

APPENDIX X – Stock Status Report – Orange roughy

STATUS REPORT

Hoplostethus atlanticus

Common Name: Orange roughy

FAO-ASFIS Code: ORY



2014

Updated: 9-Oct-14

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22. Description of the fishery

1.1 Description of fishing vessels and fishing gear

The nature of the fishery has changed over the last couple of years. Exploration for Orange roughy first started in South Africa prior to 1994 but emphasis soon shifted to Namibia when an exploratory fishing license was given to a Namibian fishing company to search for commercial deep-water fish species. The fishery expanded, extending their fishing range into SEAFO CA. By 2008, a three year moratorium on orange roughy was enforced and the fishery has not been re-opened yet.

Table 1 shows vessels that operated between 1995 and 2005 in the SEAFO CA. These vessels were also involved in the Alfonsino fishery during the same period.

Table 1: Orange roughy: Fleet information, Division B1.

Flag	ID	Name	Length	GRT	Built	HP	IRCS
Nam	L737	Southern Aquarius	54		01/01/1974	3000	V5SH
Nam	L913	Emanguluko	31	483.00	01/01/1990	1850	V5SD
Nam	L892	Petersen	43	650.00	01/01/1979		V5RG
Nam	L861	Will Watch	69	1587.00	01/01/1972	2116	ZMWW
Nam	L918	Hurinis	37	784.00	01/01/1987	1680	V5SW
Maur	L1159	Bell Ocean II	57	1899.00	01/01/1990	3342	3BLG
Nam	L830	Seaflower	92	3179.75	01/01/1972	4800	V5HO

Seven Namibian vessels (Table 1) were involved for the period that the fishery occurred in the SEFO CA. The vessels employed the standard New Zealand “Arrow” rough bottom trawl with cut-away lower wings. Sweep and bridle lengths were 100 meters and 50 meters respectively. A “rockhopper” bobbin rig was used. The net had a 5-6 meter headline height when towed at 3- 3.5 knots and had an estimated wingspread of 15 meters. The cod end had a mesh of 110 mm. Each vessel spends on average 12 days at sea.

1.2 Spatial and temporal distribution of fishing

Fishing mainly occurred on Ewing seamount and Valdivia Bank within the SEAFO CA. These operations started in 1995 and continued until 2005, with the exception of 1998 when no fishing took place. The fishing season usually extends from January to December and catches peak in winter months (May to July), which coincides with the spawning season of orange roughy.

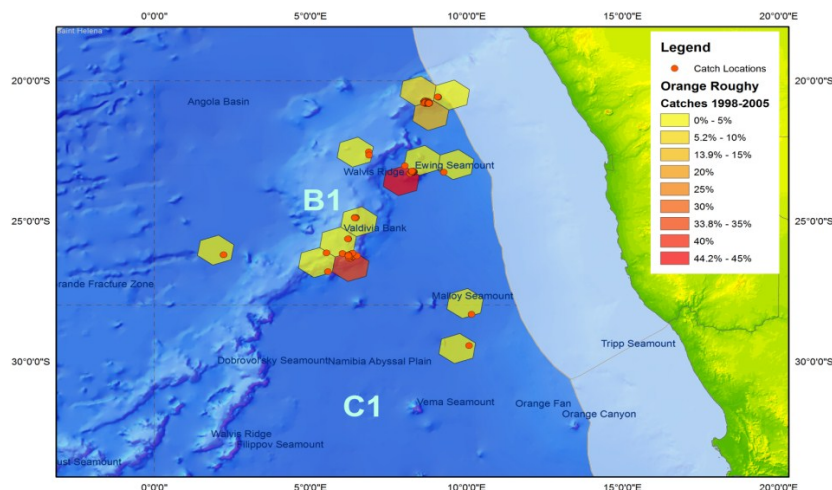


Figure 1: Geographical location of fishing activities in the SEAFO CA.

1.3 Reported retained catches and discards

For all the fishing grounds the home port is the same as the landing port, with Walvis Bay and Lüderitz the most important ports. All available landing information is presented in Table 2. However, the bulk of orange roughy catches were recorded within the Namibian EEZ (Table 3). A total of 1270 trawls were made landing about 290 tonnes of orange roughy.

Table 2: Catches of orange roughy made by Namibia, Norway and RSA.

