Deep-sea fisheries

Particular concern has been expressed regarding deep sea fisheries in parts of the OSPAR maritime area, most notably in Area V (Figure 3.4). Deep water fishing (generally below 500 m depth) has taken place in this area to the west of Britain for two decades.

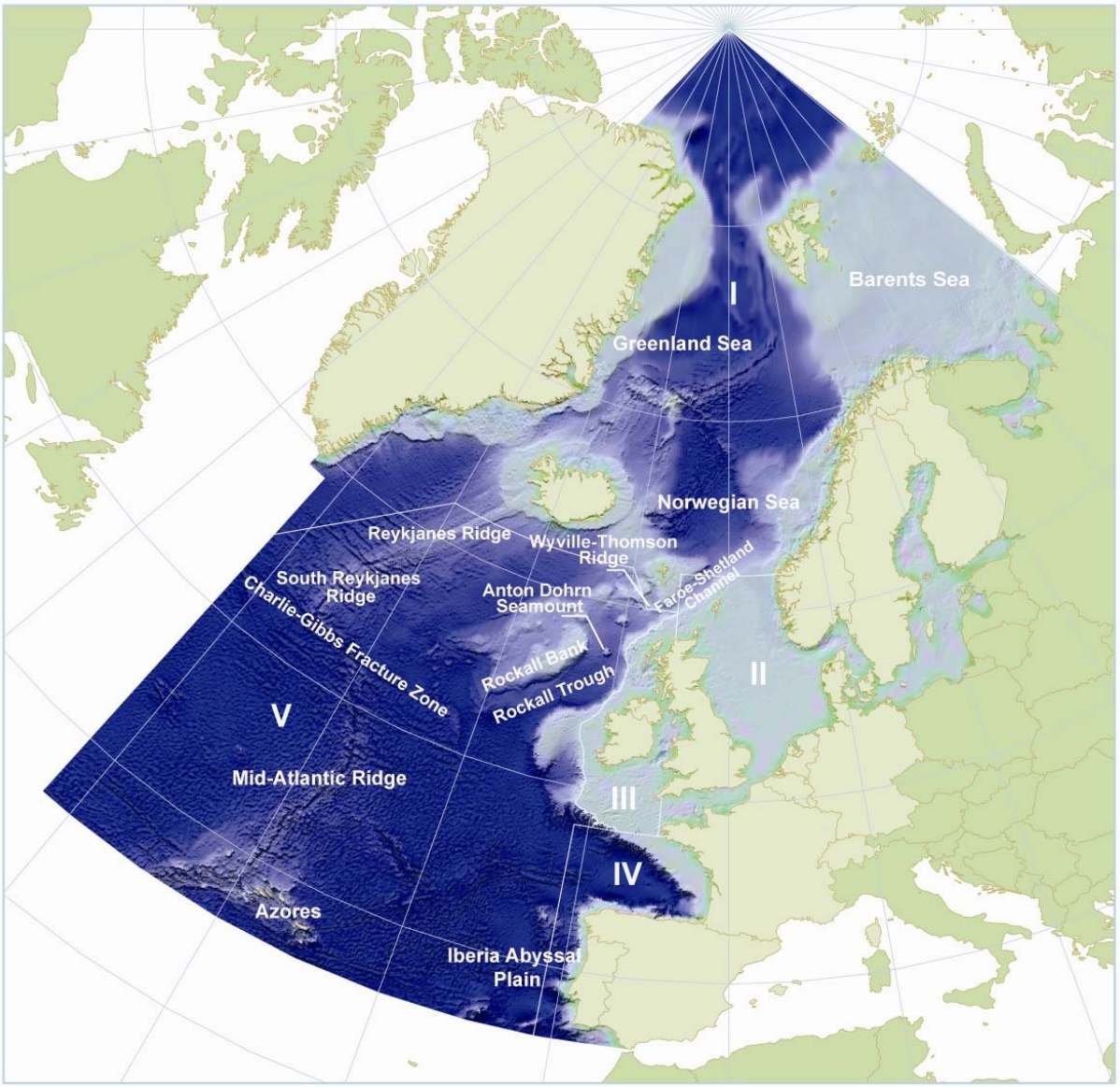

Figure 3.4: *Deep sea areas in the North-East Atlantic and the OSPAR Regions with specific features highlighted. OSPAR countries are highlighted in tan on the map.*

