Southern Bluefin Tuna Management Advisory Committee (SBTMAC)

MINUTES
SBTMAC 37
25 SEPTEMBER 2013
CANBERRA
SOUTHERN BLUEFIN TUNA MANAGEMENT ADVISORY COMMITTEE (SBTMAC)

Introduction
The thirty-seventh meeting of the Southern Bluefin Tuna Management Advisory Committee (SBTMAC 37) was held in Canberra on 25 September 2013.

The primary objectives of the meeting were to discuss:

- the outcomes from the 2013 Commission for the Conservation of Southern Bluefin Tuna (CCSBT) Scientific Committee meeting;
- research issues for the SBT fishery;
- monitoring arrangements in the SBT Fishery;
- the proposed 2013 observer program; and
- the status of the 2013/14 SBT Fishery budget.

Agenda Item 1: Preliminaries/matters arising

1.1: Opening Comments

1. The Chair, Mr Max Kitchell, opened the meeting at 9:00am and welcomed members and observers to the 37th meeting of SBTMAC.

2. Apologies were received from Mr Michael Thomas (industry member), Mr Rick Kolega (industry member) and Dr Mehdi Doroudi (State government invited participant). Mr Glenn Sant (conservation member) was also unable to attend.

3. Participants at SBTMAC 37 were:

   Chair
   Mr Max Kitchell

   Members
   Dr Ilona Stobutzki (ABARES)
   Mr Trent Timmiss (AFMA)
   Mr Andrew Wilkinson (farm industry sector)
   Mr Justin Nelligen (farm industry sector)

   Invited Participants
   Mr Terry Romaro OAM (non-farm industry sector)
   Mr Brian Jeffriess AO (ASBTIA)
   Mr Brett Cleary (recreational sector)

   Executive Officer
   Ms Stephanie Johnson (AFMA)

   Observers
   Dr Campbell Davies (CSIRO)
   Mr Dave Ellis (ASBTIA)
   Mr Matt Daniel (AFMA)
   Mr John Andersen (AFMA)¹

4. SBTMAC adopted the agenda with the addition of an Ecological Risk Assessment discussion at Agenda Item 5.4.1. The full meeting Agenda can be found at Attachment A.

¹ Present for Agenda Item 4 only.
1.2: Pecuniary interest declarations

5. The AFMA member stated that as outlined in the *Fisheries Administration Act 1991* and Fisheries Management Paper No. 1 all members of SBTMAC must declare any pecuniary interest in the Fishery at the commencement of the meeting (Table 1) and also at the commencement of each agenda item. The Committee noted that if a member discloses an interest in an item, the member must absent themselves from the meeting before the item is considered and the MAC must make a decision as to whether the member can participate in the discussion and in the making of a recommendation or remain absent from the meeting for the item. The AFMA member stressed that the MAC must fully comply with these requirements in relation to conflicts of interests during the meeting.

6. The AFMA member further noted that, regardless of the MAC’s decision on the member’s involvement in the discussion, in each and every case the minutes of the meeting must:
   
   i) Record the fact of the disclosure relating to a conflict;
   
   ii) Record the determination of the Committee whether the member may or may not be present during discussion of the matter, which is the subject of the conflict; and
   
   iii) Produce minutes (not just a Chair’s summary) for all MAC meetings, regardless of whether or not they are face-to-face.

7. SBTMAC noted that the requirement to declare an interest at the beginning of each agenda item was only for members and not for permanent observers or invited participants. It was agreed that members would declare interests at the beginning of each main agenda item, that is, at the beginning of discussion on agenda items numbered 1 through 6.

8. Members acknowledged that AFMA has consultative groups such as Management Advisory Committees because of people’s expertise in areas that are relevant to discussions.
Table 1: SBTMAC members, invited participants and permanent observers’ declarations of interest

<table>
<thead>
<tr>
<th>Member</th>
<th>Declared interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Max Kitchell</td>
<td>Employed as the SBTMAC Chair. No pecuniary interest in the fishery.</td>
</tr>
<tr>
<td>Mr Trent Timmiss</td>
<td>Employee of AFMA, no pecuniary interest in SBT fishery</td>
</tr>
<tr>
<td>Dr Ilona Stobutzki</td>
<td>Employee of ABARES, no pecuniary interest in SBT fishery, noting that ABARES conducts research on a range of fisheries issues.</td>
</tr>
<tr>
<td>Mr Glenn Sant</td>
<td>Employee of Traffic Oceania, which has a collaboration agreement with the University of Wollongong, no pecuniary interest in SBT fishery.</td>
</tr>
<tr>
<td>Mr Andrew Wilkinson</td>
<td>SBT quota holder, General Manager of company that owns and operates a tuna farm/catching business.</td>
</tr>
<tr>
<td>Mr Justin Nelligan</td>
<td>SBT quota holder and SBT boat operator.</td>
</tr>
<tr>
<td>Ms Stephanie Johnson</td>
<td>Employee of AFMA, no pecuniary interest in SBT fishery.</td>
</tr>
<tr>
<td>Permanent observer/invited participant</td>
<td>Declared interests</td>
</tr>
<tr>
<td>Mr Terry Romaro (Invited Participant)</td>
<td>Employee of a company that owns SBT SFR’s and works with company that has a consultancy with Aus Asia fishing that may longline fish in SBT Fishery.</td>
</tr>
<tr>
<td>Mr Brett Cleary (Invited Participant)</td>
<td>President of Game Fishing Association of Australia, Chair of Tasmanian Association for Recreational Fishing Inc, Member of Sustainable Marine Research Collaboration Agreement with the Institute for Marine and Antarctic Studies (IMAS), no pecuniary interest in SBT Fishery.</td>
</tr>
<tr>
<td>Mr Brian Jeffriess (Invited Participant)</td>
<td>CEO of Australian Southern Bluefin Tuna Industry Association</td>
</tr>
<tr>
<td>Mr Matt Daniel (Observer)</td>
<td>Employee of AFMA, no pecuniary interest in SBT fishery</td>
</tr>
<tr>
<td>Mr Campbell Davies (Observer)</td>
<td>Employee of CSIRO, no pecuniary interest in SBT fishery. Noting that CSIRO conducts research on range of fisheries issues.</td>
</tr>
<tr>
<td>Mr Dave Ellis (Observer)</td>
<td>Research Manager of the Australian Southern Bluefin</td>
</tr>
</tbody>
</table>
1.3: Acceptance of minutes from SBTMAC 36

9. SBTMAC adopted the provisional minutes as a true and accurate account of the discussions from SBTMAC 36.

1.4: Actions arising from SBTMAC 36 and subsequent intercessional work

10. Members noted the status of the actions arising from SBTMAC 36 as outlined below:

<table>
<thead>
<tr>
<th>Action arising</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Strategoric research meeting to be convened before end of 2012.</td>
<td>Completed.</td>
</tr>
<tr>
<td>2 AFMA to clarify VMS permit conditions for carrier vessels transferring fish to port.</td>
<td>Completed. Permit changes have been made; Carrier boats now must have VMS on and must prior report if towing cages south of Dangerous Reef.</td>
</tr>
<tr>
<td>3 SBTMAC to consider changing the starting date of the domestic fishing season.</td>
<td>Ongoing – AFMA has changed the legal mechanism for this from a regulation to a Determination. This makes a season date change much simpler, but it still must be noted that there will need to be a 10 month season prior to a shift in the season date to 1 October or 1 November. The season date cannot be changed within one season for the following season. AFMA will prepare a MAC paper outlining the associated issues with this action item, and present this at SBTMAC 38.</td>
</tr>
<tr>
<td>4 Executive Officer to include an option for members to respond to any out of session papers with a ‘no comment’ response.</td>
<td>Completed – this can now be done.</td>
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</table>

Intersessional work

11. SBTMAC noted that there have been a number of Management Plan amendments made since SBTMAC 36. These included:

i) The ability to include an undercatch allowance in the Plan;

ii) A remodel of the overcatch provisions to ensure they are consistent with any future quota policy;

iii) Allowing the season date to be set by determination;

iv) Retaining live release provisions; and
v) Streamlining some aspects of the Total Allowable Commercial Catch (TACC) setting process to remove the need to publish the outcome in a national newspaper.

12. The recreational invited participant queried the detection of stock declines due to the undercatch provisions.

13. The AFMA member explained that the undercatch percentage will be set each year, based on advice from the MAC. Any concerns about the status of the stock would be picked up through this committee, and more broadly by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) through the annual aerial survey and commercial catch information.

14. SBTMAC noted the status of the action items and the intersessional work, including the following correspondence received between meetings:

   a) October 2012, AFMA circulated a paper asking for the MAC to consider comments received during the public comment period on the draft SBT Plan amendment 2012;

   b) November 2012, AFMA requested contributions and comments on the Commonwealth Policy on Fisheries Bycatch and the Commonwealth Fisheries Harvest Strategy Policy and Guidelines reviews being undertaken by the Department of Agriculture, Fisheries and Forestry (DAFF);

   c) November 2012, AFMA circulated a paper on SBT verified count procedures for comment;

   d) January 2013, AFMA circulated a paper on the proposed SBT undercatch/overcatch arrangements for the 2012/13 fishing season for agreement;

   e) February 2013, AFMA’s 6 month levy acquittal – 1 July to 31 December 2012 sent to SBTMAC for information;

   f) March 2013, AFMA circulated the letter sent to all AFMA concession holders regarding the Quota Administration Policy;

   g) March 2013, AFMA requested comments on the research proposal for the study: ‘Forecasting spatial distribution of SBT habitat in the GAB’;

   h) April 2013, AFMA circulated for comment, the draft 2013-14 cost recovered budgets for the SBT fishery;

   i) August 2013, written comment was requested from SBTMAC on the consultation paper on varying the Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations as developed by the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC);

   j) August 2013, AFMA circulated for information, a letter from Nick Rayns to the MAC and RAG Chairs advising that AFMA will be publishing annual catch data (from CDRs) for some Commonwealth fisheries on the internet in early September 2013.
Agenda Item 2: State of the fishery

No conflicts of interest were declared under this agenda item. SBTMAC noted that no recommendations were being made and that members were just providing information reports.

2.1: Informal industry report on the 2012/13 catching season, markets and outlook

15. Industry members informed SBTMAC that the purse seine sector has had a good catching season with high quality fish caught. However, prices in Japan were lower than had been expected, making the season difficult financially. Industry is currently looking to expand their markets into South Korea and China.

16. Industry further stated that one primary company has ceased farming for the next season (2013/14) and other companies are reviewing their operations and considering how to reduce their costs. Economic conditions in the farming sector were very difficult for all operators.

17. Industry expressed their appreciation at the way AFMA handled the recent fish escape from a tow pontoon, due to storm damage.

18. Members noted that the longline sector had access to a higher amount of quota this year and were able to catch good quality SBT. However, longline operators also found the market very poor this year.

