

### **9.3.2.4 NEAFC request on vulnerable marine ecosystems (VMEs) concerning move-on provisions and threshold values for key indicator species.**

#### **Request**

NEAFC has made the following requests for advice to ICES:

*a) Move-on provisions when a potential VME is encountered.*

ICES is asked to consider the appropriateness of demanding vessels encountering a possible VME to move 2 nautical miles. ICES is also asked to elaborate if the move-on rule should be different in existing areas and new fishing areas.

*b) Threshold values for key indicator species to be used by commercial fishing vessels, operating fishing gear likely to contact the seafloor during the normal course of fishing operations, to indicate encounters with a vulnerable marine ecosystem.*

ICES is requested to consider the appropriateness of the present thresholds as measures to be applied in commercial fishing operations. In its evaluation, ICES is asked to consider scientific information as well as experience from ordinary commercial fisheries operations with different gears and relevant gear technology research, bearing in mind the necessity that the threshold levels are applicable and practical in the commercial operations.

#### **Background**

At its Annual Meeting in 2008, NEAFC established definitions of what would constitute an encounter with a VME (NEAFC Recommendation XIII 2009). These include:

- a provision demanding that the captain of a vessel encountering a possible VME shall cease fishing and move away at least 2 nautical miles from the position that the evidence suggests is closest to the exact encounter location;
- setting threshold levels for the amount of key indicators, i.e. corals and sponges. The provisional threshold levels selected were 100 kg corals and 1000 kg sponges in a fishing operation.

At a meeting held March 2009, NEAFC Heads of Delegations agreed that these issues needed to be studied further. The meeting felt that the move-on rules were unclear i.e. in relation to where the encounter takes place, and needed to be clarified. The meeting also found that the threshold levels were without strong scientific basis, probably too high and that they should be reduced.

#### **ICES advice**

*a) Move-on provisions when a potential VME is encountered.*

ICES has no information from the NEAFC Area with which to evaluate the scientific appropriateness of these provisions. The key information required is patch size of corals and sponges and its relation to tow length of trawls.

Some relevant information is available in the western Atlantic NAFO Area from Spanish research vessel surveys. This information covers gorgonian corals (and not *Lophelia* or other reef building corals, nor other solitary corals or sponges). The patch size of gorgonians in this area is about 500 m. This information would need to be used alongside information on tow length in order to model suitable distances for the move-on provisions.

Further relevant information would include the experiences of bottom-trawlers fishing within the NEAFC Area under these move-on provisions, but ICES is unaware whether or not details of such experiences are being recorded or collated by NEAFC.

ICES understands that Canada will be holding a national workshop in winter 2010 to discuss some aspects of move-on rules including the scientific data requirements and analysis methods for potential application domestically and in the NAFO context.

ICES notes that a risk from the application of a move-on rule is a potential increase of the impact of fisheries on vulnerable marine ecosystems. In many cases, one pass of a trawl net over unfished grounds containing long-lived and slow growing species and habitats is enough in many cases to cause serious adverse impacts. If fishing is occurring in a

generally previously unfished area but over oceanographic or geological features likely to support vulnerable marine ecosystems, such as seamounts, then a move-on rule might damage further vulnerable marine ecosystems.

*b) Threshold levels for the amounts of corals and sponges in nets that would indicate the presence of a VME.*

ICES notes that NEAFC has not defined precisely its view on what would comprise a Vulnerable Marine Ecosystem. This is presumably because the FAO Guidelines (FAO, 2009) do not do so. Those guidelines instead call for an assessment based upon the nature of the pressure believed to be impacting various marine ecosystems. The FAO guidelines give examples of taxa indicative of a VME including:

- 1) cold-water corals of various types (e.g. reef builders and coral forest species) likely to be found on the edges and slopes of oceanic islands, continental shelves, seamounts, canyons and trenches;
- 2) sponge-dominated communities and structural biogenic habitats (e.g., those composed of large protozoans, hydrozoans or bryozoans) with a distribution similar to cold-water corals.

The threshold levels set by NEAFC are presumably for these two example taxa; ICES notes two main difficulties with this threshold approach, the first being the implicit assumption that all species that might indicate the presence of a VME are equally likely to be retained in a fishing net and the second that these example taxa are the sole indicators of structural habitat VMEs.

The key features of a species that would be retained in a net are size and fragility; thus a small sized species or one that can easily fragment into small pieces is less likely to be retained than a large resilient species. The retention efficiency of deep-water fishing nets in relation to corals and sponges is also unknown. Using current guidelines and a hypothetical retention efficiency of 10%, at least 1000 kg of coral (or 10 000 kg of sponge) would need to be affected before a VME was identified. These limitations mean that ICES is not able to advise on science-based threshold levels and would indicate that it is unlikely that a single threshold level would be suitable for all species that could indicate a Vulnerable Marine Ecosystem. Although ICES is unable to provide definitive advice, the points made above would indicate that if a catch threshold weight of coral or sponge is required, then the current thresholds are likely to be too high for both fragile and rare coral or sponge species. ICES advises that more precautionary thresholds be set.

ICES notes that nearly all previously untrawled ecosystems and habitats are likely to be vulnerable to trawling activity (and intense use of other fishing gears) because they are likely to contain fragile species. ICES notes that an alternative strategy for the protection of vulnerable marine ecosystems would be to plot all areas where fishing has already occurred (or has occurred in the period for which records are available) and then to assume that all other areas contain vulnerable marine ecosystems. Prohibition or restriction of fishing activities in these areas would then protect many vulnerable marine ecosystems.

ICES is aware that scientists in some of its Member Countries are currently examining these issues further and are discussing them with fishers. ICES would be willing to provide further advice on these issues in future should further relevant information be made available.

#### **Source of information**

FAO, 2009. International Guidelines for the Management of Deep-Sea Fisheries in the High Seas.