

b) Sargasso Sea

The Fisheries Commission requests the Scientific Council to comment and advise on whether the Sargasso Sea provides forage area or habitat for living marine resources that could be impacted by different types of fishing; and on whether there is a need for any management measure including a closure to protect this ecosystem. The polygon to be considered is the following:

-46.844711060999884 35.722427393000203,-46.32415425899984 35.369106151000096,- 45.844178761598414
35.0,-62.202511155429988 35.0,-62.632567558331232 35.258234148636177,-63.272355558926961
35.512762148873321,-63.959640559567163 35.669259149019013,-64.673394560231941 35.722388149068536,-
65.385178560894815 35.670316149019982,-66.072834561535274 35.514837148875188,-66.875051562282238
35.198759148580848,-67.211147449541443 35.0,-71.448964644661828 35.0,-71.377610283999786
35.483190472000047,-70.697710570999789 35.847831353000117,-69.781329499999856 36.285738255000183,-
68.818622663999804 36.688934769000298,-67.810633268999936 37.057011529000135,-66.767771029999835
37.386320105000095,-65.000031260999833 37.838698970000223,-63.160524424999892 38.183166102000087,-
61.276399190999882 38.41419272700017,-59.376124598999866 38.528701613000123,-57.575810995999859
38.528867480000258,-55.796226233999846 38.422925564000195,-54.062624079999807 38.211871163000239,-
52.399638263999805 37.898770146000288,-50.826090381999791 37.487278854000067,-49.360484950999876
36.981801336000103,-48.028343332999839 36.39115303900013,-46.844711060999884 35.722427393000203

Scientific Council advises:

Within the portion of the Sargasso Sea defined by the polygon provided in the request, the forage areas or habitat for living marine resources that could be impacted by different types of fishing relevant to NAFO management are limited to those associated with the New England and Corner Rise Seamounts.

Therefore the Scientific Council **recommends** that:

- 1) *The polygons of the closures for both the New England and Corner Rise seamounts be revised to the north, east and west in the NAFO Convention Area to include all the peaks that are shallower than 2000 metres (as shown by green dots in Fig. 3).*
- 2) *For seamount fisheries in areas where fishing has not historically taken place, the Exploratory Fishing protocol be expanded to include all types of fishing, specifically the current mid-water trawl gears.*
- 3) *Precautionary regulations of the mid-water trawl fishery on splendid alfonsino be put in place. The regulations can include simple measures such as limiting spatially and temporally (i.e. outside the spawning season which is reported to be in July/August (Vinnchenko,1997)) the activity with a close monitoring (i.e. include 100% scientific observer coverage in order to collect data for these less-known areas) including prior notifications, and effort or catch limitation. These regulations would only apply to areas where fishing has taken place historically as shown in Fig. 2, and only using a mid-water trawl (i.e. bottom trawl would remain under the Exploratory Protocol). Outside these areas, the expanded Exploratory fishing protocol would apply.*

