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Commission for the Conservation of  
Southern Bluefin Tuna



みなまぐろ保存委員会

## **Report of the Fourth Annual Meeting Third Part**

**19 – 21 February 1998  
Canberra, Australia**

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The representatives of the Governments of Australia, Japan and New Zealand reconvened the Fourth Annual Meeting of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT4(3)) from 19 to 21 February 1998.

**Agenda Item 1: Opening of Meeting**

*1.1 Welcoming Address*

The Chair, Mr Royce Elliott of New Zealand, welcomed delegates from Australia, Japan and New Zealand, and observers from the Republic of Indonesia, the Republic of Korea, Taiwan, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the International Commission for the Conservation of Atlantic Tunas (ICCAT).

The Chair invited the observers to make comments on particular issues as they arose during the agenda.

*1.2 Adoption of the Agenda*

The agreed agenda and list of participants are at **Attachments A** and **B**.

*1.3 Appointment of Rapporteurs*

Rapporteurs were appointed as follows: for Australia, Mr Barrington and Ms Wallace, for Japan, Mr Komatsu and Mr Morishita, and for New Zealand, Ms Robinson and Dr Murray.

*Opening Statements*

Japan did not make an opening statement.

Australia's opening statement is included as **Attachment C**.

New Zealand's opening statement is included as **Attachment D**.

**Agenda Item 2: Total Allowable Catch and Quota Allocations**

New Zealand stated that because of the depleted status of the stock, any increases in catch, by whatever mechanism, posed a real risk to the SBT stock and therefore to the members' common interest in a viable SBT fishery. New Zealand referred to the duty of conservation under UNCLOS and to the UNIA which sets out the basic principles of the precautionary approach. Given the level of uncertainty associated with stock projections catch increases would be contrary to the precautionary approach (States shall be more cautious when information is uncertain).

New Zealand acknowledged the problems of over capitalisation and poor market returns which created economic pressures for the Japanese industry. However, on balance, stock sustainability was the key consideration.

Australia noted that the CCSBT Convention, UNCLOS and UNIA all demand that Commission members work together to set catch levels that are sustainable. The SBT stock remains depleted to levels at which recruitment may be subject to wide variations and stock recovery is uncertain. Australia's preparedness to accept maintaining the global TAC and national allocations at 1997 levels reflected a pragmatic response to the differences that currently exist between the members. Australia had already committed to restraining its catch to within limits most recently agreed by the Commission, and urged other members to do the same.

Japan stated that its position remained unchanged from that of January 1998. Japan believed the results of its scientists indicate an increase in catch of 3000t is sustainable. Past agreement by Japan to maintaining current TAC and national allocations had not been based on an agreed scientific assessment but had been a political compromise on Japan's part to secure its fishing operations within the Australian 200 nautical mile zone. Japan was concerned that such arbitrary setting of the TAC by the Commission without agreed scientific evidence undermined optimal utilisation of SBT. In Japan's view, the Commission had not acted for years to attain the objective of optimum utilisation of SBT stock stipulated in the Convention. Japan expressed its concerns on the linkage between the setting of TAC at the CCSBT and access to Australian waters, as it considered that there was no strong connection between the two issues.

New Zealand noted that the biomass of the SBT stock was well below the minimum level recognised internationally as acceptable for supporting sustainable utilisation. Even the target stock level of 1980 parental biomass levels agreed by the Commission was only 20 per cent of the unexploited biomass level. Current adult biomass is assessed to be between one quarter and one third of the 1980 level. New Zealand was also concerned at Japan's reliance on stock projections (demonstrated in retrospect to be consistently optimistic) to support an increase in TAC. Under such circumstances, New Zealand considered it irresponsible, and clearly inconsistent with the precautionary approach, for the Commission to consider an increase in TAC.

Australia stressed that individual members had a responsibility to industry, and to the Commission, to take measures to ensure stock recovery, and thereby ensure a viable future for the industry. Australia agreed with New Zealand that an increase in the TAC would not be consistent with sustainable management of the SBT stock and remained concerned that Japan was continuing to seek an increase in the TAC. The primary task of the Commission is to set sustainable quotas for SBT. Australia stated that unless responsible quotas were set by the Commission, Australia considered that, as a responsible Commission member, it should take measures so as not to facilitate activities which undermine the effectiveness of the Convention. Australia noted that access to its fishing waters and ports would be available only to countries which have agreed to national catch limits within the CCSBT. Australia reaffirmed its commitment to continue to negotiate to reach a resolution on a TAC and national allocations for this

year.

No agreement on the TAC was reached at the meeting. Australia and New Zealand again undertook to restrain their respective national allocations to the levels last agreed by the Commission for 1996/97 (5,265 t and 420 t respectively). They felt this was the only responsible action in the absence of a decision by the Commission, and urged Japan to act similarly.

Japan undertook to restrain its commercial SBT catch to 6,065 t, its national allocation for 1996/97. However, Japan would also implement an EFP in 1998 using catch in addition to 6,065 t.

New Zealand and Australia questioned the authority under the Convention for Japan's decision to take SBT in addition to the level of its former national allocation.

In the absence of a decision to set a TAC for 1997/98, national allocations were not set.

### **Agenda Item 3: Consideration of an Experimental Fishing Program**

The Chair noted that a revised *Joint Pilot Plan for Experimental Fishing Program for SBT* (CCSBT/9709/22) had been submitted by Japan in January 1997 before CCSBT 3(2).

