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Description:	*The aim of the branch is to contribute to maintaining and restoring the productive capacity and biodiversity of the marine environment, ensuring the protection of human health, as well as promoting the conservation and sustainable use of marine living resources through sound scientific-based management. The objective of the Small Pelagic Scientific Working Group is to provide advice and recommendations to ensure the sustainable utilisation of South Africa's small pelagic fish resources*

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MSC relationship (if applicable)	**Type of contributor**
MSC-accredited Certification Body Name: N/A **MSC Certificate Holder** Name: N/A Certificate number: N/A	**Organisation:** Government Department (Agriculture, Forestry and Fisheries) **Background:** The Small Pelagic Scientific Working Group undertakes accurate assessments of the resource status and predicts future status, to provide recommendations for the management of the small pelagic fishery resources in a sustainable fashion.

Future Consultations- I would like to receive consultation information on:

- Subsequent public drafts of this document ☑
- All fisheries documents ☐
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MSC Comment Form – 2011 consultation on Assessment of Low Trophic Level Fisheries (LTLF)

Document type	Code	Version No.	Draft No.	Date Circulated	Contact for this Consultation	Deadline for comment
	N/A			3 May 2011	Dan.Hoggarth@msc.org	3 June 2011

Name of Commenter of Organization:

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Branch: Fisheries Management, Department of Agriculture, Forestry and Fisheries, South Africa

1	2	3	4
Reference/Questions Part No. / Clause. No. / Note/Annex/Definition (e.g. "Introduction"; clause 3.1; p. 8, line 3)	**Type of comment** G = general; T = technical; E = editorial	**Comment** Justification / rationale for change	**Proposed change** Suggested new wording (additions, modifications, deletions)
Specific questions relating to this consultation and the document released are listed in the rows below. Comments on other areas are also welcome			
1. Are the requirements clearly framed as to how 'key LTL species' should be identified for the purpose of MSC assessments? Is additional guidance needed on any points?			

2. Are there other general species types that would normally meet the criteria in Appendix 2, and should thus be included in Appendix 1? Are the criteria for identifying key LTL species (Appendix 2) appropriate?	T	Some species of the Clupeidae family that would meet the criteria in Appendix 2 and for which assessments may be sought are omitted from Appendix 1. These include several herring species (e.g., *Clupea harengus*), sardinellas (e.g., *Sardinella aurita*) and round herrings (e.g., (Etrumeus Whiteheadi) Appendix 2. 2 a. For some systems it may not be operationally feasible to get clear answers on level of connection and energy transfer. It is furthermore not clear why 4% is chosen as the minimum and it is necessary to clearly define what is meant by a "large volume".	Add to Appendix 1 Herrings Sardinellas
3. Are the requirements clearly framed on the management expectations for key LTL species? Is additional guidance needed on any points?		**Please see below:**	
Please provide any additional comments not covered by the above consultation questions in the rows below. These may include general comments on the consultation or other ways by which the requirements could be specified to improve consistency of use, or ease of understanding. Add rows as needed.			

Key extract from MSC circular

"For species that are confirmed as key LTL species, the following requirements apply over and above the normal FAM requirements:

a. To achieve a 60 score for PI 1.1.2 (reference points), the target reference point must not be less than 40% of the unfished level (i.e. 40%B0). It must also be substantially above the level of BMSY. A minimum 15% above is suggested.

b. To achieve an 80 score for PI 1.1.2, the target reference point must be set at a level that has no more than a defined impact on associated species in the ecosystem (as given in c. below). The default target reference point level that maintains such impacts to these levels is 75%B0. Target reference levels below this level may still achieve 80 scores if it is shown that the ecosystem impacts are still within the required levels. Trophic models for the fishery/ecosystem being assessed (such as Atlantis or Ecosim) would be required to demonstrate that such impacts are within the necessary levels.

c. The required impact levels are that the abundance of no more than 15% of the impacted species are altered from their expected state in the absence of fishing on the target LTL species by more than 40%; and that no other species is impacted more than 60%."