19. Industry members expressed their concern at the continuing poor economic conditions in the SBT fishery and indicated that the next two years are also likely to be difficult. The Japanese reportedly believe that the prices this season was a low and it should improve over subsequent years, however changes in other tuna fisheries and the competition within the market mean that it might be two to three years before the full impact of these factors are seen. This is the reason for the intended expansion of the SBT market into South Korea and China.

20. The recreational fishing invited participant provided an update on the recent recreational catches of SBT in Tasmania. Recent surveys indicated approximately 103 tonnes of SBT were caught by recreational fisherman in 2012, however it was noted that the level of catch is highly variable between seasons. A total of 59 tonnes of this catch was taken by private boats with an additional 17.8 tonnes taken by the charter boat sector. Depredation due to seals accounted for 24.9 tonnes. Other recreational reports indicate that the number of large SBT being caught by the recreational sector is increasing in Tasmania however there seems to be large fluctuations in sizing for no known reason.

21. The recreational fishing invited participant expressed some concern regarding the noticeable increase in the number of seals following boats and attacking fish. Game Fishing Australia, in partnership with the Institute of Marine and Antarctic Studies (IMAS) are encouraging people to move away from seal colonies when fishing.

22. The MAC noted that Tasmania also carries out tagging of recreationally caught SBT, similar to that done in NSW, however the numbers fluctuate quite significantly. There is currently a strong push by the Tasmanian State Government for boat limits. The recreational sector is currently reviewing the need for tighter constraints.

23. The AFMA member gave the MAC an update on the longline sector for SBT catch. It was noted that the SBT management zones were again used in the Eastern Tuna and Billfish
Fishery (ETBF) this season and a higher level of observer coverage was required to fish within these zones.

24. TTMAC noted that AFMA has signed a contract with a Canadian based company for the provision of electronic monitoring (e-monitoring) services within the ETBF. E-monitoring will be vessel-based systems, consisting of four cameras. The AFMA member stated that it was expected that e-monitoring would begin to be implemented over the next few months, with a focus on operators fishing within the SBT management zones. With e-monitoring in place, AFMA should be able to deliver their services at a reduced cost.

25. The scientific member queried the ability of e-monitoring to meet the same requirements as for observers, however the AFMA member stated that AFMA intends to use e-monitoring as the main system for observer coverage and this has also been outlined to the Western and Central Pacific Fisheries Commission (WCPFC). E-monitoring will also be used as a quota verification tool for logbooks and 10% of all shots in the ETBF will be reviewed. There will be no indication of which boats/trips will be reviewed and the level of coverage in the ETBF will be biased towards those fishing within the SBT management zones. While e-monitoring will be the primary monitoring method, it is intended that a very small percentage of observer coverage will still be utilized.

Agenda Item 3: Research issues

Dr Stobutzki, as the MAC research member, declared an interest under this agenda item. She exited the room and the remaining MAC members discussed her conflict. All remaining members agreed that Dr Stobutzki’s interest was not a significant one and she should be included in all discussions under this agenda item.

3.1: Outcomes from the 2013 CCSBT Scientific Committee meeting

26. The SBTMAC scientific member referred to the Research sub-committee (RSC) meeting held on the previous day (24 September 2014).

27. The scientific member advised the MAC that the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) Ecologically Related Species Working Group (ERSWG) meeting was held in late August and this was followed by the CCSBT Extended Scientific Committee (ESC) meeting in early September. The scientific member emphasised the need for discretion with this summary information as the outcomes of these meetings remain confidential until after the main CCSBT Commission meeting being held in two weeks’ time. The main focus of this meeting was on sharks and seabirds and the interactions of fishing activities with these species. There have been working groups established to determine how we could measure the effectiveness of the seabird bycatch mitigation measures, and it is expected that an assessment of Porbeagles in the Southern Ocean will be undertaken.

28. The MAC noted that the main activity of the CCSBT ESC meeting was to run the Management Procedure to set the global Total Allowable Catch (TAC) for the 2015-17 quota block, and confirm the global TAC for the 2014 season. The recommendation for the 2014 season was a global TAC of 12,449 tonnes. For the 2015-17 3-year quota block, the ESC recommended an increase in the global TAC of 18% (based on the 2014 TAC) to 14,647.4 tonnes. This recommendation is still to be confirmed, but this is the initial number. The recommended increase has been driven by the positive trend that has been displayed in the longline sector Catch Per Unit Effort (CPUE), and the general positive trend seen in the aerial survey results. The maximum increase in the global TAC that the Management Procedure allows is 3,000 tonnes. The ESC also recommended a mortality allowance of 10 tonnes per
year, however it was unclear as to whether this allowance was to be included in the global TAC or in addition to it. The national TAC allocations will be set by the CCSBT at their upcoming annual Commission meeting.

29. In terms of the next stock assessment for SBT, these are done every 3 years and the last assessment was completed in 2011. The MAC noted that the next stock assessment for SBT will be undertaken in 2014 and a technical workshop was recently held in Portland, Maine, USA to begin the discussions regarding the sensitivities and assumptions for the next assessment. There will be another technical workshop held in 2014 to ensure that there will be a fully developed stock assessment and what it will mean for the Management Procedure. A preliminary review of the indicators for the next stock assessment revealed that they were all either positive or neutral, and subsequently there were no signs of exceptional circumstances.

30. The MAC further noted that the CCSBT is unlikely to fund further research and there is only a small amount included in the ESC’s workplan. During the ESC meeting, there was also less of a focus on Stereo Video than previously. Some comments were put forward by Japan regarding how Australia would report the data. There was some frustration that Stereo Video still has not been implemented.

31. The scientific member also provided an update on the ESC discussions relating to recreational catch of SBT. There is a continued interest in the scale of the Australian recreational catch of the species. The ESC agreed that there is a need to take this additional information into consideration when assessing SBT. New Zealand is currently leading an intersessional process to investigate the level of these other sources of mortality. The ESC indicated that Japan has reported very high levels of discarding—up to 44%—primarily of small fish. However, Japan’s discarding rate appears to always be lower when an observer is onboard. New Zealand also has a very small recreational take of SBT, but this is generally no more than one tonne. New Zealand are currently finalising their comprehensive recreational fishing survey and the report is due to be released in the next few months.

32. SBTMAC noted the report provided by the scientific member regarding the recent CCSBT ERSWG and ESC meetings.

3.2: Report from the Research Sub-committee meeting (24 September 2013)

33. The SBTMAC scientific member provided a summary of the outcomes of the Research sub-committee (RSC) meeting held in Canberra on the previous day. The key points arising from the meeting were:

   i) An update was provided on the current research projects and discussion regarding the new Strategic Research Plan followed. The main focus of this discussion was the identification of essential and high priorities for research for the SBT fishery and the level of risk associated if these priorities were not completed.

   ii) During the meeting, the scientific member compiled a paper on the prioritisation of research activities for 2014-15 (Attachment B).

   iii) The Management Procedure is due to be reviewed in 2017.

34. The AFMA member thanked the scientific member for putting together the paper on research priorities and informed the MAC that a smaller sub-group of the RSC would review
the priorities over the following weeks, before circulating to the rest of the MAC for comment. The deadline for the Strategic Research Plan is the first week in November.

**Action Item 1**: A sub-committee to finalise the Strategic Research Plan draft and circulate to the MAC for comment, intersessionally.

35. The MAC noted that the RSC intend to more clearly define the levels of priority; essential, high, medium, low. For example, if a project is categorised as ‘high’ priority, the project ‘directly addresses the key uncertainties relating to the stock assessment, Management Procedure or the monitoring of the fishery’.

**Agenda Item 4: Compliance issues**

No conflicts of interest were declared under this agenda item.

4.1: Compliance update

30. The AFMA Compliance Operations Senior Manager, John Andersen provided an update to the MAC on recent compliance issues. The two key risks that are currently affecting Australian commercial fisheries are VMS monitoring arrangements on boats and quota evasion.

31. For the SBT fishery specifically, AFMA Compliance intend to conduct a Level 1 audit of all the fish receivers in the SBT farm sector and will then undertake a Level 2 audit of all documentation. Last year there were mixed results from a similar audit; all receivers were compliant at Level 1, but only one entity was fully compliant at Level 2. Mr Andersen stated that the focus of the audits will be specifically on the paperwork.

32. More generally, the MAC noted that audits have also been conducted on east coast operators and compliance has been good.

33. The AFMA member advised the MAC of a Japanese request that the exact farm name on the register be included on all paperwork. He stressed the need for this to be done properly in order to continue working with the Japanese.

34. A final comment from Mr John Andersen, reiterating that VMS is the operator’s responsibility and that this should be taken seriously, was noted by the MAC.

35. SBTMAC accepted the minutes from the Compliance Sub-Committee (CSC) meeting and the SBTMAC Chair thanked Mr Andersen for his time. The MAC also noted that the CSC will not hold any further meetings, however if any specific issues arise, the CSC may be reconvened if necessary.

**Agenda Item 5: Domestic management issues**

Mr Wilkinson declared his conflict of interest under Agenda Item 5: Domestic Management Issues, as a SFR quota holder and as a manager of a SBT company. In line with the requirements as a MAC member who has declared an interest under an agenda item, Mr Wilkinson left the room. Mr Nelligen declared his interest under this agenda item as a SFR holder and also left the room. Mr Romaro also declared an interest under this agenda item and left the room.
The remaining members of SBTMAC considered each declaration individually and agreed that Mr Wilkinson, Mr Nelligen and Mr Romaro should all be allowed to return for all items under Agenda item 5 as each of their expertise was important to discussions and most items were for noting.

## 5.1: Monitoring arrangements in the SBT fishery

36. The AFMA member provided an update on the progress of the Stereo Video arrangements in the fishery. He outlined that there had been some amendments to the Management Plan regarding the concept of the verified count. There is a requirement that AFMA makes a determination on the transfer weight. This is currently done using the 100 fish sample method, however the AFMA Commission has decided that the transfer weight will be calculated using Stereo Video from 1 December 2013. The AFMA Commission will consider the draft determination at their meeting later in 2013.

37. The AFMA member stated that it is possible that the Commission will decide not to implement Stereo Video at their next meeting and that it was his intention that an alternative paper would be provided, should this happen. The two draft papers; Stereo Video Monitoring Determination and Procedure, and the AFMA Procedures for Verified Count – 100 Fish sample are included as Attachments C and D below. Both these papers were discussed by SBTMAC.

38. It was further emphasised by the AFMA member that all fish sampled in the 100 fish methodology must weigh greater than 10kg.

39. The observer, Mr Brian Jeffriess (ASBTIA) presented the MAC with a summary of Industry’s views. The main stated concern regarding the 100 fish sampling method was the upward bias in the sample if all the fish weighing less than 10kg are excluded. In comparison, the Stereo Video method appears to have a major systemic bias. Using the 100 fish sample means that the physical weights of fish are taken, whereas with Stereo Video, a formula is used to infer the weight of a fish from a recording. This is then averaged out and can be highly variable across years. There was also some concern expressed by Mr Jeffriess that the Stereo Video trials were never completed, that the Stereo Video method is done retrospectively, and that the technology is not cost-effective. The full representation of the view of the SBT farm sector industry is included at Attachment E and this document was endorsed by the Industry members present at SBTMAC.

40. The AFMA member recognised the contribution provided by Mr Jeffriess on behalf of the SBT farm sector industry and stated that AFMA has previously responded to Industry’s concerns in writing. He also outlined that the Fisheries Management Act 1991 requires all fish to be covered by quota from the point at which they are captured and in the case of SBT, this can be up to two weeks before they are transferred from the tow cage. Many of the concerns expressed by Industry have been regarding the retrospective sampling of Stereo Video. AFMA considers this a minor concern as Industry can take their own samples at the time of transfer and over/undercatch and live release provisions have also been introduced to assist Industry should there be a discrepancy in their estimations.

41. In relation to the concern regarding the Wildlife Trade Operation (WTO) for SBT, AFMA acknowledged and accepted the point that the WTO does not include a condition for the introduction of Stereo Video.
42. The scientific member stated that Industry had raised the same concerns with the Department of Agriculture, Fisheries and Forestry. There is currently no evidence that there was systemic bias in the trial of Stereo Video, but there is potential bias in terms of unusable fish and fish that moved faster through the system. However, this issue is expected to be resolved with the faster frame rate in the new Stereo Video system. The main concern of the CCSBT Scientific Committee is that with a continuation of the 100 fish sample, there is an ongoing risk that any potential underreporting will also continue.

43. The Industry Invited Participant, Mr Brian Jeffriess, reminded the MAC that Industry supported the initial increase in sampling from 40 to 100 fish due to the perceived bias surrounding the smaller sample. However, he also stated that the difference in results between the 40 and 100 fish samples is not statistically significant. An additional point made by Mr Jeffriess is that AFMA is not paying the bill for Stereo Video.

44. An Industry Member supported the comments made by Mr Jeffriess and reiterated that it is a major concern if the scientific inputs are mistakenly done. He stated that he would like to see more scientific evidence to show that the system is accurate.

5.2: Proposed 2014 observer program

45. The AFMA member provided the MAC with an update on the observer program for the previous season. The CCSBT requires a minimum of 10% observer coverage in the purse seine sector and last season (2012-13), there was 13.9% of catch and 7.1% of effort monitored. In the longline sector, the observer coverage level was 13% within the SBT management zones.

46. For the next season (2013-14), the observer budget has been reduced from 90 to 70 days. With additional quota available in the longline sector, the risk of SBT being captured and not covered by quota is reduced, however with the implementation of electronic monitoring, the risk is expected to be reduced even further. The east coast SBT management zones will be the priority areas when electronic monitoring is implemented.

47. The MAC noted the information provided on the previous season observer coverage and the upcoming season program.

5.3: SBT budget issues (2013-14 budget)

48. The AFMA member provided the MAC with a summary of the budget for the SBT fishery. The final budget for 2013-14 (Government and Cost Recovered) is $1,846,246. The AFMA member also outlined that salaries had increased due to the 3% pay increase to all staff, plus the advised estimates on superannuation. However, the budget will be reviewed following the AFMA Commission decision regarding Stereo Video. There could potentially be a cost-saving this year, which will be accredited in 2015.

49. The AFMA member also stated that this is the final year that AFMA will be contributing to the consultations and contractors budget. In addition, the overheads had also increased slightly for this budget, but these are an automated calculation. Logbooks are being directly invoiced to operators now on a fee for service basis, and for most fisheries there is an option to use electronic logbooks, to reduce their individual costs.

50. The MAC noted that there has been a reduction in observer costs for the fishery due to the reduction in observer days from 90 to 70. There may also be some cost savings with
compliance if Stereo Video is not introduced, and the research projects are as they were when included in the draft budget.

51. The Invited Participant, Mr Brian Jeffriess, requested a full breakdown of the Protec Marine contract and how it is handled within AFMA. The Protec Marine contract has increased this year by $230,000, which has accounted for some variance from last year.

**Action Item 2:** The AFMA member to provide SBTMAC and Mr Jeffriess with the full breakdown of the Protec Marine contract.

52. SBTMAC noted the budget summary provided and that AFMA will provide a breakdown of the compliance data budget to the MAC.

### 5.4: Environment update

53. The AFMA SBT Fishery Manager provided the MAC with a summary of the new Wildlife Trade Operation approval for SBT that will expire on 22 July 2016. Some conditions were included that relate to the operation of the fishery in terms of reporting. AFMA will continue to investigate catch monitoring methods, observers and interactions with protected species, to satisfy these conditions.

54. The MAC noted that there were no interactions with protected species in the 2012/13 fishing season. It was also noted that the network of marine reserves is still expected to be implemented on 1 July 2014, however this is now uncertain with the new Government. This is also the case for the reviews on the Commonwealth Harvest Strategy Policy and Commonwealth Policy on Fisheries Bycatch.

### 5.4.1 ERA/M update

55. The AFMA SBT Fishery Manager provided the MAC with an update of the Ecological Risk Assessment/Ecological Risk Management revitalisation project. The SBT fishery currently does not have any identified high risk species. The project is still in the scoping phase and it is likely that the scope of the project will be changed significantly over the next few months.

56. The Scientific member highlighted that the CSIRO is currently undertaking some work on identifying the process for risk assessments on habitats as this is still not being done well.

57. SBTMAC noted the current status of the project and the comments made by the Scientific member.

### 5.5: Other domestic management issues

58. A number of Industry members stated that they would to have quota allowed to be carried over between 3-year blocks. The CCSBT has only permitted undercatch between the years within 3-year blocks. The AFMA member informed the MAC that this is unlikely to be allowed if CCSBT specifically prohibits it.

59. Industry members expressed further concern regarding the difficulties of leasing quota to the east coast at the end of a 3-year block when undercatch is not permitted.
60. The AFMA member reiterated that these concerns and the decision of allowing undercatch between 3-year blocks are beyond the control of the MAC. However, the AFMA member stated that he would support an application for this at the upcoming CCSBT meeting, should Industry intend to pursue this matter further.

61. A suggestion provided by the AFMA member was that if the MAC was to agree to a resolution that says if CCSBT offers rules to allow for the transfer of undercatch into the next block, then the MAC would recommend to the AFMA Commission to allow this provision.

62. The MAC noted that an undercatch provision allows operators to make more sensible decisions regarding their catch and the best use of their quota. Without undercatch, operators are more inclined to catch their entire quota by the end of the season, even if it is not economically viable to do so.

**Agenda Item 6: Next meeting**

No conflicts of interest were declared under Agenda Item 6.

63. The Scientific member indicated that there had been some discussion in the Research Sub-committee (RSC) meeting as to having an additional RSC in March 2014. This would make this meeting more in line with the CCSBT Scientific Committee meetings.

64. The MAC agreed to hold a RSC meeting in March, subject to budgetary constraints. It was noted that it would be acceptable for this to be a teleconference.

65. The AFMA member indicated that it may be beneficial to hold another MAC meeting in May 2014, in addition to the usual meeting held in September.

66. The MAC noted and agreed to schedule the next MAC meeting for September 2014, with the exact date to be confirmed closer to the time.

Meeting closed at 1:40pm

Max Kitchell  
SBTMAC Chair  
September 2013
Attachment A

Meeting of the Southern Bluefin Tuna Management Advisory Committee (SBTMAC 37)

9.00am – 3.00pm September 25, 2013
AFMA Aquarium Room – 6th floor, Bank West House,
73 Northbourne Avenue Canberra

Draft Agenda

1. Preliminaries/matters arising
   1.1 Opening remarks/apologies/acceptance of agenda
   1.2 Pecuniary interest declaration
   1.3 Acceptance of draft minutes SBTMAC 36 September 2012
   1.4 Action arising SBTMAC 36 and intersessional work

2. State of the Fishery
   2.1 Informal industry report on the 2012/13 catching season, markets and outlook
   2.2 Informal reports from other stakeholders

3. Research issues
   3.1 Outcomes from the 2013 CCSBT Scientific Committee meeting
   3.2 Report from the Research Sub-committee meeting held the afternoon of 24 September 2013

4. Compliance issues
   4.1 Compliance update

5. Domestic management issues
   5.1 Monitoring arrangements in the SBT Fishery
   5.2 Proposed 2014 observer program
   5.3 SBT budget issues
      5.3.1 Status of AFMA’s 2013/14 SBT budget
   5.4 Environment update
      5.4.1 Ecological Risk Assessment and Management of the SBT fishery
   5.5 Other domestic management issues (eg undercatch/catch exceeding quota)

6. Next meeting
Attachment B

Southern Bluefin Tuna Fishery

Strategic Research Plan

(2014-2018)
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SBTF 5 year Strategic Research Plan (2014-2018)

Introduction
The SBTF Strategic Research Plan aims to provide a framework that identifies the key strategic research needs for the five-year period 2014-2018 inclusive. The Strategic Research Plan will assist the SBT Management Advisory Committee (SBTMAC) to identify and support research that will help achieve management goals.

The Plan will include annual research priorities that detail the specific research topics of focus each financial year that have been identified by SBTMAC, with advice from the Research Sub-Committee (RSC).

The SBTF Strategic Research Plan takes into account the fact that Australia is a member of the CCSBT that is responsible for the international management of the global SBT stock. The objectives of CCSBT are to ensure, through appropriate management, the conservation and optimum utilisation of the global SBT fishery. Management arrangements agreed at CCSBT are implemented in the domestic fishery through the SBT Management Plan and associated legislative instruments. The CCSBT Extended Scientific Committee provides the stock assessment and scientific advice associated with the SBT stock. Historically research contributing to the SBTF has been commissioned by AFMA, the Department of Agriculture, FRDC, CCSBT and ACIAR. This strategic research plan focuses on the priorities identified by SBTMAC and AFMA.

At the eighteenth annual Commission meeting of the CCSBT in 2011 a Management Procedure (MP) was adopted that outlines a rebuilding strategy for the Southern Bluefin Tuna stock. The MP aims to achieve rebuilding of the stock to 20 per cent of the initial unfished biomass (the interim rebuilding target) by 2035, with 70 per cent probability. Elements of this research plan refer or link to Australia’s obligations as a member of CCSBT.

AFMA Corporate goals and strategies
Research activities funded by AFMA must focus on attaining AFMA’s primary management objectives, which are:

i) to ensure the ecological sustainability of the fishery; and
ii) to maximise the economic efficiency of the fishery.

AFMA has developed three research goals to assist in achieving these management objectives, which are outlined in Figure 1.

These research goals should act as a guide for SBTMAC in developing SBTF research plans, identifying research priorities for the annual call for research and assessing research proposals.
Figure 1. AFMA’s corporate goals and strategies 2011-2016

Goal: Increase the number of sustainably harvested stocks and maximise the economic return to Australia

Strategy: Focus on understanding the size and condition of fish stocks and their ecosystems, prioritised by ecological risk, to underpin fishery management actions.

Goal: Prevent unacceptable impacts of Commonwealth fisheries on marine ecosystems and organisms

Strategy: Decrease the number of species identified as high risk by ERA/ERM after mitigation measures are applied.

Goal: Continuously improve the efficiency and cost-effectiveness of fisheries management and administration

Strategy: Invest in business processes and technologies that match the core needs of AFMA and its stakeholders.
Identifying research needs

Research activities must be consistent with AFMA's corporate goals and strategies and the drivers of research can be considered to fall into five categories:

**Biological**

Across AFMA's fisheries, biological and fisheries information is essential to adequately assess the stocks and estimate the size of sustainable harvests from those stocks.

In the SBTF this has been and continues to be a strong driver for research. Biological and fisheries information and research to underpin the assessment of the SBT stock and implementation of the management procedure are essential. The depleted state of the stock, its current listing as conservation dependent under the EPBC Act and the rebuilding target reinforces the need for robust assessments and scientific monitoring.

The CCSBT management procedure (MP) provides a scientific monitoring and assessment schedule (summarised below) that includes a MP run every 3 years to recommend the global TAC; annual status assessment and consideration of whether there are indicators of exceptional circumstances; and an in-depth stock assessment (reconditioning of the operating model) every 3 years.

There is also a need for research to address key uncertainties in the stock assessment (operating model) and continue to develop and implement robust indicators of the stock. Research that aims to increase the cost-effectiveness of monitoring and assessment approaches should also be a priority.

Research that contributes to understanding the broader environmental and ecosystem effects on the SBT stock, habitat and distribution are also considered under this driver.

**Environmental**

In general, information about the impact of fisheries on the marine ecosystem is essential to assist AFMA achieve our objective of ensuring Commonwealth fisheries are ecologically sustainable. Ecological risk assessments (ERAs) are a central component of the Ecological Risk Management (ERM) framework and are conducted on all Commonwealth fisheries. The results of ERAs assist in identifying and prioritising research needs regarding fishery impacts on the marine ecosystem, and in guiding research investment, data collection, monitoring, and future management decisions.

In the SBTF this is a weaker driver for research, while noting the need for continued scientific monitoring in line with the 2009 SBTF ERM workplan.

The ecological effects of fishing in the SBTF addressed here focus on the purse seine fishery. The purse seine fishery takes ~ 98 per cent of the SBT catch. There is some catch of SBT in pelagic longline operations, however, the research associated with this is dealt with in the Australian Longline Tuna and Billfish Fishery (ALTBF) ERA reports, ERM workplan and the ALTBF Strategic Research Plan.

The 2009 SBTF ERM report concluded that the ecological effects of fishing in the SBTF are minimal and are largely due to the small incidental capture of non-target species (including the capture of protected species). Purse seining was found to have no direct impact on the physical marine environment.

The level 3 SAFE assessment on chondrichthyans and teleosts identified no non-target species to be at high risk to the effects of fishing. The level 2 PSA identified three species at
high risk (Dusky Shark, White Shark and Southern Bluefin Tuna) all of which were reduced to either low or medium risk through the level 2 Residual Risk process. While 182 threatened, endangered or protected (TEP) species were assessed as occurring in the area of the SBTF, no TEP species were found to be at high risk through the ERA process. Consistent with AFMA’s objectives, and good fisheries management practices all steps will be taken to minimise interactions with these species within the fishery.

The ERM priority for the SBTF is to maintain and build on the monitoring already conducted in the fishery. By continuing to monitor aspects of the fishery such as bycatch, discarding and interactions with TEP species AFMA will be able to adequately respond to issues in the fishery in an adequate and timely manner.

**Legislative**

There are a range of legislative and international requirements which influence research activities in the SBTF. Research priorities must be consistent with AFMA’s other research programs, International obligations under the Convention for the Conservation of Southern Bluefin Tuna and obligations under the *Environment Protection and Biodiversity Conservation Act 1999*.

This is a **strong driver** of research in the SBTF, with the research primarily related to the fisheries biology and monitoring.

Southern Bluefin Tuna is listed as conservation dependent under the EPBC Act 1999. The listing advice evaluated the measures outlined in the *Resolution on the Total Allowable catch and future management of Southern Bluefin Tuna* of the 16th meeting of the Extended CCSBT and considers that they could be effective in halting further decline and supporting the recovery of SBT in order to maximise its chance of survival in nature. The CCSBT Management Procedure provides the rebuilding plan for SBT.

Over time, there may be research associated with this status and the conditions of the SBTF wildlife trade operation approval.

As a member of the CCSBT Australia has obligations with respect to data exchange and national reporting, as well as participation in the Extended Scientific Committee and Ecologically Related Species Working Group.

**Economic**

Many factors influence the overall economic performance of the fishery. In general, AFMA require an understanding of the effects of economic changes to manage Commonwealth fisheries to maximise economic efficiency.

Currently, this is a **weaker driver** of research in the SBTF. However, in considering research priorities, activities that aim, or have the potential, to increase the cost-effectiveness of monitoring and assessment approaches should be a priority.

**Social**

In general, research into the social aspects of Commonwealth fisheries can contribute to consideration of maximising the social benefits. Social research aspects may include investigating access to the resource and resource allocation issues.
Currently this is a **weaker driver** of research in the SBTF.

**Performance Indicators**

The effectiveness of the Strategic Research Plan should be measured through appropriate performance indicators and the SBTMAC will consider the development of these in 2014.

**The CCSBT Management Procedure**

In 2011 CCSBT adopted an agreed MP (also known as the ‘Bali procedure’) to recommend the level of the global TAC to the CCSBT. The MP has been implemented from 2012 and is the analogous of a harvest strategy. The CCSBT MP specifications (Attachment 15 of CCSBT 2012) outline the required data inputs, which include the scientific aerial survey index. The specifications also outline the cycle of MP runs to generate the TAC (every 3 years), in-depth stock assessment (every 3 years, not coinciding with years when a new TAC is calculated from the MP) and formal review of MP performance (after 6 years, not coinciding with years when a new TAC is calculated from the MP).

During the life of this SBTF Strategic Research Plan (2014-18), the MP specifies the following stock monitoring and assessment schedule:

- **Annual** Review of stock and fishery indicators (including the scientific aerial survey index) and any other relevant data or information, for evidence of exceptional circumstances.

- **2014** **In depth stock assessment** (including reconditioning of the operating model with new and updated data). The technical work to enable an in depth stock assessment in 2014, commenced in 2012, with the inclusion of new data and the specifications for the OM and data updates were concluded at the 4th OMMP technical meeting (July 2013) and the 2013 ESC. There is intersessional work required to conduct the exploratory analyses and conduct the assessment, with an OMMP technical meeting scheduled for June-July 2014, to ensure the 2014 ESC in able to complete the in depth stock assessment.

  The 2013 meeting of the Commission requested the ESC also conduct sensitivity analyses around all sources of unaccounted catch mortality and provision of preliminary advice on the impact of any unaccounted catch mortalities on the stock assessment projections and possible MP recommendations beyond the 2015-17 quota block.

  On the basis of the assessment, indicators and any other relevant information, determine whether there is evidence for exceptional circumstances. For example, exceptional circumstances could be indicated if the stock assessment indicates that the stock is outside the range of projected stock trajectories considered in the MP evaluations.

- **2016** **MP scheduled to be run** to recommend the annual TAC for the years 2018-20 for consideration by the Extended Commission.

- **2017** **First formal review of MP performance**, including consideration of whether there are indications of any need or not, to revise the current MP. Initial discussion of potential performance criteria for the formal review are likely to commence at the 2015 ESC, to provide recommendations for consideration by the Extended Commission at their 2016 meeting. It is likely that the 2016 ESC would discuss the
work needed to measure performance against the agreed criteria, so that the results are available for consideration in 2017.

If there is a decision to revise the MP, there is likely to be work required to develop this over the following 2-3 years.

2017 **In depth stock assessment** (including reconditioning of the operating model with updated data). The technical work to enable an in depth stock assessment in 2017 is likely to commence in 2016 and the scale of work program likely to depend on whether there are new data for inclusion in the operating model. There may be a need for an inter-sessional technical meeting prior to the 2017 ESC.

On the basis of the assessment, indicators and any other relevant information, determine whether there is evidence for exceptional circumstances.

**SBTF Research Framework**

The SBTF Strategic Research Plan is structured around research activities, including:

1) Scientific monitoring;
2) MP implementation;
3) Stock assessment (OM development); and
4) Research activities that aim to improve scientific monitoring or address key uncertainties in the stock assessment, MP or annual status advice.

1. **Scientific monitoring.** This includes fishery dependent and independent monitoring that forms the basis of the annual advice on SBTF stock status and management recommendations and the key data series in the OM and MP. This includes the required data provision under CCSBT. These are on-going activities that generally require annual updates, including:
   i) Characterisation of catch
   ii) Abundance Indices
      a) Recruitment
      b) Sub-Adults
      c) Spawning biomass
   iii) Biological parameters

   The SBTF Strategic Research Plan identifies research to address areas of uncertainty or alternative, more cost-effective approaches to monitoring, generation of abundance indices or data collection.

2. **CCSBT Management procedure implementation.** The MP is analogous to a harvest strategy for the SBTF. The MP specifications (CCSBT 2012, Attachment 7) identify regular activities required over the next five years. The SBTF Strategic Research Plan identifies research to improve future MPs or associated with the implementation of the current MP.

3. **Stock assessment (OM development).** The current MP requires an in-depth stock assessment every three years. The technical work to complete the 2014 in-depth stock assessment commenced in 2013. Intersessional work is required
in 2014 to complete the assessment. In line with the three-year cycle of stock assessments and objective of providing a robust assessment of the SBT stock, the research activities that address key uncertainties for future stock assessments have been identified.

**Economic and/or Social Research.** The current SBTF Strategic Research Plan does not identify specific economic or social research activities. However, in prioritizing research activities consideration has been given to the potential of the activities to contribute to more cost-effective monitoring, assessment and MP implementation. In addition research activities that provide a potential opportunity for capacity building for other CCSBT members, and thereby broaden the contributions to research and monitoring of the fishery have also been identified.

**Research Priority Areas and Needs**

The following research areas have been identified as **essential and high priority** needs for the next five years by SBTMAC with input from the SRC. These are consistent with AFMA's strategic goals and priorities and are not listed in order of priority.

**Provision of Data**

- Provision of scientific and fishery monitoring data and indices to enable the implementation of the MP, annual status assessment and tri-annual stock assessments and meet Australia’s reporting and data exchange obligations (Table 1).

