for all ports declaring catches from ICES rectangles 29E8, 29E9, 30E8 and 30E9 and ranks commercial fish species in terms of the mean value of those landings over a five year period (2003 – 2007). Whilst the official data are currently regarded as under-estimates, they do indicate the relative importance of exploited species within the vicinity of the south coast REA study area.

4.20 As can be seen in Table 4.1 above, almost 80% of the mean value of the catch from the vicinity of the REA study area over the last 5 years can be attributed to just 8 species. These include;

- Sole
- Lobsters
- Whelks
- Scallops
- Native Oysters
- Bass
- Edible Crab
- Cuttlefish

4.21 Emu, 2006 reports that there are around twelve fish and shellfish merchants in the area and links to other UK markets and markets overseas via the local ferry ports are good. Most of the shellfish is sold to local merchants and subsequently sold abroad. Lobsters and crabs go to France and Spain, while whelks go to Korea and other far eastern markets. Some shellfish is sold directly to Vivier trucks at the local ferry terminals.

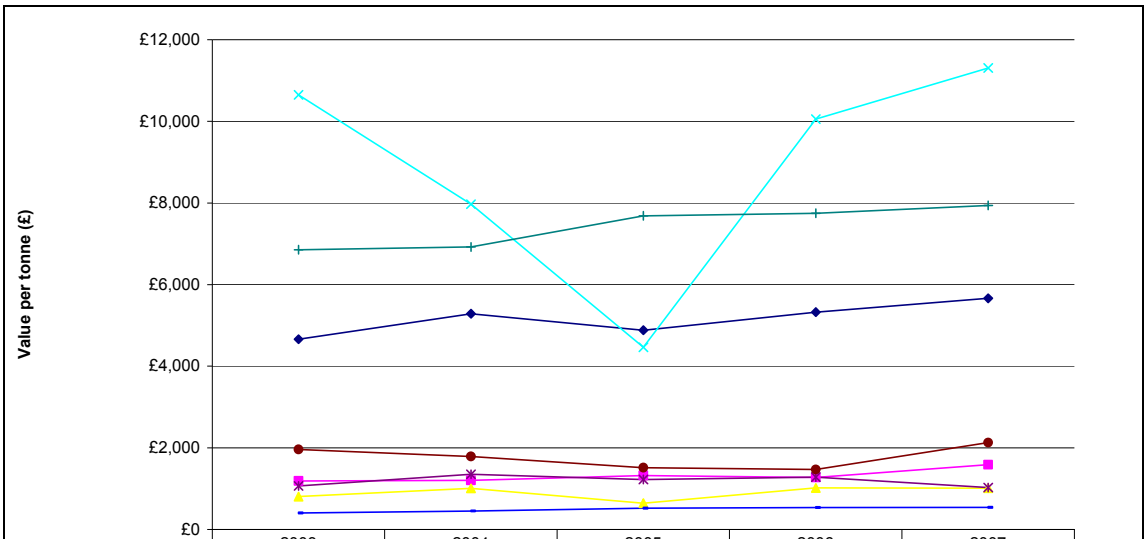
4.22 Finfish are also sold to local merchants, of which some is exported to Spain, France and Holland some to markets in the UK (e.g. Billingsgate), and some is sold to local markets

Table 4.1. Value of Commercial Species Landed at all Ports Declaring Catches from ICES Rectangles 30E8 and 30E9 for the 5 year period 2003 – 2007. (Source : Defra Fisheries Statistics Unit).

	Annual Landed Value (all ports declaring catches from ICES rectangles 29E8, 29E9, 30E8 & 30E9)					Mean Value	Mean %	Cum. %
Species	2003	2004	2005	2006	2007			
Sole	£4,789,744	£4,743,138	£2,346,873	£1,691,536	£2,665,608	£3,247,380	27.10	27.10
Lobsters	£1,257,196	£1,327,390	£1,166,766	£1,306,580	£1,552,479	£1,322,082	11.03	38.13
Whelks	£383,596	£810,863	£1,092,656	£1,750,415	£2,447,300	£1,296,966	10.82	48.96
Scallops	£967,205	£631,245	£703,484	£547,796	£2,194,874	£1,008,921	8.42	57.38
Native oysters	£682,486	£696,482	£880,286	£818,608	£654,744	£746,521	6.23	63.61
Bass	£656,985	£769,829	£672,241	£695,542	£803,484	£719,616	6.01	69.61
Edible crabs	£805,815	£655,867	£712,536	£634,658	£705,344	£702,844	5.87	75.48
Cuttlefish	£511,581	£604,120	£213,582	£277,600	£558,787	£433,134	3.61	79.09
Herring	£459,444	£244,992	£189,518	£89,293	£670,257	£330,701	2.76	81.85
Horse mackerel	£68,441	£357,392	£334,687	£212,130	£522,602	£299,051	2.50	84.35
Plaice	£356,297	£223,871	£213,686	£199,420	£306,982	£260,051	2.17	86.52
Cockles	£1,047,409	£996	£23,712	£106,529	£60,644	£247,858	2.07	88.58
Black seabream	£124,953	£196,633	£128,312	£113,541	£196,495	£151,987	1.27	89.85
Mussels	£14,800	£172,492	£350,134	£82,001	£74,340	£138,753	1.16	91.01
Brill	£145,989	£99,732	£111,124	£86,343	£122,389	£113,116	0.94	91.95
Manilla clam	£163,778	£0	£52,202	£135,167	£137,129	£97,655	0.81	92.77
Red mullet	£129,818	£61,875	£52,876	£30,907	£200,969	£95,289	0.80	93.56
Skates and rays	£82,857	£83,745	£76,586	£89,182	£138,033	£94,081	0.79	94.35
Squid	£124,548	£83,856	£50,861	£22,541	£115,306	£79,423	0.66	95.01
Turbot	£73,782	£55,270	£67,000	£45,491	£95,029	£67,314	0.56	95.57
Lemon sole	£110,579	£88,477	£59,814	£33,383	£29,614	£64,374	0.54	96.11
Cod	£42,139	£39,915	£62,960	£82,589	£90,831	£63,687	0.53	96.64
Grey mullet	£46,147	£41,845	£45,229	£56,566	£67,983	£51,554	0.43	97.07
Mackerel	£73,147	£108,595	£8,309	£8,270	£20,372	£43,739	0.37	97.44
Spider crabs	£63,620	£48,695	£34,210	£31,170	£33,385	£42,216	0.35	97.79
Sprats	£153,769	£5	£2,165	£2,016	£0	£31,591	0.26	98.05

4.23 Figure 4.2 below presents the annual value per tonne of selected key resource species within the area over the most recent 5 years. In general. prices for the top 8 most valued fish and shellfish species landed into the region have steadily increased over this period. Prices for lobsters, however, have varied dramatically between 2003 and 2007 with values ranging from £4,666 to £11,307 per tonne in just three years.

4.24 Following an increase in value, there has been a gradual decline in the average price of native oysters with current (2007) prices being less than they were in 2003.



	2003	2004	2005	2006	2007
Bass	£4,659	£5,282	£4,882	£5,325	£5,664
Edible Crab	£1,188	£1,203	£1,325	£1,274	£1,589
Cuttlefish	£807	£1,006	£644	£1,017	£1,013
Lobsters	£10,647	£7,970	£4,466	£10,055	£11,307
Native Oysters	£1,065	£1,352	£1,225	£1,281	£1,029
Scallops	£1,962	£1,787	£1,515	£1,470	£2,130
Sole	£6,852	£6,923	£7,682	£7,745	£7,939
Whelks	£401	£453	£519	£535	£543

Figure 4.2 Mean value per tonne of the most commercially valuable species landed into the REA study area.

Vessels

4.25 Based on data provided by the local Sea Fisheries Committees there are 397 commercial fishing vessels registered at the 20 home ports within the REA study area. Table 4.2 below presents the numbers of commercial fishing vessels both <10m and >10m in length that are registered to home ports within the boundaries of the south coast region. Although similar data are available on the M&FA website, the SFC information may be more accurate as they will be in day to day contact with the local fishermen and their representatives in terms of their enforcement and management activities. Both the Southern and Sussex SFC produce annual reports, which are usually accessible from the internet, and provide good summaries of fisheries management policies and issues across the respective districts, including an overview of the fishing fleets. The SFCs together with the local M&FA agencies will also be able to advise as to the numbers of part time vessels.

4.26 In addition to these vessels, there are a further 190 commercial fishing vessels based at ports just outside of the MaREA study area and which, therefore have access to the region. These include Brighton (44 vessels), Newhaven (57 vessels), Portland (28 vessels) and Weymouth (61 vessels).

4.27 A web search on www.Deep Sea and the professional boatman's association web site (www.pba.org.uk) has identified a total of 76 charter angling vessels based at ports and harbours within the study area. Drew (2004) identified 146 charter vessels but this included vessels whose home ports are outside of the REA study area such as Lyme Regis, Weymouth, Brighton and Newhaven. In addition to these sources there are various charter skipper organisations which will be able to provide contemporary data concerning the

numbers of charter vessels in the region. Contact with harbour masters may also be useful in this respect and will be able to refine the figures by highlighting skippers who may not be associated with any organisation.

4.28 The importance of the study area is emphasised by the fact that it supports 8% of the UK under 10m fleet, most of which fish full time. With respect to larger vessels, the region is comparatively less important and only supports 2.5% f the UK over 10m fleet.

Table 4.2. Number of Vessels Registered to Home Ports within the South Coast REA Area. (sources: Southern and Sussex SFCs & www.Deep Sea & www.pba.org.uk).

			No. Vessels				
			<10m		>10m		Charter Angling
SFC District	Home Ports within the SCR REA study area	Total	Full Time	Part Time	Full Time	Part Time	
Southern	Bembridge	23	17	5	1	0	
	Cowes	10	8	2	0	0	1
	Gosport	12	9	1	2	0	
	Hamble	20	14	5	1	0	2
	Keyhaven	4	4	0	0	0	
	Hythe	3	2	0	1	0	
	Langstone	27	20	6	0	1	
	Lymington	18	16	0	2	0	15
	Christchurch/Mudeford	20	16	3	1	0	4
	Poole	92	68	21	3	0	30
	Portsmouth	29	22	2	5	0	13
	Swanage	14	9	4	1	0	1
	Sussex	12	6	1	5	0	
	Yarmouth	11	8	2	1	0	
Sussex	Chichester	11	11		0		3
	Selsey	29	24		5		1
	Bognor Regis	3	3		0		
	Littlehampton	16	16		0		3
	Worthing	10	10		0		
	Shoreham	36	29		7		3
	TOTAL	**400**	**364**		**36**		**76**
	% of total UK fleet		**8.0%**		**2.5%**		

4.29 A further key characteristic of the commercial activity within the region is the small size of the vessels used, the vast majority of which are <10m in size. Because of their small size, fishing vessels tend to operate on a day basis leaving and returning to home port within the same day. As such, they are generally constrained to waters inshore and land their catch into local ports.