Note: The MSC needs to take care to avoid ambiguities when specifying percentages. For example it is unclear from a. above alone whether the 15%, if BMSY is taken to be 40%B0, is intended to mean 46%B0 or 55%B0. Though somewhat buried in later detailed text, there is indication that the latter rather than the former is meant, it would be better to choose words for the primary text that avoid such confusion.

Response

While the intent underlying these proposals is understandable, the requirements set out to achieve an 80% score (obligatory in due course if certification is awarded) are both questionable in themselves and raise serious problems as regards how they would be adjudicated. We therefore consider them premature from an operational standpoint, and needing replacement at this time with much simpler and less onerous standards, at least until adequate clarity on some of the concerns raised below might be provided.

Target of 75%B0

- The origin of this figure (CCAMLR) is based on a very simple and coarse approach, which was intended as interim level for krill fishing in a low level fishery, quite different from fisheries with a long history of higher levels of utilization to which this standard would be applied.

- From the summary provided by the MSC on the "Impacts of fishing on low trophic level species", and also the report of their 24-25 March 2010 workshop in Seattle on this topic, it appears that inferences about impacts of such fishing on natural predators are based on modeling studies only. Before this 75%B0 target figure, and the 40% figure that is suggested as an appropriate threshold for the extent of impact on a natural predator population, might be accepted:

    a) empirical evidence as well as broad modeling studies needs to be presented demonstrating impacts at this level on predators for such a target, and

    b) justifying the conclusion that predator reductions of such a magnitude have led to a deleterious effects on ecosystems.

(Requirement a) might have effectively been met if model parameters have been estimated through fitting to time series of abundances of predators and prey in the studies conducted, but the summary does not make clear whether that has been the case.) More importantly though, whether a particular impact is undesirable or deleterious would seem to be a value judgment, and a justification for the selection of 40% as an appropriate threshold on which to base such a judgment needs to be presented. It seems questionable that this 40% figure is firmly proposed in circumstances where the MSC's Seattle workshop report states that the modeling team pointed out "that this was no more than an arbitrary cut-off and that it did not necessarily reflect a biologically significant impact", and that the workshop agreed "that a generic and biologically defensible cut-off point did not exist".

- In the case of the two primary small pelagic species harvested by the SA pelagic fishery, rough estimates of "targets" expressed in these terms would likely lie in the 60-70% region. The approaches to utilization of these resources are already regarded as very conservative (typically F << M), and there is no clear indication of any past negative ecosystem impact. In the absence of such, decreasing catches to meet the proposed target would simply have no scientific justification and be impossible to defend in local courts if litigation was brought against the government for implementing lower TACs on this basis.

- Species such as sardine and anchovy fluctuate considerably, making B0 open to different definitions and also difficult to estimate. A further problem is the occasional boom periods which such species experience – are these to be included in B0 estimates, or regarded as different "regimes"? A wide range of views could likely be reasonably advanced as to what was the effective "target" in such fisheries for these reasons. With so much at stake economically for an industry seeking but failing to achieve certification of such a fishery, this cannot be left to the vagaries of differing reviewer perceptions in circumstances where there are as yet no established and widely accepted international norms. Furthermore, such an approach would need to be operationalized to a far greater level of detail than put forward here before there could be reasonable confidence of its consistent application.

- Re paragraph 11 of the MSC text: It is unclear how the determination of this target would be operationalised. We suggest that it needs to be specified that this would be by way of median results for simulations under the harvest control rule being applied in the fishery. PI 1.1.1 mentions the stock "fluctuating around its target reference point", but how is adjudication of this to be operationalised? For example, what if environmental conditions lead to a series of low recruitments so that abundance is below the target level for a number of years, even though the fishing mortality has been kept in line with that required to attain the target under average conditions – would or wouldn't this be considered as meeting the requirements of the criterion?

- Re paragraph 17 (and hence also 11) of the MSC text: We struggle to understand the reasoning here. The key feature of most LTL species compared to non-LTL species is their greater fluctuations in abundance as a result of environmentally-induced fluctuations in annual recruitment whose impact on relative abundance is amplified as a result of the short lifespan typical of such species.

