

**INTERNATIONAL REVIEW PANEL  
REPORT FOR THE 2012  
INTERNATIONAL FISHERIES STOCK  
ASSESSMENT WORKSHOP**

**26 - 30 November 2012, UCT**

**NON TECHNICAL SUMMARY**

# The Panel

- Carmen Fernandez, ICES, Denmark
- Mauricio Ortiz, ICCAT, Spain
- Andre Punt, UW, USA
- Tony Smith, CSIRO, Australia

Expertise in quantitative fishery science, stock assessment, and statistical analysis of data

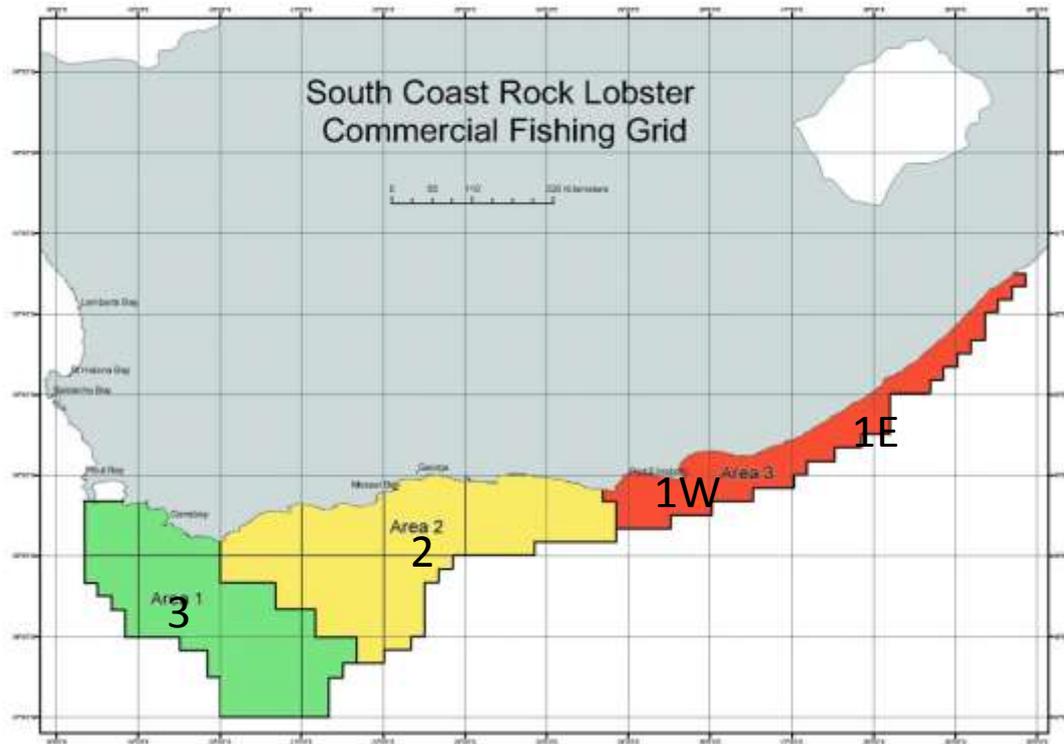
# A note on terminology

- OMP = operational management procedure
- The set of pre-agreed rules for determining annual TACs in several of South Africa's major fisheries
- These have been scientifically tested to achieve **agreed objectives** relating to resource use and risk of overfishing
- Scientific surveys are a key input into setting TACs for several important fisheries