Japan advised that, in light of a lack of collaboration in its view by Australia and New Zealand to constructively consider and approve the EFP since 1995, and because Japan believed exhaustive efforts had been exercised to achieve consensus within the Commission, that Japan was preparing to implement an EFP unilaterally under the responsibility of Government of Japan, commencing in June 1998. While the basic framework for the proposed EFP would be along the lines of CCSBT/9709/22, Japan advised that it was currently considering a further revision of the program. In order to ensure the transparency of the EFP Japan would notify the other members of the final program design around mid-May 1998. Japan said it was also willing to accept any constructive comments from the other members and it further stated it would welcome their participation in the implementation of the EFP, including observers from the other members for high seas operation.

In response to a number of queries from Australia and New Zealand, Japan confirmed that its current pilot plan as set out in CCSBT 9709/22:

- would involve conducting an EFP on a unilateral basis under the responsibility of Government of Japan from June to August 1998 in Statistical Area 8;
- would involve 2,010 t of catch of SBT each year over three years above Japan's 1996/97 national allocation of 6,065 t; and
- if the pilot EFP were shown to have an adverse effect on the stock Japan would reduce its national allocation in subsequent years to pay back the SBT catch taken under the pilot plan.

Australia and New Zealand expressed their strong concern that the Japanese EFP proposal did not specify the means by which adverse effects would be assessed, nor the

decision rules for any consequent management response.

Japan also stated that it would introduce necessary measures to ensure the transparency of the research, e.g. observers, VMS, enforcement vessels, separation of the research from commercial operations by separating catch and operations and submission of reports to the Scientific Committee.

Japan stated that the EFP's objective was to evaluate the CPUE models based on data from the areas and period from which data have not been available due to shrinkage of fishery grounds to resolve the uncertainty surrounding the CPUE hypotheses, including Variable Square Hypothesis (VSH) and Constant Square Hypothesis (CSH), for stock assessment. Japan considered that an EFP as detailed in CCSBT/9709/22 would allow the elimination of the VSH which in Japan's view would reduce the uncertainty of the future projection of the SBT stock level by 50 per cent.

Japan considered that if an EFP did not increase the estimate of the possibility of recovery of the SBT stock through the elimination of the VSH, it would consider the EFP a failure and would initiate a further EFP.

Australia stressed its concern about the underlying logic of the proposal, and that the experiment was designed to lead to a predetermined outcome, based on a misunderstanding of how CPUE is treated in the stock assessment. Australia did not consider that the pilot plan showed the extent to which an EFP would resolve or reduce the level the uncertainty in the stock assessment for SBT.

New Zealand shared Australia's concerns over the ability of the Japanese-designed EFP to rule out the VSH. In New Zealand's view the current proposal for EFP is unlikely to resolve uncertainty in the current stock assessment, and, because it involves substantial fishing in the currently fished areas, seemed to be directed at commercial fishing objectives. It was also unclear from any available information that the CSH/VSH hypotheses were the most important sources of uncertainty to resolve.

In response to a query from Japan, Australia outlined other mechanisms for reducing uncertainty in the stock assessment, i.e.

- tagging of SBT to estimate natural mortality rates;
- tagging of SBT in order to derive absolute estimates of abundance and fishing mortality;
- increased observer coverage to get better information from tagging experiments and on CPUE data;
- direct ageing of the Indonesian SBT catch;
- monitoring of non member catches (including by certification of trade in SBT);
- fisheries surveys on the spawning ground; and
- fishery independent studies such as aerial and acoustic surveys.

New Zealand added that these research activities could be undertaken without additional catch which posed further risk to the stock.

Japan stated its view that a number of these mechanisms outlined above had been in

place for years and uncertainties are still unsolved by the Scientific Committee because of lack of reliable data and methodology. Although Japan did not deny the value of mechanisms stated, it did not believe that they would produce tangible results in the near future.

In response to a query from Australia, Japan advised that in its view the preamble of the Convention provided, in its second last paragraph, a legal basis for conducting an EFP, specifically '*Acknowledging the importance of scientific research for the conservation and management of southern bluefin tuna and the importance of collecting scientific information relating to southern bluefin and ecologically related species*'. The paragraph states the importance of scientific work and becomes the basis for the program. Japan considered that a unilateral EFP was also consistent with Article 3 of the Convention which sets out the objective of the CCSBT as conservation and optimum utilisation of SBT.

Australia considered that there was a strong obligation on Japan under the Convention to undertake an EFP only within a consensus framework and noted that the preamble simply states facts and does not provide a legal basis for actions.

New Zealand considered there to be no authority under the Convention for Japan's unilateral EFP. New Zealand was of the view that an unilateral EFP would be outside the scope of the Convention and referred in particular to decisions made on catch pursuant to Article 8 and Article 9(2). New Zealand observed that information collection and scientific collaboration pursuant to the Convention were only to occur by consensus. Without a Commission decision, and a rejection of attempts by members to develop a mutually acceptable EFP, Japan's actions will constitute pre-determined overfishing beyond the levels last agreed by the Commission and would be inconsistent with its obligations under Article 8.

Australia and New Zealand provided Japan with detailed comments on the EFP (**Attachments E and F**). They asked that Japan consider their comments and work together with other Commission members to resolve the outstanding difficulties with the Japanese EFP proposal and to handle the EFP issues on a collaborative basis within the Commission.