Risks if not undertaken:

- *Substantially increased uncertainty around stock status and fishery management decisions*
- *if MP indices are not available this is likely to trigger exceptional circumstances and the MP may not be able to be used to recommend the global TAC*
- *if data are not available for the tri-annual stock assessment, the assessment will be less robust, which may have implications for exceptional circumstances*
- *if Australia does not meet the reporting and data exchange obligations there may be CCSBT compliance ramifications.*

**Biological Research Priorities**

- Stock assessments (OM Development) (Tables 1 and 2)
  - Ensure annual status assessment is robust and based on the most up to date indicators and data.
  - Ensure three-yearly cycle of in-depth stock assessment (2014 and 2017) is conducted, robust and based on the most up to date indicators and data. Including sensitivity analysis around all sources of unaccounted catch mortality and the influence on projections.
  - Research towards addressing, key uncertainties specifically:
    - Information on total removals: recreational catches and mortalities
    - Understanding the proportion of the juvenile population that move into the GAB
Evaluation of the costs and benefits of sampling designs for continued close-kin data (design study), providing an index of abundance for the spawning biomass.

Risks if not undertaken:
- Annual status assessments and in-depth stock assessments will depend on research provided by other CCSBT member scientists.
- Increased uncertainty in stock assessments will increase uncertainty around stock status and fishery management decisions. This may compromise the ability to demonstrate rebuilding of a conservation dependent species.
- Robust information on total removals is required for an understanding of the productivity of the stock.
- If the assumptions around the population structure of juveniles are not correct this will influence the robustness of the stock assessment.
- If the design study for future close-kin is not undertaken, further development on a cost effective index of spawning biomass will not occur. There is a risk of not maximising the benefits obtained from the close-kin investment to date.

Environmental influences on juvenile distribution (Table 2)
- Investigate the oceanographic and environmental factors impacting on the distribution of SBT and the scientific aerial survey index (Medium).
- Investigate the potential impact of seismic surveys on the distribution of SBT and the scientific aerial survey index.

Risks if not undertaken:
- If oceanographic and environmental factors or seismic surveys impact the distribution of juvenile SBT, they may influence the scientific aerial survey index. This index is one of the two indices used in the MP and the only fishery independent index. It is also a key input to the stock assessment.

Environmental Research Priorities
- Monitoring of Bycatch and Byproduct in line with the SBTF ERM report (2009)

Risks if not undertaken:
- Reduced ability to demonstrate the low risk of the surface fishery to bycatch and byproduct species.

Legislative Research Priorities
- Scientific monitoring and data provision (discussed above)
- Management Procedure implementation (Tables 1 and 2):
  - Annual review of whether there are indicators of exceptional circumstances
  - Consideration of the implications of the in-depth stock assessments (2014 and 2016) for the MP
  - 2016 MP run to recommend the 2018-21 global TAC
  - Preparation for and input to the first formal review of MP performance (2017).

Risks if not undertaken:
- Implementation of the MP would be reliant on scientific representatives of other members.
– Lack of implementation of the MP would reduce certainty for industry, as there is less likelihood of three-year TACs, it would also compromise the science-based process for recommending TACs.
– Implementation of the MP is central to the rebuilding strategy for SBT as a conservation dependent species.

**Economic and Social Research Priorities**

- Alternative measures of juvenile recruitment, with the first stage an evaluation of the cost effectiveness and possible sampling designs for gene tagging program (Table 2). The aim is to determine if there are more cost effective approaches that may reduce the long term monitoring cost.

**Risks if not undertaken:**
- Lack of a basis to determine if there are more cost effective approaches to monitoring juvenile recruitment.

**Prioritisation of research activities**

**Essential:** this research is essential to meeting AFMA’s primary objectives and/or Australia’s obligations as a member of CCSBT. This includes elements specified in the CCSBT management procedure.

**High:** this research directly addresses key uncertainties that impact the MP, stock assessment (OM) or the monitoring of the fishery. If this research is not undertaken the science-base for management decisions has increased uncertainty.

**Medium:** this research addresses some key uncertainties but the impact on the robustness of the management decisions is less.

**Longer term:** this research may be important in a longer time period than this plan (2014-18) but is not a priority for the current plan.

**Scientific monitoring and annual work program activities**

**Table 1:** The scientific monitoring and annual work program activities, necessary to meet AFMA’s primary objectives, provide input to the CCSBT MP, OM, stock status assessment and meet data submission and reporting requirements.

<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ongoing scientific monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Characterization of catch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catch amount &amp; fleet dynamics</td>
<td>Essential</td>
<td>OM and annual status advice</td>
<td>Logbook catch and effort, observer data, SAPUE index. Reported by ABARES (FRRF) and CSIRO (SAPUE).</td>
<td>Fundamental information for management and input to assessments. Not meeting Australia’s reporting and data submission obligations to CCSBT.</td>
</tr>
<tr>
<td>Size structure</td>
<td>Essential</td>
<td>OM and annual status advice</td>
<td>Length frequency samples scaled up to whole catch. Reported by ABARES (FRRF)</td>
<td>Fundamental information for management and input to assessments. Not meeting Australia’s reporting and data submission obligations to CCSBT.</td>
</tr>
<tr>
<td>Age structure</td>
<td>Essential</td>
<td>OM and annual status advice.</td>
<td>Generation of catch at age for Australian fisheries is currently undertaken by</td>
<td>Inability to conduct the assessment and not meeting Australia’s reporting and data submission requirements.</td>
</tr>
</tbody>
</table>

26
<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual collection and archiving of otoliths from the Australian fishery</td>
<td>Essential</td>
<td>OM and annual status advice. Historically there has been a change in growth rates and this monitoring is needed to detect if this occurs again.</td>
<td>CSIRO 2013/14 as part of AFMA inter-sessional science project)</td>
<td>Inability to assess changes in size at age.</td>
</tr>
<tr>
<td>Ageing of otoliths and generation of updated age-length keys for the Australian fishery. The frequency at which this needs to be done (annually, every 2nd year, etc) should be examined.</td>
<td>High</td>
<td>OM and annual status advice. Simulation testing with the current OM, to determine how frequently updated age-length keys are required could identify efficiencies.</td>
<td>Undertaken by CSIRO (Project: Archiving of hard parts for SBT) 2013/14)</td>
<td>Inability to assess changes in size at age. Potentially increased uncertainty in the assessment, as reliant on &quot;old&quot; age-length keys.</td>
</tr>
<tr>
<td>Scientific observer program</td>
<td>Essential</td>
<td>Data validation and ERSWG assessments</td>
<td>Reported by ABARES (FRRF)</td>
<td></td>
</tr>
</tbody>
</table>

**Abundance Indices**

**Recruitment**

<table>
<thead>
<tr>
<th>Scientific Aerial Survey</th>
<th>Essential</th>
<th>OM, MP and annual status advice</th>
<th>Undertaken by CSIRO (Project: Aerial survey in the Great Australian Bight (GAB) 2013; Aerial survey in the Great Australian Bight (GAB) 2014) that includes a contribution from CCSBT Total cost ~$800k per year but may be reduced due to changed structure of contracting hardware.</th>
<th>One of the two indices on which the MP is based, may result in exceptional circumstances if not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial SAPUE index</td>
<td>High</td>
<td>Annual status advice, fleet dynamics; if in the worst case scenario the scientific aerial survey does not take place one year this provides some information for that year.</td>
<td>Generated by CSIRO (Project: Aerial survey in the Great Australian Bight (GAB) 2013; Aerial survey in the Great Australian Bight (GAB) 2014) Small analysis cost as part of Scientific aerial survey project</td>
<td>No immediate impact. Not available for annual indicators analysis, nor contingency for lack of scientific aerial survey.</td>
</tr>
</tbody>
</table>

Sub-adults
<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring and review of the core CPUE for the MP</td>
<td>Essential</td>
<td>OM, MP and annual status advice</td>
<td>Undertaken by Japan and CPUE Working Group; ABARES participation (FRRF); CSIRO participation (CSIRO).</td>
<td>One of the two indices on which the MP is based. May result in exceptional circumstances if not available. Procedure</td>
</tr>
<tr>
<td>Monitoring series (‘reduced base’ and ‘shot by shot’ stated in the MP specifications)</td>
<td>Essential</td>
<td>Annual status advice and MP implementation</td>
<td>Undertaken by Japan and CPUE Working Group; ABARES participation (FRRF); CSIRO participation (CSIRO).</td>
<td>Specified in the MP. Potential for inappropriate CPUE series to be adopted as monitoring series.</td>
</tr>
</tbody>
</table>

**Spawning biomass**

<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesian catch and effort data from observer program</td>
<td>High</td>
<td>OM and annual status advice Potential opportunity for capacity building and further collaboration</td>
<td>Provided by Indonesia Builds on capacity development work of CSIRO/ACIAR/AusAID/DAFF projects, including PhD project.</td>
<td>Only fishery that occurs on the spawning ground.</td>
</tr>
</tbody>
</table>

**Biological parameters**

<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age-length relationship</td>
<td>Essential</td>
<td>OM and annual status advice</td>
<td>See Age structure under catch composition</td>
<td></td>
</tr>
</tbody>
</table>

**MP implementation**

<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of exceptional circumstances</td>
<td>Essential</td>
<td>MP and annual status advice</td>
<td>Annual review of indicators and exceptional circumstances. Undertaken by CSIRO (Inter-sessional Science Project 2013/14) &amp; ABARES (FRRF)</td>
<td>Central to the effective implementation of MP and confidence internally and externally of CCSBT.</td>
</tr>
<tr>
<td>Consideration of the implications of the 2014 updated assessment for the MP. Are the individual grid and assessment results outside the range that the MP was tested for?</td>
<td>Essential</td>
<td>MP implementation</td>
<td>2014</td>
<td>Breaches the MP agreed implementation and would, therefore, trigger exceptional circumstances.</td>
</tr>
<tr>
<td>2016 MP run to recommend 2018-21 TAC</td>
<td>Essential</td>
<td>MP</td>
<td>2016</td>
<td>No agreed TAC advice from ESC.</td>
</tr>
<tr>
<td>Activity</td>
<td>SBTF Priority</td>
<td>Input to</td>
<td>Current process (2013)</td>
<td>Risk if not undertaken</td>
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<tr>
<td>science inputs) and recommend to the Commission 2016 ESC workplan to deliver performance measures for consideration at 2017 ESC.</td>
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</table>