4.30 The predominately inshore nature of south coast region's commercial activities is demonstrated in Figure 4.3 below. This shows the value of landings declared from each ICES rectangle and landed to the region's ports over the last 5 years and highlights the importance of the inshore rectangles (30E8 and 30E9) with respect to landings into the region's ports, compared to the rectangles located approximately 14nm offshore (29E8 and 29E9). It should be noted that vessels from outside of the area will also operate within these rectangles and land into the region's ports but this could be offset by local vessels landing their catches at other ports outside of the study area. The data shown in Figure 4.3 are therefore indicative

rather than absolute but still effectively illustrates the relative values of the regions inshore and offshore waters in terms of landings into the REA study area.

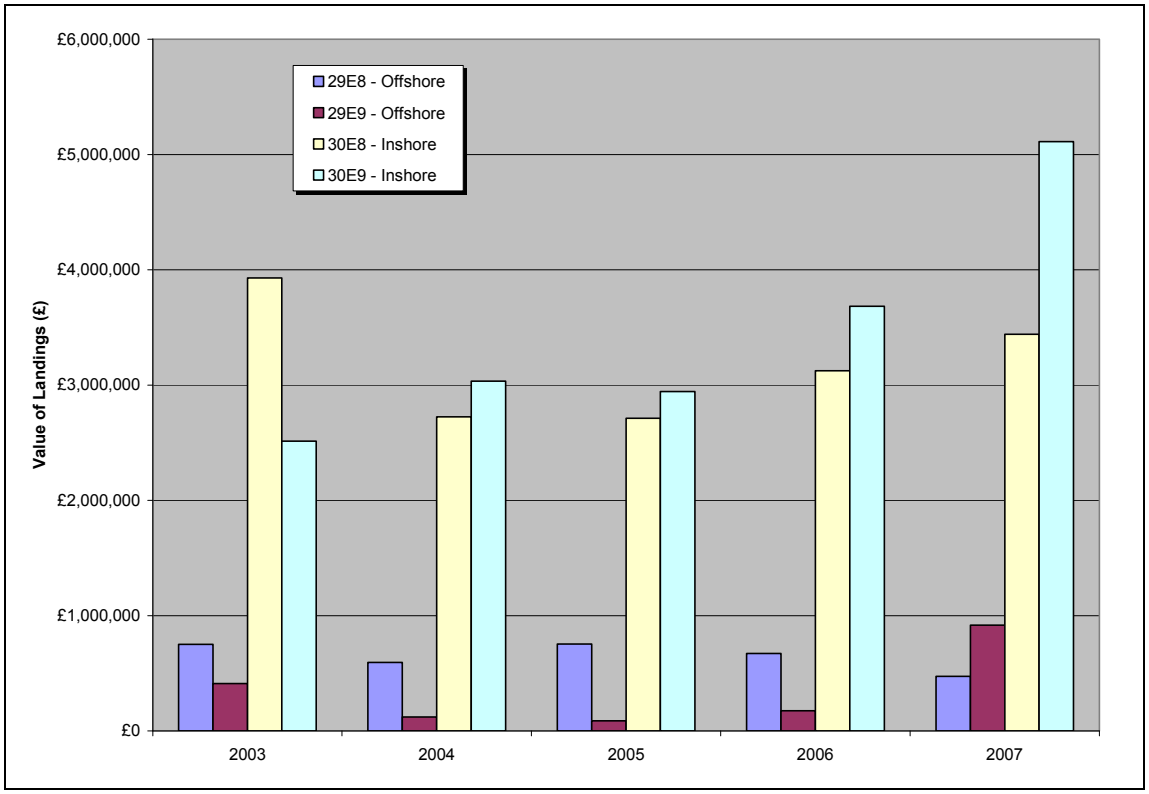


Figure 4.3. **Value of landings to all ports within the south coast study area. Despite some possible error in the data relating to landings by vessels from outside of the region, the figure shows that the greatest value of landings are taken from the ICES rectangles located closest inshore. (Source : Defra Fisheries Statistics Unit).**

4.31 As eluded to above, not all vessels within the region are faithful to one port or to one buyer and a number of vessels regularly land their catches elsewhere outside of the study area, i.e. Plymouth or Brixham, where better prices may be offered. Despite the relatively long transits and additional fuel costs, the prices offered at ports outside of the study area are clearly such that it makes the journey worthwhile. Equally a number of visiting vessels from outside of the study area may land catches into local ports with Shoreham being particularly important in this respect.

4.32 Although the majority of the south coast's fleet is <10m in size there are a number of larger vessels from the region's ports that will venture further offshore depending on tide and weather conditions. These include and the larger local vivier potters and scallop dredgers from Poole, Portsmouth and Shoreham, for example, will invariably fish to the middle of the English Channel and towards the French coastline and will also land catches into French ports, such as Boulogne and Cherbourg. The recent introduction of fast catamaran vessels has increased the accessibility of grounds located further offshore for whelk fishermen.

Home Ports

4.33 Table 4.3 below presents the annual values and weight of landings from ICES rectangles 29E8, 29E9, 30E8 and 30E9 into each of the region's ports between 2003 and 2007. Some of the landings into the larger ports are likely to be also made by nomadic vessels including those from other UK ports and foreign (French, Dutch and Belgium) vessels using the deep water anchorages available.

4.34 As well as identifying the regions principal ports in terms of landings of fish and shellfish, Table 4.3 also demonstrates the variability in landings at established ports over 5 years. This temporal variability together with the more recent development of other landing ports at Cowes, Hythe, Kimmeridge, and Lulworth Cove highlights the continued need for the collection of contemporary data during future EIAs to accurately reflect fisheries activity and to aid the assessment process. Note that these data are derived from Defra's Sea Fisheries Unit which classifies home ports differently from the local SFCs. A total of 22 home ports are recognised by Defra compared to the 19 classified by Sussex and Southern SFCs.

Table 4.3 Annual Total Value and Weight of Landings into Ports within the MaREA Study Area (Source: Defra Marine Fisheries Statistics Unit).

		2003	2004	2005	2006	2007
BOGNOR REGIS	Total Value (£)	£72,210	£77,707	£51,038	£27,249	£54,859
	Total Weight (t)	8.16	8.37	6.16	5.95	12.27
CHRISTCHURCH	Total Value (£)	£101,979	£53,872	£107,625	£136,062	£312,475
	Total Weight (t)	42.33	19.03	145.62	65.56	223.78
COWES	Total Value (£)				£6,197	£71,913
	Total Weight (t)				6.37	34.21
EMSWORTH	Total Value (£)	£17,336		£1,741	£60,905	£82,881
	Total Weight (t)	19.96		3.48	92.41	108.24
HAMBLE	Total Value (£)	£50,427	£29,634	£57,815	£20,205	£6,642
	Total Weight (t)	53.96	39.77	46.95	12.73	4.52
HAYLING ISLAND	Total Value (£)		£199	£194	£29,115	£63,951
	Total Weight (t)		0.08	0.31	37.55	58.41
HYTHE	Total Value (£)					£15,556
	Total Weight (t)					9.21
ISLE OF WIGHT	Total Value (£)	£302,869	£304,876	£388,529	£513,606	£782,220
	Total Weight (t)	137.68	102.79	197.95	235.17	567.06
ITCHENOR/EAST WITTERING	Total Value (£)	£3,618		£10,363	£27,422	£47,974
	Total Weight (t)	4.17		5.81	12.64	29.19
KEYHAVEN	Total Value (£)	£58,899		£3,578	£38,197	£31,501
	Total Weight (t)	66.87		2.15	19.37	36.02
KIMMERIDGE	Total Value (£)				£954	£19,557
	Total Weight (t)				0.08	4.09
LANGSTONE HARBOUR	Total Value (£)	£59,055	£18,051	£68,957	£200,291	£147,214
	Total Weight (t)	20.55	6.74	51.52	137.04	181.83
LITTLEHAMPTON	Total Value (£)	£205,557	£174,380	£69,970	£70,884	£148,353
	Total Weight (t)	117.36	83.58	35.20	24.94	61.36
LULWORTH COVE	Total Value (£)				£56	£4,685
	Total Weight (t)				0.01	2.22
LYMINGTON	Total Value (£)	£208,013	£111,431	£120,217	£261,509	£419,137
	Total Weight (t)	113.77	60.55	77.25	206.12	513.52
POOLE	Total Value (£)	£1,641,421	£552,812	£536,615	£1,046,331	£1,131,916
	Total Weight (t)	1919.88	277.64	263.34	536.40	497.50

Table 4.3 cont. Annual Total Value and Weight of Landings into Ports within the MaREA Study Area (Source: Defra Marine Fisheries Statistics Unit).

		2003	2004	2005	2006	2007
PORTSMOUTH	Total Value (£)	£1,620,115	£1,831,993	£2,145,036	£1,645,876	£1,862,231
	Total Weight (t)	1302.50	1385.24	4145.55	2399.09	3031.48
SELSEY	Total Value (£)	£641,997	£1,155,778	£899,020	£1,218,000	£1,173,371
	Total Weight (t)	622.66	1339.56	1037.75	1320.78	1023.02
SHOREHAM	Total Value (£)	£1,758,589	£1,419,613	£1,165,626	£1,426,383	£2,872,525
	Total Weight (t)	1016.69	849.96	707.06	1028.34	1772.99
SOUTHAMPTON	Total Value (£)	£34,739	£40,262	£56,242	£162,237	£65,443
	Total Weight (t)	17.93	10.78	47.51	106.19	44.22
SWANAGE	Total Value (£)	£5,767	£7,697	£19,194	£65,766	£128,360
	Total Weight (t)	2.13	2.97	16.36	42.21	83.67
WORTHING	Total Value (£)	£69,948	£99,898	£39,862	£24,008	£43,298
	Total Weight (t)	29.31	34.71	7.66	7.10	17.97

Charter Vessel and Recreational Angling Activity

4.35 The south coast REA study area has a number of high density urban areas nearby and is easily accessible to large numbers of people for recreational sea angling. Marinas, ports and harbours support many hundreds of small motor boats which are used by casual hobby fishermen and various slipways throughout the region allows easy launching of small boats and access to the entire study area for other recreational anglers. There is also a wide variety of easily accessible locations from which to fish from the shore including marinas and harbours, breakwaters, piers and beaches. Additionally, the region offers various types of offshore marks such as rocky reef/rough ground, sandy seabeds, gullies and wrecks.

4.36 The region offers a wide diversity of fish species for pursuit such as bass, rays, mackerel, tope, smoothound, spurdog, conger, shark and bream. Large cod can also be caught in autumn and winter whilst plaice offer opportunities for both shore and boat anglers in spring.

4.37 Fish landed by recreational angling are not monitored and unlike freshwater fishing, rod licences are not required. However, the intensity of charter vessel and hobby angling in the region suggests that the total landings of fish could be considerable. Attempts to quantify the amounts of cod and bass cod taken by recreational anglers may be made in the near future through the introduction of log book schemes (*pers. comm*. Mike Smith, CEFAS) but for now there are limited data, based on questionnaire surveys, on which to base an assessment.

4.38 In the interests of species conservation, a number of charter skippers do not allow certain fish to be landed on board, such as tope and rays. Instead these species are quickly released back to the sea. Tingley *et al* (2007) report that charter vessel skippers at the Overfalls (south-east of the Isle of Wight) set catch limits of some sort for their clients although these vary between vessels.

4.39 The charter angling fleet predominately fish within the inshore waters using favoured marks over areas of rough ground or steeply sloping bathymetry. Inshore areas are favoured due to their accessibility from local ports and the relative shelter that can be found in the lee of headlands. Some of the charter vessels have MCA licences allowing them to operate up to 20 nautical miles from a safe haven which restricts them to local inshore waters within the study area. A number of other charter vessels, however, have licences allowing them to operate up to 60 nautical miles from a safe haven which enables them to venture across the Channel.