Australia and New Zealand emphasised that they remained prepared to consider a well-designed, scientifically credible EFP, which dealt adequately with questions of experimental design, risks to the stock, underlying logic, collaborative monitoring and analysis, and subsequent management responses. They considered that it was imperative that the Commission await the outcome of the peer review and the 1998 stock assessment before making a decision on EFP.

Japan stated that it had supported the scientific peer review, but does not have any optimistic expectation for the review. Looking back, past failures of the Commission at the 1996 Stock Assessment Group, 1996 Step 1 & 2 Scientific Workshop, and 1997 Scientific Committee, Japan believed that it is unrealistic to expect the solutions after four weeks of the review by scientists who have never been involved in the CCSBT process.

Australia disagreed with Japan's comments on the Commission's prior scientific work and noted that the peer review would include consideration of the treatment and weighting of various inputs to the stock assessment and thereby assist the Commission's decision making process. Australia urged all members to support the peer review and its outcomes and noted the independence of the reviewers was a major strength as they would have no predetermined view on SBT issues.

Japan maintained that the pilot plan would contribute to resolving the issue of the CPUE hypotheses, which is one of the major sources of uncertainty, had a built in pay-back system should this not occur, and that the EFP posed little risk to SBT stock. Although Japan considered that it had responded orally to almost all of the comments by Australia, Japan expressed its intention to consider the comments provided. Notwithstanding this intention, Japan believed it was unavoidable to prepare for implementing the EFP on a unilateral basis. This was because Japan's past efforts to cooperate with other members to progress the matter of EFP had been repeatedly denied and produced no results. Japan also stated its view that the comments provided by Australia and New Zealand contained no specific details which would lead to improvements of the plan and requested clear counter proposals.

Australia asked that Japan consider Australia's comments more thoroughly as they provided very specific suggestions for improving statistical design, scientific merit and underlying premises of an EFP.

Australia and New Zealand recorded very strong objections to Japan's expressed intention to pursue a unilateral EFP. They substantially challenged Japan's EFP proposal in terms of its statistical validity, underlying logic and scientific merit, as well as its legality under the Convention.

Japan undertook to provide a written response to Australia's and New Zealand's written comments. Australia and New Zealand did not, however, consider that a written response from Japan would constitute development of a collaborative design.

#### **Agenda Item 4: Other Business**

##### ***4.1 Non-members***

The Commission recognised the importance of securing the cooperation or accession of non-members.

New Zealand and Australia considered that restraint of non-member catch is critical to the future functioning of the Commission and the viability of the SBT fishery.

Australia and New Zealand reaffirmed their commitment to the program of work relating to non-members developed at CCSBT4(2) and sought confirmation of dates for the direct approaches by Commission delegates to non-members. Japan also supported the action plan adopted at CCSBT4(2) and tentatively suggested either the last week of March or the first week of April 1998. Japan undertook to confirm dates and a



representative as soon as possible.

Non-member observers advised they were unable, at this time, to provide comment on the action plan distributed by the Commission at CCSBT4(2).

#### ***4.2 Cooperation within the CCSBT***

New Zealand reported its concern about recent developments within the Commission which threaten the function of the Commission. As members of a regional management organisation within the regime of high seas fisheries under UNCLOS and the UNIA, members of the CCSBT are required to conduct themselves in good faith, consistent with the duties of conservation and cooperation and the obligation to strengthen existing management organisations.

New Zealand noted its disappointment that Japan:

- a) was seeking to increase its SBT catch despite the depleted stock status;
- b) intended to implement a unilateral EFP;
- c) had hindered active consideration of trade certification of SBT;
- d) had delayed progress on action to achieve the accession or cooperation of non-members; and,
- e) had made overt moves to seek transfer of SBT management to the IOTC despite the IOTC's express statements that CCSBT has the mandate to manage SBT, and Japan's obligation to support CCSBT's management mandate.

Individually, these approaches by Japan gave cause for serious concern. In combination these approaches led New Zealand to question whether this conduct demonstrated the level of commitment to Law of the Sea Convention principles that would be expected from a responsible fishing nation. These approaches by Japan provided New Zealand with grave concern for the ongoing function of the Commission and the future for SBT. New Zealand reaffirmed its commitment to the CCSBT, the principles of conservation and cooperation, and its intention to resolve difficulties within the framework of the Commission.

Japan drew attention to its past efforts to support the CCSBT and reaffirmed its commitment to cooperate with Australia and New Zealand within the CCSBT. However, considering the current impasse of the organisation which leads in its view to the inability of functioning in accordance with the objective of the Convention, Japan considered that it may be appropriate to consider the option of transferring the management of SBT to another regional management organisation. As a responsible fishing nation and the largest fisher and market for SBT Japan believed it had a stronger interest than other members in the conservation and optimum utilisation of the SBT and consequently is prepared to take steps to improve the stock assessment.

Australia noted the wide range of areas important to the Commission's objectives in which members can and do cooperate, including action on non-members and steps to improve the stock assessment. Although it is extremely frustrating that fishing outside the regime is exacerbating differences within the Commission. This meant that members should seek to strengthen the Convention and to find solutions within the Convention

framework. Australia sought Japan's commitment to defer consideration of its proposed EFP until the results of the scientific peer review were available, to address Australia and New Zealand's comments on Japan's proposal, and to discuss the results of those considerations at CCSBT5.