**Stock Assessment (OM development)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>SBTF Priority</th>
<th>Input to</th>
<th>Current process (2013)</th>
<th>Risk if not undertaken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised stock assessment/ reconditioning of the operating model (2014) Intersessional work for the OMMP5 workshop and delivering the revised assessment to 2014 ESC.</td>
<td>Essential</td>
<td>OM 2014, in depth stock assessment as described in the MP specifications including projections and analysis of impacts of unaccounted for mortality.</td>
<td>Breaches the MP agreed implementation and would, therefore, trigger exceptional circumstances. Need to define/develop approach for TAC recommendation at short notice. Difficult for ESC to develop consensus advice for Commission on MP implementation for 2016-17.</td>
<td></td>
</tr>
<tr>
<td>CCSBT 20 Request for conduct of sensitivity analysis around all sources of unaccounted catch mortality and provide preliminary advice on the impact of any unaccounted catch mortalities on the stock assessment projections and the possible MP recommendation beyond the 2015-17 quota block.</td>
<td>Essential</td>
<td>OM 2014 and consideration of exceptional circumstances</td>
<td>Needed to provide advice on stock status and the impact of unaccounted catch mortality. Potentially reduced confidence in the stock assessment.</td>
<td></td>
</tr>
</tbody>
</table>

**Strategic research priorities (2014-19)**

Table 2. Strategic research activities that have been identified to improve scientific monitoring and address key uncertainties in the stock assessment, annual status and future MP development/refinement. The relative priorities from the SBT MAC are shown.
<table>
<thead>
<tr>
<th>Activity Potential research</th>
<th>Relevance</th>
<th>Timeframe</th>
<th>SBTF Priority</th>
<th>Related research</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Scientific monitoring</strong></td>
<td></td>
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<tr>
<td><strong>i. Characterization of catch (Future)</strong></td>
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<tr>
<td>Catch amount</td>
<td></td>
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</tr>
<tr>
<td>Robustness of total mortality data (all fleets)</td>
<td>Critical to estimates of total mortalities for OM and annual status advice; management procedure assumes the catch taken is the TAC.</td>
<td>Ongoing</td>
<td>High/ Essential</td>
<td>Partially addressed through regular review as part of ESC (ABARES &amp; CSIRO) Information from the Compliance Committee</td>
<td>Increased uncertainty in stock status. MP may not achieve rebuilding objective due to under-estimation of total removals.</td>
</tr>
<tr>
<td>Mortalities from fleets outside of CCSBT.</td>
<td>Improved estimate of total mortalities for the 2014 OM and annual status advice.</td>
<td>2013-14</td>
<td>Medium</td>
<td>Information from the Compliance Committee.</td>
<td>Increased uncertainty in stock status. MP may not achieve rebuilding objective due to under-estimation of total removals. Loss of economic returns to industry.</td>
</tr>
<tr>
<td>Information on total removals: longline fleet releases/ discards &amp; associated mortalities</td>
<td>Improved estimate of total mortalities for the 2014 OM and annual status advice</td>
<td>Ongoing</td>
<td>High</td>
<td>NZ led process for incorporation in 2014 stock assessment. It will require review and assessment of the suggested process.</td>
<td>As above.</td>
</tr>
<tr>
<td><strong>Age structure</strong></td>
<td></td>
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<tr>
<td>Feasibility of moving towards catch at age data rather than using cohort slicing in the OM.</td>
<td>Improved estimates of recruitment and selectivity from the longline fisheries, OM and annual status advice.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Longer term (dependent on appropriate sampling across all fleets)</td>
<td></td>
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<tr>
<td></td>
<td>Low (as ESC has concluded that it is not likely there will be sufficient sampling coverage for</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Australian data collected by CSIRO (Project: Archiving of hard parts for SBT 2013/14).</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Uncertainty in the estimation of year class strength and recruitment variability. There may be an alternative through genetic tagging of juveniles.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity Potential research</td>
<td>Relevance</td>
<td>Timeframe</td>
<td>SBTF Priority</td>
<td>Related research</td>
<td>Risk</td>
</tr>
<tr>
<td>-----------------------------</td>
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<tr>
<td>would require changes to OM.</td>
<td></td>
<td>longline fleets in the short-medium term</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age structure - Indonesian catch</td>
<td>OM and annual status advice Potential opportunity for capacity building and further collaboration</td>
<td>On-going</td>
<td>Essential But not necessarily funded through AFMA research funds.</td>
<td>Collection in Indonesia, archiving and ageing (in Australia) Undertaken by CSIRO (Project: Archiving of hard parts for SBT 2013/14)</td>
<td>The use of “old” age-length keys has potential for increased uncertainty in the assessment.</td>
</tr>
</tbody>
</table>

ii. Abundance indices

**Recruitment**

<table>
<thead>
<tr>
<th>Proportion of juvenile population that move into the Great Australian Bight (otolith microchemistry, gene tagging)</th>
<th>Juvenile population structure and assumptions for recruitment indices and close-kin analysis</th>
<th>Prior to 2017</th>
<th>High</th>
<th>Initial research to detect within year location signals in otolith microchemistry is underway (CSIRO)</th>
<th>Potentially biased estimation of recruitment and year class strength if current assumption is not correct. This could result in the MP not meeting the rebuilding objective.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative (with interested members and CNMs) design study based on simulation testing within the current OM framework to evaluate relative cost effectiveness and possible sampling designs for gene tagging program (to address proportion of juveniles that move into GAB; provide an index of absolute juvenile abundance)</td>
<td>Stock structure; estimates of absolute abundance for cohorts for the OM; potentially more cost-effective index of recruitment (and absolute) for future MP inclusion. Potential opportunity for capacity building with other members and CNMs</td>
<td>2014-15</td>
<td>High</td>
<td>Note potential for CCSBT funding in 2015 (see FAC report CCSBT 20)</td>
<td>Limits consideration of alternative, possibly, more cost-effective approaches for recruitment monitoring. Lack of contingency for the scientific aerial survey.</td>
</tr>
<tr>
<td>Alternative measures of absolute juvenile recruitment (gene-tagging)</td>
<td>Estimates of absolute abundance of cohorts for the OM; potentially more cost-effective index of absolute recruitment for future MP inclusion</td>
<td>Dependent on the outcomes of the design study. 2015-2016 would be the earliest.</td>
<td>High</td>
<td></td>
<td>See above</td>
</tr>
<tr>
<td>Impact of environmental variation on the scientific aerial survey index</td>
<td>Improved relative recruitment index; MP implementation</td>
<td>Medium</td>
<td></td>
<td>The project Forecasting spatial distribution of SBT habitat in the GAB (CSIRO FRDC TRF), may provide some information on this</td>
<td>Potential uncertainty in recruitment index, which is one of the two indices in the MP and provides input to the OM.</td>
</tr>
<tr>
<td>Activity Potential research</td>
<td>Relevance</td>
<td>Timeframe</td>
<td>SBTF Priority</td>
<td>Related research</td>
<td>Risk</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>---------------</td>
<td>------------------</td>
<td>------</td>
</tr>
<tr>
<td>Impact of seismic surveys on scientific aerial survey index</td>
<td>Improved relative recruitment index; MP implementation</td>
<td>Medium</td>
<td></td>
<td>As above</td>
<td></td>
</tr>
</tbody>
</table>

**Sub-adults**

| Exploration and refinement of alternative CPUE monitoring series; and changes in core longline fleet operations over time | MP implementation and OM | Ongoing | High | Undertaken by Japan and CPUE working group; ABARES (FRRF) generate CPUE monitoring series and review the CPUE series and fleet dynamics | |
| Standardised CPUE series for other longline fleets (e.g. Taiwanese & Korean fleets) | Annual status advice | Ongoing | Medium | Taiwan, Korea and Japan progressing | |

**Spawning biomass**

| Close-kin genetics approach, collaborative design study using simulations with current OM framework to evaluate the costs and benefits of sampling designs for continued close-kin data | To inform future collection and processing for input to OM; long-term possible additional index for MP. Potential opportunity for capacity building with other members and CNMs. | 2014-15 | High | CCSBT20 agreed to fund a collaborative design study. | Monitoring is not continued and the ability to provide an index of the spawning stock is lost, not building on the investment in close-kin genetics research to date. |
| Collection of further close-kin samples | To take advantage of present opportunity given the genotyping done to date. | 2014 & ongoing dependent on design study | High | CCSBT20 agreed to fund. | Collection is relatively low cost and can’t be undertaken retrospectively. |
| Processing of additional close-kin samples (currently archived) | Need to take advantage of present opportunity and capacity to process samples efficiently and with high QC. | Dependent on design study outcomes | High | The advantage of processing these samples is that it would provide sufficient “matches” that would result in further precision in the estimate of spawning abundance for the 2014 assessment. | Potentially increased cost to process samples at later date. |
| Updating close-kin estimation (trend) | To update stand alone close-kin assessment and potential future index for MP | Dependent on design study, longer term (prior to 2017) | High | | Potential loss of fishery independent index of spawning stock. |
## Provisional Minutes
SBTMAC 37, 25 September 2013

### Activity

<table>
<thead>
<tr>
<th>Potential research</th>
<th>Relevance</th>
<th>Timeframe</th>
<th>SBTF Priority</th>
<th>Related research</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative genetic approach (SNPs)</td>
<td>Cost savings with newer technologies and synergies with gene tagging program. Potential opportunity for capacity building and collaboration with other members and CNMs.</td>
<td>3 – 5 years</td>
<td>Medium</td>
<td>There is a range of current research addressing this issue more generally (i.e. other than for SBT).</td>
<td>May be an additional cost associated with moving from microsatellite markers (for close-kin) to SNPs (for genetic tagging). This is likely to be small to moderate, relative to the investment already made in the current microsatellite technology.</td>
</tr>
</tbody>
</table>

### iii. Biological parameters

| Independent estimate of maturity schedule | Defining effective reproductive contribution in the OM for estimate of MSY | Sample collection and storage (Age 8+) | Processing once sufficient samples are available (Medium) | High | Proposed sample collection by observers on longline fleets | See Farley et al 2013 paper on method for identifying maturity markers in resting Albacore. | Increased uncertainty (potential bias) in estimated long-term yield. |
| Understanding within season spawning behaviour and potential skip spawning behaviour (e.g. electronic tagging approaches and otolith microchemistry for spawning frequency) | Defining effective reproductive contribution in the OM Potential opportunity for capacity building with other members | Dependent on outcomes of initial otolith microchemistry work. | Longer term | Otolith microchemistry (initial research by CSIRO) |

### 2. MP Implementation

| Feasibility of alternative indices for input to the MP (estimated trends from the stand-alone close kin assessment) | For revised MP | Dependent on performance review and outcomes of other research. | Longer term | |

### 3. Stock Assessment (OM development)

| Selectivity of the fishery on the spawning grounds. Collation and analysis of current | OM – basis for domed selectivity and defining effective | 2014, prior to OMMP meeting | High | Builds on capacity development work of CSIRO/ACIAR/AusAID/DAFF projects, |
| No further basis to resolve dome-shaped selectivity/senescence issue in OM. | |