4.40 There are also large numbers of privately owned motorboats on moorings, in ports and marinas or that are launched from slipways that will be used by hobby anglers, again mostly close inshore with a few larger vessels venturing further offshore. Beach angling is also very popular throughout the region with activity focused on a number of favoured marks including beaches, piers and marinas depending on access.

4.41 Popular offshore marks include high energy environments where there are strong tidal flows and irregular topography. Typical locations include the areas around the Needles, St Catherines Point, Culver Spit, The Overfalls and Nab Tower for conger, rays and bass with important shark (tope and smoothound) marks around Bracklesham Bay, Boulder and Pullar Banks, amongst other locations. The inshore waters around Poole Bay and Selsey are important for black bream. Plaice are targeted over mussel beds, such as Hooe Bank and offshore between St Catherines and Ventnor and are also taken by shore anglers at Southsea.

4.42 Wrecks on the seabed provide refuge for a number of species and can naturally attract large aggregations of fish. These sites are also popular for recreational anglers and numerous wreck sites between the UK coast and the Channel Islands are regularly fished by local charter vessels for conger, pollack, ling and pout.

4.43 A survey and review of the economic contribution of sea angling was undertaken by Drew Associates (Shorney, 2004). This found that on average shore anglers spent around 65 days per year fishing. Those fishing from a charter boat or from their own boat fished for an average of 23 - 30 and 45 - 78 days respectively. A total of 81% of sea anglers with experience of fishing at the Overfalls, located south-east of the Isle of Wight, were found to live within the region (Tingley *et al,* 2006) suggesting a high rate of local participation. This result also highlights that the region attracts a proportion of visiting anglers, 19% in this instance.

4.44 With respect to the types of fish caught by recreational anglers, the Drew report found that 68.8% was round white fish, such as cod and bass (see Table 4.4). Oily fish such as mackerel were secondarily important in respect. The mean number of fish caught per trip was around 10 - 11. Shore anglers tended to catch less and retain fewer fish than boat anglers.

Table 4.4. Types of Fish Caught by Recreational Anglers (source: Drew Report, Shorney, 2004)

Type of Fish	Proportion of total (%)
Flat white fish (e.g. Flounder)	10.4
Round white fish (e.g. Cod, Bass)	68.8
Oil rich fish (e.g. Mackerel)	20.2
Exotics (e.g. Trigger fish)	0.6

4.45 Expenditure is significantly affected by the type of fishing undertaken (Shorney, 2004). Those fishing from their own boats have the highest expenditures at £2,566 per year whilst those that only undertake shore angling have the lowest annual expenditures at £964.

4.46 Tingley *et al* (2006) estimated that the overall expenditure related to recreational fishing at the Overfalls area was between £100,000 – £200,000 per annum or more.

5.0 GEAR TYPES AND THEIR DISTRIBUTION

5.1 This Chapter provides some further detail on the fishing activities that occur within the south coast REA study area and gives information regarding the distribution of each fishing type throughout the region.

5.2 Distributional information has obtained been following consultation with the South Coast District and Sussex Sea Fisheries Committees and with the local Marine and Fisheries Agency offices in Poole, Portsmouth and Shoreham.

5.3 As well as the distributional maps a series of intensity contour maps have also been provided. These plots reflect the relative cumulative intensities of each fishing activity over a five year period (2003 – 2008) based on the number of observations made during the collection of the over-flight data and Vessel Monitoring System (VMS) data.

5.4 The mapped results of both the consultation and analysis of the over-flight and VMS data are presented in Appendices III to VII. The treatments of the surveillance data prior to analysis have been described in Chapter 2.0.

5.5 During the interpretation of the over-flight data it was considered that the relative intensities of each fishing activity might have been affected by the total numbers of observations made. Data from around the Isle of Wight, for example, may be comparatively limited as the aircraft used would need to avoid flight paths relating to a number of local airports at Bembridge, Bournemouth and Southampton as well as the Daedalus airfield at Lee on Solent. Consequently, fishing intensity may be under-represented around the Isle of Wight relative to other areas where monitoring has been undertaken more intensely. In order to aid the interpretation therefore, a further plot has been constructed to show the relative intensities of the monitoring activity (see Figure 5.1 below).

5.6 It is also important to consider that the VMS data are only relevant for vessels in excess of 15m in length. Consequently, it is likely to significantly under represent the majority of the fisheries activity within the REA study area which is conducted by vessels that are under 10m in length.

5.7 In terms of overall fishing activities, the over-flight and VMS data are in broad agreement and show relatively intense fishing activity to the east of the south coast region and throughout the near-shore waters east of Selsey (see Figures 5.1 and 5.2 below). Areas to the west of the Isle of Wight and within the western Solent appear to be less intensively fished by comparison.

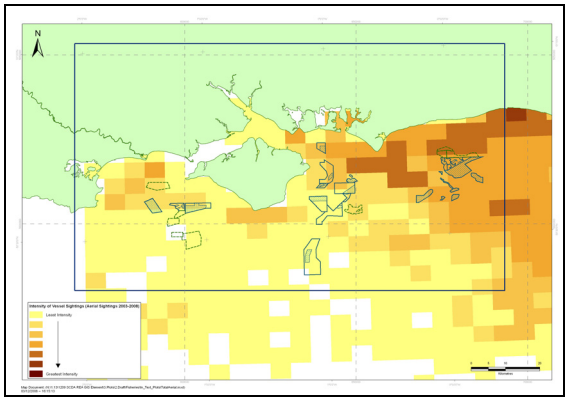


Figure 5.1. Intensity contours of all fishing activities derived from over-flight data

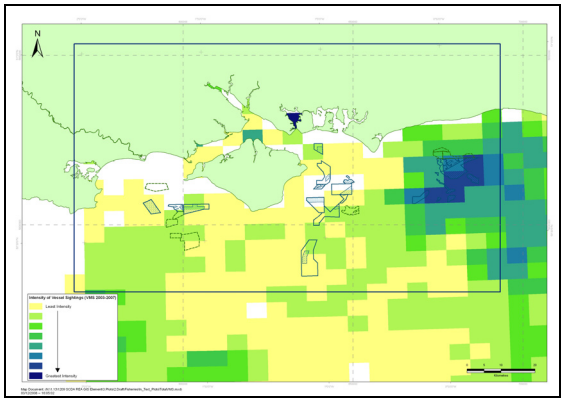


Figure 5.2. Intensity contours of all fishing activities derived from VMS data

The Net Fisheries

5.8 Appendix III presents the distribution and relative intensities for different types of net fishing. The plots are reasonably consistent and highlight the predominately inshore distribution of the south coast region net fishery.

5.9 The principal netting gears used within the study area may be divided into fixed net types, such as trammel nets (three walled nets), gill nets and tangle nets and mobile nets such as drift nets. Beach and ring seine nets together with fyke nets are also used in the region by a small number of fishermen and are typically deployed close inshore in harbours, estuaries and from beaches for migratory species (i.e. sea trout, eels and salmon) and also for species that shoal close to the shore such as sandeels, mackerel and mullet.

5.10 Table 5.1 below provides a summary of the different types of netting methods used within study area together with the respective target species, main catch seasons and important locations for each type of netting activity. The main catch season indicates the period of greatest activity although the activity may continue at other times either side of peak times albeit at lower intensity.

Table 5.1. Summary of Netting Gear Types, Target Species, Main Catch Season and Important Locations

Type of Net	Target Species	Main Season	Important Locations
Trammel	Sole Plaice Spider Crab	March – December March - September May - September	Poole Bay Christchurch Bay St. Albans Head Bognor Regis, Littlehampton to Shoreham
Gill	Sole Flounder Black Bream Gilt-head Bream Bass Mullet Cuttlefish Sea Trout	September - October October – March May - August June - September October - January May – September March – May June - September	Poole Bay Christchurch Bay St. Albans Head Bognor Regis, Littlehampton to Shoreham
Tangle (larger mesh trammel nets)	Thornback Ray Undulate Ray Blonde Ray	All year round All year round March – September	The Overfalls
Drift	Bass Mullet	October - December May - October	Eastern Solent, Bracklesham Bay Worthing to Shoreham
Beach Seine	Plaice Bass Mackerel Sprat Sandeel Sea Trout Salmon	May – September July - August May – August December – January May – August May – October May - October	Chichester Harbour
Ring Seine	Mullet Sandeel	May – September May - August	Chichester Harbour
Fyke	Silver Eel Elver	May – August July - August	Langstone and Chichester Harbours. Poole Harbour Solent estuaries

Fixed Nets

5.11 Fixed nets are generally set within the inshore waters and within the 6nm mile, although some will be set out to around the 12nm limit to target various demersal fish and ray species. The nets are typically made of monofilament of 50 – 100m in length and are joined together to form fleets with a single fleet comprising 3 or 4 nets although up to 8 nets may be used within a single fleet.

5.12 Depending on the target species, net mesh sizes may range between 90 and 120mm with larger mesh nets of mesh size up to and above 220mm used to catch turbot, red mullet and rays as well as salmon and sea trout.

5.13 In general, the nets are shot whilst travelling into the tide and are laid out in the direction of the tidal current stream. This prevents the nets from being swept over or tangled in strong tidal currents. Spring tides may be avoided as the nets fish relatively poorly and can collapse in the fast current steams. Also, there may be excessive amounts of floating seaweed in the water column during spring tides, and especially during summer, which then becomes entangled within the nets and subsequently needs clearing out. Whilst some of the larger

vessels from the south west are able to quickly clear nets of weed with the use of on board flaking bars, the local vessels do not have this capability and need to come into port and dry their nets on flaking bars on shore.

5.14 Trammel nets are the most common type of net deployed in the study area and are used to target sole and plaice with a by-catch of lemon sole. These types of net consist of three layers of netting with a slack smaller mesh inner netting between two layers of large mesh netting within which fish will entangle. They are set vertically within the water column and are set between the bottom and a few metres above it. They are and are kept more or less vertical within the water column by floats on the head rope along the top of the net and by weights on the ground rope along the bottom.

5.15 Trammel nets are set for sole and plaice from March onwards when inshore waters reach a critical temperature threshold stimulating the inshore migrations. Trammel netting then continues throughout the rest of the year. Effort on sole is reduced during early summer because of the seasonal influx of spider crabs towards the shore. The spider crabs become entangled within the nets and fishing efficiency is diminished. During this period netters may relocate to target skate or reset their nets off the bottom for bass and/or cuttlefish. Other fishers may simply land and sell the spider crabs caught within the nets as bycatch supported by improving markets overseas.

5.16 Large meshed trammel nets, termed tangle nets, are set very loosely for rays and other larger demersal species.

5.17 Entanglement with floating weed becomes a particular problem during the summer months, making the nets visible to fish and reducing catch rates. The problems may be exacerbated during spring tide occasions when the greater movements of water and stronger tidal flows lift greater quantities of unattached weed. Locally, the weed is cleared from nets by drying then and then running them through flaking bars on the quayside of some of the ports and harbours within the study area. Where the problem is particularly bad, fishers may abandon netting altogether for a period of time and switch to other gears, such as cuttlefish traps, until the levels of weed subside. Walmsley & Pawson (2007) suggest that problems with weed fouling and the success of using sandeels, whiting and mackerel as bait, has prompted many commercial net fishermen to switch to rod and line fishing for bass.

