

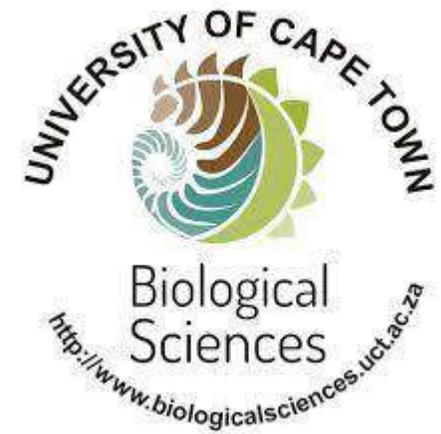
# Co-operation between fishing and environmental interests in South Africa

Colin G. Attwood

Biological Sciences Department

University of Cape Town

[colin.attwood@uct.ac.za](mailto:colin.attwood@uct.ac.za)





Purse-seine -small pelagics



Midwater trawl



Tuna pole



Handline



Estuarine gill-net fishery

## Major fishery sectors in South Africa



Hake trawl



Large pelagic longline



Abalone diving



Beach-seine fishery



Recreational shore angling



South coast rock lobster trap



West coast rock lobster trap



Squid jigging



Demersal longline



Subsistence



Recreational boat based angling

# Regulators and stakeholders

Government regulator

The spectrum of environmental and social NGOs  
{ Co-operative ↔ Activist }

Scientific advice

Allocation of rights  
Determination of TAC, TAE  
Catch reporting

Government research agencies

Surveys, assessments  
Scientific working groups

Fishing industry

“Improvement” projects  
Alliances

Assessments

This link is too complicated to describe

Ecolabels

Collaborative research  
Data provision consultancies  
Working groups

Research projects  
Consultancies

Labour council

Universities and consultants

Labour unions

Funding of research projects and consultancies



Training in fisheries science

# Major challenges for fishery sustainability in South Africa

- Corruption
- Malthusian overfishing
- Managing multi-species fisheries
- Endangered Threatened and Protected species interactions
- Habitat damage
- Sustainability of monitoring programmes

Externalities: climate change, mineral extraction, fuel price, ZAR strength, global fish demand, pollution

# Benguela Ecology Programme provided a legacy of research excellence

- Initiated in 1982 and continued through several phases over the following two decades
- This was a well-funded multi-institutional research partnership, between government agencies, universities and museums.
- Although criticised by some for failing to focus on critical questions related to management procedures, the wide range of research projects included the broad ecological impacts of fishing, and set the foundations for the Ecological Approach to Fisheries that slowly gained acceptance in the years that followed.
- BEP funding, mostly disbursed through universities, led to the training of scores of marine biologists and oceanographers, many now plying their trade in NGOs and consultancies.

*Ecosystem Approaches to Fisheries in the Southern Benguela*  
*Afr. J. mar. Sci.* 26: 37–51  
2004

**CONTRIBUTIONS OF THE BENGUELA ECOLOGY PROGRAMME TO  
PELAGIC FISHERIES MANAGEMENT IN SOUTH AFRICA**

*C. L. MOLONEY\**, *C. D. VAN DER LINGEN†*, *L. HUTCHINGS†* and *J. G. FIELD‡*

# Ecosystem Approach to Fisheries

- South Africa has struggled with implementing the EAF.
- The EAF invites complexity and challenges existing protocols.
- Neither the government nor the industry could tackle this alone.
- The EAF in South Africa was supported by Ecological Risk Assessments for all major fisheries in South Africa – a process led by WWF-SA
- South Africa has recently expanded its protected areas to cover 5% of its EEZ, by adding 20 offshore MPAs, which is the result of a seven-year project drawing on vast sets of spatially-indexed data bases – a process lead by the South African National Biodiversity Institute.

## References:

Petersen, S, Duncan, JA, Omardien, A, Betts, M, Johnson A (eds.) 2015. A decade of implementing an Ecosystem Approach to Fisheries for Southern African fisheries. WWF South Africa Report Series – 2015/Marine/001.

Cochrane KL, Joyner J, Sauer WHH, Swan J (2015) An evaluation of the Marine Living Resources Act and supporting legal instruments as a framework for implementation of an ecosystem approach to fisheries in South Africa, African Journal of Marine Science, 37:4, 437-

456. DOI: [10.2989/1814232X.2015.1100682](https://doi.org/10.2989/1814232X.2015.1100682)

# Example: Seabirds mortality in longline and trawl fisheries

- Unacceptably and unsustainably high rates of mortality on longline hooks and trawl warps were documented for both fisheries in the 1990's.
- Studies were funded by Benguela Current Large Marine Ecosystem, WWF South Africa, Bird life International, the Albatross Task Force, the Sea Change programme of the National Research Foundation, and the FitzPatrick Institute African Ornithology.
- Something had to be done.