#### ***4.3 Handling of the Report***

Japan expressed its concerns on the leakage of draft meeting reports to the media at CCSBT4(2) and the unauthorised distribution of an NGO pamphlet at the opening of CCSBT4(3). Australia and New Zealand were also concerned at leakage of information to the media during the course of a meeting.

The Commission reaffirmed the need to take care during meetings to ensure the security and confidentiality of papers and draft meeting reports. The Commission also agreed a report of the Commission should be brief and succinct.

#### ***4.4 Scientific process***

Scientists from the three members met to confirm the work program, timetable and general procedures for the 1998 stock assessment process (**Attachment G**). The arrangements developed by the scientists were agreed to by the Commission.

Japan made several queries on the work program, and asked whether the Scientific Committee could achieve productive and fruitful progress including agreement on the uncertainty and stock assessment. It cast doubt on the 1998 scientific process in that it might repeat the impasses experienced in the past years. New Zealand responded it would make every effort to avoid this, but that it could not predict the outcome of the 1998 scientific process. New Zealand proposed questions which the Commission could use to guide the deliberations of the Scientific Committee. These were circulated for comment (**Attachment H**) and supported by Australia. Japan asserted it was not reasonable for New Zealand to submit such a proposal at a late stage in the meeting and noted the necessity of clear rules for the submission of proposals and documents.

### **Agenda Item 5: Close of the Meeting**

#### ***5.1 Election of Chair and Vice Chair for 1998***

Japan stated that it was appropriate to close CCSBT4 and nominated Mr Yasuo Takase of the Japanese Ministry of Foreign Affairs, Fisheries Division, for election as the new Chair of the Commission for CCSBT5.

However, the meeting did not close and therefore elections did not occur.

#### ***5.2 Adoption of the Report of the Meeting***

The meeting approved and adopted the report of the meeting.

### *5.3 Closure of the Meeting*

All members thanked the Chair, Secretariat and interpreters for their support throughout the meeting.

Japan noted that at this meeting there has been little agreement on the issues considered by the Commission. However, Japan hoped that in the future the CCSBT could function more effectively in the management of the SBT stock. Japan reported that it was not able to agree to many points because it was seeking to improvement of the organisation. Japan undertook to work hard in the future so the Commission will become a better international organisation.

New Zealand noted its serious concern that significant issues that were the responsibility of the Commission remained unresolved. New Zealand reaffirmed its commitment to continue negotiating in good faith to resolve these issues. As no decision had been made to close the meeting, New Zealand looked forward to resumption of the adjourned meeting as soon as possible to resolve the outstanding issues.

Australia viewed with great concern the fact that a TAC and national allocations for 1997/98 had yet to be set by the Commission. All Commission members are parties to UNCLOS and, with others, have signed the UNIA, which reinforces their duty to cooperate to conserve the SBT stock.

Australia stressed that the precautionary approach is firmly embedded as a norm for the international natural resource management. Outsiders looking at the Commission wondering why there had been no agreement on a TAC and national allocations would find two members prepared to apply the precautionary approach and take appropriate management action for addressing the very real concerns that apply when a stock is depleted to less than 10 per cent of unexploited biomass.

Australia considered that in the absence of a decision on a TAC by the Commission, no member is free to fish, for any reason, to a level in excess of the national allocation last agreed by the Commission. Australia strongly urged Japan to resile from its expressed intention of implementing an EFP using catch in excess of its most recent national allocation (6,065t). Australia remained hopeful that Japan would return to the table to work in a collaborative way to resolve the outstanding issues of TAC, national allocations and experimental fishing.

All members affirmed their commitment to continuing to seek the resolution of these issues.

Royce Elliott  
Chair  
21 February 1998

## **List of Attachments**

Attachment A	Agenda
Attachment B	List of Participants
Attachment C	Opening Statement - Australia
Attachment D	Opening Statement - New Zealand
Attachment E	Australian Comments on Joint Pilot Plan for Experimental Fishing Program for SBT (CCSBT/9709/22)
Attachment F	New Zealand Comments on Joint Pilot Plan for Experimental Fishing Program for SBT (CCSBT/9709/22)
Attachment G	Facilitation of the 1998 Scientific Process
Attachment H	Possible Questions for the Managers to Pose to Scientists - a Proposal by New Zealand

**AGENDA**

1. Opening of Meeting
  - 1.1 Welcoming Address
  - 1.2 Adoption of Agenda
  - 1.3 Appointment of Rapporteurs
  - 1.4 Meeting Arrangements
  
2. Total Allowable Catch and Quota Allocation
  - 2.1 Total Allowable Catch
  - 2.2 National Allocations
  
3. Consideration of an Experimental Fishing Program
  
4. Other Business
  - 4.1 Non-members
  - 4.2 Cooperation within CCSBT
  - 4.3 Handling of the Report
  - 4.4 Scientific Process
  
5. Close of the Meeting
  - 5.1 Election of Chair and Vice Chair for 1998
  - 5.2 Adoption of the Report of the Meeting
  - 5.3 Closure of the Meeting

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**Opening Statement of Australia**

Australia welcomes the delegates from Japan and New Zealand, and observers from the Republic of Korea, Chinese Taipei and the Republic of Indonesia, and CCAMLR and ICCAT to Canberra.

It is time for the Commission to demonstrate leadership in the conservation and management of SBT, and for the individual members to demonstrate their commitment to fulfilling the Commission's mandate.

All members agree that the SBT stock is severely depleted at levels below 10 per cent of the 1960 levels.

