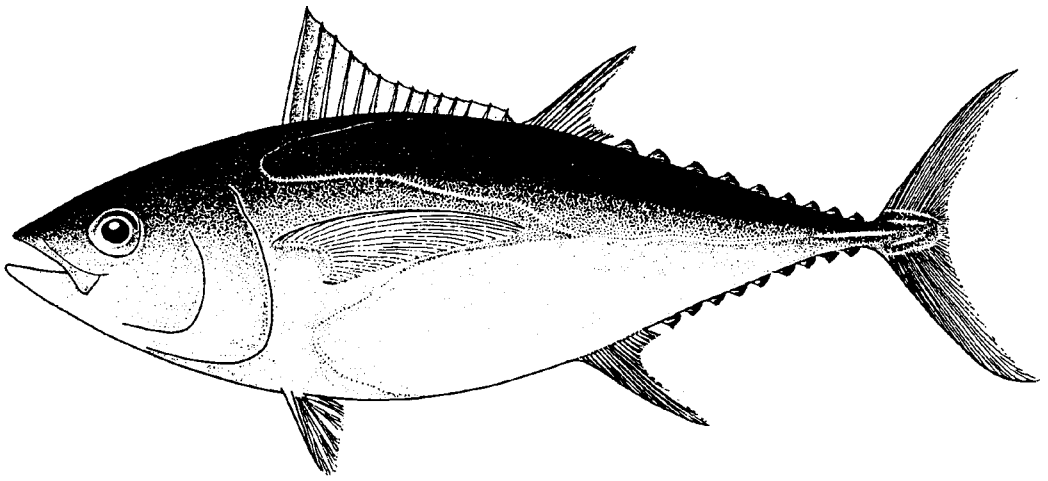
REPORT OF THE TENTH MEETING OF

THE STANDING COMMITTEE ON TUNA AND BILLFISH

Nadi, Fiji
16–18 June 1997



Oceanic Fisheries Programme
South Pacific Commission
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II. SUMMARY OF DISCUSSIONS

1. PRELIMINARIES

1.1 Opening Address

1. Mr Robin Yarrow, the Permanent Secretary, Department of Coordination and Strategic Planning of Fiji Government opened the meeting. In his opening address (ANNEX I), he noted that the second *Multilateral High-Level Conference on the Conservation and Management of Highly Migratory Tuna Stocks of the Western and Central Pacific Ocean* (MHLC 2), held during the previous week, had made significant progress towards the development of appropriate management arrangements for oceanic resources of the region. Further, he noted that a key element in this process will be the provision of scientific advice on the condition of the stock and concerns regarding catch data, which were issues raised at the *Technical Consultation on the Collection and Exchange of Fisheries Data, Tuna Research and Stock Assessment*, held in Noumea, New Caledonia, 15–19 July 1996. As such, and in order to ensure that the Standing Committee on Tuna and Billfish (SCTB) group provides appropriate scientific advice in the future, he noted that the review of the format and function of SCTB will be an important agenda item to be discussed during this meeting.

1.2 Appointment of Chairman and Rapporteurs

2 The Honorary 'Akau'ola, the Secretary of the Ministry of Fisheries in Tonga was appointed chairman.

3 The Secretariat offered to provide the rapporteurs for the meeting. Mr Keith Bigelow and Mr Peter Williams were appointed rapporteurs. Mr Peter Ward from the Bureau of Resource Sciences, Australia, was appointed rapporteur for Agenda Item 6 (Future of the SCTB).

1.3 Meeting Procedures

4. The meeting was to be conducted over three days, with the meeting hours scheduled for 8:30am–5:00pm. During the Ninth meeting of the SCTB (SCTB9), a sub-committee was appointed to review the format of future SCTB meetings. It was noted that this group would meet, as required, out of normal meeting hours.

1.4 Adoption of the Report of the Ninth Meeting of the SCTB

5. The meeting formally adopted the report of SCTB9, held in Noumea, New Caledonia, 22–23 July 1996 (Working Paper 1).

6. The meeting was advised by the Secretariat that the action items and recommendations coming from SCTB 9 were to be addressed by the following agenda items:

SCTB 9	SCTB10 Agenda
Action Item 1	6.1
Action Item 2	6.1
Action Item 3	5.2
Action Item 4	5.2
Action Item 5	2.1
Action Item 6	2.2
Action Item 7	4.1
Recommendation 1	4.1
Recommendation 2	4.1

2. OVERVIEW OF WESTERN AND CENTRAL PACIFIC OCEAN (WCPO) TUNA FISHERIES

2.1 National Fishery reports

7. Dr Tony Lewis, SPC Oceanic Fisheries Coordinator, introduced this agenda item by providing a brief overview of developments in tuna fisheries in the SPC region during 1996.