<https://www.birdlife.org.za/what-we-do/seabird-conservation/what-we-do/albatross-task-force/longline-fisheries/>

## NGOs got involved

*“Unsatisfied with the perception of its fishery and desiring of improvement, the South African Hake Longline Association (SAHLLA) approached WWF-SA to improve its sustainability status. The parties discussed embarking together on a Fishery Conservation Project (FCP).”* WWF-SA Sustainable Fisheries Programme Annual Report 2015

Bird scaring devices, managing dumping of offal, removing sticky grease from warps and reducing setting times, were the chief mitigation measures that were tested and applied. The new gear were incorporated by the government regulator as fishing conditions.

Albatross deaths on trawl warps were reduced by 99%

Petrel deaths on longline hooks were reduced by 85%.

### References:

Maree, BA, Wanless RM, Fairweather TP, Sullivan BJ & Yates O. 2014. Significant reductions in mortality of threatened seabirds in a South African trawl fishery. *Animal Conservation* 17(6):520-529.

Rollinson DP, Wanless RM, Ryan PG. (2017) Patterns and trends in seabird bycatch in the pelagic longline fishery off South Africa. *African Journal of Marine Science* 39:1, pages 9-25.



Trawlers now use scaring lines to prevent birds from flying into the trawl warp.

Source: <https://www.birdlife.org.za/what-we-do/seabird-conservation/what-we-do/albatross-task-force/>

# Responsible Fisheries Alliance

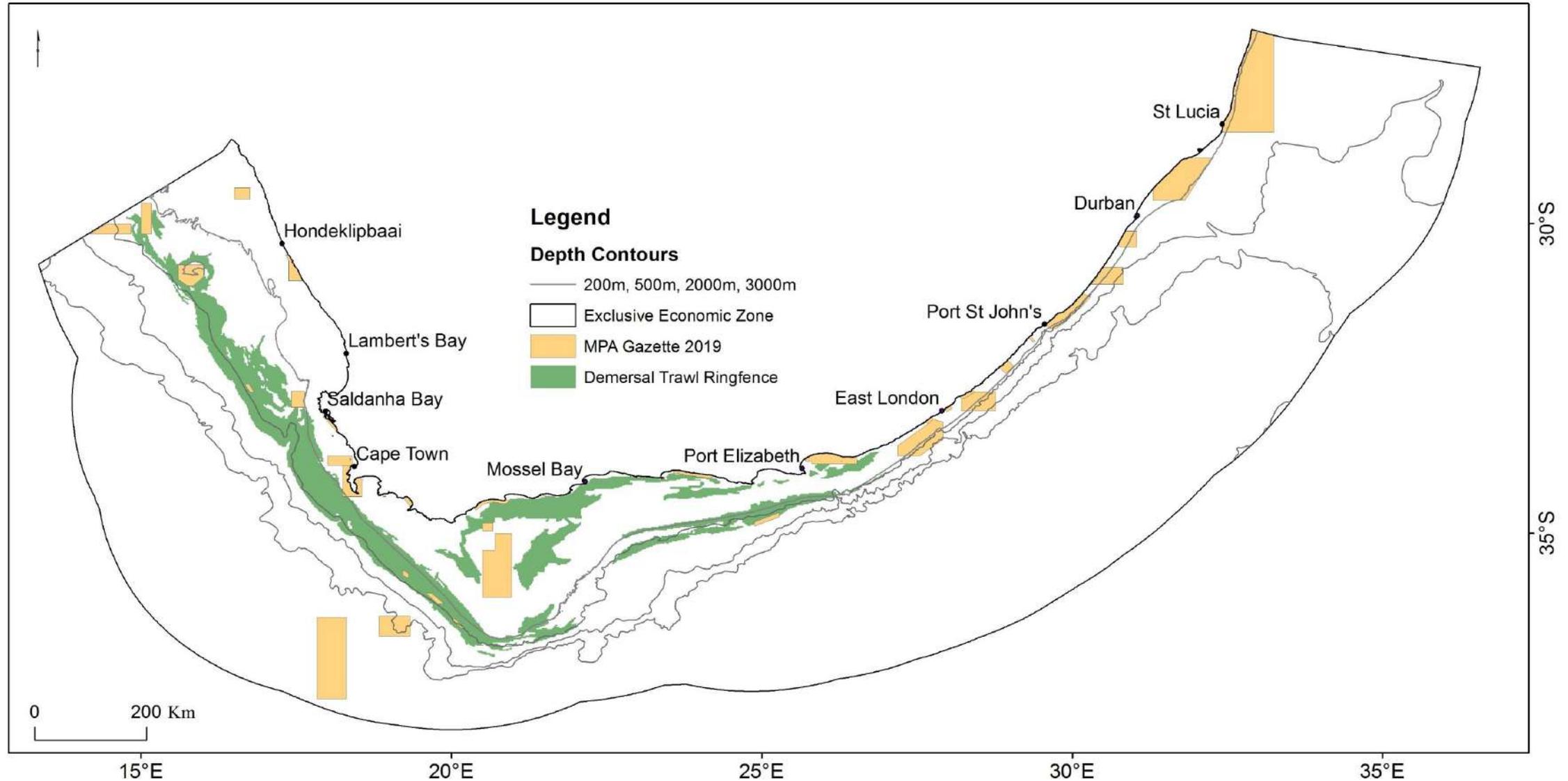
- A partnership between environmental NGOs and the largest industrial fishing companies.
- Provide a forum for environmental NGOs and responsible fishing companies to work together
- Assists participating fisheries to respond proactively to the growing needs of informed consumers.
- Projects include: **Spatial fisheries management, effects of seismic surveys, monitoring of ETP catches, sustainability of non-target species in the hake trawl fishery, analysing penguin abundance data, policy development and codes of conduct etc.**
- The activities of the Responsible Fisheries Alliance can be found here:  
<https://www.rfalliance.org.za/wp-content/uploads/2017/10/RFA-Review-2009-2017.pdf>



