

**Documents for the MARAM/DAFF International Fisheries Stock Assessment Review
Workshop, 2017**

General:

General 1: Announcement. 1pp.

General 2: Schedule 1pp.

General 3: Document list (draft) 4pp.

Hake OMP revision

Primary Documents:

P1: List of questions to the panel regarding the 2018 hake OMP revision. 4pp.

P2: Rademeyer, R.A. and Butterworth, D.S. 2017. Specifications of the South African hake 2017 Reference Case Assessment. 40pp.

P3: Rademeyer, R.A. and Butterworth, D.S. 2017. Retrospective analysis for the South African hake resource Reference Case Assessment. 3pp.

P4: Rademeyer, R.A. 2017. Updated Reference Set Operating Model results for South African hake.

P5: Rademeyer, R.A. and Butterworth, D.S. 2013. List of Suggested Robustness Tests for the Revised Hake OMP. 9pp.

P6: Ross-Gillespie, A. and Butterworth, D.S. 2017. Hake predation model mortality rates. 11pp.

P7: Winker, H., Fairweather, T. and Leslie, R. 2017. Comparison of model-based geostatistical trawl survey biomass indices with the current design-based estimates for the South African hakes. 15pp.

P8: Fairweather, T.P., Winker, H. and Durholtz, D. 2017. How best might we take results from the extension of surveys into deeper water into account? 10pp.

P9: Vrancken, C. and Butterworth, D. 2017. An approach to weighting the various Operating Models in a Reference Set in inverse relation to the similarity of their results. 15pp.

P10: Rademeyer, R.A. and Butterworth, D.S. 2017. An example contrasting TAC behavior under target- and slope-based empirical management procedures. 4pp.

Background Documents:

BG1: Durholtz, M.D. 2017. An overview of the SA hake fishery. 8pp.

BG2: Rademeyer, R.A. 2014. Proposed Reference Set for the South African hake resource. 1pp.

BG3: Rademeyer, R. and Butterworth, D. 2014. Results leading to a Proposal for a Reference Set of Operating Models for Testing the 2014 OMP Revision for the South African hake resource. 14pp.

BG4: Rademeyer, R. and Butterworth, D. 2015. Estimating the *Andromeda* catchability compared to the *Africana* for South African hake in an update of the Reference Case assessment. 8pp.

BG5: Rademeyer, R. and Butterworth, D. 2015. Modelling selectivity as a random walk process for the offshore trawl fleet for *M. paradoxus*. 6pp.

BG6: Rademeyer, R.A. 2009. Age-reading error matrices for *Merluccius paradoxus* and *M. capensis*. 7pp.

- BG7:** Thorson, J.T., Shelton, A.O., Ward, E.J. and Skaug, Hans. 2017. Geostatistical delta-generalized linear mixed models improve precision for estimated abundance indices for West Coast groundfishes. 43pp.
- BG8:** Winker, H., Thorson, J., Fairweather, T., Leslie, R. and Durholtz, D. 2017. Towards improving precision in South African demersal trawl survey indices using geostatistical GLMMs. 17pp.
- BG9:** Rademeyer, R. and Butterworth, D. 2017. A spatially structured stock assessment for the South African hake resource with movement based on a gravity model, and including fitting to outputs from the GeoPop Model. 47pp.
- BG10:** Rademeyer, R.A., Butterworth, D.S., Cooper, R., Durholtz, M.D., Fairweather, T.P., Glazer, J.P., Leslie, R.W., Singh, L. and Somhlaba, S. 2014. The 2014 Operational Management Procedure for the South African Merluccius paradoxus and M. capensis Resources. 28pp.
- BG11:** Rademeyer, R. and Butterworth, D. 2014. Final CMP Projections for the South African hake resource. 18pp.
- BG12:** Rademeyer, R.A. 2016. Output from the South African Hake OMP-2014 for the 2017 TAC recommendation. 4pp.
- BG13:** Butterworth, D.S., Robinson, W.M.L. and Ross-Gillespie, A. 2017. Evaluating the accuracy of hake abundance index predictions using different smoothing techniques. 8pp.
- BG14:** Ross-Gillespie, A. and Butterworth, D.S. 2017. Progress on recommendations from 2016 review panel report regarding hake. 4pp.

Sardine OMP revision

Primary Documents:

- P1:** List of Key Questions for the Panel Regarding Small Pelagics. 3pp.
- P2:** de Moor, C.L. 2017. Alternative risk thresholds for South African sardine and anchovy resources. 12pp.
- P3:** de Moor, C.L. and Butterworth, D.S. 2017. Selection of acceptable levels of risk for South African small pelagics: the probability of dropping below pre-defined risk thresholds. 6pp.
- P4:** Simulating single area management on two sardine components. 4pp.
- P5:** Butterworth, D.S., de Moor, C.L. and Coetzee, J.C. 2017. At what biomass threshold should the directed sardine fishery be closed? 4pp.
- P6:** de Moor CL. 2017. A summary of the operating models being used to simulation test OMP-18 for South African sardine and anchovy. 10pp.
- P7:** de Moor CL. 2017. Results for sardine projections under alternative future management scenarios. 6pp.
- P8:** OLSPS Marine, 2017. Sardine assessment results compared to a run which excludes the directed sardine catch, 1984 – 2015. 12pp.
- P9:** Bergh, M. 2017. Use of the relationship between long term catch and biomass to establish a management target. 2pp.