The life history of deep water species makes them particularly sensitive to exploitation. They are slow growing species, a consequence of the low temperatures and scarcity of food in the deep sea, have a late age of maturation, may not always reproduce every year and have long lifespans. Some stock aggregate in certain areas, for example orange roughy (*Hoplostethus atlanticus*) can gather round seamounts, increasing that species catchability. Similarly, due to their spatial distribution associated with seamounts, their life history and their aggregation behaviour, alfonsinos are easily overexploited by trawl fisheries; they can only sustain low rates of exploitation. Furthermore, the current ICES advice for alfonsinos is that exploitation of new seamounts should not be allowed so as to avoid wiping out entire subpopulations that have not yet been mapped and assessed. Many deep water species have

fragile scales and skins and contact with a net can prove fatal even for escapees. Given the huge pressure change in bringing these species up from the depths, discard survival rate is generally negligible. In recognition of the vulnerability of these stocks, OSPAR has included a number of deep water species in its list of threatened and declining species (Reference No: 2008-6); the gulper shark (*Centrophorus granulosus*), the leafscraper shark (*Centrophorus squamosus*) and orange roughy[1].

Scientific data on the state of these stocks is notoriously difficult and expensive to collect. None the less, some data was collected prior to the establishment of a deep water fishery. Comparison of the data with current information is not straightforward but declining trends in deep sea assemblage biodiversity and fish size have been observed where fisheries have been prosecuted.

Most of the deep sea fishery occurs within EU or NEAFC waters. Within the EU zone deep sea fisheries are subject to CFP regulations. Total allowable catches (TACs) were set in 2002 for the period 2003-2004. In 2004, TACs were extended to previously unregulated species, and closed areas were introduced for the protection of orange roughy. Other measures were added to these including the limitation of fishing effort, reporting obligations, data collection and control. In terms of TACs, their effectiveness has been limited due to the fact that they were set at levels beyond what many stocks could sustain. Indeed, the declared catches on most of them have been significantly lower than the TACs. The problem has been compounded by the fact that the mixed nature of the fisheries, combined with incomplete information on catch composition, discards and the geographical distribution of the stocks, has made it difficult to use TACs in a targeted manner. Not surprisingly, the Commission has concluded that the implementation of the measures has been too poor to adequately protect deep sea stocks. Current ICES advice for a number of deep sea stocks emphasises their continued vulnerability. As an example, ICES advise that there should be no direct fishing for blue ling (*Molva* dypterygia) during 2009 and 2010 while fisheries on greater forkbeard (*Phycis blennoides*), black scabbard fish (*Aphanopus carbo*) and greater silver smelt (*Argentina silus*) should not be allowed to expand unless it can be shown that it is sustainable. The advice nearly always highlights the need to collect data which can be used to evaluate a long-term sustainable level of exploitation for individual species. On 8 June 2009, the FAO published a set of technical guidelines aimed at helping the fisheries sector reduce its impacts on fragile deep-sea fish species and ecosystems. The guidelines were adopted by FAO members at a technical consultation held in Rome in September 2008. These *International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (http://www.fao.org/fileadmin/user_upload/newsroom/docs/i0816t.pdf) were developed through a participatory process involving fisheries experts, fishery managers from governments, the fishing industry, academia and non-governmental and intergovernmental organizations. The guidelines are designed to provide guidance on management factors ranging from an appropriate regulatory framework to the components of a good data collection programme, and include the identification of key management considerations and measures necessary to ensure the conservation of target and non-target species, as well as affected habitats. These guidelines are voluntary and constitute an instrument of reference to help States and RFMO/As (Regional fisheries management organizations and arrangements) in formulating and implementing appropriate measures for the management of deep-sea fisheries in the high seas.

➥*Go to full QSR assessment report on environmental impact of fishing (publication number 465/2009)*

[1] Current (9 October 2009) ICES advice for orange roughy (all areas) is that due to its very low productivity, orange roughy can only sustain very low rates of exploitation. Currently, it is not possible to manage a sustainable fishery for this species. ICES recommends no directed fisheries for this species. Bycatches in mixed fisheries should be as low as possible.