# The role of ecolabels

- Collaboration between environmental NGOs and fishing companies has been lubricated by ecolabels. The *Marine Stewardship Council* and the *SA Sustainable Seafood Initiative* have brought consumers into the management process.
- In some respects, criteria for eco-certification surpasses government regulatory requirements.
- NGOs (and consultancies) have been keen to assist fishing companies in reducing their ecological footprint.
- Fishing companies were willing to cooperate. **The trawl footprint was frozen.**
- Notable collaborative projects have included: **Inspection of the seabed for trawl-related damage, monitoring of fishing gear impacts on seabirds, monitoring of catches of ETP species and mapping of vulnerable marine ecosystems.**

South Africa's trawl foot print was ringfenced. Trawling will not take place outside of the ringfenced area. Marine protected areas were declared to protected examples of ecosystem types, some of which interrupt trawl lanes.



# Industry co-operation on research into trawl seabed damage

## South African Deep-Sea Trawling Industry Association

### NOTICE TO DEEP-SEA TRAWLERS Seabed Rehabilitation Experiment

The Deep-Sea Trawling Industry has engaged in an experiment to determine the effects of trawling on the seabed and its associated marine life. Although bottom trawling is generally known to affect life on the seabed, the extent and consequence of the impacts can differ greatly, depending on the type of gear deployed and the type of seabed. We currently know little about how trawling might affect benthic communities under local conditions. SADSTIA together with local scientists are concerned about our present lack of scientific knowledge about trawling relationships within common benthic habitats --- not only of the effects of trawling on marine ecosystems, but also of the possible effects on long-term productivity of trawled fish resources. It is surmised that typical South African soft trawl ground may rehabilitate when left untrawled but it is necessary to demonstrate that this contention is correct.

The Industry will actively support a five year experiment conducted by university and government scientists to study the impacts of trawling in a clearly defined locality. This project forms part of our environmental responsibility, and is one of the actions supporting current *Marine Stewardship Council Certification* of South African trawled hake and hake products.

Each year, starting in 2014, scientists will film and sample the seabed throughout Grid Block 372. The first samples have already been taken. The experiment will involve the closure of three lanes in Block 372 on the west coast, immediately west of Child's Bank (Karbonkel), from 1<sup>st</sup> March 2014. The experiment is intended to determine if closure will result in significant changes in marine life, by comparing trawled and un-trawled areas over time. It has been designed to allow trawling to continue in Block 372, by confining vessels to two designated 'lanes'. This limited degree of trawling activity in the research area throughout the duration of the experiment is absolutely essential to the success of the experiment.