8. The preliminary estimate of total catch in the SPC statistical area for 1996 was approximately 860,000 t. This represents a decline of approximately 70,000 t compared to the 1995 total catch level, with a drop in the proportion of yellowfin (down from 22% to 17%) in the overall catch primarily accounting for the difference. By gear, the overall longline catch (109,000 t) was slightly less than in 1995 and the pole-and-line catch (73,000 t) showed a drop of about 15,000 t; the purse-seine catch (678,000 t) was down by approximately 50,000 t, with the drop in the purse-seine catch of yellowfin primarily accounting for this difference.

9. Similar to 1995, there was continued growth of domestic fleets in 1996. The distant-water fishing nation (DWFN) fleet remained relatively stable during 1996.

10. National fishery reports were then presented; the summaries of these are listed in alphabetical order.

2.1.1 Australia

11. Mr Peter Ward provided an overview of the Australian tuna fishery, referring to BP 6. Activity by Australian longliners increased substantially during 1996/97, with many longliners extending the range of their longline operations further offshore. Landings of yellowfin increased only marginally on 1995 landings, whereas landings of broadbill swordfish and bigeye tuna rose significantly. A variety of factors contributed to the increased catches of swordfish and bigeye in 1996. It was a "warm water year", presumably driven by the easing of El Nino conditions and coinciding with low catch rates of large yellowfin. The scarcity of large yellowfin partly resulted in increased targeting of other high value species, such as bigeye.

12. In 1996, many Australian longliners relocated from southern New South Wales to southern Queensland where they used night-set squid baits to target swordfish and bigeye. Swordfish catches rose to 414 t in 1996. In 1997, swordfish catches are expected to surpass the 800 t total allowable catch (TAC) for swordfish taken by Australian and Japanese longliners in the north-eastern AFZ. The major changes in effort distribution and targeting by Australian longliners will complicate CPUE-based assessments.

13. Tuna and billfish are taken by a variety of other methods, such as pole-and-line, purse seine and trolling. Pole-and-line and purse seine are used to take skipjack tuna off southern New South Wales. The annual skipjack catch reached 6,000 t in the early 1990s then fell below 1,500 t a year. In 1996, vessels using pole-and-line and purse seine gear reported catching 2,697 t of skipjack.

2.1.2 Federated States of Micronesia (FSM)

14. Mr Tim Park provided an overview of tuna fisheries of FSM, referring to BP 8. The catch data collection via logsheets is still preliminary for 1996, representing an estimated two-thirds of the actual activity. Despite this, it is apparent that the catches by each gear type, purse seine, longline

and pole-and-line, are less than in 1995. The total catch for 1995 was the largest yet recorded in FSM waters at 253,585 t. Preliminary estimates indicate that the total catch for 1996 will be under 200,000 t.

15. The reduced total catch is due to the change in fleet structure between 1995 and 1996; that is, there were one third fewer purse seiners fishing in the FSM EEZ. The failure of the Taiwanese and Korean purse-seine associations to come to an agreement to fish in the FSM EEZ meant that two of the major purse seine fleets active in 1995 did not fish for much of 1996. In addition, the US purse seiners tended to fish to the south-east outside the FSM EEZ.

16. The longline fleet was also reduced in 1996. This was in part related to the departure from the FSM of the Chinese-flagged vessels under the Taiwanese company Ting Hong. The pole-and-line fleet was also reduced in 1996.

17. The decline of the purse-seine and longline fleets resulted in much fewer transhipments in 1996. The preliminary data indicate that the number of purse-seine transhipments in 1996 was only about 15 per cent that of 1995. This is due to the absence of the Taiwanese and Korean fleets which used Chuuk harbour for many of their transhipments in 1995. The number of longline transhipments in 1996 was only 58 per cent that of 1995. There was no transhipment activity in Kosrae harbour for the latter 3 months of 1996.

18. The return of the Taiwanese and Korean purse seine fleets in 1997 will probably increase the catches for 1997. The longline fleet is also expected to increase. This will also increase the amount of transhipment in FSM ports.