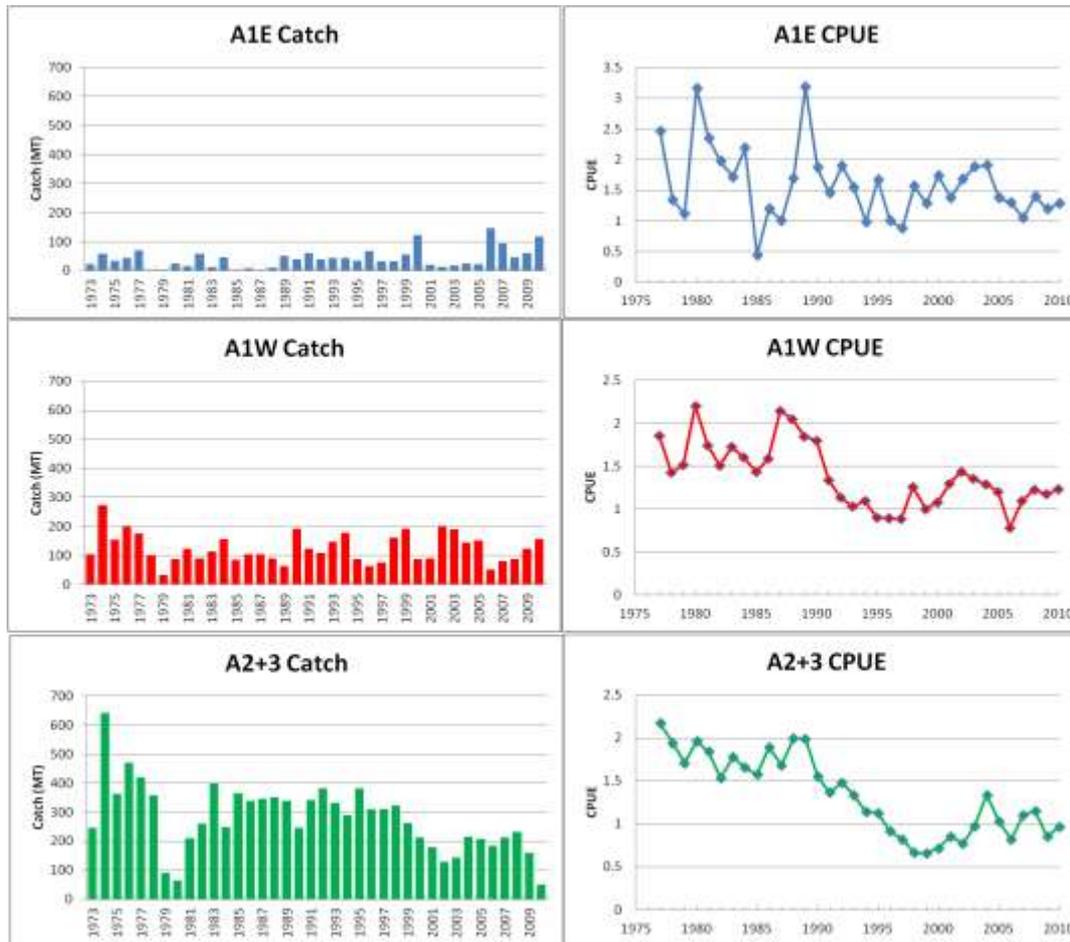
# Focus of the review

- South Coast rock lobster
  - Review assessment and advise on OMP testing
- Squid
  - Review assessment and advise on harvest strategies
- Line fishery
  - Review new catch rate standardization method
- [Anchovy assessment]
- Surveys
  - Africana availability, use of industry vessels, and implications for OMPs