VMS will be used for monitoring purposes and MaxSea tracks from trawlers working in the northern half of Block 372 will need to be made available to scientists to enable them to evaluate the extent of trawling in the area and experimental compliance.

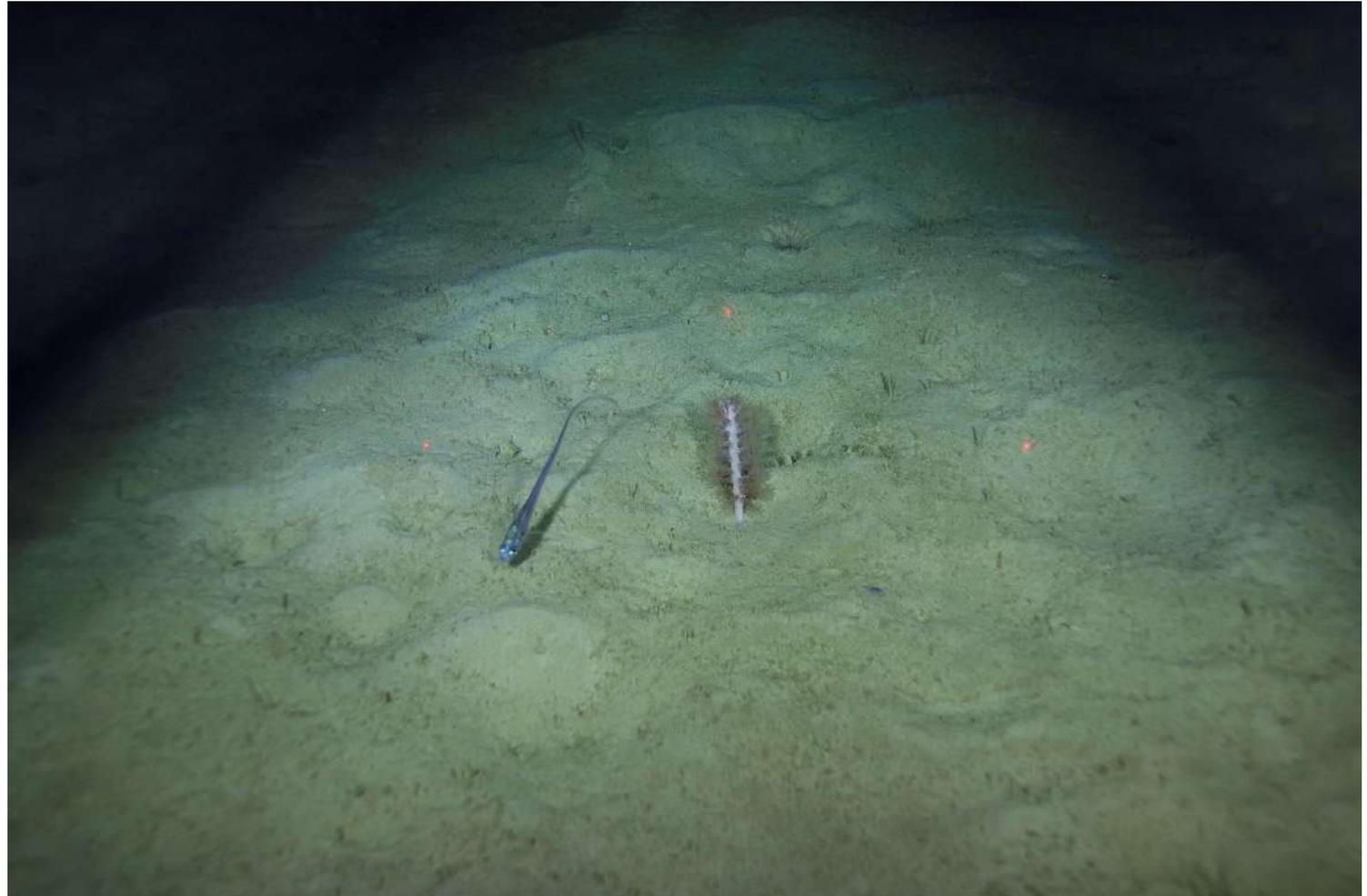
#### SADSTIA skippers working in block 372 must comply with the following directions:

From 1<sup>st</sup> March 2014 onwards until further notice, skippers trawling in Block 372 will have to avoid trawling in 3 strips, each 0.65 nm wide and 8.1 nm long. The accompanying chart indicates the closures, and the coordinates are given. It is equally important that trawling should continue in the lanes between these strips and along the western edge. Please note: skippers are not required to avoid Block 372 entirely but only to adhere to the demarcations.