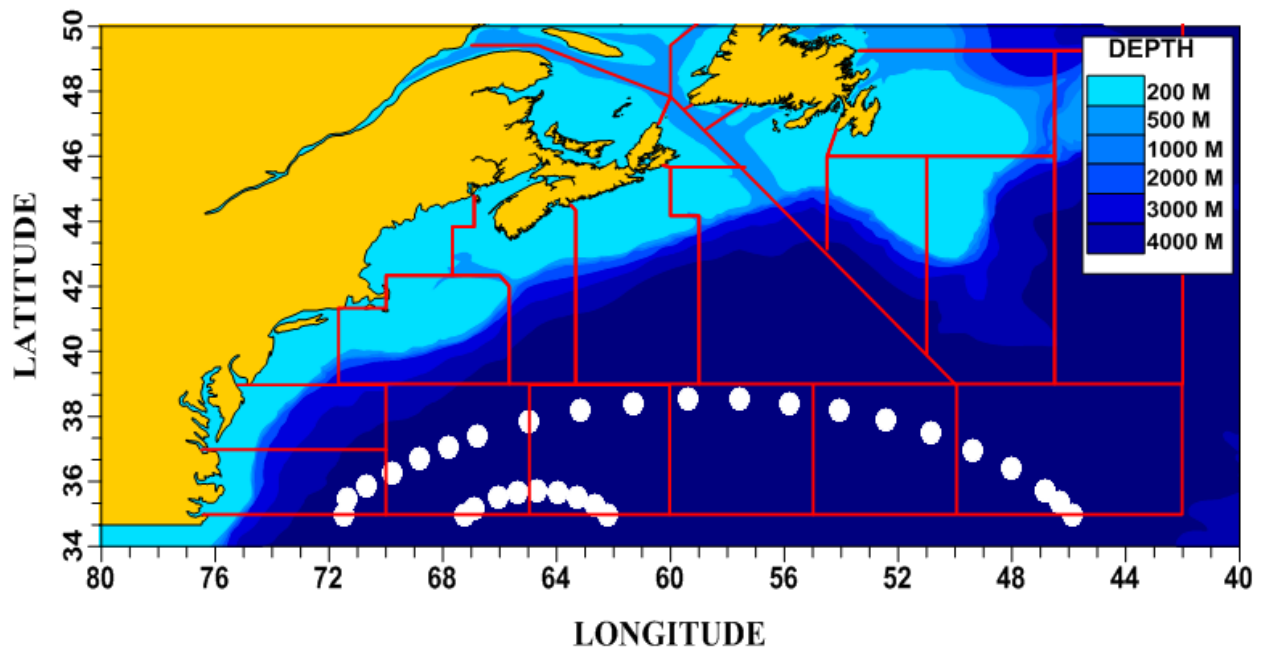


Fig. 1. Map of coordinates provided in Request #15.

Within the portion of the Sargasso Sea defined by the polygon provided in the request, the forage areas or habitat for living marine resources that could be impacted by different types of fishing relevant to NAFO management are limited to those associated with the New England and Corner Rise Seamounts. These seamounts support complex coral and sponge communities, including numerous endemic species, which provide habitat for diverse invertebrate communities that are highly dependent on them (Watling 2007, Watling et al 2007, Cho 2008, Simpson and Watling 2011, Pante and Watling 2011, ICES 2011, Shank 2010). These seamounts also host populations of deep-water fish and are important as aggregating and spawning areas for splendid alfonsino (*Beryx splendens*). Generally, deep-sea and seamount fish stocks are particularly vulnerable to exploitation because the fish are long lived, take longer to reach sexual maturity, and have lower fecundities (Norse *et al.*, 2012).

A fishery on splendid alfonsino has taken place on a regular basis from 1976 to 1996 (Vinnichenko, 1997) on the Corner Rise Seamounts followed by a 9-year hiatus and again starting in 2004. Table 1 shows that catches have generally been low except for 1976, 1987 and 1995 where the catches were significantly larger (10 200 t , 2 400 t and 3500 t respectively). The splendid alfonsino is an aggregating moderately productive bathypelagic deep-sea fish that can be caught using either a bottom trawl or a mid-water trawl (Vinnichenko, 1997). It was noted that in most recent years, a directed commercial fishery using mid-water trawl had been conducted since 2005. Catches for this fishery ranged from about 50 to 1200 t and effort ranged from 4 days to 50 days. Although today this fishery is generally small (catches of 302 t in 2012), this mid-water trawl commercial fishery is not covered under Chapter II of the NCEM (i.e. Bottom Fisheries in the NAFO Regulatory Area) or any other chapter. SC noted that this gap in the NCEMs could result in an ongoing fishery that is unregulated. In 1997, Vinnichenko published a study of the alfonsino fisheries on the Corner rise seamounts and concluded: “Limited stocks of deep water fish found in the area by these studies suggest there should be concerns for these resources which are in an area where free enterprise fisheries can develop easily. These concerns demonstrate the **necessity for the development of an international fishery management plan for the area of the Corner Rise** and other seamounts.”

Given the long history of the splendid alfonsino fishery on the Corner Rise Seamounts, SC reviewed FC document 09-02 on the delineation of the fishing footprint and noted that the fished areas of the Corner Rise Seamount (Figure 2) had met the criteria for inclusion in the footprint but had not been included in the end due to the fact that the seamounts were closed to fishing (SCR 07-006). Nonetheless, Fig. 1 shows the areas where historical fishing of splendid alfonsino has occurred on the Corner Rise Seamounts.