While we are all frustrated by the differences between us, any action we take individually or together should be aimed at ensuring the SBT stock progresses towards a more robust stock status over time, and towards enhancing prospects for consensus on key scientific and management issues.

Australia has a very substantial interest in the SBT fishery and is concerned at the current impasses in the Commission.

We are committed to taking the steps necessary to secure the sustainability of the SBT stock, including action to bring non members into the Commission.

In January 1998 the CCSBT agreed on the timing for the 1998 stock assessment and peer review of the Commission's stock assessment process. Australia urges all members to lend their full support to these activities.

Australia strongly urges all members to use this meeting to resolve our differences and seek consensus on outstanding matters before the Commission.

**New Zealand Opening Statement**

The New Zealand delegation welcomes the opportunity to once again meet and work with delegations from Australia and Japan in an effort to resolve issues outstanding from CCSBT4(2). New Zealand is very concerned at the lack of resolution on core issues within the Commission. Our concerns relate to the fundamentally different approaches by the parties to the management of SBT. Important differences between the parties include: no agreement to a TAC for 1997-98; slow progress on efforts to secure the accession or cooperation of non-parties; differences in stock projections; and, more recently, Japan's intent to undertake unilateral experimental fishing and its efforts to establish an arrangement in the IOTC to manage SBT.

These differences threaten the function of the Commission and therefore, the existence of a responsible and appropriate framework for the management of SBT. The existence of such a framework is directly linked to the continuation of a viable SBT fishery. The three parties have clear obligations to cooperate within the framework of the Convention for the Conservation of Southern Bluefin Tuna, and this should include on-going cooperation in the scientific process in order to develop a common approach.

New Zealand recognises that restraint of SBT catch by non-parties is a core issue facing the Commission. Although some progress was made at CCSBT4(2) with respect to a programme of work to secure the accession or cooperation of non-parties, at this meeting New Zealand will seek the commitment of all parties to the programme of direct approaches to non-parties. For its part, New Zealand is interested in pursuing options, such as trade certification, as use as tools to facilitate non-party accession or cooperation.

The continuing function of the Commission is essential because of its role in preventing any further deterioration of the depleted SBT fishery - an issue of critical concern to the industries and Governments of the three parties. For this reason New Zealand remains intent on negotiating in good faith within the Commission with a view to resolving the difficult issues before us.

**AUSTRALIAN COMMENTS ON THE REVISED JAPANESE JOINT PILOT  
PLAN FOR EXPERIMENTAL FISHING PROGRAM FOR SBT (CCSBT/9709/22)**

20 February 1998

**Background**

Australia continues to hold the view that a carefully designed, well-evaluated and properly implemented experimental fishing program (EFP) can be an important tool for reducing uncertainty in the stock assessment and improving future management. However, such experiments must provide demonstrable benefits for future management while minimising any risks to stock recovery. A core element of any effective EFP is that it is collaborative in all stages of design, conduct and analysis. As currently drafted the proposal does not provide adequately for such collaboration.

Australia provided written comments (Attachment S of the Report of the Third meeting - first session) on the August 19 version of the Joint Pilot Plan for Experimental Fishing Program for SBT prepared by the Fisheries Agency of Japan (CCSBT/SC/96/33). The original proposal has been revised somewhat from the version tabled in August 1996 and addressed some of Australia's concerns. However, many of the questions and concerns raised by Australia at the September 1996 meeting persist. In particular, the following concerns remain: (1) the adequacy of objective and incompletely specified testable hypotheses, (2) the level of risk, (3) the level of uncertainty that will be resolved, (4) the specific ways the information will be used in the stock assessment and management decision processes, (5) the scientific validity of the design, (6) the distribution and levels of sampling coverage, (7) the adequacy of the monitoring and verification, (8) alternative approaches and designs, and (9) criteria for evaluating the results and determining subsequent management actions.

**EFP Logic and Decision Rules**

The underlying logic and rationale for the EFP requires a re-assessment. The main concern is that the experiment is designed to lead to a pre-determined outcome based on a misunderstanding of how cpue interpretations lead to uncertainty in the stock assessment process. The logic of the Japanese proposal appears to be:

1. Fish in Area A (currently fished areas) and Area B (previously fished areas)
2. Estimate CPUE in both areas
3. If fish are found in Area B then reject the Variable Squares hypothesis
4. Recalculate a new higher probability of stock recovery to 1980 levels by 2020
5. Return to number 1 if the variable square hypothesis is not rejected and if the probability of recovery has not increased
6. Use the higher probability of recovery as evidence of a more robust and healthy SBT stock

The main problem with this logic is in step 3. Obviously some fish will be caught in

Area B. Simply finding fish in Area B does not mean that the Variable Squares hypothesis is rejected (given a zero weighting). The proposal does not reflect the appropriate way to update weights that should be used in the Scientific Committee. Both the Constant Squares hypothesis (same density of fish in the previously fished areas as in the currently fished areas) and the Variable Squares hypothesis (zero fish in the previously fished areas) are extremes of a continuum of possible intermediate situations during any particular year. (It should be noted that the constant and variable square hypotheses do not represent the extremes for changes over time.) Weighting these extreme values higher or lower indicates the degree to which one believes (on the basis of the existing evidence) that the "truth" lies toward one or other of the extremes. A corollary of the Japanese logic would be if the density of fish in Area B were lower from that of Area A, then the Constant Square hypothesis would be rejected. Again this would be a distortion of the weighting procedures and the scientific process.