# South coast rock lobster



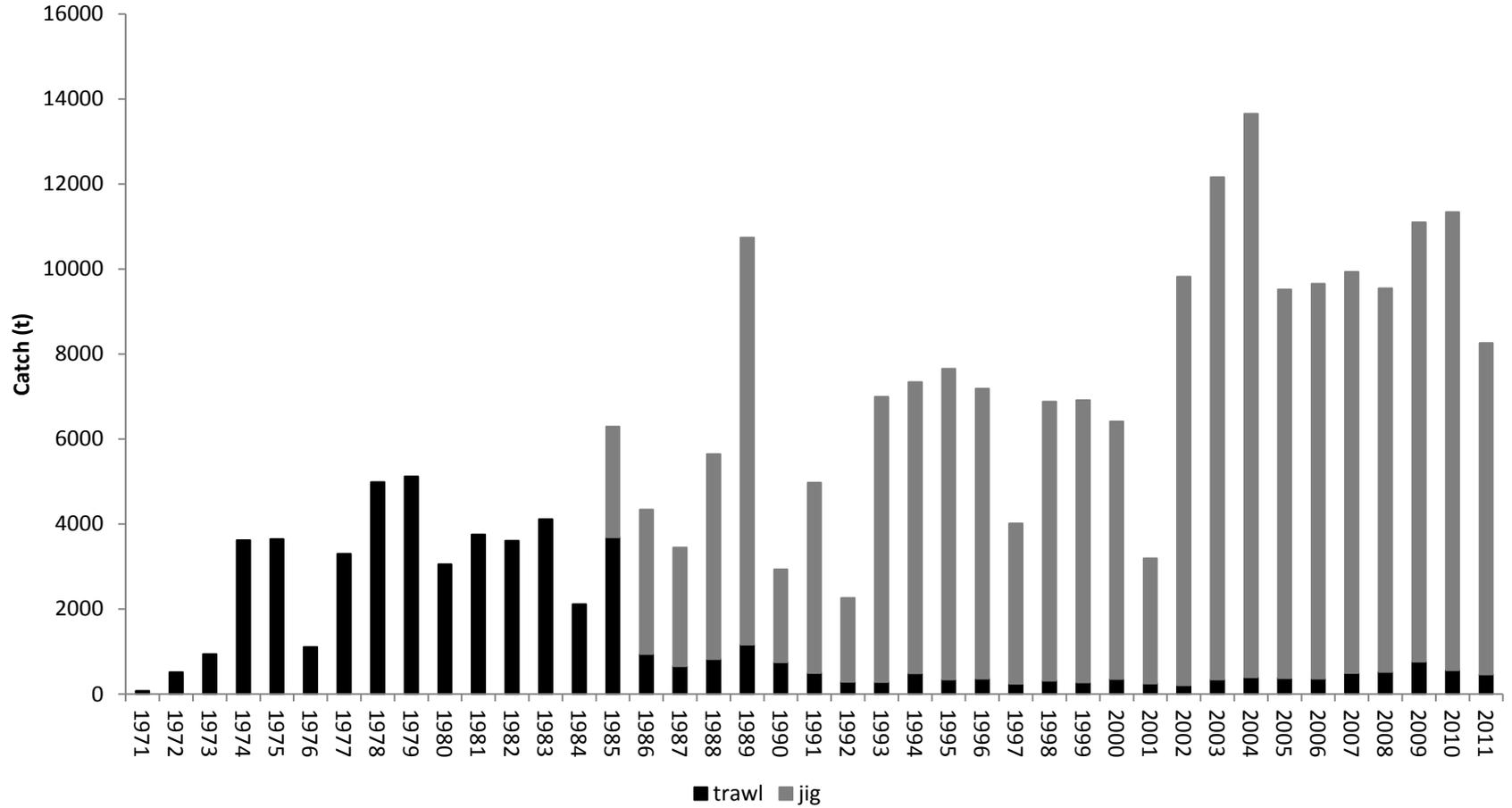
# SCRL



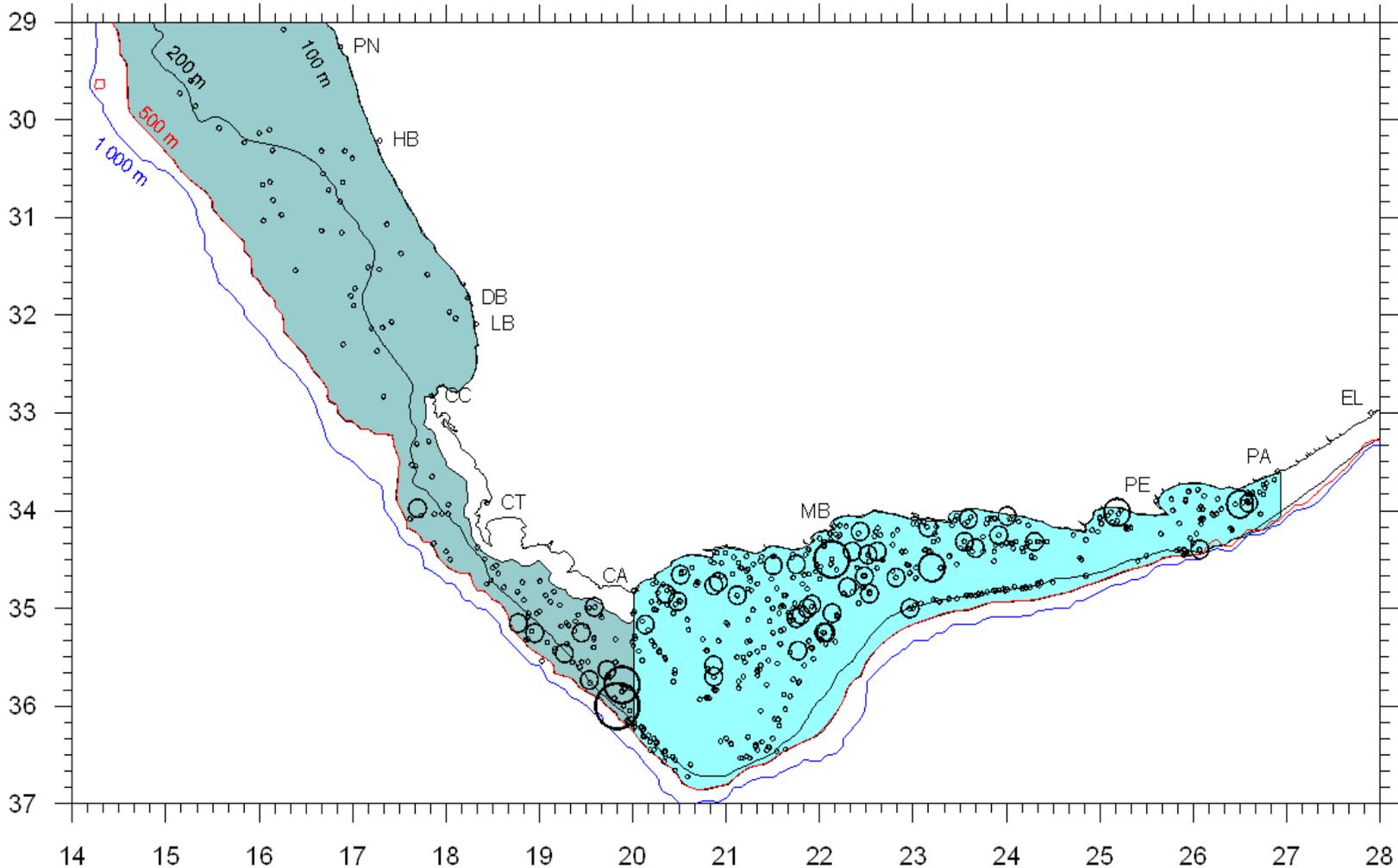
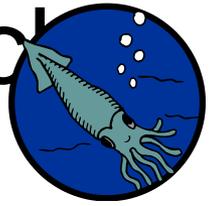
# South Coast rock lobster

- Mostly dealt with technical issues arising from variable quarterly sampling of the length data
  - Low sample sizes
  - Missing quarterly samples
  - Geographical distribution of catch and effort
  - Differential growth by area(s)
- Technical review and recommendations
- No major issues with the assessment
- Advice provided on OMP scenarios

