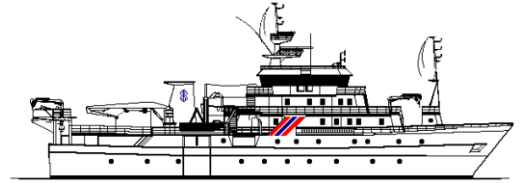


Country: SEAFO Convention Area, Southeast Atlantic				
Research vessel: R/V DR. FRIDTJOF NANSEN				
Survey number: 2015402				
Number of days: 28				
General objectives: Analyse occurrence and abundance of benthopelagic fish and sessile epibenthos, including indicators of vulnerable marine ecosystems (VMEs), in selected 'existing fishing areas' and areas closed to fishing within the SEAFO CA.				
	Port	Date	Coverage	Specific objectives
Departure	Cape Town, South Africa	15/01	SEAFO Convention Area, Southeast Atlantic.	1) Bathymetry survey and benthic video mapping of VME indicators in the fishery closures at Vema, Wüst, and Schmitt-Ott (SEAFO Fishing Closures 6, 7, and 9), as well as in 'existing fishing areas' of Valdivia and Discovery seamount complexes. 2) Acoustic survey on the Valdivia Bank and Vema seamount to determine abundance and distribution of armourhead and other benthopelagic fishes. 3) Bathymetry mapping and video survey of selected seamounts of the 'existing fishing area' where longline fisheries for Patagonian toothfish is being conducted. (Discovery Seamount complex).
Arrival	Walvis Bay, Namibia	12/2		
Cruise leader: Odd Aksel Bergstad				
Participants:				
<p>From IMR: Odd Aksel Bergstad (cruise leader), Åge S Høines (scientist), Jan F Wilhelmsen (Head of scientific engineering team), Jan Vågenes (scientific engineer), Reidar Johannesen (scientific engineer).</p> <p>From FAO: Edoardo Mostarda</p> <p>From California State University Paul Clerkin</p> <p>NatMIRC: Erich Maletzky</p> <p>DAFF, South Africa: Larvika Singh</p> <p>Angola: Miguel André António</p> <p>University of Vigo: Francisco Ramil Blanco, Marta Gil Gonzales</p> <p>IEO: Roberto S Vizueté</p>				





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Summary of the results:

In January-February 2015 the R/V Dr Fridtjof Nansen conducted a 29 day cruise to seamounts in the SEAFO Convention Area. The cruise was part of a scientific study conducted by an international team of scientists, most of whom represented the SEAFO Contracting Parties. The overall objective of the study was to conduct basic mapping and identification of vulnerable marine ecosystems (VMEs) and fisheries resources on selected seamounts and seamount complexes in the SEAFO Convention Area. Some of the areas studied are currently closed to fishing whereas others are being or have been fished for a variety of species including Patagonian toothfish, alfonsino, pelagic armourhead (boarfish), orange roughy, and deep sea red crab.

The investigation included studies at the following seamounts: Schmitt-Ott, Wüst (2 locations), Vema, Valdivia (4 locations), and Ewing. SEAFO Conservation Measure 29/14, (www.seafo.org) classified the three first seamounts as closed to fishing, while Valdivia and Ewing were 'existing fishing areas' and thus open to fishing. Unfortunately bad weather forecasts prevented studies on the Discovery seamounts, i.e. the southernmost planned study area where longline fisheries for Patagonian toothfish are being conducted.

The report presents first results on bathymetry, VME-indicator organism presence, fisheries resources, and evidence of human footprint in the different study areas. Data have been submitted to SEAFO and the biological collection is deposited in the IZIKO South African Museum in Cape Town. Data and material collected during the study will be analysed further and results published. Most of the SEAFO Convention area is deep ocean (i.e. deeper than 2000m) and the seamounts visited are small relatively shallow sites protruding from a vast deep ocean floor. Multibeam echosounder mapping showed that several seamounts were appreciably deeper than suggested by authoritative sources. In most areas, the potential fishing areas are thus smaller than appreciated earlier.

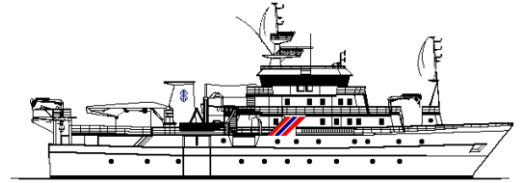
All seamounts visited had VME indicators (mainly corals), but there was diversity amongst the seamounts in terms of taxonomical composition and density, presumably depending on depth, shape, hydrographical setting, geological and ecological history etc. At Schmitt-Ott there was a pronounced dominance of gorgonian corals. In all others, diversity was greater, and more scleractinians (stony corals) occurred. In many cases scleractinians were mainly dead and probably ancient. In Valdivia and Ewing, which are open to fisheries, scleractinians (dead or alive) seemed restricted to slopes of knolls, and in the Valdivia Bank and Western Valdivia the summit substrate was virtually bare rock.

Abundance estimation of fish resources targeted in SEAFO was very difficult due to rugged topography and the character of distributions of the target organisms that tend to form aggregations (shoals and schools) near summits of the seamount. Sampling with midwater trawl and use of hydroacoustics is challenging but has some potential. Unidentifiable summit schools were observed in Erica, Valdivia and Ewing. In Ewing these were likely to be orange roughy, and in Valdivia North they were unidentifiable but possibly alfonsino. Bottom trawling was only possible on sandy bottoms on deep plains, not in the main fishing areas on slopes and summits. Pelagic armourhead was locally numerous in video records, but appeared generally limited in distribution. Very few were observed in the main former fishing area of Valdivia, none in Ewing. Orange roughy was common in video records around the summit in Ewing. A few juveniles occurred in a bottom trawl catch on the deep plain in Valdivia. Even in Valdivia, which is a large area <2000m compared with





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all the other seamounts (probably the largest of the 'existing fishing areas' in SEAFO), potential fishing areas are restricted because only minor subareas are shallower than 500-1000m and suitable for the target fish resources alfonsino, armourhead and orange roughy. The fishing area for crab is much larger, however, because crabs are distributed across a more extensive depth range than the fishes.

Frequent video observations of lost pots and rope were made in Vema and some in Valdivia. These items could not be aged, but may well have been abandoned or lost many years ago.

In Ewing, lost trawl gear was observed in one of the summit dives. On the main Valdivia Bank and Valdivia West summit what was suspected to be trawl door skid marks on the bare rocky substrate were observed. No evidence of impacts of trawling or pot fishing was observed in areas of soft sediments, including the extensive areas with coral rubble. In areas with high densities of live (and dead) coral that may be regarded as candidate VMEs, the impression from the video records is that the benthic communities are intact and not impacted by fishing.

Report: status: final References:

Report ready

Constraints/Comments:

