STATUS REPORT

*Hoplostethus atlanticus*

2012
TABLE OF CONTENTS

1. Description of the fishery ................................................................. 3
   1.1 Description of fishing vessels and fishing gear ................................................. 3
   1.2 Spatial and temporal distribution of fishing ....................................................... 3
   1.3 Reported landings and discards ........................................................................ 4
   1.4 IUU catch ........................................................................................................ 6
2. Stock distribution and identity ....................................................... 6
3. Life history parameters and information ........................................... 6
   3.1 Length frequencies ......................................................................................... 6
   3.2 Length-weight relationships ............................................................................ 6
   3.3 Age data and growth parameters .................................................................... 7
   3.4 Reproductive parameters ................................................................................ 7
   3.5 Natural mortality .............................................................................................. 7
   3.6 Feeding and trophic relationships (including species interaction) ..................... 7
   3.7 Tagging and migration .................................................................................... 7
4. Stock assessment ................................................................................ 7
   4.1 Available abundance indices and estimates of biomass ...................................... 7
   4.2 Data used ........................................................................................................ 7
   4.3 Methods used .................................................................................................. 7
   4.4 Results ............................................................................................................ 7
   4.5 Discussion ...................................................................................................... 7
   4.5 Conclusion ..................................................................................................... 7
5. Ecosystem implications/effects ....................................................... 7
   5.1 Incidental and bycatch statistics (fish, invertebrates, seabirds, cetaceans, turtles) ................................................................. 7
   5.2 VME incidental catch ....................................................................................... 8
   5.3 Incidental and bycatch mitigation methods ...................................................... 8
   5.4 Lost and abandoned gear ............................................................................... 8
6. Biological reference points and harvest control rules ....................... 8
7. Current conservation measures ....................................................... 8
8. State of stock and management advice ........................................... 8
9. References ............................................................................................. 9
   APPENDIX – CPUE for orange roughy .............................................................. 10
1. 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>
<thead>
<tr>
<th>Name</th>
<th>Length</th>
<th>GRT</th>
<th>Built</th>
<th>HP</th>
<th>IRCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Aquarius</td>
<td>54</td>
<td>1974</td>
<td>3000</td>
<td>V5SH</td>
<td></td>
</tr>
<tr>
<td>Emanguluko</td>
<td>31</td>
<td>483</td>
<td>1990</td>
<td>1850</td>
<td>V5SD</td>
</tr>
<tr>
<td>Petersen</td>
<td>43</td>
<td>650</td>
<td>1979</td>
<td>V5RG</td>
<td></td>
</tr>
<tr>
<td>Will Watch</td>
<td>69</td>
<td>1587</td>
<td>1972</td>
<td>2116</td>
<td>ZMWW</td>
</tr>
<tr>
<td>Hurinis</td>
<td>37</td>
<td>784</td>
<td>1987</td>
<td>1680</td>
<td>V5SW</td>
</tr>
<tr>
<td>Bell Ocean II</td>
<td>57</td>
<td>1899</td>
<td>1990</td>
<td>3342</td>
<td>3BLG</td>
</tr>
<tr>
<td>Seaflower</td>
<td>92</td>
<td>3179.75</td>
<td>1972</td>
<td>4800</td>
<td>V5HO</td>
</tr>
</tbody>
</table>

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

The Namibian orange roughy fishing mainly occurred on the four grounds within the Namibian Exclusive Economic Zone (Fig. 1). In some years, fishing vessels extended their range into SEAFO area at Valdivia and Ewing seamounts (red circles). These operations started in 1995 and continued until 2005, with the exception of 1998 when no fishing took place. Seven Namibian vessels (Table 2) were involved during this nine year-period and a total of 1270 trawls were made landing about 290 tonnes of orange roughy.

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.
1.3 Reported landings and discards

Table 2: Catches of orange roughy made by Namibia, Norway and RSA.
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. In 2005, the Namibian fishing vessels landed over 10 t within the SEAFO CA; caught at the Valdivia and Ewing seamounts (Figure 2).

<table>
<thead>
<tr>
<th>Main species</th>
<th>Orange roughy catches (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Area</td>
<td>B1</td>
</tr>
<tr>
<td>Nations</td>
<td>Namibia</td>
</tr>
<tr>
<td>Fishing method</td>
<td>Bottom trawl</td>
</tr>
<tr>
<td>1976</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td></td>
</tr>
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<td>39</td>
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<td>8</td>
</tr>
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<td>1997</td>
<td>5</td>
</tr>
<tr>
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<td>N/F</td>
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<tr>
<td>1999</td>
<td>0</td>
</tr>
<tr>
<td>2000</td>
<td>75</td>
</tr>
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<td>94</td>
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<td>15</td>
</tr>
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<td>2005</td>
<td>18</td>
</tr>
<tr>
<td>2006</td>
<td>N/F</td>
</tr>
<tr>
<td>2007</td>
<td>N/F</td>
</tr>
</tbody>
</table>

Figure 2 – Monthly orange roughy catches in the different Namibian QMA’s as well as the SEAFO CA for 2005.
1.4 IUU catch

Apparent IUU fishing activity in the SEAFO CA has been report by vessel to the Secretariat, but the extent of this is at present unknown.