5.18 Trammel nets are also used to catch female cuttlefish in spring which are subsequently used to bait specialist traps for males during the brief cuttlefish season in May and June. Large mesh tangle nets set throughout the year take various rays including thornback, blonde, spotted, undulate, cuckoo rays, brill and turbot.

5.19 Gill nets are also employed in the area to target a wider range of species including sole, plaice red mullet, black bream and bass. Gill nets set close to the shore have traditionally targeted cod and whiting and prior to the quota restrictions in this part of the English Channel, there was an important winter net cod fishery located offshore of Shoreham. This may be revived in the future depending on whether quota again becomes available. Gill nets may also be set close to wrecks in pursuit of pollack and ling.

5.14 Some limited gill netting occurs in most of the harbours for grey and golden mullet. Seasonal gill netting also occurs in offshore waters for herring, mackerel and sprat during summer.

Drift Nets

5.20 As well as fixed nets there are a number of boats undertaking drift netting principally for bass and migratory species such as salmon and sea trout although this method will take other pelagic fish such as herring and mackerel when available. They are rigged to form a curtain within the water column and are laid out to drift within the tidal current. The depth at which

they fish can be varied by adjusting the weights on the bottom of the sheets. Vessels deploying drift nets are required to remain alongside their nets throughout the deployment.

5.21 Drift netting for bass and mullet occurs throughout the eastern Solent and also offshore of Selsey (Bracklesham Bay) and between Worthing and Shoreham. There is also one occasional vessel from Littlehampton which also takes mackerel and herring via drift nets. Some drift netting may also occur within active dredging areas and over deep water anchorage areas where fixed gears are less prevalent. Drift netting is commonly undertaken after storms when visibility is poor and fish are unable to easily avoid the nets. This type of activity reaches a peak during autumn and winter months.

Fyke and Seine Nets

5.22 Yellow eels are taken with fyke nets for most of the year within many of the estuaries within the study area. During autumn, silver eels are taken with traps.

5.23 Trout, salmon and eel are exploited within some of the estuaries and rivers within the region using seine nets, fyke nets and rod and line under licence from the Environment Agency (EA). There are licenced salmon and sea trout seine net fisheries in the Beauleiu River and in the estuaries at the heads of Christchurch and Poole Harbours. The use of seine nets within the study area is restricted to the period between June and July.

5.24 EA data for 2006 indicates that 4 seine net licences were issued for salmon and sea trout in the Avon and Stour with a further licence for Poole Harbour. In Beaulieu, one seine net licence for sea trout was granted in 2006.

5.25 Rod and line catches for salmon on the Test and Itchen are restricted to the period between mid January and September/early October..

5.26 Sea trout are caught with rod and line from the rivers Adur, Arun, Ouse, Itchen Test, Beaulieu and at Lymington, Avon, Stour, Frome and Piddle, amongst other locations, with the highest catches being landed from the rivers Itchen and Test. The peak period of activity, in terms of numbers caught is between July and October.

5.15 Fishing for sandeels takes place in many of the harbours and bays throughout the study area which provide bait for the bass fishery. Sandeel fishing is usually undertaken with the use of small trawling equipment or with beach seine nets.

Potting and Cuttlefish Traps

5.16 The main types of potting in the REA study area is for crab and lobster using parlour pots and for whelks using cheaply made whelk pots. Prawn pots are set in a small area of Poole Bay and offshore of Swanage. Specialist traps for cuttlefish are set close inshore during the period between April and June and exploit the seasonal onshore spawning migration. Appendix IV presents the distributions and intensities of potting and cuttlefish activities. Both the over-flight and the VMS data aggregate potting and whelk activity.

5.17 Potting activity is intense across much of the REA study area because of the accessibility of the high value crab and lobster fisheries from local harbours and the excellent opportunities presently available for whelk fishermen due to high demand from Korea and other Asian countries. It is estimated that currently there are typically 50,000 crab and lobster pots and 200,000 whelk pots set between Selsey and Portland (*pers comm.*, M&FA).

5.18 The crab fishery within the study area is reportedly in decline (Cooper, 2005; Emu, 2006; Walmsley & Pawson, 2007) and it is likely that many crab fishers are deploying an increasing

proportion of whelk pots along with crab pots to make up the earnings. Table 5.2 below presents a summary of the potting activity undertaken in the study area together with the respective target species, mean catch season and important locations.

Table 5.2. Summary of Potting and Cuttlefish Gear Types, Target Species, Main Catch Season and Important Locations

Gear Type	Target Species	Main Season	Important Locations
Parlour pots	Lobster	All year round. Peak in spring.	Sandown Bay & south of the Isle of Wight
Parlour pots **Inkwell pots**	Brown (edible) crab	August – December May - July	Sandown Bay & south of the Isle of Wight
Prawn pots	Prawns	August - December	Poole Bay
Whelk pots	Whelks	All year round	Widely distributed across the region on sand and gravely sand substrates.
Cuttlefish traps	Cuttlefish,	April – June	Close inshore

5.19 Potting effort may be broadly stratified on the basis of seabed type. Edible crab are taken over sand and gravel substrates, whilst lobsters prefer rocky habitat. Whelks prefer finer sand and mud seabed types but are also commonly occurring on sand and gravel substrates. Consequently, the entire REA region may be regarded as potentially suitable potting ground, excepting deep water anchorage areas, active dredge areas, deep water shipping lanes and areas of low productivity, such as spoil disposal grounds. Potters may also avoid popular trawl lanes to prevent potential conflict with the mobile fisheries and loss of gear.

5.20 Potting effort is also related to distance from home ports with the inshore areas closest to harbours more intensively potted than areas further offshore. This is broadly reflected in the over-flight and VMS data contour plots which indicate greater intensities of potting activities closer inshore.

5.21 Small vessels <10m in length will fish closest inshore setting around 50 – 300 pots in strings of 10 – 30 pots. Around 4 small boast (4-7m) from Bognor work very close inshore on the local ledges for lobster setting single pots which are hauled by hand. Larger vessels (>10m) may fish much further out and beyond the boundaries of the study area setting strings of 1000 pots each.

Crab and Lobster

5.22 Many of the crab and lobster fishermen within the REA study area now use parlour pots instead of the traditional inkwells. These newer pots have a better retention because they incorporate a second compartment, or parlour, from which lobsters are unable to easily escape. Because there is less chance of escape, these pots may be left in the water for longer periods of time (days) rather than the usual 24 hours so that effort is reduced and the fisher can lay further pots or pursue other fisheries. These pots may also incorporate a small hatch to allow under-sized lobsters to escape. This means that any damage to and mortality of juveniles due to confrontation with adults whilst in the pot is avoided with obvious benefits to the fishery.

5.23 Effort for crab and lobster continues all year round but tends to decrease in winter due to adverse weather conditions and the dormant over-wintering period of female brown crab. During this period ovigerous (egg bearing) female crabs remain semi-buried in small depressions in clean sand and gravel sediments and show little if any interest in feeding. Consequently, females are rarely, if ever caught in crab pots over winter. There may also be a lull during the summer as crab quality falls.

5.24 Lobster fishing is mainly confined to sheltered locations during winter; the higher prices at this time of year offsetting lower catch rates.

5.25 A permit issued by the Sussex SFC is required for the fishing of lobsters in the district which restricts the numbers of pots set within 3 miles of the coast to 100 per person up to a maximum of 300. For this reason, many boats set pots both within and beyond three miles (Walmsley & Pawson, 2007). There are no restrictions on the number of whelk pots per vessel and depending on the size of the boat, the number of pots deployed ranges from about 100 to 1000.

5.26 Lobster fishing is principally undertaken off Selsey and around the Isle of Wight (Cooper, 2005) and has provided an improving income for fishermen during summer (Walmsley & Pawson, 2007). Greatest effort is in the summer when many part time fishermen exploit this fishery.

5.27 The principal crab and lobster potting areas are along the south east coasts of the Isle of Wight, along the Ventnor coastline, Sandown Bay, Bembridge Ledges and out to the Nab Tower which are fished primarily by around 30 small potting vessels from Bembridge and one or two vessels from Ventnor and who are reliant on this fishery. Other inshore potting areas are Medbury Bank and between Langstone Harbour and the Owers Banks which attracts small vessels from Selsey, Langstone and Chichester. There are a large number of larger visiting crab vessels that regularly work out of Poole Harbour and lay pots from Poole Bay out to central areas of the eastern English Channel.

5.28 Other types of crab taken from the region include spider crab, which is taken as by-catch, velvet swimming crab and green shore crab. These species are landed into ports on the continent. Emu 2006 report that while the abundance of spider crab in the area has increased over the last ten years, the value of landings has decreased due to the generally low quality of the catches. Emu 2006 go on to suggest that the spiders swarm over pots and compete for bait and space with brown crabs and lobsters and further propose that the decline in brown crab catches is a result of the increase in the spider population. It has also been mooted elsewhere that the increase in trapping for cuttlefish, a natural predator of spider crab, has lead to the population growth of spiders in recent years.

Whelks

5.29 Whelks are taken in cheaply constructed weighted plastic pots which are baited with a mix of dogfish and spider crab. Whelk fishing continues all year round driven by the continued high demand from overseas markets.

5.30 There has been a sharp increase in whelk fishing activity over recent years as markets overseas have rapidly developed. The value of this fishery has increased from just over £380,000 in 2003 to over £2.3M in 2007. Whelks currently fetch around £540 per tonne. It is unclear as to how long the current levels of intensity of fishing can be sustained within the region or for how long the demand may continue into the future.

5.31 Whelks usually favour fine, softer substrates but may be locally abundant on mixed sand and gravel. Whelk fishing activity therefore has the potential to occur over much of the REA study although the most important and highest value areas will be those closest inshore and therefore easily accessible. Pots for whelks are therefore set between Portsmouth and Selsey, and found over much of the crabbing ground, which includes large areas in the east of Solent from the Nab Channel to Selsey Bill and east to the Owers Bank and beyond. Potters from the Isle of Wight deploy whelk pots from Bembridge to St Catherine's.

Prawns

5.32 Pots for prawn are laid in Poole Bay and offshore of Swanage. Principal landings are made during the winter period mainly into Christchurch and Selsey with Poole and Isle of Wight being of secondary importance in this respect. In Poole Bay there is a closed season for prawns between January and July inclusive.

Cuttlefish traps

5.33 During spring and early summer (April – June), large numbers of cuttlefish come close inshore and are taken by trawlers and in specialist traps baited with either a piece of white tile or a female. Cuttlefish, together with squid, provide an important fishery in spring particularly when there are restrictions on quota species.

Trawling and Dredging

5.34 A variety of different types of trawling and dredging are practiced within the study area. The principal types include beam trawling and stern trawling and involve local and visiting UK and foreign vessels. There is also an important pair trawl fishery off the Sussex coast between Selsey and Shoreham. This activity is undertaken by local pair trawl teams which operate from Newhaven and Shoreham. These local vessels are joined by visiting pair teams from Lowestoft and Jersey during the brief black sea bream season around May-June as well as French teams up to the 6mn limit.

