



SCIENTIFIC COMMITTEE

THIRTEENTH REGULAR SESSION

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**Implications of a range of Target Reference Points
for the south Pacific albacore stock**

WCPFC-SC13-2017/MI-WP-01

Pacific Islands Forum Fisheries Agency

Purpose of the paper

The report of the 13th Annual Session of WCPFC (December 2016, Nadi), under Agenda 8.4 on a Target Reference Point (TRP) for South Pacific Albacore, included the following requests and agreements:

313. WCPFC13 requested that existing analyses of the implications of different TRP levels – in terms of total catch and effort changes required – should be re-circulated to CCMs by FFA before the end of December 2016, and that the Scientific Services Provider assist CCMs in understanding the economic implications of different TRPs for their vessels before SC13.

314. WCPFC13 agreed to defer the possible adoption of an interim Target Reference Point for the South Pacific Albacore stock, which had originally been agreed to take place in 2015 under the Harvest Strategy Work Plan, until December 2017 at the latest.

315. The Commission directed that further discussion of the TRP should take place over the course of 2017 as part of the ongoing consultative process for the development of a Bridging Measure for the Conservation and Management of the South Pacific Albacore stock, and should include a report on progress by the Convenor of that process to the 13th WCPFC Scientific Committee.

WCPFC14 thus will adopt a TRP for South Pacific Albacore and this paper responds to the request for FFA to re-circulate a summary of existing work on the implications of different TRP levels in order to assist WCPFC members in that discussion.

Further to paragraph 315 of the WCPFC13 report, it had originally been envisaged that discussion of a South Pacific Albacore Bridging Measure among WCPFC CCMs would start early in 2017, however this will not take place until after TCC, on 4th October. In view of this delay we felt that these TRP options would be more usefully considered by CCMs at SC13 rather than as an isolated circular shortly after WCPFC13.

SC13 is invited to consider these options with a view to providing scientific advice to the Commission, noting that the South Pacific Albacore Measure Consultation on October 4th will also discuss a TRP and that WCPFC14 is scheduled to make a decision on the matter in December.

SC13 may also wish to note that while the agreement of a Target Reference Point for a stock is a management decision, the proposed TRP options themselves are based on elements such as estimated biomass and the estimated cost of fishing, that are informed by fisheries science and economics, and thus within the advisory remit of SC13.

Background

The CCMs that are Participants in the Tokelau Arrangement (Australia, Cook Islands, Fiji, New Zealand, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu) adopted an interim South Pacific Albacore TRP in October 2015. The objective of the interim TRP is to restore spawning biomass and CPUE, over time, to approximately 2008 levels, which was the period when a consensus of Tokelau Arrangement Participants felt that their southern longline fisheries were last economically productive.

The TKA-adopted TRP is intended to help restore and maintain the spawning biomass (SB) at 45% of the estimated biomass in the absence of fishing ($SB_{F=0}$), or $SB / SB_{F=0} = 0.45$.

Various other bioeconomically-informed options were considered in making this decision, and all but one of these options were presented to the WCPFC Harvest Strategy Workshop (HSW) in November 2015 in the SPC paper HSW-WP-05. After this HSW discussion, the FFA member proposal to establish a TRP for the South Pacific Albacore stock was considered by WCPFC12 (WCPFC12-DP03). A further proposal was made to WCPFC13 in Fiji as WCPFC13-DP09, accompanied by a technical analysis in WCPFC13-2016-13. The issue was also considered by SC in SC11-MI-WP-07 and SC12-MI-WP-01. These various papers contain the description of the analyses and reasoning, and will not be repeated here.

South Pacific Albacore Stock TRP options

Objectives

An agreed TRP must reflect the management objectives of stakeholders, and it is clear that these will vary within any group. The WCPFC Management Objective Workshops in 2012 and 2013 that initiated the work on harvest strategies specifically focussed on this issue. In particular, MOW2 considered the “strawman document” (MOW2 IP-01), which was based on an inclusive process at MOW1 that allowed all CCMs and observers to describe their management objectives for each fishery.

For the southern longline fishery, there was good agreement amongst stakeholders on the need for objectives to ensure biological sustainability of albacore. The majority of stakeholders also listed economic factors as objectives for this fishery, although these came in different forms including:

- Maximum Economic Yield;
- Optimising CPUE and fishing capacity;
- Maximising access revenue; and
- Catch level stability.

Clearly, each of these objectives could be achieved through different TRPs, but this is a useful starting point for consideration.