Australia could endorse a proposal based on sound logic rather than one that appears to result inevitably in an increased probability of stock recovery regardless of the real stock condition.

Australia still believes that an EFP can give useful information to reduce the uncertainties in the stock assessment if it is set up and implemented on a sounder scientific basis. The following outlines the type of procedure which needs to be developed collaboratively:

1. Assign weights to the alternative hypotheses used to explain CPUE changes. This needs to take into account the fact that hypotheses form a continuum with the variable squares and the constant squares being near the bounds of possible explanations (however, other hypotheses - eg the habitat hypothesis- are even more extreme).
2. Experimentally fish in predetermined blocks in Area A and B, based on a well designed and implemented experiment. The sampling design needs to be based on consideration of statistical precision and the implementation needs to include adequate monitoring and verification (see Annex).
3. Use the results of the EFP to objectively re-assign the weightings based on agreed procedures.
4. Recalculate the probability of stock recovery (including all other known uncertainties)
5. Use this new evidence along with information on current stock status and fishery indicators to determine appropriate TACs and management measures. (The results from an EFP will not necessarily indicate that the stock can sustain higher catches).

There also needs to be a practical design criteria to determine if the EFP is having an adverse impact requiring quota compensation. Agreed criteria and decision rules of what will happen if these criteria are met need to be decided up front before an EFP is initiated. These criteria have to consider the new stock status, any adverse trends in fishery indicators as well as the new estimates of the probability of stock recovery based on agreed scientific logic and process for integrating the results of the EFP into the scientific process and weightings.

## **Annex - Technical Comments**

The revised EFP proposal needs to better address the basic principles underlying the design and implementation of an experimental fishing program in an adaptive management context. More details are needed on how the results coming from the program would be incorporated into the stock assessment and the future management decision-making for the fishery. While Australia recognises that a pilot program would of necessity be simple and exploratory in design there is not enough information provided for the relative risks and benefits of the Japanese proposal to be assessed.

The basic objective of any experimental fishing program should be to improve the chances of achieving management objectives. As agreed to by the Commission, "the criteria for judging an EFP should be derived from management objectives e.g. a 50 to 90% chance of achieving 1980 parental stock levels by 2020 and maintaining parental stock above that level having achieved...". A critical part of the process is determining and specifying how the results of the experiments will be used in the management decisions and consequently how the experiments affect the chances of achieving management's objectives. This needs to be addressed within the current EFP proposal.

### **Objectives**

The main stated objective of the Japanese pilot program is to conduct a feasibility study for vessel deployment (i.e. "whether participating vessels cover appropriately the survey area and the appropriate data are obtained"). This is an objective that does not require 2,010t of catch to determine. In fact this objective requires no quota at all. It can be achieved by simply developing a well designed and agreed on sampling scheme with appropriate monitoring, including observer coverage.

The objectives of the main EFP program remain unchanged in the revised proposal. As such many of the comments Australia provided in September 1996 are still relevant. In terms of the SBT stock assessments, interpretation of cpue is only one of a number of major sources of uncertainty. In evaluating the merits of the objectives of an EFP, consideration needs to be given to the extent to which other options (such as tagging, spawning ground surveys, etc) can contribute to the broader management objective for the fishery.

### **Sample Design and Vessel Deployment Scheme**

The proposed vessel deployment scheme for Part 1 needs to be based on statistically valid approaches for developing sampling schemes. There is no statistical justification for trying "to reproduce the past operational patterns" in terms of trying to maximise the information on the relative abundance in areas that are no longer being fished. In fact the proposed deployment scheme results in 75% of the effort/quota being taken from time/area strata that are currently being fished.

Setting target cv's of 5% is not an appropriate basis for determining sampling effort. Given the underlying variance in daily CPUE rates, the required increase in sample



effort to achieve marginal increase in precision below even 10% are very large. This is demonstrated in the results in table 2 of the proposal which demonstrate that to go from cv's on the order of 6 to 5% requires at least an increase in sampling of 67%). Moreover, the claim that cv's of 5% will be obtained for Part I of the survey is not supported by the results in Table 2. In fact, 5% cv levels are not achievable based on the sample sizes provided in Table 2 for either July and August. Thus, for example, even with 700 operations in August the cv that is estimated to be achieved would only be 15% and the effort would likely to have to be more than doubled to achieve a cv in the 5% range (Calculations for larger sample sizes are not presented). Moreover, the bootstrap procedure as implemented will greatly overestimate the level of precision that is likely to be obtained because it has not taken into account the nested and non-random aspects of the data being used to calculate the estimates.

Sampling error is only one aspect of the total error in any abundance index. The potential levels of process error also need to be considered. Substantially underestimating total error as the result of estimates with highly precise sampling relying on estimates can lead to misleading and unreliable conclusions.

The calculation of sample size needs to be based on an analysis of the statistical power to resolve the alternative hypotheses being test in the EFP and not an arbitrarily set level of precision.

More information on how vessels will be deployed between the two defined areas in Part I are needed to ensure that the desired level of coverage will be achieved (e.g. the basis for determining which vessels will fish in which areas and for which time periods).

### **Methods of Analyses and Interpretations**

Although the revised plan contains some information of the method of analyses, the needs to be clear and full description of how the results of the EFP will be factored into the stock assessment for SBT. In particular the scientific methodology by which the results will be used for improving the objective weightings of different cpue interpretations should be specified.