5.35 Dredge gears principally target the seasonal oyster and clam fisheries in the Solent, inshore waters and harbours as well as the scallop fisheries located to the east of the study area. Additionally, a number of the larger trawlers involved in fishing for flatfish during warmer months switch to oyster and scallop dredging during winter months. Due to the inshore distribution of the oyster and clam beds, it is highly unlikely that these fisheries will interact with aggregate dredging.

5.36 Appendix V presents the distributions and relative intensities of the region's trawling and dredging activities. Figures 5.3 and 5.4 have been presented below to illustrate the widespread trawling activity over the south coast region.

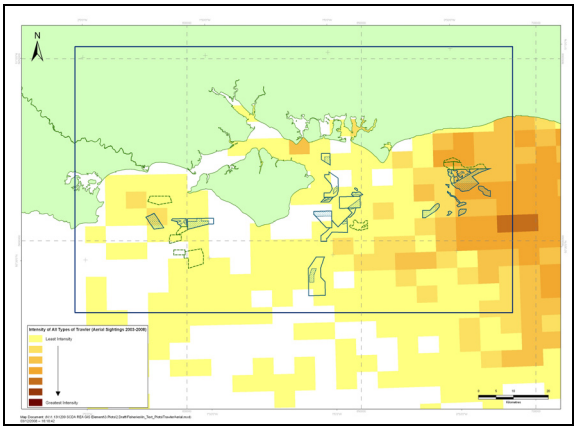


Figure 5.3. Intensity contours of all trawling activities derived from over-flight data.

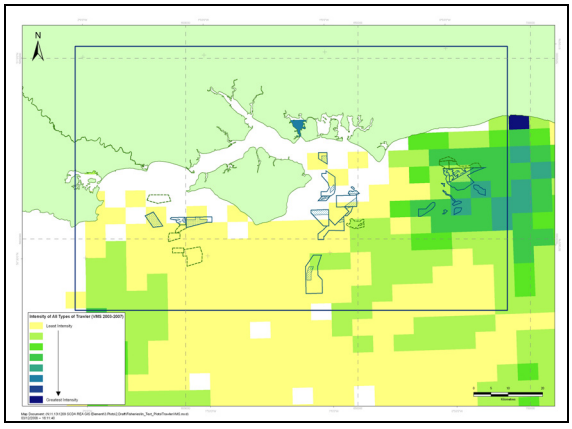


Figure 5.4. Intensity contours of all trawling activities derived from VMS data

5.37 Table 5.3 below provides a summary of the trawling and dredging methods used within study area together with the respective target species, main catch seasons and important locations.

Table 5.3. Summary of Trawl and Dredge Gear Types Target Species, Main Catch Season and Important Locations.

Gear Type	Target Species	Main Season	Important Locations
Beam Trawl	Sole Plaice	September – May April – December	Throughout region
Otter Trawl	Sole Plaice Flounder Black Bream Skates and Rays Sharks	September – May April – December October – March August – October All year round All year round	 Selsey and Littlehampton Bracklesham Bay/ south Selsey
Pair Trawl	Bass Black Bream	February – June	Inshore areas between Selsey and Shoreham Selsey and Littlehampton
Stern Trawling	Cuttlefish Sole Sandeels Plaice	May – June September – May April – December	Inshore shallow waters and harbours. Bracklesham Bay Bognor and Littlehampton Poole Bay Christchurch Bay
Oyster Dredging	Oysters	November – March	Solent, Solent Harbours
Scallop Dredging	Scallops	October – April	East of region.
Hydraulic Dredging	Cockles		Poole Harbour

5.38 Despite the apparent widespread occurrence of trawling across the region, demersal fishers may be expected to avoid hard, rocky and boulder strewn ground or variable substrate types which may cause damage to particular gear types. Close inshore, within 6 nautical miles of the coast, these types of seabed are intensively fished by fixed gears (nets, pots and traps) giving further cause for fishers using mobile gears to fish elsewhere thus avoiding possible conflict.

5.39 Cooper (2005) reports that trawlers may also avoid actively dredged areas due to the exposure of large cobbles which collect in and damage the cod ends of trawls and also due to changes in topography making the ground unsuitable for trawling. One trawler skipper has previously reported a change in the nature of the seabed within the Owers group of licences from gravel to fine silty muds. This change has rendered the seabed as unsuitable for trawling as the gear sinks into the softer sediment. This has led to a loss of fishing ground (Cooper, 2005).

5.40 Sussex and southern SFC byelaws restrict fishing by vessels of >14m and >12m in length respectively within 6 nautical miles of the coast. Many of these vessels are beam trawlers and scallop dredgers and therefore confine their trawling activities to areas of the sea which are over 6 nautical miles from baselines. Beam trawlers of more than 300bhp or 70 tonnes gross weight are also restricted from within the 12 nautical mile limit to in order to protect the inshore sole fishery. A further byelaw excludes trawling from 0.25 nautical miles from the coast east of Shoreham between May and October to further protect juvenile flatfish.

5.41 There therefore seems to be a number of spatial restrictions on trawling and dredging activity which is not reflected in the over-flight and VMS data. This may, however, be more apparent in the data drawn from consultation.

5.42 Although spatial restriction are apparent, the introduction of improvements to demersal trawls, such as rock hopper trawls, now enables coarser substrates to be fished than previously targeted increasing the area of ground that can be exploited. In addition, the introduction and continuous development of other technologies such as sensors on the doors of trawls and sonar and ground discrimination technologies allows trawling closer to wrecks and other seabed features than previously attempted which has generally improved access to ground previously avoided as a result of better navigation.

Beam and Stern Trawling

5.43 Trawling takes place in Poole Bay, where 4 full-time boats >10 m take sole, rays, plaice and cuttlefish during the warmer months.

5.44 Trawling in the outer eastern Solent and east of the Isle of Wight is mainly undertaken by vessels of <12m in length operating from Cowes, Portsmouth, Langstone and Chichester and along well established trawl lanes (Emu, 1999a). Tows are conducted from Ryde through to the New Grounds and further east across the shipping lane. Other tow lanes are located to the east of the Nab Tower through the Nab Hole and to the east and north of this. Local trawlers also trawl close to the spoil ground. Target species in these areas include sole, plaice, bass, slates and rays. Trawling has also targeted cod in the past but this species is currently not landed due to the present lack of quota. Peak trawling activity in this area occurs between April and December.

5.45 Emu (2006) describes about 10-12 trawlers from Portsmouth, Emsworth and Chichester operating within the inshore grounds including Hayling Bay, Bracklesham Bay, and St Helen's Road off the north east corner of the Isle of Wight. Trawling also takes place in and around the Nab channel and the Nab Deeps, mainly in summer. Target species are predominantly sole and plaice all year round, and ray, brill (*Scophthalmus rhombus*), and turbot in spring and summer. Most vessels change to dredging for oysters in November.

5.46 Portsmouth trawlers also trawl inshore waters to the south and west of the Isle of Wight between the Needles and Brighstone Bay.

5.47 Beam trawlers from Newhaven and Shoreham target smoothhound and blackbream in spring near Medbury Bank and in Bracklesham Bay. On the outer banks of the Solent, including the overfalls area, two or three specialist local vessels use pelagic trawls for bass in summer and opportunistically for sprat. Large Dutch pelagic trawlers fish up to the 12 nm limit taking herring, mackerel and horse mackerel.

5.48 In the vicinity of Area 395, the Nab Deeps and ground bordering the south west of the dredged area is fished by 1-2 Portsmouth beam trawlers and by 2 visiting beamers from Shoreham (Emu. 2006). Trawlers also dredge for mussel seed in the vicinity of Hooe Bank, and outside of the 6nm limits south of Selsey Bill. Sussex SFC bylaws prevent dredging for mussels from within the 6nm zone. The mussel seed is used for relaying within Langstone Harbour and other locations outside of the region including Swansea Bay and the Menai Straits.

5.49 In recent years there has been an increase in the number of inshore beam trawlers based at Shoreham, fishing for sole and plaice (Walmsley & Pawson, 2007).

5.50 There is a small stern trawl fishery in Bracklesham Bay for sandeels prosecuted by one vessel. A few of the local vessels from Portsmouth and Langstone, for example, undertake stern trawling within the Solent Harbours harbours and waters close inshore for seasonal cuttlefish during April and May.

Pair Trawling

5.51 Pair trawling is mainly constrained to the waters off Shoreham, Worthing, Littlehampton and Bognor out to around 6 - 8nm offshore and targets the seasonal on shore black bream spawning migration in later spring/early summer. The focus of back bream activity is around Kingmere Rocks and west of Worthing which correlates with the area supporting the greatest densities of black bream nests on the seabed although this species may be commercially available between Selsey and Brighton. With the onset of summer, pair trawling activity moves inshore following the onshore movement of black bream during their spawning period when the greatest catches of black bream are made. The shoals of bream quickly disperse once spawning is complete and the fishery rapidly declines from June onwards.

5.52 There have been around 5 or 6 regular pair teams from Shoreham, Newhaven, Jersey and Lowestoft but this number has reduced over recent years and last year (2007) only one visiting pair team from Jersey and an occasional pair team from Shoreham were active in this fishery (*pers comm.*, M&FA). Decreased abundance of fish and the associated increase in effort required to maintain catch rates appears to have discouraged the traditional fishers here. Figure 5.5 below illustrates the decline in the local black bream fishery since 1998 in terms of weight and value of annual landings.

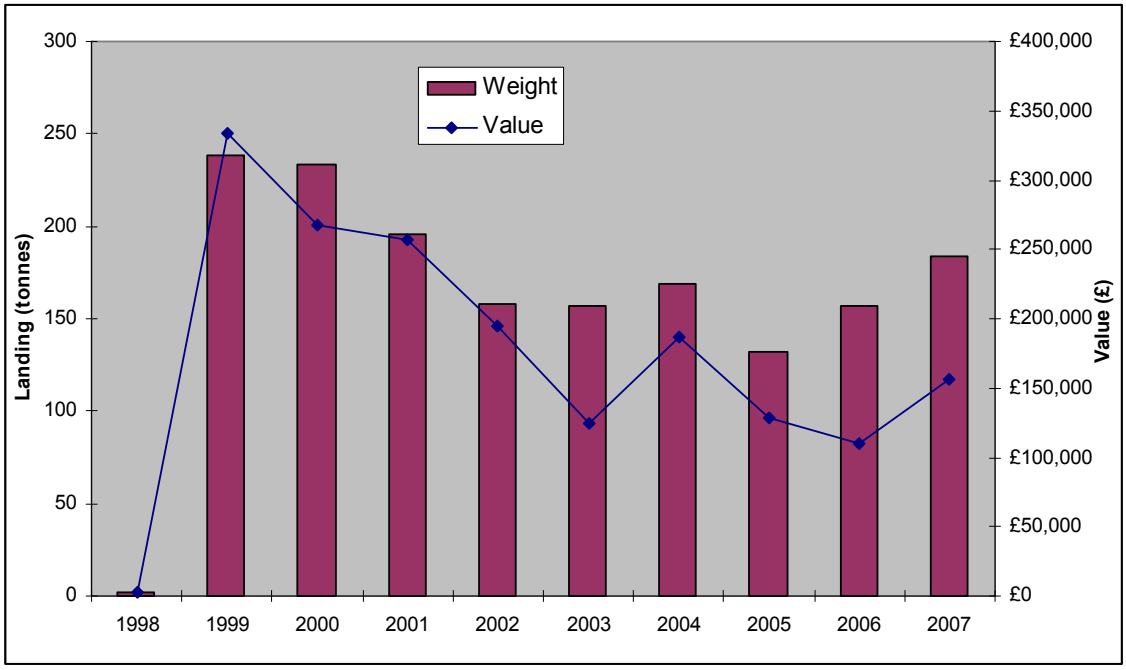


Figure 5.5. Annual weights and values of landings of black bream into all ports declaring catches from ICES rectangles 30E8 and 30E9 (source Defra Fisheries Statistics Unit).