# Squid



# Distribution of demersal research survey caught squid

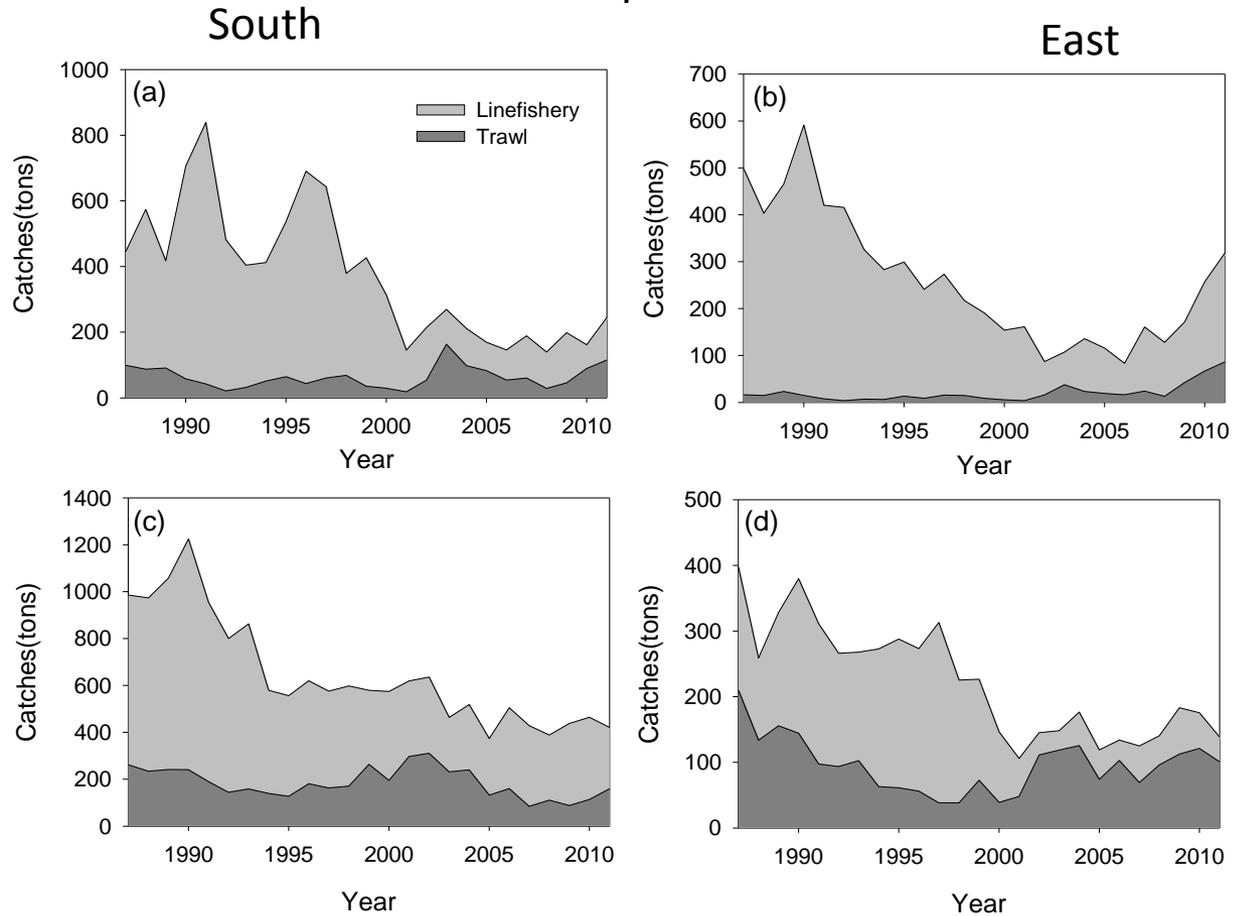


# Squid - findings

- Questions about representativeness of hake trawl CPUE
- Little or no trend in abundance indices since early 1990s
  - Uncertainty in assessment without trawl CPUE
- Current effort and catch levels likely sustainable but impacts of increases more uncertain