### **Appropriate Monitoring**

As agreed by all parties, appropriate monitoring and verification is essential if the Commission is to have confidence in the results. The proposal does not relate the level of observer coverage to the scientific needs of the experiment. Verification of the data is a critical issue and without adequate verification the experimental results will be open to a wide range of interpretations - possibly even increasing the uncertainty in the stock assessments.

There needs to be specific and binding commitments for collaborative verification. A high level of observer coverage is required with adequate provisions to ensure that a representative and random sample from all vessels is obtained. VMS should be used on all vessels for position fixing as this will ensure verification that specified

spatial/temporal design was achieved.

### **Assessing the impact of the experimental fishing program**

The proposal lacks transparency in terms of the way in which impact will be assessed and the criteria for management response to the outcomes of such assessment. These should be specified clearly so that the respective risks and benefits of the proposal can be assessed. All parties need to have a common understanding of the decision rules to be used and the management responses to be implemented at each stage of the program.

**New Zealand Comments on Japanese Pilot EFP Proposal  
(CCSBT Doc 9702)**

Note, these comments summarise material provided by New Zealand to Japan in 1996 and included in the report from CCSBT3(2) (Attachment T)

**DESIGN**

- The proposal does not have a clearly worded objective
- No quantitative analysis on the extent to which design will reduce uncertainty
- CPUE uncertainty arises mainly from quarter 2 and 3-large proportion of the fish come from quarter 4
- Not clear what data will be gathered
- CV estimates are very low (suspect calculated inappropriately; implies precision not likely to be realised)
- Fishing activities need to be structured to maximise information on unfished areas.
- Very limited additional data collected-recommend the inclusion of otolith collection and tagging experiment to compliment the EFP design
- Level of data verification proposed (10% coverage) needs to be justified in relation to precision
- No prescription on how or when the data collected will be shared with Commission parties
- The programme is supposed to be designed to generate information on abundance of fish in unfished areas but a large proportion of fishing occurs in currently fished areas

**ANALYSIS**

- The proposal does not include an analysis to support the assumption that finding fish in currently unfished areas means we are able to reject the variable square hypothesis
- Not clear how the data will be analysed

**DECISION MAKING**

- Need clear decision rule (e.g. 3 000 tonne increase/3 000 tonne decrease for three years unless Scientific Committee agrees on assessment that >50% probability that the stock will rebuild to 1980 levels by 2020).
- No description of how the data generated from the EFP would be analysed to determine if there had been an adverse effect to the stock.

Prepared by New Zealand  
20 February 1998

**FACILITATION OF THE 1998 SCIENTIFIC PROCESS**

To clarify the action necessary to facilitate the scientific process in 1998, representatives of the Commission's Scientific Committee met on 19 February to confirm the work program and general procedures to be followed for 1998.

The following agenda was endorsed to cover the relevant issues:

1. Steps required to lead up to the Stock Assessment and Scientific Committee meetings,
2. Review of the Stock Assessment Group (SAG) and Scientific Committee terms of Reference,
3. Resolution of implementation and computational differences in Steps 1 and 2,
4. Evaluation and development of VPA output weighting procedures, and
5. Setting date for meeting of scientists in April 1998.

**Steps required to lead up to the Stock Assessment and Scientific Committee meetings**

The meeting noted that there were a number of issues to be agreed prior to the start of the 1998 stock assessment process which will be the focus of the April meeting of scientists. The meeting agreed that the April meeting would also discuss the process and rules for considering how and when to incorporate new information, changes to models, and biological parameters in the stock assessment process.

It was also agreed that the April meeting would seek to clarify arrangements for determining the Chairperson of the SAG.

**Review of the Stock Assessment Group (SAG) and Scientific Committee Terms of Reference**

The meeting noted that the Scientific Committee Terms of Reference were set out in the Convention for the Conservation of Southern Bluefin Tuna and that the Terms of Reference for the SAG had been agreed at the Scientific Process Workshop, Sydney. The SAG Terms of Reference and Report format and content are at Annex A to this paper; in addition the standard draft agenda for the SAG, agreed at the Sydney meeting, is at Annex B. The draft agenda and format and content for the report of the Scientific Committee are at Annexes C and D respectively.

The following was confirmed as the timetable for exchange of data and meetings

Exchange of catch, effort, size data

April 28

Exchange of catch-at-age and non-members catch and age composition	May 5
Draft agendas for SAG and SC	May 26
Exchange standardised CPUE	June 9
Final dead line for brief description of intended VPA changes (April meeting may impact on this issue)	June 23
All documents and list of meeting documents	July 14
SAG meeting	July 23-31
Scientific Committee meeting	Aug 3-6.

The meeting confirmed that all documents for either the SAG or SC would be tabled at the start of the SAG. The meeting agreed that the 'Review of Fisheries Papers' should be available to the SAG meeting for reference and consideration if there are implications for the work of the SAG. Full presentation of those papers would occur at the Scientific Committee meeting.

### **Resolution of implementation and computational differences in Steps 1 and 2**

The meeting noted that the resolution of VPA/Projection implementation and computation differences would not be completed by the target deadline (1 March) suggested at CCSBT4(2). This is due to inadequate resources and competing demands of other work. It was further noted that if this matter was not completed within a reasonable time it would create difficulties in effectively completing the 1998 assessment and projections.

It was agreed that regular e-mail and fax contact would be maintained to resolve technical issues relating to the implementation and computational differences in the VPA and projections. It was also agreed that a common framework for handling constraints and non-convergence in models would be sought. Scientists agreed to make their best efforts to complete this work by 1 April 1998.

