Data Required for Planned Assessment-related Analyses for the South African Hake Resource in 2008

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Working group document 2008:WG-Dem:H:03 briefly describes the assessment-related analyses planned for the South African hake resource in 2008. This paper lists the data required for this work, referring to the different analyses below by including the corresponding letters in parentheses.

A) *Sensitivity tests on the 2006 assessment for 2008 OMP mid-term in-depth review*

B) *Spatially-structured, species- and gender-disaggregated model*

C) *Species-disaggregated model taking predation into account*

D) *GADGET model*

- Need to define zones: 100m depth, west and south coasts?

An appendix lists some key sensitivities planned for the 2008 in-depth assessment, which are linked to the data requirements discussed.

I. Annual catches

Offshore trawl:

□ Updated (to 2007) catches, disaggregated by species using survey proportion by depth relationship, for each coast and then combined for the south and west coasts (A)

□ Updated (1978-2007) catches, disaggregated by species using the observer data, for the south and west coasts combined (A) [Note: Are these observer data available? How are they to be analysed and by whom?]

□ 1978-2008 catches, disaggregated by species (re various disaggregations, using observer data or depth relationship or some combination of the two?) and gender (using observer information?), for each zones (B, D)

□ Assumptions pre-1978 re various disaggregations

Inshore trawl catches:

□ Updated (to 2007), south coast only, assuming all *M. capensis* (A)

□ Updated, disaggregated by gender and separated by zones (B,D)

□ Assumption all *M. capensis* still ok?

Longline catches:

□ Updated (to 2007), for south and west coasts combined (A)

□ Updated, disaggregated by gender and separated by zones (B,D)

Handline catches:

□ Updated (to 2007), south coast only, assuming all *M. capensis* (A)

□ Updated, disaggregated by gender and separated by zones (B,D).

II. Commercial catch-at-length

Note: For years for which Age-Length Keys are available, Catch-At-Age (CAA) will be used, otherwise, Catch-At-Length (CAL) will be used directly.

Offshore trawl:

□ West coast CAL (species aggregated) to 2007 (A,B,D)

□ South coast CAL (species aggregated) to 2007 (A,B,D)

□ South and west coasts CAL from observer data, disaggregated by zone and species (B,D)

- In Leslie (1998a) (west coast) there are CAA data from 1964, why is only the data from 1975 used currently?

- In Leslie (1998b) (south coast) CAA data are available for the period 1975-1996, any reason why they are not used currently?

Inshore trawl:

□ South coast CAL to 2007 (assuming all *M. capensis*) (A,B,D)

Longline:

□ South coast CAL to 2007 (assuming all *M. capensis*) (A)

□ West coast CAL to 2007 (species aggregated) (A,B,D)

- In Leslie (1998a) (west coast), some CAA data are available; any reason why they are not used currently?

Handline:

- Any length data available for this fishery?

III. Age-length keys

□ All ALKs, species aggregated, available (A,B,D)

□ All species disaggregated ALKs available (A,B,D)

□ Species and gender disaggregated ALKs (B)

- What are plausible mis-ageing assumptions to which to directly test sensitivity?

- How have the combined species ALKs been calculated? And are they from the surveys or combination of survey and commercial data?

- Use combined ALKs for the south and west coasts?

IV. CPUE

□ Updated (to 2006) GLM-standardised CPUE, species disaggregated, coasts combined (A)

□ Updated (to 2006) GLM-standardised CPUE, disaggregated by species and zones (B,D)

- What progress has been made in developing a longline CPUE series ? (A,B,D)

V. Survey Biomass Estimates

□ Survey biomass estimates updated (to 2007) disaggregated by species (A)

□ Survey biomass estimates (to 2007) disaggregated by species, gender and regions (B,D)

□ Estimates of proportion of trawlable ground in each survey station (A)

VI. Survey Catch-At-Length

□ Species disaggregated survey CAL (south coast autumn and spring (0-500m) and west coast summer and winter (0-500m)) (A)

□ Survey CAL disaggregated by species, gender and zones (B,D)

- Why is the west coast winter *M. paradoxus* CAA not used in current assessment?

VII. Diet Information

□ Analyse additional stomach content information (for the period 1995-2007) using an analogous method to that applied by Punt and Leslie (1995), including the average fraction of hake (of size?) in the diet of other hake (of size?)

VIII. Biological Information

- Any update on length-weight, weight-at-age relationships, and their possible inter-annual variations? (B,C,D)

- Any update on maturity-at-age, and its possible inter-annual variations? (B,C,D)

References

Punt AE and Leslie RW. 1991. Estimates of some biological parameters for the Cape hakes off the South African west coast. *S. Afr. J. mar. Sci*. 10: 271-284.

Rademeyer RA and Butterworth DS. 2008. Plans for Assessment-related Analyses for the South African Hake Resource in 2008. Unpublished document, MCM. 2008:WG-Dem:03.

Appendix

List of some key sensitivity analyses planned for the 2008 assessment (in addition to advancing data used for 2006 assessments by 2 years):

- Use of observer-based species splits of catches; check whether this has implications for plausible range of pre-1978 split formulae.

- Use of age-length keys only when available for that year; otherwise use catch-at-length (CAL) data.

- Use of earlier CAA, CAL data (west coast 1964-1974; south coast 1975-present)

- Longlining – use of further CAA, and possibly CPUE data

- Impact of different proportions of trawlable ground in the various survey strata