Nation	Namibia		Norway		South Africa	
Fishing method	Bottom trawl		Bottom trawl		Bottom trawl	
Management Area	B1		A1		B1	
Catch details (t)	Retained	Discarded	Retained	Discarded	Retained	Discarded
1995	40		N/F			
1996	8		N/F			
1997	5		22		27 ^{#**}	
1998	N/F	N/F	12			
1999	<1		N/F	N/F		
2000	75		0			
2001	94		N/F	N/F		
2002	9		N/F	N/F		
2003	27		N/F	N/F		
2004	15		N/F	N/F		
2005	18		N/F	N/F		
2006	N/F	N/F	N/F	N/F		
2007	N/F	N/F	N/F	N/F	N/F	N/F
2008	N/F	N/F	N/F	N/F	N/F	N/F
2009	N/F	N/F	N/F	N/F	N/F	N/F
2010	N/F	N/F	N/F	N/F	N/F	N/F
2011	N/F	N/F	N/F	N/F	N/F	N/F
2012	N/F	N/F	N/F	N/F	N/F	N/F
2013	N/F	N/F	N/F	N/F	N/F	N/F
2014*	N/F	N/F	N/F	N/F	N/F	N/F

N/F = No Fishing.

Blank fields = No data available.

* Provisional (Aug 2014)

** Sum of Catches from 1993 to 1997.

Values taken from the Japp (1999).

Table 3: Orange roughy landings (tonnes) in SEAFO CA and Namibian EEZ

Year	SEAFO CA	Namibian EEZ
1994	N/F	1 872
1995	40	6 288
1996	8	17 381
1997	5	14 729
1998	N/F	10 040
1999	<1	2 699
2000	75	1 344
2001	94	874
2002	9	1 985
2003	27	1 730
2004	15	1 106
2005	18	297
2006	N/F	429
2007	N/F	288

1.4 IUU catch

IUU fishing activity in the SEAFO CA has been reported to the Secretariat latest in 2012, but the extent of IUU fishing is at present unknown.

23. Stock distribution and identity

Orange roughy (*Hoplostethus atlanticus*) is distributed globally (Fig. 3), but predominantly in the Southern Hemisphere. In the SE Atlantic orange roughy may most probably be regarded as a single stock (management unit). In the BCLME region that species occurs within the economic zones of each of the coastal states as well as in the SEAFO CA.

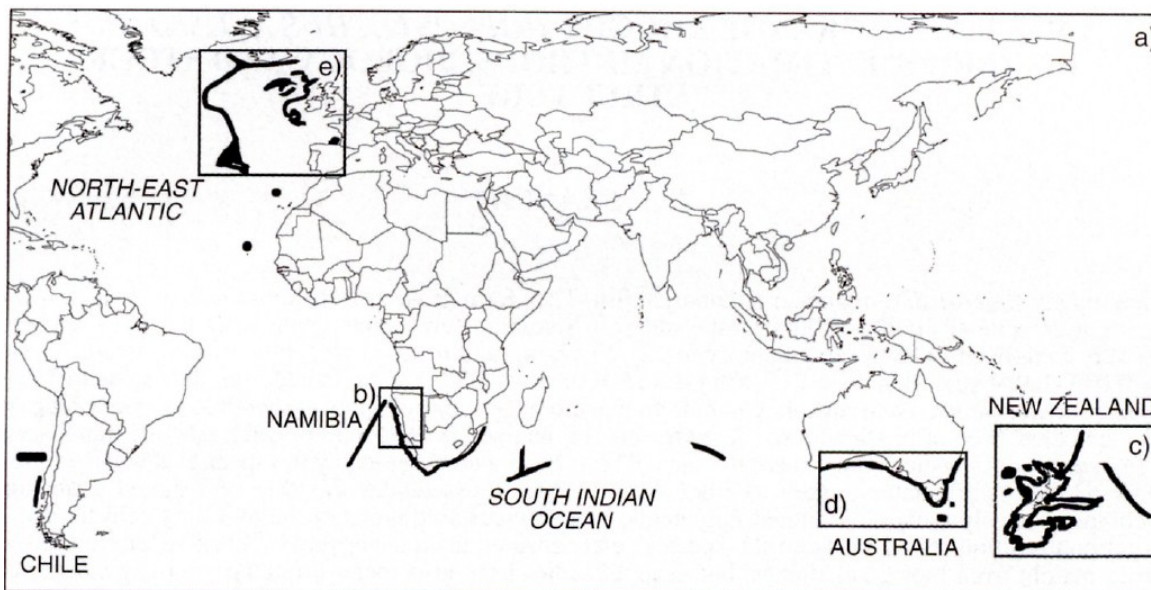


Figure 3: Global distribution of orange roughy (Branch, 2001).