Background Documents:

- BG1:** Coetzee, J.C., de Moor, C.L. and Butterworth, D.S. 2017. A summary of the South African sardine (and anchovy) fishery. 12pp.
- BG2:** de Moor, C.L., Butterworth, D.S. and van der Lingen, C.D. 2017. Progress on recommendations from the 2016 review panel report. 6pp.
- BG3a:** de Moor, C.L., Butterworth, D.S. and van der Lingen, C.D. 2017. The quantitative use of parasite data in multistock modelling of South African sardine (*Sardinops sagax*). Can. J. Fish. Aquat. Sci. 74: 1895–1903.
- BG3b:** de Moor, C.L., Butterworth, D.S. and van der Lingen, C.D. 2017. The Quantitative Use of Parasite Data in Multi-Stock Modelling of South African Sardine (*Sardinops sagax*). 26pp.
- BG4:** Butterworth, D.S., van der Lingen, C.D., Coetzee, J. and de Moor, C.L. 2017. The present agreed hypothesis for South African sardine stock structure. 4pp.
- BG5:** Coetzee, J. Estimation of the effective proportion of sardine biomass contributing to putative western stock recruitment by including the proportion of eggs transported to the West Coast nursery area from South Coast spawning areas. 10pp.
- BG6:** van der Lingen, C.D. and McGrath, A. 2017. Incorporating seasonality in sardine spawning into estimations of the transport success of eggs spawned on the South Coast to the West Coast nursery area. 4pp.
- BG7:** de Moor, C.L. 2017. Updated simulation testing framework to be used during the development of OMP-18. 28pp.

South Coast rock lobster OMP revisionPrimary Documents:

- P1:** List of questions to the panel regarding the development of a revised OMP for south coast rock lobster. 1pp.
- P2:** Johnston, S.J. and Butterworth, D.S. 2017. 2017 updated south coast rock lobster assessment results. 16pp.
- P3:** Johnston, S.J. and Butterworth, D.S. 2017. South coast rock lobster OMP 2014: Specifications and results. 10pp.
- P4:** Johnston, S.J. and Butterworth, D.S. 2017. Development of a revised OMP for south coast rock lobster. 1pp.

Background Documents:

- BG1:** Johnston, S.J. and Butterworth, D.S. 2017. Summary of South Coast rock lobster (*Palinurus gilchristi*) fishery. 4pp.
- BG2:** Johnston, S.J. and Butterworth, D.S. 2017. The south coast rock lobster Reference Case Operating Model. 26pp.
- BG3:** Johnston, S.J. and Butterworth, D.S. 2017. SCRL OMP-2014 simulation testing. 7pp.

West Coast rock lobster poaching estimation

Primary Documents:

- P1:** List of questions to the panel regarding estimation of the extent and trends of west coast rock lobster poaching. 1pp.
- P2:** Johnston, S.J. and Butterworth, D.S. 2017. Summary of key issues for discussion at the international workshop regarding the estimation of the magnitude and trends of poaching of west coast rock lobster. 9pp.
- P3:** Brandao, A., Johnston, S.J. and Butterworth, D.S. 2016. Trends in policing effort and the number of confiscations for west coast rock lobster. 16pp.
- P4:** OLRAC-SPS. 2016. Summary statistics derived from confiscations and policing effort data with implications for the inferred trends in west coast rock lobster IUU fishing levels. 9pp.
- P5:** Endert, J. and Burgener, M. 2016. A preliminary analysis of South African lobster landings and trade records. 4pp.
- P6:** Anon. 2016. WCRL SWG agreements on WCRL poaching trends. 5pp.

Background Documents:

- BG1:** Johnston, S.J. and Butterworth, D.S. 2017. A summary of the west coast rock lobster fishery. 8pp.
- BG2:** Johnston, S.J. and Butterworth, D.S. 2016. Initial updated 2016 assessments for west coast rock lobster and some initial constant catch projections. 21pp.
- BG3:** Johnston, S.J. and Butterworth, D.S. 2016. Further projections of the west coast rock lobster resource for a range of future constant catch and poaching scenarios. 13pp.
- BG4:** van Zyl, D., Glazer, J.P. and Butterworth, D.S. 2017. Analyses of trends in west coast rock lobster poaching and policing effort data. 2pp.
- BG5:** Johnston, S.J. 2017. Biomass trajectories under future catch scenarios. 3pp.

Line fish assessment methodology

Primary Documents:

- P1:** List of questions to the panel regarding linefish. 1pp.
- P2:** Winker, H., Carvalho, F., Thorson, J.T., Kapur, M., Parker, D., Kerwath, S., C., Booth, A.J. and Kell, L. 2017. JABBA-Select: an alternative surplus production model to account for changes in selectivity and relative mortality from multiple fisheries. 27pp.
- P3:** Winker, H., Carvalho, F., Thorson, J.T., Kapur, M., Parker, D., Kerwath, S., C., Booth, A.J. and Kell, L. 2017. Performance evaluation of JABBA-Select against an age-structured simulator and estimation model. 24pp.