### **Evaluation and development of VPA output weighting procedures**

It was agreed that comments on the procedures set out in the revision of SC/9707/29 distributed recently to members of the Scientific Committee would be circulated by April 1. Reference to the original should also be made.

### **Setting date for meeting of scientists in April 1998**

Australia proposed that scientists meet 9-10 April, New Zealand advised they were available. Japan would confirm their availability or suggest alternate dates by 27 February. Australia and New Zealand would notify Japan of their other commitments.

### **Terms of Reference for the Stock Assessment Group**

- To review any new information on the stock structure and biology of SBT.
- To update the stock assessment of SBT, including estimating trends in abundance and current and future stock size
- To develop and evaluate methods and models for assessing the stock status of SBT.
- To provide the technical evaluation of the implications of management measures that have been identified by the Scientific Committee.
- To consider any matter referred to it by the Scientific Committee.
- To identify the research and technical requirements for future stock assessment of SBT.
- To produce a report as specified in the agreed "Format and Content for the Report from the Stock Assessment Group".
- To refer matters to the Scientific Committee for consideration.

### **Format and Content for the Report from the Stock Assessment Group**

1. New data available since the previous stock assessment  
Brief description of new data that has become available since the previous stock assessment. A detailed description of these data should be included in subsequent sections where appropriate.
2. Biology  
Description of the aspects of SBT biology that are most important for stock assessment, including:
  - age
  - growth
  - natural mortality
  - reproductive parameters
  - stock structure
3. Stock assessment  
Description of the methods, input parameters, and outputs from the stock assessment, including:
  - a) Catch at size/age
  - b) CPUE analyses
  - c) Other indices of abundance
  - d) Population and model parameters
  - e) Virtual population analysis
  - f) Other modelling results
  - g) Model projections
  - h) Uncertainties
4. Responses to matters referred by the Scientific Committee  
A detailed response to the technical matters referred by the Scientific Committee to the Stock Assessment Group.
5. Research and technical requirements for stock assessment  
Descriptions of the research and technical requirements that would improve future stock assessments as identified by the Stock Assessment Group.

**Draft Standard Agenda for the  
Stock Assessment Group**

- 1) Opening
  - introduction of participants and administrative matters
- 2) Appointment of Chair and Rapporteurs
- 3) Adoption of agenda
- 4) Biology and stock structure of SBT
- 5) SBT stock assessment
- 6) Matters referred by the Scientific Committee
- 7) Research and technical requirements for future stock assessments
- 8) Other Business
- 9) Finalisation and adoption of the Report of the Stock Assessment Group
- 10) Close of meeting

**Draft Standard Agenda for the  
CCSBT Scientific Committee**

- 1) Opening
  - introduction of participants and administrative matters
- 2) Appointment of Chair and Rapporteurs
- 3) Adoption of agenda
- 4) Review of SBT fisheries
- 5) Review of the Report of the Stock Assessment Group
- 6) Status of the SBT Stock
- 7) Implications for SBT Management
- 8) Review of the Report of the Ecologically Related Species Working Group
- 9) Research requirements
- 10) Matters referred by the Commission
- 11) Other Business
- 12) Finalisation and adoption of the Report of the Scientific Committee
- 13) Close of meeting



**Proposed format and content for the Report of the CCSBT Scientific Committee**

1. Introduction  
This section will include a brief overview of the meeting including a list of new information used in the current assessment as "bullet" points.
2. Review of SBT Fisheries  
Description of where, when and how the fishery operated, focusing on the most recent year and could include:
  - \* overview
  - \* summaries of party and non-party fisheries
3. Summary of new scientific information
4. Current Management Measures  
Description of current management measures
5. Status of the SBT stock  
Description of the current status of the stock based on the results of the SAG Report and information provided to the Scientific Committee, this could include:
  - \* current stock size relative to reference points
6. Management Implications  
This section includes the implications of the stock assessment results on the management of the SBT fishery, this could include:
  - \* uncertainty
  - \* probability of stock rebuild and recovery times
  - \* evaluation of the risks of alternative harvest strategies and catch limits
7. Consideration of the ERS Working Group Report
8. Response to matters referred by the Commission
9. Advice and Recommendations

**Possible Question for the Managers to Pose to Scientists**  
**A Proposal by New Zealand**  
(20 February 1998)

1. What is the current status of the PB relative to the PB in 1960 and 1980?
2. What are the trends in PB and recruitment in recent years relative to 1988?
3. What are the major remaining sources of uncertainty in the assessment? How sensitive are the estimates of stock status and probability of stock rebuild to these sources of uncertainty? How could those remaining sources of uncertainty with significant effects on the results of the assessment be resolved?
4. If the PB is increasing, what is the probability that the PB will recover to 1980 levels by 2005, 2010 and 2020? What would be the impact of added removals comparable to those consistent with increased non-Party fishing effort?
5. What level of catch would be required to ensure that the probability of recovery to 1980 PB levels by 2020 is greater than 50% and 75%?
6. With respect to stock projections provided in previous assessment, how well have the previous projection results subsequent stock structure and abundance? If prediction have subsequently been shown to be unreliable, how can predictions be improved? How could advice to managers be framed to better reflect the unreliability of stock projections?
7. What program of work should the scientists undertake to develop and estimate reference points (ie, limit and target reference points as in the UNIA Annex II) for consideration at CCSBT-5?