2. Stock distribution and identity

Orange roughy (Hoplostethus atlanticus) are distributed globally (Figure 3), but are found predominantly in the Southern Oceans. In the south eastern Atlantic orange roughy is most probably a single stock. In the BCLME region they have been found within the economic zones of each of the coastal states as well as in the SEAFO CA. The only commercially viable fishery occurred in Namibian waters (Figure 2).

Figure 3 – Global orange roughy distribution.

The aggregating behaviour of orange roughy contributed to its vulnerability to over exploitation 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 with estimates of maximum age 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.

3. Life history parameters and information

3.1 Length frequencies

No information available for SEAFO CA.

3.2 Length-weight relationships

No information available for SEAFO CA.
3.3 Age data and growth parameters
No information available for SEAFO CA.

3.4 Reproductive parameters
No information available for SEAFO CA.

3.5 Natural mortality
No information available for SEAFO CA.

3.6 Feeding and trophic relationships (including species interaction)
No information available for SEAFO CA.

3.7 Tagging and migration
No information available for SEAFO CA.

4. Stock assessment

4.1 Available abundance indices and estimates of biomass
No stock assessment done for orange roughy found within the SEAFO area.

4.2 Data used

4.3 Methods used

4.4 Results

4.5 Discussion

4.5 Conclusion
Since there is no fishery 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 the New Zealand orange roughy resource.

5. Ecosystem implications/effects

5.1 Incidental and bycatch statistics (fish, invertebrates, seabirds, cetaceans, turtles)
No information available for the SEAFO CA.
5.2 **VME incidental catch**
No information available for the SEAFO CA.

5.3 **Incidental and bycatch mitigation methods**
No information available for the SEAFO CA.

5.4 **Lost and abandoned gear**
No lost and abandoned gear data have been reported for the deep-sea red crab fishery in the SEAFO CA.

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

7. **Current conservation measures**

- Conservation Measure 04/06: On the Conservation of Sharks Caught in Association with Fisheries Managed by SEAFO
- Conservation Measure 07/06: Relating to Interim Measures to Amend the Interim Arrangement of the SEAFO Convention
- Conservation Measure 08/06: Establishing a List Of Vessels Presumed To Have Carried Out Illegal, Unreported And Unregulated Fishing Activities in the South-East Atlantic Fisheries Organization (SEAFO) Convention Area
- Conservation Measure 13-09: Interim Prohibition of Transshipments - at – Sea in the SEAFO Convention Area and to Regulate Transshipments in Port
- Conservation Measure 14-09: To Reduce Sea Turtle Mortality in SEAFO Fishing Operations.
- Conservation Measure 15-09: On Reducing Incidental By-catch of Seabirds in the SEAFO Convention Area.
- Conservation Measures 18/10 on the Management of Vulnerable Deep Water Habitats and Ecosystems in the SEAFO Convention Area
- Conservation Measures 19/10 on Retrieval of Lost Fixed Gear
- Conservation Measure 20/10: on Total Allowable Catches and related conditions for Patagonian Toothfish, Orange Roughy, Alfonsino and Deep-Sea Red Crab in the SEAFO Convention Area in 2011 and 2012
- Conservation Measure 22/11: on Bottom Fishing Activities in the SEAFO Convention Area

8. **State of stock and management advice**
There is no data available for orange roughy within the SEAFO area, as a result SC cannot provide a reliable state of the stock assessment within the Convention area. SC recommends that orange roughy assessment should be done separately for each aggregation area found in the SEAFO CA and subsequent quotas. SC therefore recommend a status quo for the 2013-2015 TAC: Zero (0) tonnes in Sub-Division B1 and 50 tonnes in the remainder of the Convention Area.
9. References

**APPENDIX – CPUE for orange roughy**

The catch per trawl trend was used as an indicator of the CPUE trend and was the highest in 1995 and thereafter decreased rapidly to reach the lowest CPUE in 1999 after which it stabilized at a low level (Figure 4).

![Figure 4 – CPUE of orange roughy in tonnes per trawl in Sub-Division B1.](image-url)