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33
<table>
<thead>
<tr>
<th>Activity Potential research</th>
<th>Relevance</th>
<th>Timeframe</th>
<th>SBTF Priority</th>
<th>Related research</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data and information on investigations of fleet operations (shifts in targeting, spatial temporal distributions in effort, species composition, hook setting depth)</td>
<td>Reproductive contribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality estimates for mature fish (10+ years old)</td>
<td>Current OM does not have data sources that provide substantial information on M10. There may be potential to address this through the close-kin analyses</td>
<td>Longer term</td>
<td></td>
<td>Could be considered in the close-kin design study</td>
<td></td>
</tr>
<tr>
<td>Improved information on cohort abundance, fishing mortality and natural mortality (e.g. gene-tagging approaches)</td>
<td>OM – mortality estimates, particularly for 4-10 year olds</td>
<td>Longer term</td>
<td></td>
<td>Could be considered in design studies</td>
<td></td>
</tr>
<tr>
<td>Evaluation of the costs and benefits of a spatially explicit stock assessment (dependent on stock structure and other research)</td>
<td>OM</td>
<td></td>
<td></td>
<td>Longer term</td>
<td></td>
</tr>
<tr>
<td>Incorporation of SRP tagging data from 2000s (requires a spatially explicit model)</td>
<td>OM</td>
<td>Longer term if move to spatial OM</td>
<td></td>
<td>Longer term</td>
<td></td>
</tr>
</tbody>
</table>

Current and recently completed SBTF related projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archiving of hard parts for SBT in 2013/14 (AFMA)</td>
<td>2013</td>
</tr>
<tr>
<td>Aerial survey in the Great Australian Bight (GAB) 2013; 2014 (AFMA – DAFF- CCSBT)</td>
<td>2013</td>
</tr>
<tr>
<td>Intersessional science 2012-13 (AFMA)</td>
<td>2013</td>
</tr>
<tr>
<td>National data/report submissions and scientific engagement 2012-13 (ABARES)</td>
<td>2013-14</td>
</tr>
<tr>
<td>Forecasting spatial distribution of SBT habitat in the GAB (CSIRO - FRDC TRF)</td>
<td>2013-15</td>
</tr>
</tbody>
</table>
Great Australian Bight Science Research Program | 2013-17
---|---
Assessing post-release survival of SBT from recreational fishing (IMAS - FRDC 2013/025) | 2013-15
Development of methods for obtaining national estimates of recreational catch of SBT (ABARES - FRDC 2012/022) | 2013-15
Recreational value of SBT recreational fishing (Victoria) | 2012-13
Attachment C

DETERMINATION OF FISHING CAPACITY

Fisheries Management Act 1991
Subsection 17(6)(aa)
Southern Bluefin Tuna Fishery Management Plan 1995
Subclause 22B.2

SOUTHERN BLUEFIN TUNA FISHERY TRANSFER WEIGHING DETERMINATION 2013 – STEREO VIDEO MONITORING

The Australian Fisheries Management Authority makes the following Determination pursuant to subsection 17(6)(aa) of the Fisheries Management Act 1991 under subclause 22B.2 of the Southern Bluefin Tuna Fishery Management Plan 1995.

Dated: November 2013

The Common Seal of the Australian Fisheries Management Authority was affixed in accordance with a resolution of the Commission

Ryan Murphy
Executive Secretary
Australian Fisheries Management Authority

Citation

1. This Determination may be cited as the Southern Bluefin Tuna Fishery Transfer Weighing Determination 2013.
Commencement

2. This Determination commences on the day after it is registered on the Federal Register of Legislative Instruments.

Cessation

3. This Determination ceases as if it was revoked on 30 November 2014 unless earlier revoked.

Interpretation

4. A term used in this Determination that is defined for the purposes of the Southern Bluefin Tuna Fishery Management Plan 1995 has the same meaning in this Determination as it has in that Plan.

5. “stereo video” means a system that uses two digital video cameras to measure objects or features that are presented to a camera at two different angles.

6. “Approved Stereo Video” software is a software package known as EventMeasure Stereo being a software package designed for annotating and measuring the lengths of fishes recorded in underwater stereo imagery.

Notes:

i. Terms defined in the Fisheries Management Act 1991 have the same meanings in this Determination.

ii. Terms defined in the Southern Bluefin Tuna Fishery Management Plan include “Southern Bluefin Tuna Fishery”.

Determination of transfer weighing methods

7. Southern Bluefin Tuna must not be transferred from a tow cage to a farm without a transfer weighing of the fish, conducted by AFMA or an Agent of AFMA using the procedures set out below as directed by AFMA or an Agent of AFMA.

8. Industry must notify the contractor 72 hours prior to the arrival of the tow cage and that the monitoring of transfers start within 24 hours of a tow cage arriving.

9. A count is a transfer weighing only if it meets the requirements of clause 10.

Transfer weighing procedures

10. A transfer weighing of fish transferred is to be conducted in the following manner:

(a) A recording using a stereo video system is to be made of the transfer of fish from the tow cage to the farm;

(b) The stereo video is to depict a side view covering the opening between the tow cage and the farm in order that all Southern Bluefin Tuna then transferred will appear on the stereo video recording;
(c) Once the transfer is complete AFMA or an Agent of AFMA is to view the recording and tally the number of Southern Bluefin Tuna transferred. Each Southern Bluefin Tuna in the recording shall be given a unique identifier (number) so that it can be verified at a later date;

(d) At least ten percent of the Southern Bluefin Tuna transferred will have their length estimated using approved stereo video software and that estimate will be recorded;

(e) A length to weight conversion factor of

$$\text{Weight}=0.000015577 \times \text{length}^{3.0214}$$

will be applied to the individual estimated length of each fish referred to in (d) to produce an estimated weight for each fish measured with stereo video;

(f) The estimated weight of each fish determined in (e) will be summed and divided by the total number of fish measured by stereo video to produce an average estimated weight; and

(g) The transfer weight is the average estimated weight in (f) multiplied by the total number of fish transferred (c).

**Revocation of previous Determination**

11. This Determination revokes the *Southern Bluefin Tuna Verified Count Determination 2012* from the date of commencement.

**AFMA Procedures for Transfer weighing – Stereo Video**

**September 2013**

The AFMA Authorised Representative (AAR) (currently Protec Marine Pty Ltd) verifies the weight sample on behalf of AFMA and must be present at all transfers.

Two Protec Marine Pty Ltd representatives must be present when fish are transferred from the tow cage to the fish farm and oversee the operation of the stereo video equipment.

The contractor is responsible for all set up and takedown of the stereo video system.

The contractor is to provide the final counts, total weight estimates and data to industry within 3 calendar days of the transfer taking place.

This policy is to be read in conjunction with the *Southern Bluefin Tuna Fishery Transfer Weighing Determination 2013* (Attachment A)

1. Procedures for stereo video count of fish transferred from the tow cage to the fish farm

The transfer weighing will be conducted as follows:
• the stereo video should show a side view covering the opening between the tow cage and the farm in order that all SBT transferred will appear on the video recording;
• a scale bar consisting of a calibration target will be welded to the transfer gate. The exact distance between the target will be determined using photogrammetry. The stereo-video system will be determined to be out of calibration if the mean error from three repeat measurements is greater than one percent from the known distance between the target;
• there must be a ‘drop down’ net above the transfer gate that completely covers the opening in the net;
• the drop down must extend at least a metre either side of the opening and at least one metre below;
• the bottom of the net must be heavily weighted to ensure it hangs as vertically as possible to prevent any fish moving through the transfer gate opening and to stop the net being blown away from the opening by current caused by the movement of fish in the cage;
• an attendant must stay for the duration of the transfer directly over the transfer gate to ensure the immediate release of the drop down net.

The use of bait to move fish from cage to cage is **not permitted** except where authorised to do so by the AAR.

2. **Specification for analysis of stereo video recording**

**Count**

(a) Once the transfer is complete AFMA or an Agent of AFMA is to view the recording and tally the number of Southern Bluefin Tuna transferred. Each Southern Bluefin Tuna in the recording shall be given a unique identifier (number) so that it can be verified at a later date.

**Fish Selection**

(b) A number between 1 and 10 will be selected by a representative of the transferring company. This number will be used as a starting point for the selection of fish to be measured. It and every 10th fish that breaks the plane between the camera and the far edge of the transfer gate during the transfer will be eligible for measurement. If a selected fish cannot be measured then the next fish will be selected and measured.

**Length measurements**

(c) Length measurements shall be made by locating the tip of the upper jaw and the caudal fork (Fork Length) of the target Southern Bluefin Tuna using the appropriate software.

(d) Three replicate measurements shall be taken to give the average length.

(c) A fish will be deemed unusable and will not count towards the sample if the average of the three replicate measurements of any one fish has a standard deviation greater than 20mm or a residual mean square value of 10mm or greater or three measurements cannot be obtained.

3. **Resolving interference in the transfer weighing procedure**

If the AAR observes any interference with the transfer weighing, the event is to be stopped and AFMA management is to be advised immediately.

If the sample is stopped and AFMA management advised, the company is to be issued with a first warning. At this stage:

4. the AAR will advise the company why the transfer weighing has been stopped and record the reason;
5. once the issue is resolved the transfer weighing will continue in line with the agreed procedure; and

6. should the AAR have concerns with the continued sample, they will again cease to supervise the transfer weighing. The AAR will return to port and AFMA management are to be advised by phone at this point.

If the sample is stopped a second time AFMA will contact the company directly and issue a second warning. The AAR will then return to the tow cage at an agreed time and continue to supervise the transfer weighing in line with the agreed sampling procedures.

Should the AAR have any further concerns with the continued sample, then they will terminate the sample. AFMA management is to be advised of the terminated sample. If the sample is terminated AFMA will:

1. Send a senior officer to Port Lincoln and assist the AAR to conduct a new transfer weighing procedure.

2. No results from the previous aborted transfer weighing event will be used.

3. All costs associated with conducting the new sample and subsequent samples will be paid by the company involved.

7. Review Mechanism

All requests for review must be provided to AFMA, in writing on an approved form, within 21 days of the date the contractor provides the original weight estimate. A review will then be conducted and results provided within 45 days of the date of application.

AFMA will conduct the review as follows:

- the fish, using the same starting point, will be re measured by AFMA using the process outlined in this policy and the Southern Bluefin Tuna Fishery Transfer Weighing Determination 2013.

8. the weight estimate derived during the review will be the figure used for quota decrementation purposes.

Cost of the review

There will no cost charged to the applicant if:

- the total SBT count differ between the two estimates by greater than 0.5 percent; or

9. the difference between the two weight estimates be greater than 1%
Attachment D

AFMA Procedures for Verified Count – 100 Fish Sample
December 2012

The AFMA Authorised Representative (AAR) (currently Protec Marine Pty Ltd) verifies the weight sample on behalf of AFMA and must be present at all transfers.

To ensure consistency of application of these rules, all weight samples must be supervised by the principal or one of the two second in charge officers of the AAR. If these officers are unavailable an alternative person may be agreed on between AFMA and the Australian Southern Bluefin Tuna Industry Association.

