



Management of deep-sea fisheries from a conservation perspective

Deep-sea fisheries are expanding rapidly, as traditional stocks become heavily overfished. Because most deep-sea species are long-lived, have low fecundity and a slow growth rate, these stocks are particularly vulnerable to exploitation and are becoming rapidly depleted. Similarly, due to the life characteristics of deep sea fishes, any recovery is likely to be very slow. This is a real consequence of mismanagement of inshore waters that has forced expansion into offshore areas for previously untapped resources, yet the deep sea is an extremely vulnerable ecosystem. Although inshore stocks may recover in a few years or decades, deep sea stocks may take a few centuries to recovery, and there is no guarantee recovery would occur at all. The orange roughy has been practically wiped out in 20 years, argentinies crashed in the Irish deepwater fishery in 1990, roundnose grenadiers suffer very high levels of juvenile mortality in trawls, monkfish catches are now composed of juveniles, and for many other species the state of the stocks is unknown. These species are also often of unusual shapes, making them more prone to being caught especially when immature, and even small, unwanted species are caught in large numbers. The levels of discards of immature and non-target fish species are very high. Much lost fishing gear is present and ghost fishing is a real danger.

Management and conservation efforts to save deep-sea species are therefore urgently needed, as previous lack of adequate management and problems with enforcement compound the problems faced above. To manage the fisheries the fisheries in accordance with the precautionary approach the fisheries needs to be closed. A recent report “A preliminary Investigation on Shelf Edge and Deepwater Fixed Net Fisheries to the West and North of Great Britain, Ireland, around Rockall and Hatton Bank” also concluded that the deepwater gillnet fishery is unsustainable, as it is unregulated targeting monkfish and deepwater sharks, which stocks (deepwater sharks) has declined to ~ 20% of original levels in less than ten years. The amount of fishing gear fishing at any given time is conservatively estimated to be between 5800 and 8700 km.

Scientific advice

According to scientific advice most deep-sea species that are currently subject to fisheries are believed to be over-exploited. Experience shows that deep-sea stocks can be depleted even within a single season. Stocks of certain species (e.g. red sea bream, blue ling, Portuguese dogfish, leafscale gulper shark, kitefin shark and orange roughy) are known to have collapsed or near collapse in some areas, and there is insufficient data on other stocks to determine what level of fishing would be sustainable. Complete stock structure and distribution is unknown for all species of deep-sea stocks including chondrichthyan fish.

For the Northeast Atlantic, ICES (International Council for the Exploration of the Sea) has repeatedly, consistent with the precautionary approach, recommended an immediate reduction in established deep-sea fisheries unless they can specifically shown to be sustainable. This year ICES advised zero catch for Portuguese dogfish and leafscale gulper shark.

The survival rates of discards and of fish encountering gears and escaping are unknown, but many species are expected to be very vulnerable to injury, and therefore would be expected to die even if they escaped through meshes. The body shape of many deepwater fish combined with a high age/length at maturity often means that there can be a high fishing mortality of immature fish. Some species, such as blue ling, orange roughy, red sea bream, and alfonsinos aggregate in shoals, often associated with seamounts, and the fisheries have high catch rates

once the shoals are located. It is evident that high catch rates can only be maintained by moving from one concentration to another and progressively depleting the sub-units of each stock. Furthermore, many deepwater fisheries are on mixtures of species, making it difficult to manage the species components individually.

In many cases significant proportions of the catch are discarded at sea and not recorded. All these factors make it difficult to determine which level of exploitation is sustainable. Fisheries on deepwater species have often developed and expanded before sufficient information is available on which to base management advice.