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Response to CAB Response to Direction for Remand by the IA Regarding the 3PS Cod MSC Assessment

1 This document forms The Ecology Action Centre response to Acoura Marine's response to the Remand Decision of the Independent Adjudicator (IA), received by e-mail on March 4 2016.

2 We thank the IA for her detailed and clear commentary.

3 The IA's decision stated (Paragraph 2): "Taking into account all written and oral submissions and the evidence put before me, my decision is to remand the Determination for the certification body to consider again PI 1.1.2, specifically with regard to compliance with CB 2.3.4. All other points of the objection are not upheld."

4 We have a number of concerns with the rejection of the bulk of our objections and we will make these concerns known to the IA, CAB, Client, and MSC in due course.

5 Our response focuses solely to the CAB response in their Appendix 1.

6 With reference to DFO (2012) in which there is a section on MSY-based reference points for 3Ps Cod, the CAB asserts that "… one of the two models tested arrived at a Bmsy estimate that is highly consistent with a recent estimate of 2 x the LRP for 3Ps Cod (i.e., 21,480 t is consistent with 19,000 t (long term data and Beverton-Holt), and 21,000 t (recent term data and Bacon-Watts), so fully meeting requirements as detailed in CB 2.3.4."

7 In fact, there are 5 Bmsy estimates in DFO 2012 with values of 91,000 t, 31,000 t, 30,000 t, 21,000 t, and 19,000 t. The CAB selected only the two estimates that suited their argument despite acknowledging that there was no clear evidence as to which stock-recruit model may be more appropriate. We submit that no reasonable certification body could have reached such a decision on the evidence available to it.

8 The CAB states "During the site visit, DFO accepted that the estimation of actual MSY-based reference points does require an assessment framework review and further review of a modeling approach which could be used to quantify the USR." The site visit occurred from August 4-7, 2014 (final report p. 57). The TESA workshop reported in DFO (2012) occurred December 13-15, 2011, 32 months before the site visit. Clearly DFO did not accept the MSY-based reference points reported in DFO (2012), otherwise why would they state that further another assessment framework and modeling was required to arrive at MSY-based reference points?

9 The scale of the reference points, i.e. LRP = 10,740 t and TRP = Bmsy = 21,480 t is

incompatible with the 2014/15 TAC of 13,225 t and the post-moratorium average landings 13,290 t. While the IA chose to ignore landings data from the period 1960-1989 (para. 26 of Final Decision), surely the more recent landings data are considered reliable. Otherwise, how could the fishery be managed with TACs? Figure 1 shows the SURBA SSB time series scaled to the LRP of 10,740 t in 1994 and the annual landings. The landings exceeded the biomass in 5 of 20 years. The SURBA biomass estimate in 2014 was 17,184 t and if the TAC were caught, this would generate a harvest rate of 77% which is well above what the stock could sustain. Figure 2 compares the annual fishing mortality rate determined as the ratio of catch/biomass (standard fisheries definition) with total mortality rate determined by SURBA. Note that total mortality = Fishing + Natural mortality. The rate of fishing mortality exceeded the total mortality rate in 14 of 20 years. This simply cannot happen. We submit that no reasonable certification body could have reached such a decision on Bmsy on the evidence available to it.

10 The CAB states “An upper stock reference (USR) level of 2 times BLIM has been defined as part of the harvest control rules within a stock rebuilding programme. This is consistent with DFO's Precautionary Approach (PA) Framework (DFO 2006d, DFO 2009d)…”. This simply is not true. Nowhere in the cited documents is it stated that the USR can be 2 x the LRP. We submit that no reasonable certification body could have reached such a decision on the evidence available to it.

11 The following is the direct text from DFO (2009b) that is relevant to finding proxy values for Bmsy.

> **Biomass at MSY.** In absence of an estimate of B_{MSY} from an explicit model**, the provisional estimate of B_{MSY} could be taken as follows** (select the first feasible option):
>
> The biomass corresponding to the biomass per recruit at F0.1 multiplied by the average number of recruits; or
>
> The average biomass (or index of biomass) over a productive period; or
>
> The biomass corresponding to 50% of the maximum historical biomass.