2.1.3 Fiji

19. Mr. Iliavi Tuwai presented an overview of the Fijian tuna fisheries, referring to BP 11. Longline and pole-and-line fishing are the only commercial methods used to catch tuna and billfish in Fiji. Longline fishing has increased dramatically during the past five years from 27 vessels in 1992 to 49 vessels in 1996. Total domestic longline production in 1996 was 4,339 t. The majority of vessels target sashimi-quality fish for the export market. Sashimi-grade tuna were mainly marketed in Japan and the U.S.A, whereas bycatch, primarily swordfish and marlin, were also marketed locally. Foreign longliners from Taiwan have continued with bilateral access agreements with Fiji during the past five years. Foreign catches were consistently greater than 4,000 t from 1992 to 1995, but declined to 2,290 t in 1996. During 1997, no other foreign vessels have applied for licences to fish in Fiji waters.

20. The pole-and-line fishery started in Fiji in the late 1970s with the establishment of the Pacific Fishing Company (PAFCO) cannery at Levuka. The fishery primarily catches skipjack and unloads at the cannery. During the past five years, vessels participating in the fishery have declined from 9 to 7. With the decrease in effort, catch has also declined to 3,287 t in 1996.

21. Total transhipments from foreign boats conducted in the port of Suva were 1,600 t in 1996. Transhipments will be much greater in 1997 as 1,600 t have already been offloaded in the period from January to May. Fish Aggregating Devices (FADs) have been deployed in Fiji waters to aid local troll fishermen. There has been some data collection for these small scale fishermen, but catch statistics are largely incomplete. The introduction of *Hazard Analysis and Critical Control Point* (HAACP) by the U.S.A. in December 1997 is a major concern for Fiji's sashimi fish exporters.

2.1.4 French Polynesia

22. Mr Stephen Yen outlined the current status of the fishery in French Polynesia, referring the meeting to BP 3. Domestic fisheries in French Polynesia consist of troll, handline and longlining. Similar to other Pacific islands, the domestic longline fishery has expanded significantly in the last five years. The domestic longline fleet was composed of 58 vessels in 1996, 47 of which were 13–25 metres. Domestic longline catch was greater than 5,000 t in 1996 and largely composed of albacore (43%). The majority of the catch was marketed locally, with only 100–200 t of fish exported. Future plans for the domestic industry are to strengthen the export marketing, provide additional training for the fishing industry and enhance infrastructure.

23. The Korean distant-water fleet has been licensed to fish in French Polynesia for the past four years. Korean catch has been stable at around 2,000 t over the licensing period; yellowfin catch per unit effort (CPUE), in particular, was high in 1996.

2.1.5 Japan

24. Dr Naozumi Miyabe briefly described the Japanese fishery, referring to BP 13. The trend of declining fleet size for offshore and distant-water pole-and-line and longline boats continued during 1996, reaching about half the level seen in 1986. The distant-water longline fleet also experienced some decline, but not to the extent of these former fleets. Similarly, the number of small-sized purse seiners has declined during the past decade. The amount of catch taken by these fisheries has been stable, with a gradual decline in recent years corresponding to changes in fleet sizes. Notably, there was a large decline in the yellowfin catch (40%) during 1996 in the purse-seine fishery. This decline in the yellowfin catch by purse seiners was probably due to the shift of fishing ground towards the west due to changes in environmental conditions. Fishing conditions for the other fisheries were near normal during 1996.

2.1.6 Kiribati

25. Mr Ribanotake Awira gave a brief overview of the tuna fishery developments in Kiribati. A longline fleet was established in March 1997 to target yellowfin and bigeye, with bycatch consisting of shark, sailfish, wahoo and sunfish. There has been a reduction in effort by the larger pole-and-line vessels to promote effort by small domestic skiffs. Current fisheries research is concentrating on the traditional knowledge of skipjack spawning areas.

26. It was suggested that, as El Nino Southern Oscillation (ENSO) events appear to play a significant role in the availability of tuna in Kiribati waters, the Kiribati government may want to access information made available by the ENSO Applications Center based in Hawaii.

2.1.7 Korea

27. Dr Jang-uk Lee outlined the activities of Korean fleets during 1996, referring to BP 9. The 1996 catch of tuna and tuna-like species by Korean fleets operating in the western and central Pacific Ocean (WCPO) was estimated to be 178,400 t. This catch was taken by 184 vessels and was a 12.8 per cent decrease compared with the previous year's catch.

