

Demersal trawling experimental closure

The South African Hake Trawl fishery, one of the most important industrial fishing activities within South Africa's offshore environment, received Marine Stewardship Council (MSC) certification in 2004 and was re-certified in 2010, demonstrating an environmentally sustainable fishery. As part of the 2010 recertification, the client, the South African Deep-Sea Trawl Industry Association (SADSTIA) and the South-East Coast Inshore Fishing Association (SECIFA) committed to, *inter alia*, closing a fished sub-area to trawl fishing activity with the aim of establishing an experiment to investigate benthic recovery potential. The 589 km² sub-area selected for partial closure is located westwards of Childs Bank mound, 108nm west of Groen River mouth along the west coast. Through collaborations among SAEON, UCT, SANBI, DAFF and the client, the experiment was initiated in February 2014 with the first samples being collected using the DAFF research vessel *Ellen Khuzwayo*. SAEON's deepsea benthic camera, SkiMonkey III, was deployed at 15 sites ranging in depth from 360 m to 510 m, obtaining footage of the seabed for further analysis. Sediment and macrofauna samples were also collected at each site. This serves as the baseline conditions for the long-term experiment. From 1st March 2014 pre-defined trawl lanes in the area were closed to trawl activity to allow for any benthic recovery to proceed. In January 2015 and again in 2016, the second and third benthic trawl experiment surveys was conducted in the area, using identical equipment and vessel to that in 2014. These follow-up surveys were successful in obtaining sediment samples and imagery from all 15 sites. Results from this experiment will only become viable in another 2 years time as the benthic fauna require a lengthy period of time to respond to changes in the conditions.

Links to articles and videos about the project:

<http://www.saeon.ac.za/2015-benthic-trawl-experiment-research-cruise>

<http://www.saeon.ac.za/enewsletter/archives/2014/april2014/doc02>

<http://www.saeon.ac.za/enewsletter/archives/2013/april2013/doc04/>

<https://vimeo.com/97715970>

<https://vimeo.com/123743027>

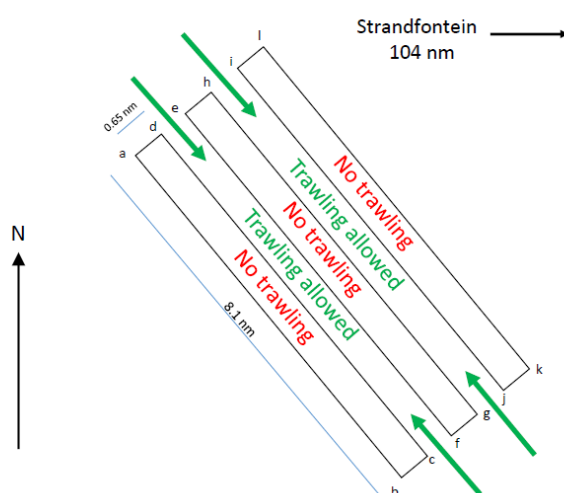


Fig 1: Diagrammatic illustration of partial closure areas to assess recovery of benthic environment from trawl impacts.

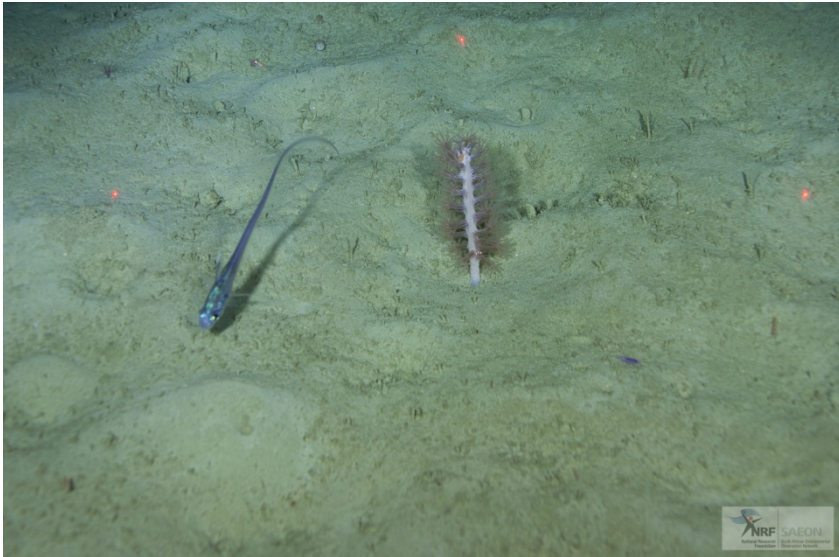


Fig 2: Rattail and seapen viewed from SkiMonkey III in experimental area, January 2015

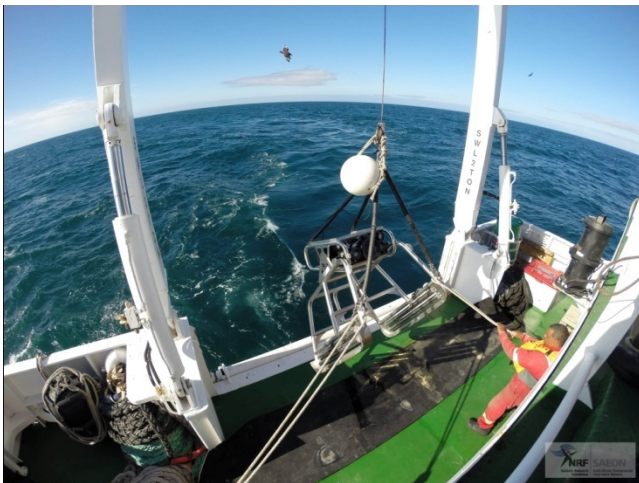


Fig 3: SkiMonkey III being retrieved aboard the RV Ellen Kuzwayo, February 2014



Fig 4: *Crossaster penicillatus* (starfish), bristle worm and isopod *Munopsurus mimus*, January 2015.