# Line fishery

## Carpenter



## Silver kob

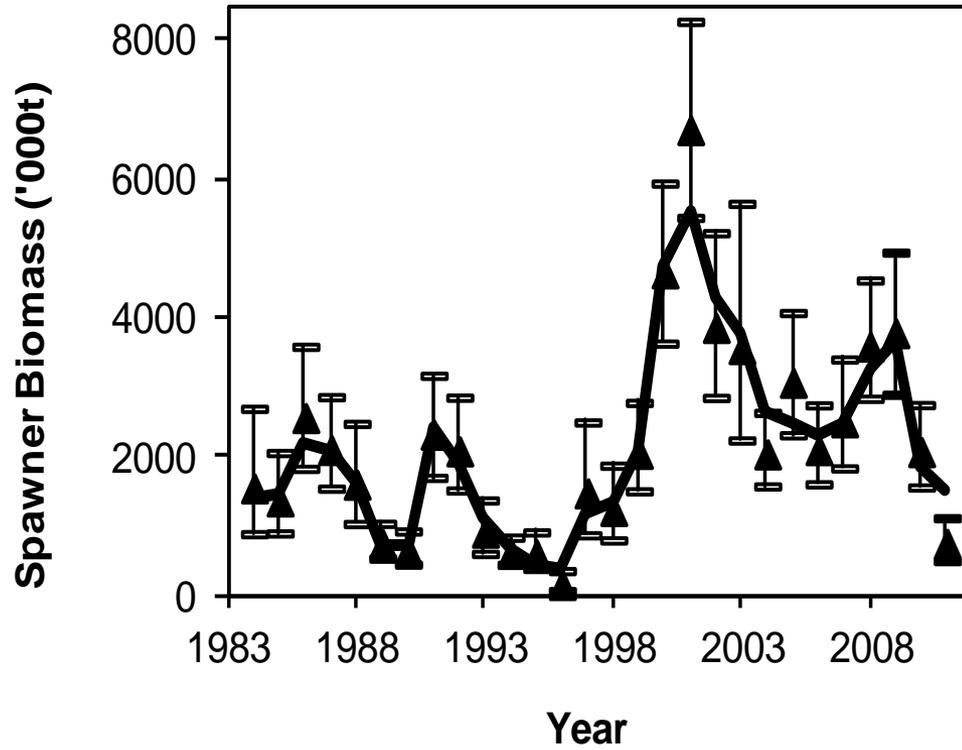
# Line fishery

- Multi-species fishery
  - Snoek, kob, yellowtail, geelbek, carpenter etc
- A long time series of catch and effort data available but not used in assessments so far
- Hard to “standardize” multi-species CPUE
  - Distinguish trends in abundance from changes in fishing tactics and/or different habitat distribution
- New method developed to account for these factors (Winker, Kerwath and Attwood)

# Line fishery

- Panel reviewed new method with the authors
- Using simulation methods to test how robust the new CPUE method might be
- Results to date look very promising but further analyses suggested
- New method is suitable for application to the line fishery but continue to compare with other (more standard) methods

# Anchovy



# Anchovy assessment

- The issue:
  - updates to the assessment in 2012 have changed key aspects of the model relative to the model used for the 2007 OMP, including natural mortality and the form of the stock recruitment curve
  - This has resulted in increased estimates of risk for the previous OMP and potentially a more conservative OMP for 2013

# Anchovy assessment

- The Panel spent some time unpacking the changes in the assessment and their impacts on perceptions about risk
- Suggestions were made about how to maintain a more consistent approach to risk from one OMP to the next, taking into account new understanding

# *Africana*



# *Africana* surveys

- Scientific surveys are the foundation of fisheries assessment and management for South Africa's most important fisheries
  - Hake Fishery and the Pelagic Fishery and others
- The importance of long and consistent time series
  - Relative versus absolute abundance
- Recent difficulties for the *Africana* in completing surveys and uncertainty about future surveys