28. In 1996, 156 longliners fished for tunas in the Pacific Ocean and the total catch in the WCPO was 29,600 t, an increase of 1.2 per cent over the 1995 catch. The CPUE for the Korean longline fishery in 1996 was calculated to be 1.39 fish per 100 hooks, the same level as the 1995 value.

29. Species composition of the longline catch in 1996 was bigeye (46.8%), yellowfin (39.9%), albacore (1.3%), and others (12.1%). The catch of bigeye was down 10 per cent to 13,800 t from 15,400 t in 1995, but yellowfin catch increased 24.4 per cent to 11,800 t from the 9,500 t taken in the previous year.

30. A total of 28 purse seiners operated in the SPC Statistical Area in 1996. The total catch of this fleet was 148,800 t, a decrease of 15.2 per cent compared to the 1995 catch.

31. Catch from the purse seine fleet during 1996 was composed of 129,900 t skipjack, a 5.8 per cent decrease over the 1995 catch of this species, and 18,900 t yellowfin, which was down 49.7 per cent compared to 1995.

32. Longline catch and effort statistics for 1995 are being compiled in 5°x5° grids for subsequent publication, as per previous years. Korean purse seine fishery statistics from 1980 to 1995, stratified by 1°x1° grid and month, were recently provided to the Oceanic Fisheries Programme (OFP).

33. The OFP commended Korea for their efforts in preparing the aggregated purse seine fishery statistics.

2.1.8 New Zealand

34. Dr John McKoy provided a brief overview of the New Zealand fisheries, referring to BP 7. The pelagic fleet of New Zealand consists of 60 (15–50 m) longline vessels, five 50-metre chartered Japanese longline vessels, around 200 small (15 m) albacore troll vessels, 5–6 medium purse seiners, and handline boats. The total annual catch in 1996 was 6,280 t of albacore, 80 t of bigeye, 190 t of yellowfin, 3,650 t of skipjack and 180 t of swordfish.

35. Tuna landings primarily occur during summer months (January–March). Albacore were mainly caught by a summer troll fishery. The purse-seine fishery primarily catches skipjack during the summer and other pelagic species during the remainder of the year. The longline fishery operates over a wide spatial area. Longline effort occurs within the New Zealand Exclusive Economic Zone (EEZ), within international waters to the north and east of New Zealand, and in the Fiji EEZ.

2.1.9 New Caledonia

36. Mr Regis Etaix-Bonnin provided an overview of tuna fisheries of New Caledonia, referring to BP 4. The first attempt to develop a tuna industry took place in the early 1980s when several local pole-and-line vessels started to operate around New Caledonia. For several reasons, for example the high seasonality of bait, pole-and-line was abandoned and activities switched to the longline gear. The longliners at this time were all freezer vessels imported from Japan. In 1989, the first fresh sashimi longliner started to fish around New Caledonia, and monofilament gear was introduced in the fishery in 1994.

37. In 1996, five vessels (of a total of eight) were using a monofilament longline and targetting bigeye and yellowfin tuna for export to the Japanese sashimi market. Their fishing trips are usually limited to 6 days, during which 4 longline sets are made. Due to their cruising range, these smaller vessels operate close to their landing port. On the other hand, the two freezer longliners are capable of staying at sea for up to 45 days, and fish much further from the landing port. The frozen bigeye, yellowfin and striped marlin are the only catch from these vessels that are not sent to the Pago Pago canneries.

38. The preliminary catch statistics for 1996 indicate that about 1,300 t of tuna and tuna-like species were caught by the New Caledonia longline fleet, of which 50 per cent were yellowfin, the predominant species in the catch since 1995. Prior to 1995, the predominant species was albacore.

39. Five new monofilament longliners are to be imported in 1997, and another four similar vessels will be delivered in the future. It is expected that the fishery will soon reach an annual production of 2,000 tonnes. The demand for sashimi-grade species is still high, but the local market is limited to bycatch.

40. An important study is currently underway that will hopefully define new avenues to develop New Caledonia's tuna fishing by focusing on precise goals to be reached within five years.

2.1.10 Papua New Guinea (PNG)

41. Mr Joel Opnai provided an overview of the PNG tuna fisheries, referring the meeting to BP 12. During 1996, PNG had bilateral arrangements with the purse-seine fleets from Korea (28 vessels), Philippines (11 vessels) and Taiwan (42 vessels), while two vessels from Vanuatu also operated under a bilateral arrangement. Four purse seiners and five longline vessels fished under domestic licensing arrangements in 1996.