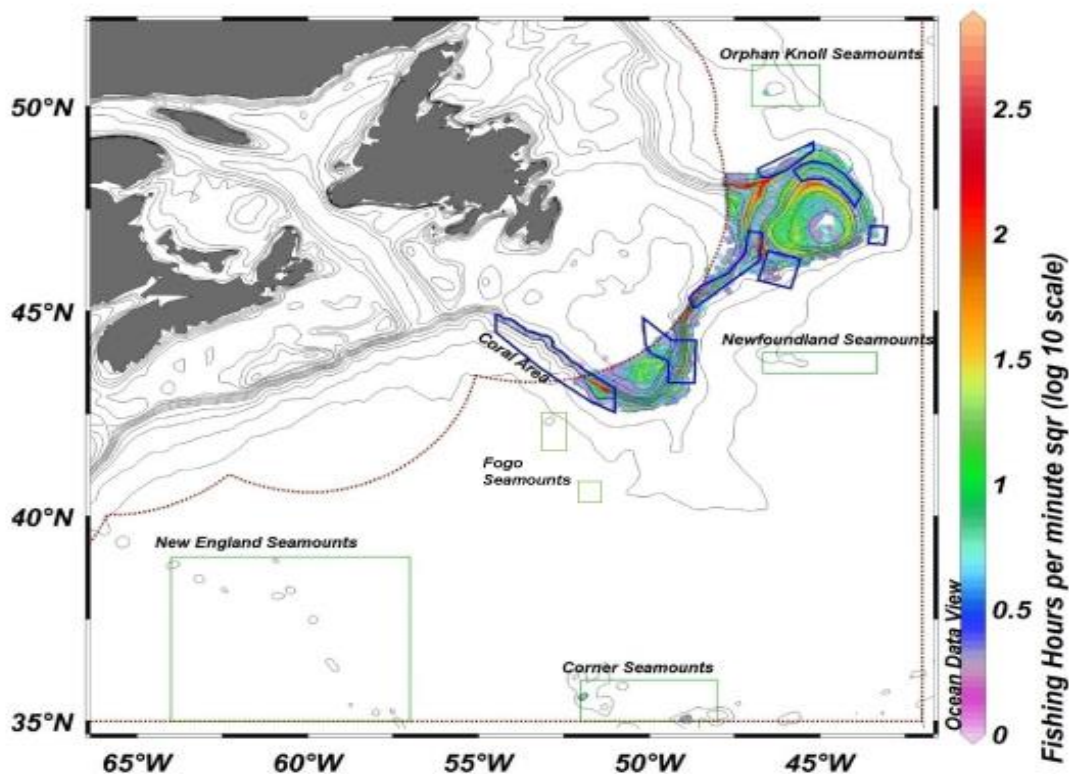


Fig. 2 Distributional map of the intensity of bottom trawl effort by commercial fishing vessels for 2003–2007 in the NRA with an overlay of the candidate VME areas (FC doc 09-02). Existing bottom fishing areas were defined as areas where VMS data and/or other available geo-reference data indicating bottom fishing activities have been conducted at least in two years within a reference period of 1987 to 2007 (SCS Doc. 09/21).

Scientific Council also reviewed the science advice and management measures in place for alfoncino on seamounts in other areas of the Atlantic. The 2006 ICES advice stated: “Due to their spatial distribution associated with seamounts, their life history and their aggregation behaviour, alfoncinos are easily overexploited by trawl fishing; they can only sustain low rates of exploitation. Fisheries on such species should not be allowed to expand above current levels unless it can be shown that such expansion is sustainable. To prevent wiping out entire subpopulations that have not yet been mapped and assessed the exploitation of new seamounts should not be allowed.” (ICES, 2006). Similar advice was also given in the South East Atlantic Fisheries Organisation (SEAFO). A precautionary catch limit of 200 tonnes was implemented for alfoncino in the SEAFO Convention Area until additional information becomes available to identify sustainable fishing levels (SEAFO 2008).

Historical fishing on seamounts is also known in other areas such as the South Pacific by Australia, New Zealand and other nations (fishing essentially for alfoncino and orange roughy). In the international waters of the South Pacific, before opening new regions or expanding fishing effort or catch beyond existing levels it is necessary to establish conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems and assure the long-term sustainability of deep sea fish stocks (SPRFMO, 2007 Interim Management Measures, <http://www.southpacificrfmo.org/interim-measures/>)

With respect to bottom fisheries on seamounts, Scientific Council reviewed the closures and noted that the boundaries of the polygons around the Corner Rise and New England Seamounts exclude some peaks that are less than 2000m which could therefore be fishable (Fig. 3). SC notes that exploratory bottom fishing activities are regulated through the exploratory fishery protocol within the closures but that semi-pelagic fisheries (using mid-water trawl) have no measures in place.