The aggregating behaviour of orange roughy contributed to its vulnerability to overexploitation globally. Spawning aggregations of orange roughy have been targeted in Namibia during winter. Outside the spawning seasons catches were found to be lower due to a more dispersed resource. Orange roughy are also extremely slow-growing and estimates of maximum age are in excess of 100 years.

Recruitment to the fishery is poorly understood as juveniles are not found in significant quantities. Adults have been caught in small amounts in both Angolan and South African waters, but not in large spawning aggregations as in Namibia. Orange roughy distribution also extends beyond the economic zones of the BCLME countries with good catches reported for example on the Valdivia Bank on the South Atlantic Ridge as well as on the fringes of the Agulhas Bank and Walvis Ridge in the southern Benguela.

24. Data available for assessment, life history parameters and other population information

24.1 Fisheries and survey data

Catch records for the period 1995 to 2005 are available (see Table 2 above). The number of hauls made per year are depicted in table 4 and shows that more hauls were recorded in years when the catches were high.

No orange roughy survey has been conducted in the SEAFO CA.

Table 4: The total number of hauls from which orange roughy catches were derived for the period 1999-2004.

1999	2000	2001	2002	2003	2004
16	330	297	40	63	48

24.2 Length data and frequencies distribution

No information available for SEAFO CA.

24.3 Length-weight relationships

No information available for SEAFO CA.

24.4 Age data and growth parameters

No information available for SEAFO CA.

24.5 Reproductive parameters

No information available for SEAFO CA.

24.6 Natural mortality

No information available for SEAFO CA.

24.7 Feeding and trophic relationships (including species interaction)

No information available for SEAFO CA.

24.8 Tagging and migration

No information available for SEAFO CA.

25. Stock assessment

25.1 Available abundance indices and estimates of biomass

The catch per trawl trend was used as an indicator of the CPUE trend and is illustrated in figure 4. The CPUE was the highest in 1995 and thereafter decreased rapidly to reach the lowest CPUE in 1999. Since then the CPUE seems to have stabilized at a low level until 2005 after which there are no data.