- Consideration of potential impacts on predators (particularly land-breeding marine predators) should also take account of possible localized reduction of prey density through fishing, though a criterion for this may be difficult to operationalise.

Use of trophic models to establish impact

- Worldwide there seems to be little if any use of such models by the scientific committees of RFMOs and similar organisations for the purposes of providing management advice

- There is a wide spectrum of views amongst scientists as to the reliability and acceptability of results from such models, with at least one scientific committee of an international fishery organisation considering them not yet sufficiently developed to play any role in management decisions, i.e. there are as yet no broadly accepted fisheries scientific norms in this area.

- Different reviewers could well hold very different views about the level of species disaggregation and extent of diet data monitoring necessary to consider such results reliable.

- There is a wide trend (e.g. for resources for which ICES provides advice, i.e. in first world countries, let alone developing countries) towards diminishing resources available for fisheries monitoring data, necessitating consideration of moves towards use of simpler assessment methods. This is quite the reverse of the direction implicit in these proposals which would greatly increase resource needs for monitoring e.g. feeding-related data.

- Before an approach such as advocated above might be accepted, indications need to be given of the levels of cost associated with the greater requirements for data collection and analysis that are seen to be required.

- The same broad reservation as above applies: with so much at stake economically for an industry seeking but failing to achieve certification of such a fishery, this cannot be left to the vagaries of differing reviewer perceptions in circumstances where there are as yet no established and widely accepted international norms.

- In essence the state of the art of acceptable fisheries modeling has not yet progressed to the stage that approaches such as suggested could realistically be expected to be widely implemented and their results consistently adjudicated. Given the levels of certainty that some scientists require to draw conclusions on such matters, the condition would be unachievable now and likely well into the future. Again, such an approach would need to be operationalized to a far greater level of detail than put forward here before there could be reasonable confidence of its consistent application.

A way forward?

The commendable essence of this proposal is to move from what at the moment is only a qualitative rather than a quantitative guideline in respect of the relative level of exploitation of lower compared to higher trophic level species.

The state of the art, and implementation (including interpretation) difficulties, dictates that no more than some very simple quantitative guidelines might be applied and reliably adjudicated in a relatively simple manner at this stage.

We therefore suggest that the acceptable target guideline (e.g. Bmsy or some proxy for this) should for the present be set 25-35% higher than the level that would be advocated in the absence of these trophic level considerations (i.e. in the range 1.25 – 1.35Bmsy/Bmsy proxy), unless cogent evidence can be presented that this is causing/would cause undesirable levels of reduction of some key higher trophic level species. This suggestion that at this stage MSC select a figure in the 25-35% range for the target for an 80% score is put forward on a purely pragmatic basis. We do not consider that the potential loss of income and particularly employment associated with choices of higher values to be justifiable at this time in the absence of supporting empirical justification. The criterion for a 60% score would then be set intermediate between this level and Bmsy or its proxy.

This situation should again be reviewed at a time trophic models have come to be much more widely applied and accepted as a basis to contribute towards fisheries management advice in most parts of the world. The only way an acceptable approach might be achieved to introducing such considerations earlier would necessitate a complete revamping of the current certification *modus operandi*. The approaches put forward here are

cutting edge and unresolved in fisheries science, unlike the generally agreed norms used for single species assessment and management. In such circumstances one cannot expect or rely on the expertise of what typically amounts to no more than one member of a certification panel to provide consistent evaluations (in contrast to the situation for single stock assessment evaluation where there are broadly accepted norms in existence). Rather that would have to be achieved using the well-established approach in international fisheries management bodies of an expert group of scientists, with appropriately wide expertise and representivity, as well as reasonable continuity over time, to fully debate in annual round-table meetings all new cases of this nature raised each year, and to contrast them with their past practice and decisions. Only this would have the chance of securing the consistency and fairness of decisions that stakeholders with considerable economic and/or socially related stakes to safeguard would be entitled to expect.