

Update on Data to be used in Conditioning the next Reference Set of Operating Models for the South African hake resource

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MCM/2009/MAY/SWG/DEM-32 summarised the proposed data to be included in the next Reference Set of Operating Models for the South African hake resource. This paper presents an update on the data already specified/provided, and highlights our understanding of where further clarification/analysis is still required before model conditioning (model fitting) commences.

Feedback from attendees at the DWG meeting on progress and prospects in these areas would be appreciated. It would be appreciated also, where further data/information is agreed as required to be provided, the scientist responsible could be identified.

This exercise should be considered in the context of a likely guillotine data of early August 2009 for finalisation of these data.

Note that the Reference Set will model the sexes separately, which requires fitting directly to age-length keys (ALKs) and length frequencies, and estimating sex-specific growth curves in the overall model fitting process.

Commercial data

Total catches

- The 2007 catch update and 2008 estimates for each fleet are needed.
- Offshore trawl catches disaggregated by depth strata as for surveys are required (though not immediately urgent -see discussion in MCM/2009/MAY/SWG/DEM-32).

CPUE

- The GLM CPUE series are required updated to 2008 (note that these standardised CPUE values are readily disaggregated by depth strata if so required for future models).
- Investigation of possible bias in GLM CPUE (*M. capensis* particularly) – possibly arising from not taking account of the effect of introduction of advanced navigational aids – what conclusions have been reached to date?
- What is the progress of work being done on the longline data, and when might a CPUE series be available?
- Is any work being done on the inshore data and if yes, when would a CPUE series be available?

Catches-at-length

- Are there any further data available? Note that information for some years is missing in Table 3 of MCM/2009/MAY/SWG/DEM-32, specifically:
 - No SC trawl from 1997 to 2004
 - No WC trawl from 2000 to 2004

No inshore trawl from 2001 onwards
No longline (SC or WC) from 1998 onwards

Age-length keys

- No commercial ALKs (whether or not species are disaggregated) are available for the moment and will probably not be available by August for inclusion in the Reference Set.

Survey data

Biomass estimates

- Biomass estimates for South Coast spring 2008, West Coast summer 2009 and South Coast autumn 2009 surveys are needed.
- If readily developed, sex-disaggregated biomass estimates should be used? Can this information be made available, and if so by when?
- Are South Coast estimates to be re-analysed based on a (slightly) finer stratification by depth?
- What progress has been made on efforts to adjust survey estimates to take account of environmental co-variates?

Catches-at-length

- Sex-disaggregated length frequencies for some of the surveys are now available and will be used.

Age-length keys

- Sex-disaggregated ALKs are required as far back in time as possible, as become available until August 2009.

Other biological information

Maturity-at-age

- Maturity-at-length rather than at-age will be used; the ogive of Fairweather and Leslie (2008) that assumes stage 2 as the cut off will be adopted for this purpose.

Length-weight relationship

- The average of the south and west coast to get a coast-combined, sex-disaggregated length-weight relationship from Fairweather (2008) will be used.

REFERENCES

- Fairweather T. 2008. Length-weight relationship for *Merluccius capensis* and *M. paradoxus* based on research survey biological data. Unpublished report, MCM, South Africa. MCM/2008/JUL/SWG-DEM/38. 5pp.
- Fairweather T. and Leslie R.W. 2008. *Merluccius capensis* and *M. paradoxus* length at 50% maturity based on research survey biological data. Unpublished report, MCM, South Africa. MCM/2008/JUL/SWG-DEM/42, 5pp.