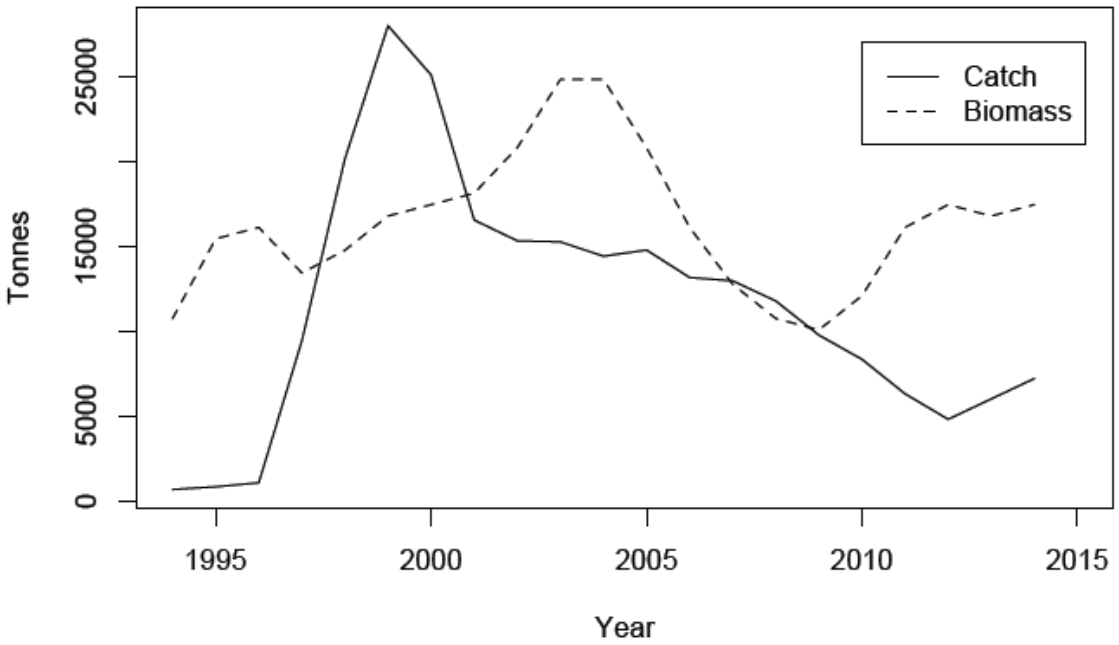

Figure 1: Comparison of landings and biomass of 3Ps Cod 1994-2014. The landings data were taken from Healy *et al.* (2013) for 1994-2010 and DFO (2015) for 2011-2014 . The biomass time series was taken from the SURBA estimates in DFO (2015) scaled to the 1994 value of 10,740 t.

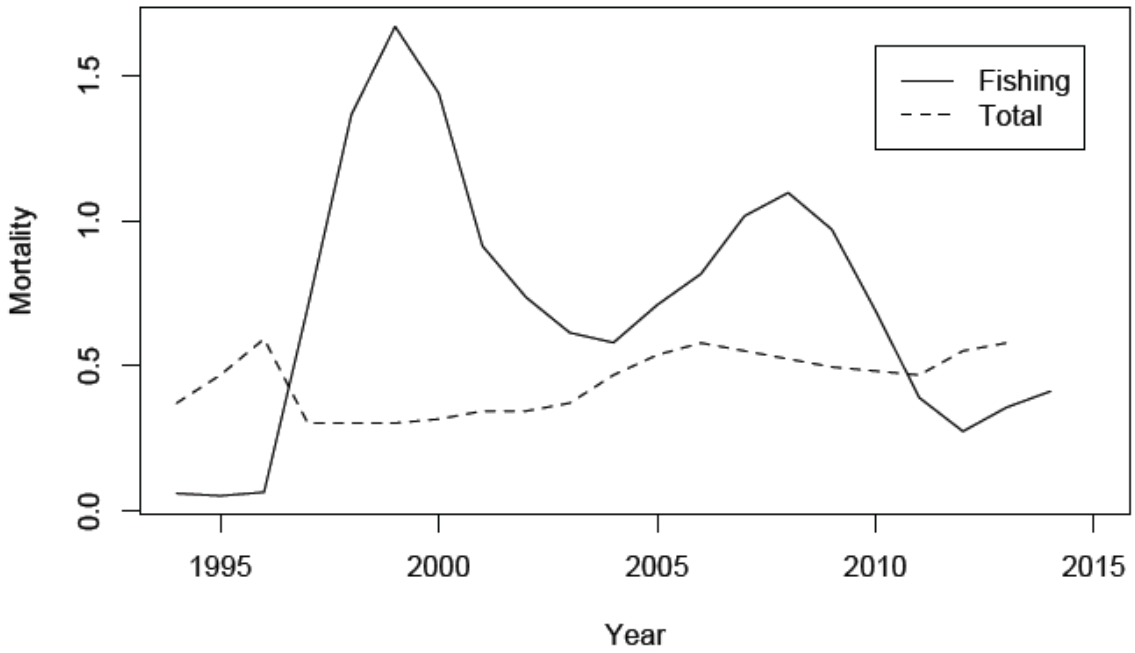

Figure 2: Comparison of fishing and total mortality estimates of 3Ps Cod 1994-2014. The total mortality estimates were obtained from DFO (2015). The fishing mortality was estimated as landings / biomass shown in Figure 1.

Additional References

DFO (2012). Presentation 10: Current issues with MSY-based reference points in 3Pc Cod. in Proceedings of the national workshop for Technical Expertise in Stock Assessment (TESA): Maximum sustainable yield (MSY) reference points and the precautionary approach when productivity varies; December 13-15, 2011. Canadian Science Advisory Secretariat Proceedings Series 2012/055.

Healy, B.P. *et al.* 2013. Assessing the status of the cod (*Gadus morhua*) stock in NAFO Subdivision 3Ps in 2012. CSAS Res. Doc. 2013/087.