Your cooperation will contribute greatly to this necessary and interesting scientific project.

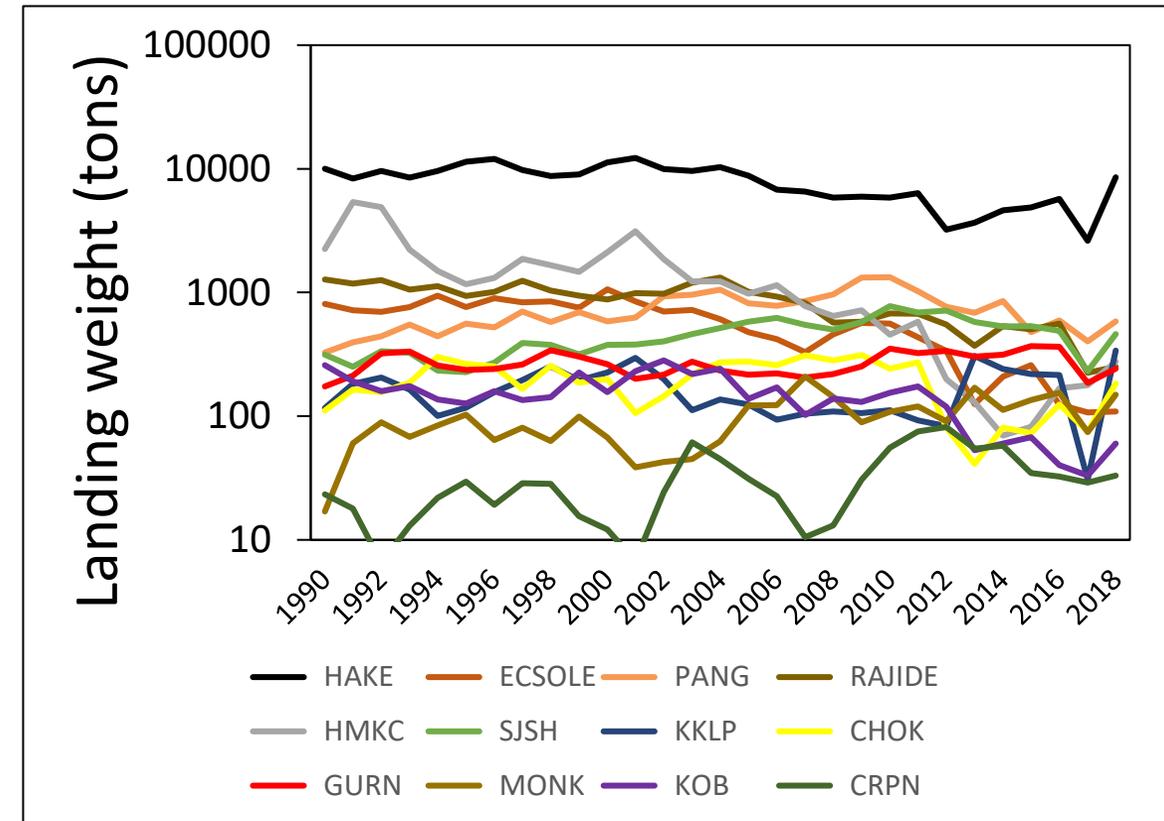
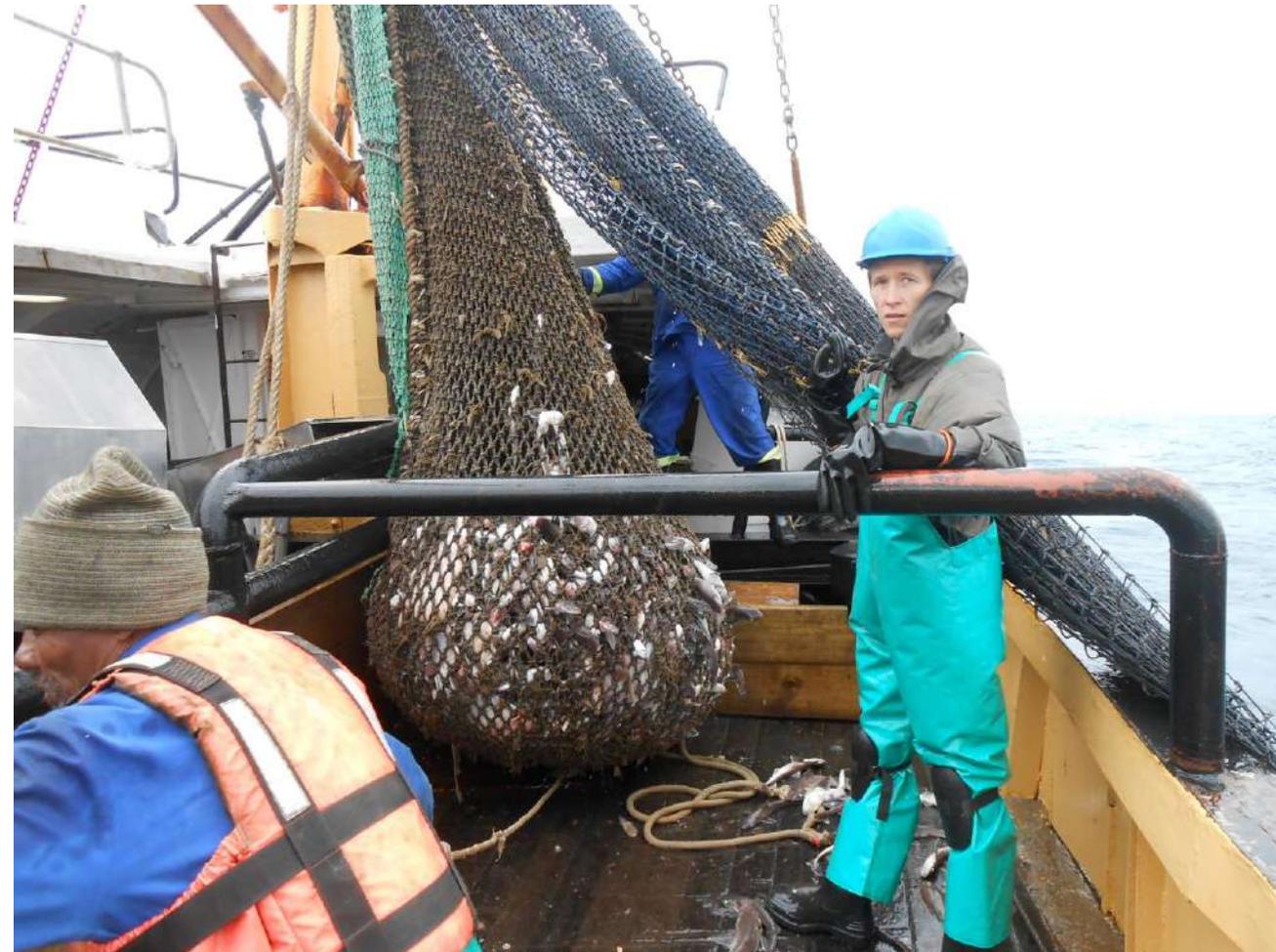