5.53 In order to supplement incomes due to the decline in the black bream fishery, fishers are now tending to also target bass closer inshore along the east Sussex coast.

5.54 Other pair trawl activity may also include 6-8 vessels from Newhaven which target bass, bream and smoothound in the area around the Overfalls area and French pair trawlers fish up to the 6 mile limit for bass in summer (Emu, 2006).

Oyster Dredging

5.55 The Solent and associated harbours at Langstone, Chichester, Portsmouth and Southampton Water support a large self rejuvenating oyster fishery. The majority of the Solent and its harbours are designated as a regulated fishery under the Solent Oyster Fishery Order and is regulated by the Southern Sea Fisheries Committee through byelaws limiting the configuration and size of gears and by imposing a minimum landing size.

5.56 Many of the smaller trawlers are actively engaged in oyster dredging once the fishery opens in November switching from other summer gear types. Although the fishery remains open until March the following year, the vast majority of oysters have been fished out within the first few weeks or so and the vast majority of the region's catch has been sold on the continent by Christmas.

5.57 The seasonal fishery attracts an estimated 137 vessels from harbours between Poole and Chichester Harbour. Activity is mainly limited to the private and public shellfisheries throughout the inner Solent and associated harbours. Some of the smaller boats target the sporadic oyster beds at the heads of some of the Solent Harbours and which may be unprofitable to larger vessels. Oysters are also targeted from a small area in Poole Bay, located between the two piers by one vessel from Poole and six vessels from Portsmouth. Vessels from Southampton, Portsmouth, Langstone Harbour and Chichester Harbour also take oysters from the shallow waters off Portsmouth in season. Although the season includes the period between November to March, much of the effort is spent within the first few weeks.

5.58 There is limited dredging in the Solent and adjoining harbours for hard shelled clams.

Scallops

5.59 Scallop fisheries in the region are heavily exploited by scallop dredgers originating from both local ports and from ports outside of the region. Surveillance data indicates the principal area of scallop activity which is to the east of the study area. The majority of the landings of scallops from the region are made into Shoreham and Brixham with smaller quantities made into Portsmouth and Newhaven. Scallops are now subject to SFC byelaws aimed to restrict fishing. To the west of the study area, scallops represent an opportunistic fishery as the beds tend to be transient (Walmsley & Pawson, 2007).

Manila Clams

5.60 Manila clams are now well established in Poole Harbour with developing populations within the Solent Southampton Water. This is an important fishery for the local boats during winter.

Mussel Dredging

5.61 Mussels appear to be an important, if a somewhat sporadic, fishery at Portsmouth, the variability in landings being accounted for by the relative annual successes of around 3 mussel dredgers taking seed mussel from the vicinity of the Hooe Bank, outside the 6nm limit off Selsey. The seed mussel is then relayed in Langstone Harbour or sent to Menai Straits for relaying. (SFC byelaws restrict mussel dredging within the 6nm limit).

5.62 Mussel laying for fattening occurs on extensive lays within Poole Harbour, an activity which was initiated following the eradication of oysters from the local fishery. Many of the seed mussels that are laid in Poole Harbour are taken from around Portland Bill.

Rodding and Longlining

5.63 Appendix VI presents the distribution of longlining and rodding activity. Long lining includes the deployment of a main line with a number of branch lines onto which a baited hook is attached. The main line may hang within the water column for pelagic species or may be set close to the seabed for demersal fish. Up to 1000 koolks mayu be set at any one time. Within the study area the main target species for long liners is bass. Long liner vessels are infrequently recorded within the REA study area by surveillance patrols in comparison with other fishing activities.

5.64 Rodding includes the use of a baited (sandeel) hook with a rod and line deployed from an anchored vessel. Several rods may be used on a single vessel depending on vessel size and number of crew. The principal species targeted by fishers using this technique is also bass. . For experienced fishers, the quantities of bass that can be caught in this way can be significant with 500kgs or more reportedly caught on good days (Emu Ltd., 2002). According to historic MFA landings data, rodding has accounte4d for about 25% of bass catches locally (Emu Ltd., 2002). Local knowledge of where and when bass congregate appears to be a key requisite, the best marks being areas of strong tides and irregular seabed topography such as headlands, offshore races, sandbanks and overfalls. Typical vessels include fast catamarans capable of accessing many areas of the region.

Charter Vessels and Angling

5.65 Charter vessel and shore angling occurs almost all year round and throughout the entire region. Appendix VII shows the distribution of angling vessels within REA study area. Added to this must be the large numbers of privately owned motor boats and other vessels used by hobby anglers the numbers of which are in their hundreds.

5.66 Popular target species for both the shore and boat anglers include bass, sharks and rays (particularly tope, smoothound, spurdog and lesser dogfish thornback rays and blonde rays), plaice, mackerel and black bream. In winter, cod and whiting are targeted although an important cod area to the south of the Isle of Wight provides cod fishing all year round, weather depending. The principal gear type is rod and line.

5.67 Boat angling is undertaken commercially from specialist charter vessels licenced by the Maritime & Coastguard Agency (MCA) and coded according to specific criteria. There are many different types of MCA codings which relate to the numbers of passengers that can be accommodated onboard each vessel and its operational distance from a safe haven. The vast majority of charter angling vessels are licenced to carry between 8 and 12 persons (including the skipper) and travel from 20 to 60 nautical miles from a safe haven.

5.68 The main organisations representing charter sea angling skippers within the region include the Poole and District Fishermen's Association, West Wight Charter Skipper's Association, Langstone Harbour Licenced Boatmen's Association, Gosport and Portsmouth Licenced Charter Fishermen's Association as well as a number of active sea angling and boating clubs which represent amateur anglers.

5.69 As with commercial fishing, charter activity and recreational angling is seasonal with different species becoming available at different times of the year. Table 5.4 below summarises the main species targeted by recreational anglers and the seasons in which they are mostly targeted.

Table 5.4 Summary of the Seasonal Availability of Fish Targeted by Recreational Anglers

Spring	Summer	Autumn	Winter
Plaice Flounders Rockling Bass, Black Bream Pout, Whiting, Dabs, Codling.	Bass Black Bream Mackerel Rays Sole Scad Garfish Smoothound Mullet Tope	Flounders	Flounders Cod/codling Whiting Pout

5.70 Bass fishing is extremely popular with anglers throughout the region with the best marks including dynamic areas such as headlands with strong tides, offshore races and areas of irregular seabed topography such as sandbanks and overfalls. Sandeels are most often used as bait and are collected and sold locally. Tope and smoothounds (including the starry and common smoothound) are also highly valued as sport fish and are caught over large areas of the south coast REA region over spring and summer months with a focus around Boulder Bank, Medbury Bank and Bracklesham Bay which may be a shark nursery area.

5.71 Black bream are also targeted by the charter fleet with peak activity occurring in spring and early summer when they congregate and move into the region's inshore waters for spawning. Important areas for black bream angling include Poole and Christchurch Bays and offshore of Littlehampton and Worthing. Juvenile black bream are known to occur here prompting suggestions of a black bream nursery area and possible spawning area where nesting occurs.

5.72 Plaice are taken over mussel beds with important plaice marks in the outer eastern Solent offshore of Southsea and approximately 1 mile offshore of the south coast of the Isle of Wight between St. Catherines and Ventnor. Turbot and rays are found at various marks on gravel banks. In summer mackerel come close inshore throughout the region and are sought both for both bait, for bass fishing for example, and for sport. Wrecks in the area hold Pollack, conger and, in winter, cod. Whiting and gurnard (Triglidae) are found over a wide area.

5.73 There are possibly hundreds of fishing marks for the charter anglers within the region although these will also be visited by commercial fishermen. Some of these marks will be widely known throughout the local charter community whilst others will be known only to one or a few charter skippers. In general, inshore areas are more intensely fished by the charter fleet compared to offshore marks due to the greater shelter and proximity to home ports. Fuel prices also currently limit the profitability of offshore charter trips making inshore areas increasingly more attractive. However, during periods of suitable tide and weather, a number of vessels will travel further offshore fishing known wreck sites and overfall areas in the mid Channel and towards the French coast. Table 5.5 below provides a list of popular marks which are regularly used by the charter fleet.

Table 5.5. Popular Offshore Marks for Charter Angling Vessels.

Port	Popular Offshore (Boat) Marks	Typical fish caught
Weymouth	Shambles and Adamant Banks Rough ground marks around the banks Wrecks (unspecified) Portland Race	Turbot, brill, bass, plaice, pollack, cod and rays. Huss, conger, spurdog and tope. pollack, cod, ling conger occasional porbeagle and blue shark
Poole	Poole Bay	Black Bream
Christchurch	Shingles Dolphin Bank Dolphin Sands Christchurch Ledge	Black Bream Blonde Rays
Isle of Wight to Selsey	Needles	Bass pollack, conger, mackerel, pouting, thornback rays, occasional tope, black bream, skate and shark. Cod in autumn and winter.
	Totland Bay	Bass
	East and West Winner Banks	Flatfish, small bream and bass
	Stokes Bay	
	No Mans Land Fort and Horse Sand Fort	Mackerel, bass and small pollack
	The Blocks (submarine barrier)	Bass. Spring plaice.
	Culver Spit.	Bass pollack, conger, mackerel, pouting, thornback rays, occasional tope, black bream, skate and shark. Cod in autumn and winter.
	Deal Tail. (ship wreck, Theofano)	Summer mackerel small pollack and pouting
	Bullock Patch	Black bream (May-June).
	Utopia (south of main shipping channel)	Tope (summer)
	The Spoils	
	Boulder Bank	Bream (April onwards). Tope
	Nab Rock	Black bream (May-June).
	Medbury Bank	Rays
	Pullar Bank Hooe Bank	Tope (May-June) Bass and plaice.
	Overfalls	Blonde rays (all year), bass (summer), cod (winter), Brill/turbot (May-Oct)
	New Ground	Bass, smoothhound and rays (summer). Cod and whiting (winter)
	Cowes	Bass, flounder, plaice and sole
	Seaview/Priory Bay	Bass, mackerel and plaice. Winter cod.
	Bembridge Ledges	Black bream
Selsey	Mixon Hole Bracklesham Bay	Tope (summer) Smoothound

5.74 The Overfalls area, located south east of the Isle of Wight, is a particularly important area for recreational fishing. This location has been found to account for over a third (37%) of all boat fishing days in the eastern Solent and outer approaches for boat owners and for over half (52%) for non-boat owners (Tingley *et al*, 2007). Key species here include bass over spring tides and blonde rays, tope, brill, turbot and cod over neap tidal conditions.