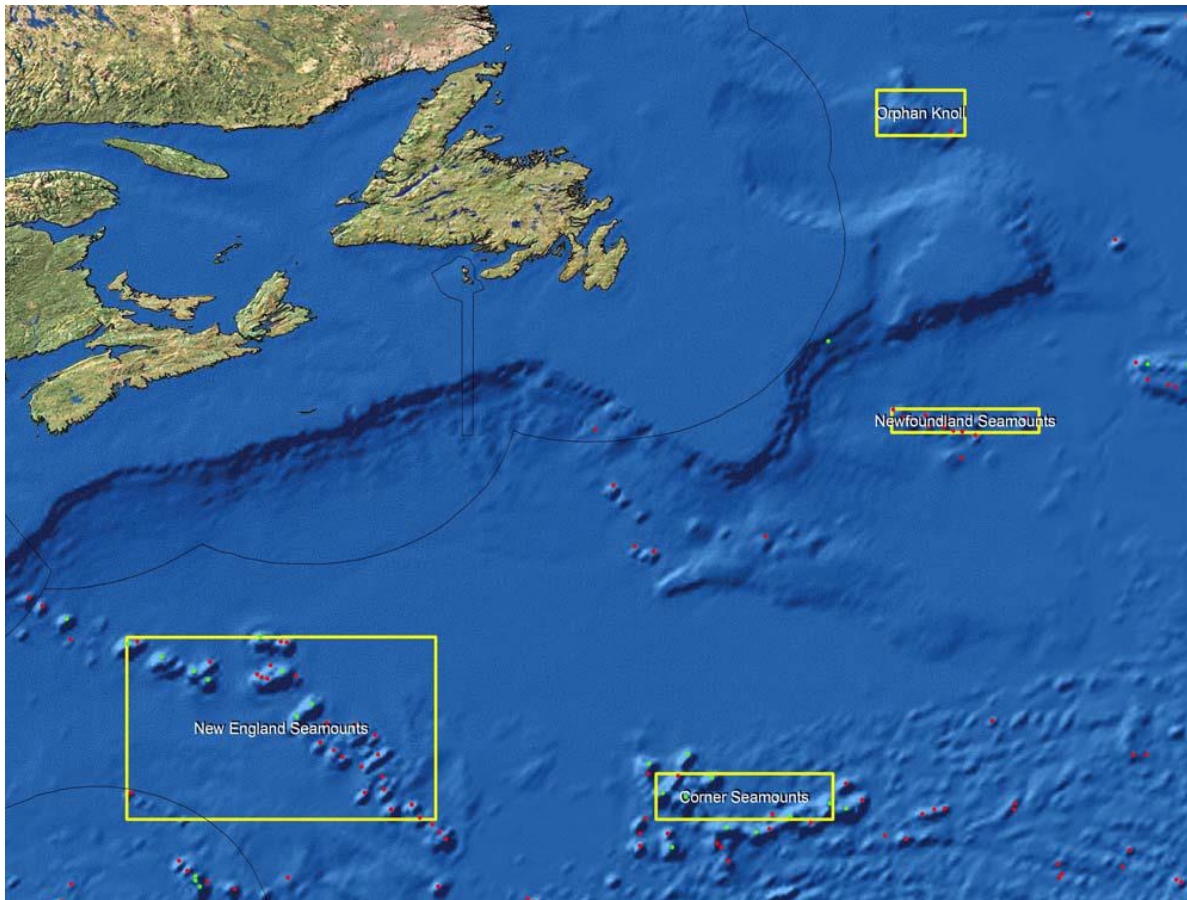


Fig. 3. Area of closure on and around four seamounts in the NAFO Regulatory Area effective 1 January 2007 to 31 December 2010. Seamount peaks marked with green dots rise above 2000 m depth, those marked with red dots have peaks below 2000 m depth. (Map produced by Michael McKee and Peter Auster, National Undersea Research Center at The University of Connecticut, CI USA) (SCR Doc. 07/06)

Table 1. Catches of splendid alfonsino from 1976 to 2012. The shaded area shows the catches and effort of the recent commercial fishery.

Year	Catch (t)	Effort (days)
1976	10200	
1977	800	
1978	130	
1979	530	
1980	200	
1981	390	
1982	10	
1983	360	
1984	240	
1985	10	
1986	110	
1987	2400	
1994	400	
1995	3500	
1996	600	
2004	414	50
2005	1187	29
2006	130	6
2007		
2008		
2009	479	28
2010	52	4
2011	152	9
2012	302	22