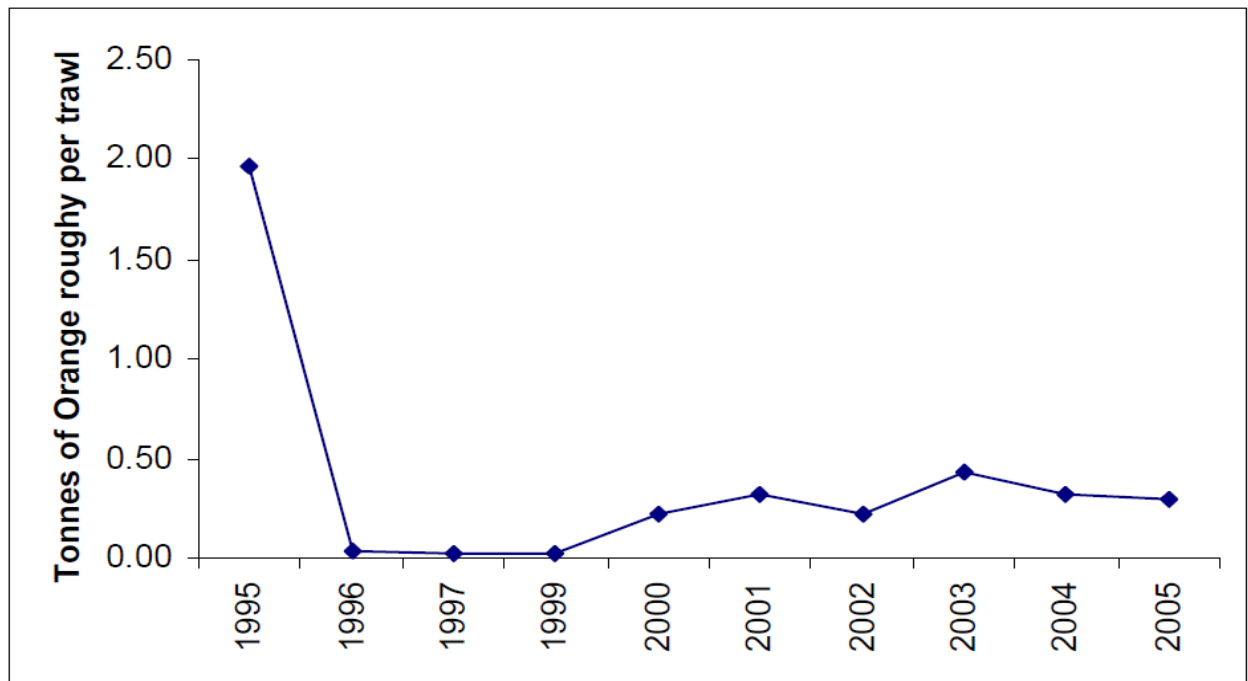


Figure 4: CPUE of orange roughy in tonnes per trawl in Division B1 (SEAFO SC Report 2006).

25.2 Data used

No data since 2005 available.

25.3 Methods used

No data since 2005 available.

25.4 Results

No new data, therefore no results.

25.5 Discussion

25.6 Conclusion

Since there is no fishery in recent years or any other independent data available within the SEAFO CA, no assessment can be done at the moment. However, future assessments for orange roughy should be separated according to fishing ground, similar to what has been done for the New Zealand orange roughy resource.

25.7 Biological reference points and harvest control rules

No biological reference points and/or harvest control rules have been established for this stock as yet.

26. Incidental mortality and bycatch of fish and invertebrates

26.1 Incidental and bycatch statistics (seabirds, mammals and turtles)

No information available for the SEAFO CA.

26.2 Fish bycatch

No information available for the SEAFO CA.

26.3 Invertebrate bycatch including VME taxa

No information available for the SEAFO CA.

26.4 Incidental mortality and bycatch mitigation methods

No information available for the SEAFO CA.

26.5 Lost and abandoned gear

No lost and abandoned gear data was reported for Orange roughy fishery in the SEAFO CA.

26.6 Ecosystem implications and effects

There has been no orange roughy fishery since 2006 in the SEAFO CA, thus there are no perceived negative impacts from this fishery.

27. Current conservation measures and management advice

27.1 Current conservation measures

The 2014 management measure pertaining to orange roughy in the SEAFO CA (CM 27/13) is a moratorium (zero TAC) on directed fishery in Division B1 and a TAC of 50 tonnes for the remainder of the SEAFO CA. Other conservation measures relevant for orange roughy fishery is shown in Table 5 below.

Table 5: Conservation measure relevant to Orange roughy fishery

Conservation Measure 04/06	On the Conservation of Sharks Caught in Association with Fisheries Managed by SEAFO
Conservation Measure 14/09	To Reduce Sea Turtle Mortality in SEAFO Fishing Operations.
Conservation Measure 25/12	On Reducing Incidental Bycatch of Seabirds in the SEAFO Convention Area
Conservation Measure 18/10	On the Management of Vulnerable Deep Water Habitats and Ecosystems in the SEAFO Convention Area
Conservation Measure 27/13	On Total Allowable Catches and related conditions for Patagonian Toothfish, Orange Roughy, Alfonsino and Deep-Sea Red Crab in the SEAFO Convention Area in 2014
Conservation Measure 26/13	On Bottom Fishing Activities in the SEAFO Convention Area

27.2 Management advice

SC considered available data on orange roughy since the inception of the fisheries in SEAFO CA. The fishery started in 1993 and lasted for about 13 years. The fishery was dominated by Namibian vessels and other nations (Norway and South Africa) only joined for shorter periods. During this period, more than 7 vessels fished in the SEAFO CA for orange roughy and over 1270 trawls were made with a total catch of about 290 tonnes. CPUE was the highest in 1995 and thereafter decreased rapidly to reach the lowest CPUE level in 1999. Since then CPUE seems to have levelled at a low level. In the last nine years no fishing has been reported in the SEAFO CA.

There is no reliable data series available for orange roughy within the SEAFO CA, as a result SC cannot conduct proper assessment of the orange roughy stock within the Convention area. SC recommends whenever possible, that orange roughy assessment should be done separately for each aggregation area found in the SEAFO CA and subsequent quotas.

SC recommends the continuation of the moratorium for 2015 and 2016 on directed fishery in Division B1 and allowance for bycatch limit as proportion (10%) of the average of landings from the last five years with positive catches (i.e. 2001-2005), equivalent to 4 tonnes. A precautionary TAC of 50 tonnes is set for the remainder of the SEAFO CA.

A comprehensive harvest control rule should be developed for orange roughy and should facilitate recovery.

28. References

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