The weight sample will be conducted as follows:

1. The AAR will supervise the company’s representative catching the fish;
2. The AAR has complete say over the taking of the weight sample, and all company representatives will follow their instructions at all times;
3. The AAR will make and supply the standard catching gear for the sample;
4. The standard catching gear will be: 300 mm leader, 25 mm gate barbless hook, and 8 millimetre diameter rope;
5. All divers must be out of the water 10 minutes prior to the start of weight sample, and must remain out of the water until the sample is completed;
6. The company is to supply at least two tonnes of thawed bait for the sampling. The bait used for the sample must be whole fish;
7. The company is to supply at least 4 people to assist the AAR in the sampling;
8. The company catches the fish under the direction of the AAR until they have weighed and measured at least 100 fish of 10 kg or higher to the AAR’s satisfaction;
9. The AAR may trial different scales which have the capacity to measure to 0.1 of a kg and these scales will be calibrated before each sampling; and
10. Only whole bait can be used in the chum for the sampling. A full shovel of chum must be thrown prior to the release of each hook. The chum must be thrown at least two (2) meters in front of the catcher. The catcher must not throw the hook until instructed by the AAR. The catcher must throw the baited hook into the centre of the chum. Once the individual fish is recorded, the weight is final with no recourse by the AAR or the company.
11. To assist with minimising the time taken to complete the sample, 2 fish cradles may be used during the sample.
12. In the advent of the cessation of the weight sample due to weather, safety, operational or unforeseen circumstance, the company and AAR will agree when the sampling is to recommence. In such circumstances the fish already caught and weighed in the sample prior to stopping the sample will still be part of the sample of 100 fish of 10kg or higher.

Resolving interference in the 100 fish sampling procedures

If the AAR observers any interference with fish selection in the catching process the sampling is to be stopped and AFMA management is to be advised immediately.

If the sample is stopped and AFMA management advised, the company is to be issued with a first warning. At this stage:
10. the AAR will advise the company why the sampling has been stopped and record the reason on the sampling form;

11. the AAR may instruct the company to use different sampling equipment, or techniques to address the concerns in the sampling process;

12. sampling will not continue until the issue is resolved to the AAR’s satisfaction;

13. the fish already caught and weighed in the sample prior to stopping the sample will still be part of the sample of 100 fish of 10 kg or higher;

14. once the issue is resolved sampling will continue in line with the agreed sampling procedures; and

15. should the AAR have concerns with the continued sample, they will again cease to supervise the sampling making any further sampling void. The AAR will return to port and AFMA management are again advised by phone at this point.

If the sample is stopped a second time AFMA will contact the company directly and issue a second warning. The AAR will then return to the tow cage at an agreed time and continue to supervise the sample in line with the agreed sampling procedures. The fish already caught and weighted in the sample prior to stopping the sample will still be part of the sample of 100 fish of 10 kg or higher.

Should the AAR have any further concerns with the continued sample, then they will terminate the sample. AFMA management is to be advised of the terminated sample. If the sample is terminated AFMA will:

4. Send a senior officer to Port Lincoln and assist the AAR to conduct a new 100 fish weight sample to replace the terminated weight sample

5. None of the weights collected in the terminated sample will count in the new sample;

6. No company representative will participate in the new sample but is entitled to be present for the new sample. The AAR will conduct all aspects of the new weight sample;

7. The AAR will conduct all future weight samples for the company involved for the remainder of the season: and

8. All costs associated with conducting the new sample and subsequent samples will be paid by the company involved.

Procedures for video count of fish transferred from the tow cage to the fish farm

Two Protec Marine Pty Ltd representatives must be present when fish are transferred from the tow cage to the fish farm and oversee the operation of the video. The Holder of the Statutory Fishing Right under which the SBT in the tow cage were taken must ensure that sufficient equipment and personnel to facilitate the transfer are provided.

The transfer should be conducted as follows:

- the video should show a side view covering the opening between the tow cage and the farm in order that all SBT transferred will appear on the video recording;
- there must be a ‘drop down’ net above the transfer gate that completely covers the opening in the net;
- the drop down must extend at least a metre either side of the opening and at least one metre below;
• the bottom of the net must be heavily weighted to ensure it hangs as vertically as possible to prevent any fish moving through the transfer gate opening and to stop the net being blown away from the opening by current caused by the movement of fish in the cage;

• an attendant must stay for the duration of the transfer directly over the transfer gate to ensure the immediate release of the drop down net; and

• where the fish farm is to be positioned at a site where turbid water occurs, the fish count is to be done prior to the fish farm being positioned at that site.

The use of bait to move fish from cage to cage is **not permitted** except where authorised to do so by the AAR.
Attachment E

Industry member views on the 2013-14 monitoring Determination

“Mr Jeffriess listed the 12 points that industry uses to measure the relative merits of unautomated s/v and the current sampling method. These are:

1. Sampling precision
2. Sampling bias (accuracy)
3. Validity of using a single length/weight conversion
4. The 2011 s/v trial – was it completed to meet normal research rigour?
5. The DAFF/ABARES/AFMA/Industry agreement on the impacts of the current stereo video
6. The cost-effectiveness legislative requirement
7. The net community return legislative requirement
8. Effect of overstocking/understocking
9. An efficient catching structure
10. Breaching SA’s legislation
11. Managing the quota
12. WTO Conditions

Expanding on each of these points, Mr Jeffriess noted:

1. **Precision**: The current sample of 100 fish of $\geq 10$kg (total about 3,000 fish) has a precision of at least 98% at a 1% confidence interval that AFMA will meet its legislative objective that Australia’s total TAC is not exceeded (see DSI 2005; Fushimi & al 2006)
   - The precision level of stereo video is unknown.
   - The length/weight conversion required for s/v (see (3) below) affects the precision (see O’Neill 2011).
   - The 100 fish of $\geq 10$kg means in effect, an open-ended number of fish
   - The move from 40 to 100 $\geq 10$kg produced virtually the same average wt.

2. **Accuracy/bias**: The only demonstrated bias in the current sampling technology is the known impact (2-3% increase in average weight) of excluding fish under 10 kg from the sample.
   - The 2011 stereo video trials had shown that stereo video had a “potentially serious bias” (see O’Neill 2011) because it systematically excludes particular fish sizes.

3. **Validity of using a single length/weight conversion**: The current sampling measures **actual** length and weight. The stereo video average weight was based on a length/weight conversion formula which only **infers** the actual weight of the fish.
   - Actual sampling has shown that the length/weight relationship is very different within a catching season, between seasons, between different age groups, and between different areas (eg see O’Neill 2011; DSI 2005).
Therefore it is **not** possible to apply a single conversion formula and get an accurate result.

(4) **Trials of stereo video:** The 2011 trials were never completed – and did not meet the normal research criteria applied to a full trial. It was not possible to properly assess the outcomes of a trial only partly completed.

(5) **Agreed overall damage of unautomated stereo video:** The unanimous conclusion of DAFF Policy, ABARES, AFMA and industry in the 2011 Stereo Video Working Group was that (our emphases):

> “Stereo video provides estimates of the weight of fish transferred **retrospectively.** This could potentially lead to **overstocking or understocking** farm cages. Overstocking farm pontoons exposes industry to breaches of South Australian aquaculture legislation on stocking rates and **environmental impact.** Further, overstocking causes **major fish health concerns, reduces growth rates, and increases mortalities.** Understocking results in the need to use more farm pontoons than would otherwise be necessary, causing **substantial additional costs to the industry.** Not knowing the weight of fish at the time of transfer creates substantial uncertainty in the management of individual quota holdings for farm companies, which is exacerbated by the lack of over and under catch provisions in the SBT Fishery. Creating these provisions may require CCSBT approval and potentially amendments to the *Fisheries Management Act 1991* and *Southern Bluefin Tuna Management Plan 1995.*”

The impacts of these agreed points are detailed below.

(6) **Cost-effectiveness legislative requirement:** AFMA’s legislation, and a pre-requisite for stereo video and the previous WTO Condition, was that stereo video was cost effective. The stereo video is more than double the cost of the current system.

- It has never been demonstrated how this large increase meets AFMA’s legislative objective, despite AFMA being required to show this (eg in the submission to renew the WTO for SBT in July 2013).

(7) **Net community return legislative requirement:** The value to the community of Australia’s SBT is based on adding value through the **farming** process. The farming process is based on avoiding overstocking and understocking as identified in the conclusions of the Stereo Video Working Group. AFMA’s legislative requirement is to “**Maximise the net economic returns to the Australian community from the management of the SBT Fishery.**”

- The SBT Management Plan requires AFMA to “allow holders of statutory fishing rights for the SBT Fishery to pursue practices consistent with maximising net economic returns to the Australian community.” It also requires AFMA to assess every two years how the legislation is met.
Industry has shown that the only volume alternatives to farming (canning, poling, etc) are low value and mean that the current stereo video does not meet the legislation.

(8) Overstocking/understocking: Avoiding overstocking and understocking is central to the viability of tuna farming. Overstocking leads to higher mortalities and lower growth rates. Understocking leads to inefficient investment in infrastructure and other inputs.
- The current sampling system mitigates these risks by providing the average weight before the fish are counted into the farms. Stereo video only provides the average weight retrospectively so creating overstocking and understocking.

(9) Efficient catching structure: The SBT farming sector has rationalised to an efficient catching system with four companies catching for the ten farming companies. Under the FMA, the catching company holds the legal exposure for the fish caught, and for any overcatch.
- The current sampling technology mitigates that risk because the average weight is known before the fish are transferred. Stereo video does not mitigate the risk because the average weight is only known retrospectively. This can only lead to a less efficient fishery and appear to breach AFMA’s legislative objectives.

(10) Breaching SA’s legislation: The jurisdiction over SBT is split between AFMA and Primary Industries and Regions SA (PIRSA). AFMA manages the catching in the wild and PIRSA manages the farm part of the fishery. AFMA continues to audit the fish stock to the point of landing of the fish in Japan and other markets after the growout. PIRSA has very strict regulations on maximum stocking rates and the environmental impact of farming.
- The current sampling system mitigates the risk of breaching these regulations because the stocking rate is controlled by knowing the average weight of the fish before entry to the pontoon. In contrast, stereo video only made the average weight available retrospectively, so risking breaching the SA Government laws.

(11) Managing the quota: The current sampling system assists considerably to manage the use of the quota because the average weight is known before the fish are counted into the pontoons.
- Stereo video only provides the average weight retrospectively – so making it much more difficult to manage the quota and avoid overcatching and undercatching. The introduction of live release and limited carryforward of uncaught quota only partly mitigates this risk.

(12) WTO Conditions: A previous reason given by DAFF and AFMA for introducing stereo video has been that it was a Condition of the WTO approval under the EPBC Act. This Condition was deleted by SEWPaC in the new WTO starting July 2013 after submissions by ASBTIA.