



**SCIENTIFIC COMMITTEE
THIRD REGULAR SESSION**

13-24 August 2007
Honolulu, United States of America

BIOLOGICAL REFERENCE POINTS

WCPFC-SC3-*Informal Small Group*/WP-1

**SMALL GROUP 1
(Convener: Ray Conser)**

DRAFT-2

Discussion Group on Biological Reference Points

Following the success of the small group discussions at SC2 (Manila), D. Moon (SC Chair) proposed that several discussion groups be established in conjunction with the SC3 meeting. An SC3 discussion group on biological reference points (BRP) was established with R. Conser (USA) serving as convener. The group held two one-hour meetings: (i) 12 August 2007 (prior to the start of the formal SC3 meeting); and (ii) 13 August 2007 (during the SC3 session lunch break). Both meetings were well attended with most of the most of the WCPFC members represented.

The BRP Discussion Group (the Group) recognized that the breadth of the subject matter – including a vast literature and numerous world-wide case studies – could not be adequately addressed in two brief discussion periods on the periphery of the formal SC3 meeting. Further, the Group acknowledged that the BRP topic will be taken up by both the Methods Specialist Working Group (MSWG) and the SC3 Plenary (Agenda Item 4).

The Group focused primarily on SC3 working paper ME-WP-3 entitled “A brief review of the use of the precautionary approach and the role of target and limit reference points and Management Strategy Evaluation in the management of highly migratory fish stocks” by Davies and Polacheck (CSIRO). The SC2 adopted a work program for 2007 to investigate alternative stock status reference points, including identification of appropriate target and limit reference points. Consistent with the 2007 work program, the WCPFC Secretariat commissioned a review of BRPs and related issues. ME-WP-3 is a product of the resulting consultancy.

The Group approached the discussion of ME-WP-3 at three levels.

- A. General introduction to BRPs – a brief presentation by C. Davies – to assist those without expertise on these issues to more fully benefit from the discussions.
- B. Questions of clarification and more detailed explanation of points raised and conclusions reached in ME-WP-3.
- C. General discussion of the BRP issues with particular emphasis on identifying key points that would benefit most from in-depth discussion during the MSWG and the SC3 Plenary.

It was agreed that the product of this Group would be a list of the discussion points identified in Level C, above, and that the individual points in the list would be categorized as items best suited for in-depth discussion at (i) the MSWG meeting (**M**); (ii) the Plenary meeting (**P**); or (iii) both meetings (**M+P**).

BRP Discussion Points for Methods Specialist WG (M) and SC Plenary (P)

1. ME-WP-3 concludes that the WCPFC management cannot be considered precautionary at least until both BRPs and the concomitant decision rule(s) are agreed and implemented. The SC has been using F_{MSY} and SSB_{MSY} as BRPs but no clear decision rule has been put forth.
 - a. Does the SC agree with the ME-WP-3 conclusion regarding WCPFC and the precautionary principle? **(P)**
 - b. Recognizing that full development of decision rule(s) may take considerable time (perhaps 3-5 years), can interim decision rule(s) be put forth by the SC to satisfy the precautionary principle? **(M+P)**
2. ME-WP-3 suggests that a full management strategy evaluation (MSE) is needed to integrate the best choices of stock assessment methods, appropriate BRPs, decision rules, and higher-level management objectives. An MSE for the WCPFC stocks would be a time- and resource-consuming endeavor. Does the SC agree that a full MSE is necessary or are there other objective means of establishing the best BRPs and control rules? **(M+P)**
3. If an MSE is needed, what are the technical issues and impediments that need to be resolved to make this feasible, e.g. feasible range of sensitivity cases, conditioning the currently-used assessment methods, robustness tests, etc? **(M)**
4. ME-WP-3 suggests that the inclusion of explicit socio-economic objectives in any WCPFC MSE would make the process intractable (due to the large number of nations involved and the sometimes conflicting socio-economic objectives). Does the SC agree? **(M+P)**
5. ME-WP-3 suggests that a proper MSE cannot be done by the SC alone. Rather the full involvement and continuing feedback from fishery managers, stakeholders, and other interested parties are essential.
 - a. What is the best process for involving non-scientists in the MSE? **(P)**
 - b. What are the responsibilities of the various groups? For example, fishery managers will need to establish the acceptable level of risk for the MSE. What else is needed from the fishery managers? **(M+P)**
 - c. What institutional arrangements are needed? For example, the Commission meeting is the only place where the broad scope (suggested above) can be fully considered. How should the SC and the Commission interact regarding MSE planning? **(P)**
6. Given that the science contribution to an WCPFC MSE process would be costly (both in monetary terms and time of the individuals involved), what is the best mix of involvement of national scientists and Secretariat contracted services? **(M+P)**

7. The current mix of fisheries and their relative catches implies an aggregate selectivity that greatly influences BRP estimates, e.g. F_{MSY} and SSB_{MSY} . Should the scope of an MSE undertaken by the SC allow for changes to the aggregate selectivity to better meet the pre-established management objectives, e.g. to maximize long-term yield? **(M+P)**
8. The SC has been considering MSY-based BRPs to be limit reference points but no target reference points have been put forth. The precautionary principle requires both. Should MSY-based BRPs be used as targets and other BRPs be established as limit reference points? **(M+P)**
9. If an MSE is to be undertaken, it will not be practical to initially specify all of the details needed to model the complex multi-national, multi-species WCPFC fisheries; and the current process for assessing them and providing management advice. The SC's 2008 work plan should include a scoping process that will identify the species and fisheries for initial consideration; evaluate the current assessment methods; suggest alternative methods as necessary; etc. Scoping out the MSE model? Unlikely to do a multi-species complex fishery to start the MSE. Need to identify which aspect(s) of the fishery we should target as the starting issue for initial MSE development. **(M+P)**
10. The HMS species identified in Annex 1 form a diverse and lengthy list, including many species considered to be bycatch in the tuna-targeted fisheries. Should bycatch issues and BRPs for bycatch species be considered in initial MSE planning? **(M+P)**