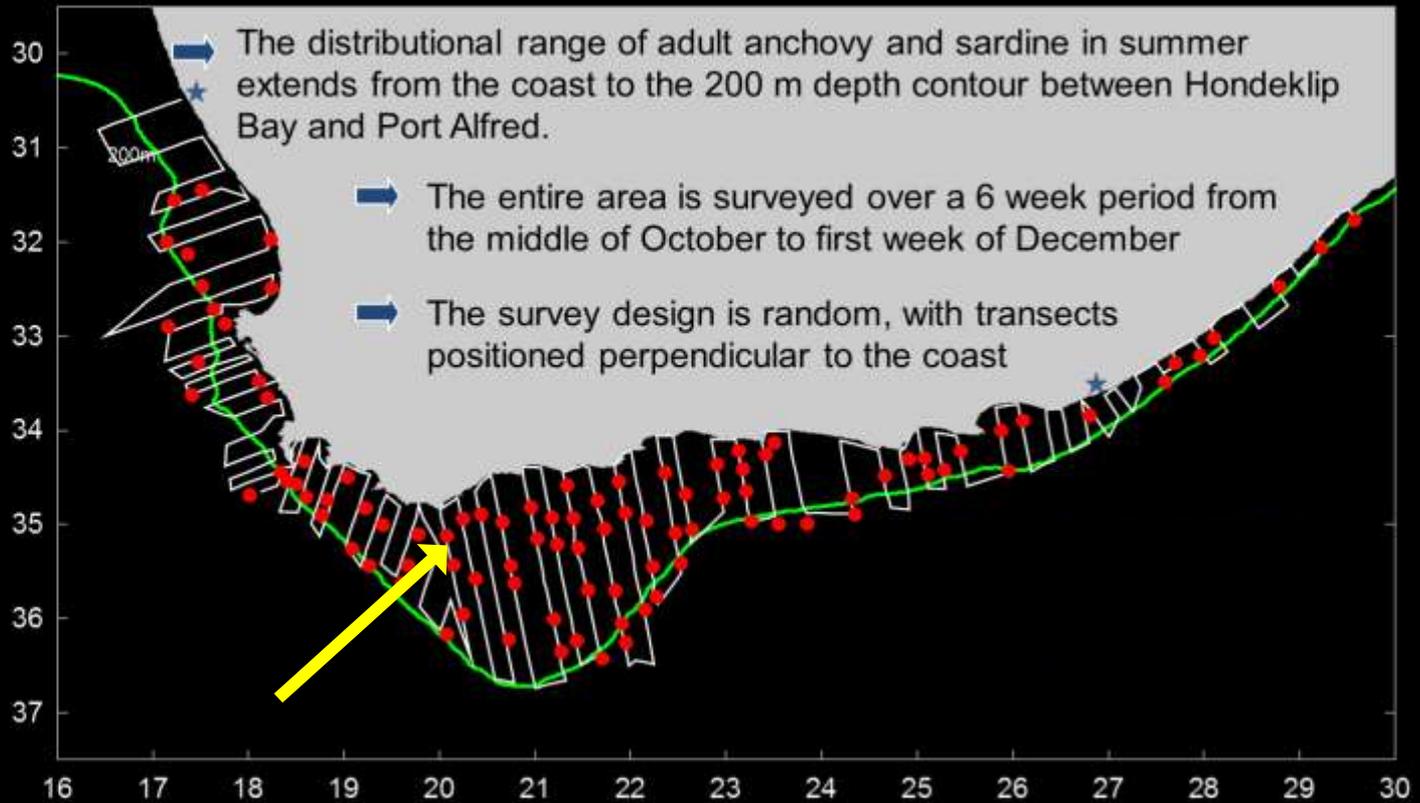
# Pelagic surveys

- Sardine and anchovy
- Hydroacoustic survey
- Summer and winter surveys
- West and south coasts
- Uninterrupted time series since 1984
- Surveys provide key input to assessments
- Surveys directly determine the TACs

# Current situation

- November *Africana* survey interrupted off Cape Point more than 3 weeks ago
- Survey now resumed using deep sea trawler “Compass Challenger”
- New vessel performing well so far (has reached Cape Agulhas) but questions about comparability of data
- Agreed rules if surveys not completed satisfactorily (→ potential heavy penalty to TACs)

# Survey Approach



# Pelagic survey – new vessel

- Potential uncertainties with new vessel
  - Position of the transducer
  - Difference in noise levels during ship operation
  - Differences in fish avoidance to the vessel
- Panel concluded that differences not likely to be large but advisable to conduct calibration with *Africana*

# Response in OMP to missing survey

- The OMP rules in the event of the survey not being completed satisfactorily have been agreed previously
- The Panel was presented with a variety of opinions on an appropriate response – this is a policy issue to be determined by the appropriate authorities

# Demersal surveys

- Scientific surveys are a key input to assessments for hake – important check on changes in efficiency for commercial CPUE
- Survey results are used directly in the OMP to set annual TACs
- *Africana* completed the January 2012 survey but the April and September surveys were not conducted

# January 2013 survey

- Doubts about availability of *Africana*
- Potential to use commercial vessel for survey but issues of calibration more critical for demersal survey than pelagic survey
- January survey needs to be considered in light of longer term plans for conducting demersal surveys

# Panel recommendations

- Continued surveys using *Africana* would be the ideal situation
- Should plan to conduct some form of January trawl survey with a suitable commercial vessel irrespective of whether *Africana* is available
- Best scenario is that both vessels are available to conduct a full survey and to allow calibration between vessels
- This would provide future vessel options if problems with *Africana* continue as well as forward planning for *Africana* replacement

# Panel recommendations (cont)

- Survey using a commercial vessel should use the same gear as *Africana* and try to replicate *Africana* operations as closely as possible
- However in the absence of direct calibration, the January survey point should not be used in the OMP calculation, but would provide the first data point in a new time series of survey estimates

# Panel recommendations (cont)

- A missing survey point potentially impacts on the OMP calculation and hence the TAC
  - Increases the risk and may require a lower TAC
- Analyses can be undertaken to assess the level of risk using existing models and information
  - It is possible (but not yet determined) that no immediate adjustment would be required

# Panel recommendations (cont)

- A strong recommendation of the Panel is that a comprehensive plan be developed as soon as possible to ensure the ongoing provision of survey data for hake (and other demersal species) factoring in
  - Contingencies on future availability of survey vessels
  - Need for calibration between vessels
  - Possibility of using multiple commercial vessels
  - Long-term replacement of *Africana*

# Summary of survey issues

- Scientific surveys critical to assessment and management
- Easier to calibrate alternative vessels for pelagic than for demersal surveys
- Missed surveys will impact on pelagic TACs and could also impact hake TACs
- Need longer term comprehensive plan for future scientific surveys including vessel options