Potential TRPs

Table 1 presents a table of the expected consequences for the fishery of a range of potential TRPs based on the information provided in Table 1 of WCPFC HSW-WP-05¹. The table also includes advice from SPC on the fishery consequences of a candidate TRP of 14% $SB/SB_{F=0}$, which is the estimated level of biomass depletion that would produce the maximum sustainable yield for the stock, unqualified by relevant environmental and economic factors. The indicative result for this MSY candidate TRP is presented in the bottom line of the table.

¹ <https://www.wcpfc.int/system/files/HSW-WP-05%20Potential%20SP%20Albacore%20TRP.pdf>

Option #	TRP (median SB ₂₀₃₃ /SB _{F=0})	Change in Catch Rate Proxy ²	Change in effort by 2033 relative to 2013 to achieve TRP	Average change in total catch in 2033 relative to 2013 resulting from TRP	Risk of breaching 20% SB _{F=0} LRP in 2033	Result for this level of TRP once fishery reaches equilibrium
1	59%	+49%	at least -75%	-59%	0%	Maximum Economic Yield achieved
2	45%	+17%	-47%	-41%	0%	Allows 20% revenue margin per average vessel over costs at US\$1.10 cost per hook or 10% revenue margin for a high cost vessel over costs at \$1.30 per hook
3	42%	+10%	-39%	-38%	0%	Allows financial break-even per vessel if cost is \$1.30 per hook
4	40%	+5%	-33%	-36%	0%	Allows 10% revenue margin over costs at \$1.10 per hook
5	37%	-1%	-23%	-33%	4%	Allows break-even if cost is \$1.10 per hook
6	34%	-8%	-12%	-30%	9%	Allows 10% revenue margin over costs at \$0.90 per hook
7	32%	-14%	0% (status quo)	-28%	20%	Achieved if no change in effort from 2013: Allows break-even only if cost per hook is less than \$0.90
8	14%	-56%	+150%	-22%	74%	Maximum Sustainable Yield achieved

² Vulnerable biomass in 2033 relative to 2013 (Median longline VB₂₀₃₃/VB₂₀₁₃)

FFA Members' proposed TRP and the process for its selection

FFA members used the information in Annex 1 to form their proposal for an interim TRP of 45% $SB_{F=0}$, which was proposed in 2015 and 2016. A detailed presentation³ on the factors considered in selecting that TRP was provided to the Harvest Strategy Workshop and is not repeated here. Critical issues worth highlighting to the SC include:

- Any TRP less precautionary than 32% $SB_{F=0}$, which is what it would fall to under current fishing effort poses an unacceptable risk of breaching the limit reference point;
- Maintaining effort at current levels will see catch levels decline by 28% and CPUE decline by 14% over the next 20 years;
- A TRP more precautionary than 37% $SB_{F=0}$ is required to ensure that there are no further reductions in vulnerable biomass, used as a proxy for longline CPUE;
- Similarly, a TRP more precautionary than 37% $SB_{F=0}$ is required to deliver a “breakeven” scenario for vessels indicative of the regional average cost structure (\$1.10 per hook);

TRP option #2 (45% $SB_{F=0}$) is where FFA members ideally want the stock biomass to be restored to by 2033, which should allow the average individual longline vessel to achieve a 20% revenue margin during an average fishing year with average prices, noting that both of these vary over time. Even for higher cost vessels (\$1.30 per hook), this level would allow a 10% revenue margin. As highlighted in the HSW presentation, this would restore the stock broadly to the condition it was in in 2008, which was generally accepted as a good state.

While FFA members have proposed a TRP at that level, Table 1 clearly shows that significant reductions would be required to achieve it. FFA members are therefore open to discussions about other potential TRPs that represent fishery improvement, but might be achieved more easily.

It must be emphasised that agreement of a TRP does not require it to be achieved immediately. It would be achieved over an agreed timeframe through management actions by governments within their EEZs and over their vessels fishing on the high seas. It is a reference point, not a rule.

Recommendations

The Commission has laid down a clear expectation that it will adopt a TRP for albacore this year and the SC to provide advice about that undertaking. To do so, CCMs are strongly encouraged to:

- Describe their own objectives for the fishery; and
- Using the information in table 1, discuss which TRPs broadly reflect those objectives, as well as considering the implications of each TRP therein.

FFA members look forward to further discussing these options and analyses with other CCMs over the remainder of 2017, with a view to broader co-sponsorship of a proposal for adoption of a Target Reference Point for south Pacific albacore – and a timeframe for achieving it – for agreement at WCPFC14.

³ <https://www.wcpfc.int/system/files/Agenda%207.b%20Wez%20Albacore%20TRP.pdf>