5.75 The region is also extremely popular with shore anglers with almost the entire length of the coastline accessible from a number of local population centres. A list of popular onshore marks is provided in Appendix VIII.

6.0 WHAT THE FUTURE HOLDS

6.1 This chapter takes a look at the introduction of new fishing technologies, policy developments and general trends in commercial and recreational fisheries that may shape fishing activities in the years to come. Areas of current research and potential data sources that may assist future authors of site level EIAs are also discussed.

Marine Bill

6.2 The draft Marine Bill was published on 3rd April 2007 and introduces a new system of spatial planning to allow effective management of activities in the marine environment. The Bill makes provisions for improving licencing arrangements for marine activities and access to all part of the coast, introduces marine protected areas (MPAs) and improves the management of marine fisheries and marine enforcement powers including replacing Sea Fisheries Committees with Inshore Fisheries and Conservation Authorities.

Register of Buyer and Sellers

6.3 In November 2006 European Ministers agreed to the introduction of electronic recording and reporting of fishing activities for certain groups including registered buyers and sellers of first sale fish and also fishing vessels over 15 metres in overall length. They also agreed that Member State Fisheries Monitoring Centres (FMCs) must possess the technical capability for them to match positions derived by remote sensing with the data received from vessel monitoring systems (VMS). This decision is set down in Council Regulation 1966/2006.

6.4 Because all landings must be registered, including those by vessels of <10m, the future accuracy of fisheries statistical data will be much improved and similar assessments undertaken within the south coast REA area, including those undertaken at the site level, will be comparatively robust. A certain amount of care should be exercised during the interpretation of these new data as comparison with historic (pre - 2006) data may show an artificial increase in catch rates due to the use of enhanced records.

General Trends in Commercial Activities

6.5 Although normally excluded from fishing within 12 miles, some large vessels from the continent have been reported to be buying UK licences and operating under a UK flag of convenience. This means that they are able to fish inshore of the 6 and 12 nm limits and up to the UK coast. Flag of convenience vessels can operate from both UK ports and ports on the continent and will compete with local fishers in the REA study area. This practice is likely to place additional pressures on local fishers within the region in the future.

6.6 The recent sharp increases in fuel costs have stimulated a switch from the use of traditional demersal gear types to more fuel efficient techniques such as fly seining. This method employs towing a long weighted ground rope across the seabed to corral bottom dwelling fish into the net and uses less fuel compared to other demersal fishing methods because the tows are conducted at relatively lower speeds. Typical species taken by fly seiners include squid, red mullet and gurnard with other species, such as sole taken as by-catch. Depending on the future price of fuel, it is possible that this fishing method becomes more popular in the south coast REA study area. Importantly, fly seining may be regarded as less damaging to benthic habitats compared to the use of heavy demersal gears. Consequently, the effects of fishing of benthic ecology, including any cumulative and in-combinations effects may be less severe.

6.7 There have been a number of technological innovations over recent years that have improved catch rates for commercial fishermen. In particular, the introduction of ground discrimination equipment has enabled fishers to accurately identify the locations of suitable ground on which to shoot their gear to maximise catches. GPS navigation has also undoubtedly benefited

fishermen through the accurate location and re-locations of set gears and favoured fishing marks.

6.8 There have been particular advances in towed gear technology including the placement of sensors on the doors of otter trawls. This enables fishers to trawl much closer to wrecks and other potential fasteners on the seabed than has been previously possible. Continual improvements in rock hopper equipment now allows rough ground to the fished by trawlers increasing the size of area that can be exploited. Whilst these types of technology improve catches, it can reduce the availability size of historic refuge areas for fish.

Future Data Sources

6.9 In addition to the official landings and surveillance data, a number of other valuable sources of fisheries information become available for use in site assessment in the future For example, CEFAS are conducting surveys of landings of bass by recreational anglers based on a log book scheme with the intention of developing a sufficient dataset to allow a *pro-rata* based assessment of bass populations against different spatial scales and levels of intensity of activity. This information would have potential benefits during future assessment work for the appraisal of important bass populations within the vicinity of aggregate applications and licence renewals. There is also a possibility of introducing a similar recording and assessment scheme for cod.

6.10 Additionally, landings data recorded during angling competitions are currently an under used resource and may be useful for future characterisation and assessment purposes.

7.0 REFERENCES

ABPmer (2007). Southampton Approach Channel Dredge: Scoping Study. Ref: R/3703/01. Report No. R.1358. Dated July 2007.

Clarke R.W., Dapling, T. M., Foster-Smith, R.L., Hume, D.R., Irving, R. & Rhymnas, K. (2006). The Seabed and Inshore Fishing Activity: Assessment and Relationship (MAL 0020). Sussex Sea Fisheries Committee.

Cooper, K.M. (2005). Cumulative Effects of Msirne Aggregate Extraction in an Area East of the Isle of Wight – A Fishing Industry Perspective. Science Series Technical Report No. 126 Cefas, Lowestoft.

Emu Ltd. (1999a). Area 433 Environmental Assessment for Aggregate Extraction from the North Nab Adjustment, English Channel. July 1999.

Emu Ltd. (1999b). Inner Owers Environmental Assessment for Aggregate Extraction from the Inner Owers, English Channel. Technical Note 12 Fisheries Issues – Formal Response, April 1999.

Emu Ltd. (2002). Outer Eastern Solent Fisheries Activity Study. November 2002. Report No. 02/J/01/06/0401/0314, November 2002.

Emu Ltd. (2006). Dredging Application Area 395 Fisheries Intensity Study Prepared by Emu Ltd. on behalf of UMA & Kendall Bros. Ltd. (Portsmouth), December 2006.

Royal Haskonoing (2004). Poole Harbour Approach Channel Deepening and Beneficial Use of Dredged Material Environmental Statement, November 2004. Borough of Poole and Poole Harbour Commissioners. Reference: 9P0171/R/mas

Shorney, B. (2004). Research into the Economic Contributions of Sea Angling. Report to Defra Economics and Statistics Group. Drew Associates, March 2004.

Tingley, D., Bellew, S. Franklin, P., Drakeford, B., Himes, A. & Marchant, G (2006). Multiple-use, Planning and Management: The Overfalls Area Phase 1 (MAL0012. CEMARE, University of Portsmouth, UK.

Walmsley S.A. and Pawson, M.G., 2007. The Coastal Fisheries of England and Wales, Part V: A Review of their Status 2005–6. Sci. Ser. Tech Rep., Cefas Lowestoft, 140: 83pp.

APPENDICES

Appendix I

List of Other Potential Organisations for Consultation in the South Coast REA Area

APPENDIX I

List of Other Potential Organisations for Consultation in the South Coast REA Area

Adur Deep Sea Angling Club
Aerostructures Hamble WSFC
Albion Sea Angling Club
Alresford Sea Angling Club
Armfield & Ringwood Sea Fishing Club
Ashlett Sea Angling Club
Badgers Bum Sea Angling Club
Bass Anglers' Sportfishing Society
Bembridge Angling Club
Bishops Walthan Anglers Club
Bisley & District Sea Angling Club
Bisterne Sea Anglers
Bitterne Royal British Legion Sea Angling Association
Blandford Sea Angling Club
Boscombe & Southbourne S F C
Bournemouth & District S A A
Bournemouth Pier Angling Club
British Disabled Angling Association
British Conger Club
Calshot Oyster Fishermen Ltd
Calshot Sea Angling Club
Castaways Fishing Tackle
Christchurch & District Fishing Club
Christchurch Shore Fishing Club
Eastney Cruising Association
Eel Conservation Society, The
Elmore Angling Club
Emsworth Sea Angling Club
European Federation of Sea Anglers
Fareham Sea Angling Club
Fleetlands Angling Club
Fountain Lake Angling Club
Get Hooked on Fishing
Gosport & District Angling Club
Gosport Commercial Fishermen's Association
Hamble Sea Angling Club
Hampshire Police Sea Angling Section
Hamworthy Royal British Legion Sea Angling Club
Hayling Island Angling Club
Individuals Sea Angling Club
Keyhaven Fishermen's Association
Langstone Harbour Fishermen's Association
Littlehampton & District Angling Club
Littlehampton Commercial Fishermen’s Association
Littlehampton Skippers Association
Lure Anglers Society
Lymington & District Sea Fishing Club

Lymington Fishermen's Association
Machine Shop Beach Fishing Club (BHC)
Marine Leisure Association
Mudeford and District Fishermen's Association
Mudeford Men’s Club S A A
National Mullet Club
New Milton Sea Fishing Club
Newhaven Deep Sea Anglers
Newhaven Shore Angling Club
Norbiton Sea Angling Club
North Haven Yacht Club (Fishing)
Pagham Pirates Angling Club
Pagham Sea Angling Club
Poole & District Angling Association
Poole & District Fishermen’s Association
Poole & District Sea Angling Association
Poole Bay Small Boat Angling Club
Poole Charter Skippers Association
Poole Dolphins Sea Angling Club
Portchester Sailing Club Angling Section
Portchester Sporting Angling Club
Portsmouth Royal Dockyard Angling Club
Post Office Angling Group (Bournemouth)
Ravens Sea Angling Club (Isle Of Wight)
River Hamble Mooring Holders Association
Royal Air Force Sea Angling Association
Salisbury Anchor S A C
Saltwater Fly Fishing in the UK
Sandown & Lake Angling Society
Selsey Angling Club
Selsey Bill Fishing Club
Selsey Coasters Sea Angling Club
Shanklin Deep Sea Fishing Club
Shark Angling Club of Great Britain
Shirley Sea Angling Club
Solent Area Royal Navy & Royal Marines Sea Anglers' Association
Solent Sea Angling Club
South Coast Rock Hoppers Sea Angling Club
South Coasters Small Boat Angling Club
Southampton Sea Angling Club
Southern Circuit Sea Angling Association
Southsea Sea Angling Club
Stamshaw Lake Angling Club
Stanswood Bay Oystermen Ltd
Sussex Police Sea Angling Club
Ventnor Angling & Social Club
Western Wight angling club
Weymouth & Portland Fishermen's & Licensed Boatmen's Association
Weymouth Angling Society
Woolston Social Club Sea Angling Club