Roy Bross: SECRETARY



Delicate sea creatures: a grenadier and a seapen filmed in a trawl lane during an experiment in which trawlers were voluntarily re-routed

Trawl nets are non-selective. Management of the non-target species has become an important activity for the trawling industry.



Trends in the tonnage of 12 species of fish landed by inshore trawlers - the subject of a co-management project to limit impacts on non-target species. The project is funded by WWF-SA, the RFA and the South African Deep Sea Trawling Industry Association.

# Vulnerable Marine Ecosystems



The impact of nets on benthic ecosystems is a major concern. The industry assists researchers by providing specimens of hard corals caught in nets with position data to help map vulnerable marine ecosystems. A move-on-rule has been established, whereby trawlers will vacate the area if hard corals are found in their nets.



Watch the two-minute movie, DEEP RESPECT.

<https://youtu.be/n6kdnR2eXmg>

It is one of several initiatives to raise awareness among fishers of the diversity in the deep sea on which they depend.

# Conclusions

- The largest fishing companies in South Africa have expressed and demonstrated a commitment to work towards environmental sustainability.
- Some NGOs have been willing to provide practical and analytical support to fishing companies and government, to improve sustainability.
- Fishers have helped researchers with the supply of data and specimens.
- A number of formal alliances between industry, NGOs and government have developed.
- Although such alliances have been strained by ideological differences on occasion, the prevailing atmosphere is one of co-operation.