Appendix II

List of Fishermen's Organisations within the South Coast MaREA Study Area

LIST OF FISHERMENS ASSOCIATIONS WITHIN THE REASTUDY AREA 2008
SOUTHERN SFC DISTRICT

ASSOCIATION	CHAIRMAN	SECRETARY
Bridport Commercial Boat Owners & Fishermen's Association (mail to D Sales)	Mr D E Sales Marsh Barn Farm Burton Rd Bridport Dorset DT6 4PS Tel: 01308 422755	Mr C A Pearce Orchard Bungalow Uploaders Bridport Dorset DT6 4PD Tel: 01308 485386
Calshot Oyster Fishermen Ltd (mail to Mrs Lawes)	Mr R L Hayles Barn Cottage Middleton Totland IOW PO40 9RW Tel: 01983 752912	Mrs R Lawes Crampmoor Fm Crampmoor Lane Romsey Hants Tel: 01794 518278
Gosport Commercial Fishermen's Association	Mr V Gathergood	Mr S P Gathergood 106 Dunkeld Rd Gosport Hants PO12 4NJ Tel: 02392 522087
Hardway Fishermen's Association	Mr C Breeze 145 Albermyle Avenue Elson, Gosport, Hants PO12 4HT Tel: 02392 524239	Mr R Varndell 28 Camcross Close, Paulsgrove Portsmouth, Hants Tel: 02392 380508
Inner Camber Fishermen's Association	Mr C Marshall 13 New Road, Fleet End Warsash, Southampton Tel: 01489 574502	
Keyhaven Fishermen's Association	Mr M W Maybee 2 Gordleton Farm Sway Lymington Hants Tel: 01590 682455	Mr N Crouch 9 Aubrey Close Milford on Sea SO41 0TD
Langstone Harbour Fishermen's Association (Correspondence to: Club House, Milton Locks, Lockway Road, Portsmouth, PO4 8LT)	Mr J Holloway 244 Lockway Road Milton, Portsmouth Hants Tel: 02392 819043	Mr R Monks 14 Orchard Way Trenches Lane, Langley Slough Berks SL3 6QQ Tel: 01753 548768
Lymington Fishermen's Association		Mr W Grose 25 Cowley Road Lymington Hants SO41 9JR Tel: 01590 677749
Lyme Regis Fishermen's Association	Mr P Wason 45 North Avenue Lyme Regis Dorset Tel: 01297 443880	
Mudeford & District Fishermen's Association	Mr R Stride Sunnyside, Waterditch Road Bransgore Christchurch Dorset BH23 8JX Tel: 01425 673034	Mrs S Stride Locksbridge, South Drive Ossemsley, New Milton Hants Tel: 01425 615058
Poole Charter Skippers Association	Mr B Bartlett 11 Denby Road Poole Dorset BH15 2JP Tel: 01202 676564	Mr M Minns 16 Catalina Close Mudeford Dorset BH23 4JG Tel: 01425 274636

LIST OF FISHERMENS ASSOCIATIONS WITHIN THE REASTUDY AREA 2008
SOUTHERN SFC DISTRICT

ASSOCIATION	CHAIRMAN	SECRETARY
Poole & District Fishermen's Association	Mr R Channon 77 Merriefield Avenue Broadstone Dorset BH18 8DB Tel: 01202 603351	Mr P Higgins 11 Lyall Road Parkstone Poole Dorset BH12 2NE Tel: 01202 741684
Portland Fishermen's Association	Mr R Studley 4 Old Coastguard Cottages, Portland Bill Portland Dorset Tel: 01305 822025	Mr K Leicester 7 Page Drive Southwell Portland Dorset Tel: 01305 821040
Portsmouth Oystermen's Association		Mr C Kyzer 26 Repton Close Alverstoke Gosport Hants Tel:02392 588266
South Devon Shellfishermen Ltd **(**Mail to K Lynham)	Mr C Venmore Leyburn Torcross Kingsbridge South Devon TQ7 2TJ Tel: 01548 580446	Mr K Lynham 58 Easton Street Portland Dorset Tel: 01305 826934
Stanswood Bay Oystermen LTD	Mrs G Mills 13 Hampton Lane, Weeke, Winchester Hants Tel: 01962 861273	
Swanage Fishermen's Association		Mr A Lander Hillview Worth Matravers Swanage Dorset Tel: 01929 439203
Weymouth & Portland Licensed Skippers	Mr C Caines 22 Killicks Hill Portland Dorset DT5 1JW	Mr D Gibson 10 Portway Close Weymouth Dorset DT4 8RT

Appendix III

Distributional Maps Showing the Locations and Intensities of Netting Activities

Appendix IV

Distributional Maps Showing the Locations and Intensities of Potting and Cuttlefish Activities

Appendix V

Distributional Maps Showing the Locations and Intensities of Trawling and Dredging Activities

Appendix VI

Distributional Maps Showing the Locations and Intensities of Rodding and Longlining Activities

Appendix V

Distributional Maps Showing the Locations and Intensities of Charter Angling Activities

Appendix VIII

List of Popular Onshore Angling Marks

Appendix VIII
Popular Onshore Marks for Recreational Sea Angling in the South Coast REA Study Area

Area	Popular Onshore Marks	Typical fish
Swanage	Swanage Pier	Mackerel, garfish, pollack, mullet, bass, wrasse, bream and ray. Winter flounder, pout and whiting.
	Peverel Point	Wrasse, mackerel, garfish, pollack. undulate ray, dogfish and pout
	Durdle Dore	Bass, conger, bull huss, wrasse, pollack, mackerel and garfish
Poole	Holesbay Road	Eels and bass Winter flounders
	Baiter Park	Winter flounder
	Rockley Park	Bass and flounder
	Lake steps and Lake Pier.	Flounder and Bass
	Hamworthy Park	Flounder and Bass
	Haven Hotel	Bass
	Sandbanks	Summer wrasse Bass and Mackerel
	Jerry's Point	Winter flounder.
Bournemouth	Southbourne Beach	Plaice Winter whiting and flounder
Christchurch	Mudeford	Bass, thin and thick-lipped mullet winter flounders
	Hengisbury Head	Bass, mackerel, wrasse, pollack and scad Winter whiting, dabs, bass, pout and rockling
	Mudeford Spit	Eels, flounder
	Mudeford Quay	Mullet. Pout, silver eels and pollack.
	Kelp beds	Summer wrasse, bass and bream Winter codling, whiting, pouting and huge rockling
	Double Dykes	Smoothhound, bass, sole, pouting, garfish, mackerel and scad.
Keyhaven	Shingle beach to Hurst Castle	Bass, dab, sole, mackerel, dogfish and pout. Winter codling
Lymington	Pennington Sea Wall	Eels and smoothound. Winter flounder
	Hordle Cliff	Plaice
Isle of Wight	Colwell Bay	Bass, sole, wrasse
	Yarmouth	Flounder and mullet. Summer bass, rays and mackerel. Winter cod.
	Newtown	Bass and flounders
	Burnt Wood	Smoothound and sting ray
	Gurnard	bass and mullet
	Cowes	Flounder and plaice
	East Cowes	flounders, plaice, eels
	Newport	flounders, school bass, mullet, plaice, eels
	Wotton	School bass and flounders
	Ryde	Flounder, plaice, bream, smoothound cod, pollack, scad and bass.
	Bembridge	Wrasse, mullet, bass, flounder, pout, conger, ling, bream, dogfish, turbot, brill, pollock, skate and ray.
	Sandown	Summer mackerel, scad, garfish, pollack, mullet. plaice, bass, pout, sole and painted ray.

Area	Popular Onshore Marks	Typical fish
	Bonchurch & Ventnor	Bass, conger, wrasse and pout
	Chale	Rays. Summer mackerel
	Atherfield, Brook & Compton Bay	Bass, rays, pout, conger Winter cod
	Freshwater Bay	Pouting, bass, pollack and conger
	Totland	Bass, conger
	Alum Bay	conger, bass, rays and sole
Southampton	Calshot Lepe	Summer bass, dogfish and smoothhounds Winter pouting, whiting and codling
	Hamble Common	Flounder, silver eel and bass Spring plaice
	Hill Head	Smoothhounds, sting ray, bass and eels
Gosport	Browndown	Dogfish, rays and bass Summer smoothhounds Winter cod.
	Alverbank Wall	Bass, sole and mackerel
	Lifeboat Station	Spring plaice Winter cod and whiting
	Gilkicker Point	Summer thornback rays, smoothhounds, bass and mackerel Winter cod
	Haslar Wall	Summer mackerel and thick-lipped mullet. Winter cod and whiting
	Millenium Pier	produce mackerel, pollack, wrasse, bass and bream
Portsmouth	Victoria Pier	Bass, pollack, wrasse, bream , garfish, mackerel and spotted ray
	Clarence Pier Beach	Eel, bass and gurnard
	Southsea Castle	Summer bass, sole, bream, eel, smoothhound and dogfish.
	South Parade Pier	Summer bass, pollack, smoothhounds, mackerel, garfish, wrasse, scad, bream, pouting and thick-lipped mullet. Winter codling and whiting.
	The Blocks (submarine barrier)	Spring plaice Summer bass, pollack, wrasse red mullet and bream. Winter codling and whiting
	St George's Road	Spring plaice Summer, bass, pout, gurnard and smoothhound Winter cod and whiting
	The West Winner	Summer bass, mackerel, bream and garfish Winter flounder
Chichester and Langstone Harbours	Northney Hayling Billy Trail, Old oyster beds	Eels, flounders and school bass
	Harbour entrances	Summer bass, mackerel, garfish, bream, scad, thick-lipped grey mullet, wrasse, flounder and plaice. Winter flounder and codling
	Ferry pontoons	Bass, mackerel and pout
	Langstone Bridge	bass, mackerel and scad
	Southsea Marina	Bass, black bream, scad, pollack, bass, mackerel and garfish.

Area	Popular Onshore Marks	Typical fish
	Broadmarsh/Budds Farm and Eastern Road jetty (Portsmouth)	Summer eels and school bass Winter flounder
Hayling Seafront	The Lifeboat Station Coastguard lookout Fun Fair The Inn on the Beach Ferry Boat Inn	Bass, dogfish, smoothhounds and sole
Selsey	West Wittering Beach	Place and Dover sole. Winter flounder, whiting and codling
	The East Beach	Summer mackerel, bass, small thornbacks, black bream, gurnards and smoothounds Winter cod and whiting
	The Lifeboat Station	Bass and smoothhound
	The Point	Summer mackerel, bass and smoothound
	The Windmill	Smoothound
	West Sands	Sole, smoothounds, bass and pout.
Littlehampton	Climping Beach	Summer bass, smoothounds, stingrays golden grey mullet, flounders, plaice, eels, dogfish and Gurnards Winter flounders
	Swing Bridge	Mullet Winter flounder
	Inner Harbour	Mullet Winter flounder
	Rustington	Bass, flounders and eels
	East Preston	Bass, flounders and eels
Saltdean	The Prom End The Slope The New Beach The Groyne The New Sea Defence The Shingle Beaches	Bass and eels
Shoreham	Shoreham Harbour	Bass, flounder, silver eels. Spring and autumn plaice Winter codling, whiting and small pout.
Brighton	Black Rock Groyne Nudist Beach	Bass, eels
	Paston Beach Banjo Groyne	Summer flounder, bass, sole and smoothhounds Winter cod, whiting, sole and dogfish
	Amusement Arcade	Summer sole, flounder, bass and eels Winter codling and whitin
	Palace Pier Beach	sole, flounder, dabs and eels
	Brighton Marina	Summer mackerel, bass, sole, thick Lip mullet, golden grey mullet, mackerel, garfish, ballan wrasse, corkwing wrasse, scad, pollack, plaice, flounder, bream, rockling and pout.
	Goring	flounders, eels, bass, plaice, rockling and dogfish
	Southease	mullet, flounders, eels, bass
	Hove Beaches	Sumnmer bass, mackerel garfish and smoothhound. Winter Flounder, rockling
Shoreham Harbour		Sumnmer bass, mackerel garfish and smoothhound. Winter Flounder, rockling

Area	Popular Onshore Marks	Typical fish
Worthing	Pier	Garfish, flounders, sole and plaice
Seaford Beach	Tidemills Buckle	Bass, Flounder, Sole, Black Bream, Plaice mackerel and Garfish. Winter Cod
Newhaven	East Newhaven Pier	garfish and mackerel golden grey mullet, thick lipped mullet, flounders, sole, wrasse and Pollack