42. In November 1996, the PNG Government, with its policy to broaden the fisheries economic base for the country, announced a major reduction in the fishing sector tariffs to encourage investors. This initiative had its beginnings with the domestic policy on the longline fishery, announced by the government in late 1995.

43. Domestic longline fishing has seen major changes during the past year, with five out of 12 licensed domestic longline vessels actively fishing. Fresh tuna exports for 1996 were estimated at over 200 t, which is worth over half a million Kina. Domestic longline operators sent their target tuna catch to the Japanese fresh tuna markets, with most of the by-catch being sent to the Sydney Fish Market; very few catch were sold locally. There are currently problems in getting this fleet to provide catch and effort data via logbooks.

44. One Philippines (Mar Fish) purse-seine vessel was re-flagged to PNG in June 1996, and fished for a Philippine joint-venture fishing company (Paradise Fishing Co. Ltd) registered in PNG. The other three domestic purse-seine vessels are ex-Taiwanese vessels and belong to Niugini Fishing company. Towards the end of 1996, eight purse seine fishing licences were issued to RD Fishing Company Ltd, whose vessels will supply tuna to the RD Canners Company Ltd. 100 tonne-a-day cannery, which opened in June 1997.

45. There have been problems in obtaining all catch and effort data from the domestic purse-seine fleet. For example, one of the companies, Niugini Fishing, unloaded some of their catch in FSM ports, thus making it difficult for PNG to obtain logsheets. The total reported domestic purse-seine catch for 1996 was 4,446 t, which is much less than the estimated 15,556 t in 1995 (SPC Tuna Fishery Yearbook).

46. Transhipment has been mostly from catcher vessels to reefer carriers, as no facilities for onshore storage were available prior to the construction of the RD Canners Co. Ltd cannery. The Niugini Fishing Co. Ltd sent their catch to Philippines, Thailand and Japan. Paradise Fishing Co. Ltd sent their catch to Zamboanga in Philippines, and part of their catch may have then been transhipped to other markets.

47. As mentioned, the collection of catch and effort data from the domestic fleets currently presents more problems than the collection of data from the distant-water fleets, and will, therefore, be an important area for the National Fisheries Authority (NFA) to address in the future. The capacity for the NFA to manage the PNG tuna fishery is very small. Only a handful of PNG junior biologists have been recruited to work in the NFA Tuna Research and Monitoring Section, and are being assisted by two Australian volunteers. Staff in this section are currently involved with the National Observer Programme, and also in establishing the national tuna data collection system.

48. With the assistance of the Forum Fisheries Agency (FFA) and the OFP, PNG has embarked on establishing a National Tuna Management Plan for its EEZ. This has been both an initiative of the Government as well as a requirement of the World Bank's Structural Adjustment Programme. The plan is currently in its third draft and will go before the National Fisheries Board in July.

49. It was suggested that the documentation dealing with the feasibility of small-scale purse seine activities, conducted several years ago, might be useful to the operations of the PNG domestic fleet. It was noted that several incentives have been offered to domestic fleets in PNG; these include: reduction in fuel tax; abolition of export tax; reduction of import of baitfish; favourable depreciation conditions on vessels, and concessions on the importation of equipment.

2.1.11 Solomon Islands

50. Mr Sylvester Diake provided an overview of the tuna fisheries in the Solomon Islands. During 1995, seven locally-registered tuna companies were actively involved in tuna fishing within the Solomon Islands EEZ. During 1996, 31 single seiners, one group seiner, 31 longliners and 23 pole-and-line vessels were licensed. A total of 60,859 t of tuna was taken by the domestic fisheries during 1996 compared to 67,241 t in 1995. The catch consisted of 33,649 t for the single seiners, 5,450 t by the group seiner, 5,540 t by the longliners and 16,220 t from the pole-and-line fishery. From 1995 to 1996, longline landings increased 550 per cent, whereas group seine and pole-and-line landings decreased by 26 per cent and 53 per cent, respectively. The operations of some of the single seiners and longliners extended beyond the Solomon Islands EEZ.

51. Species composition of the domestic catch in 1996 was skipjack (36,031 t), yellowfin (21,269 t) and bigeye (1,335 t). A small portion of the catch was processed locally as various canned tuna and smoked products. The remainder of the catch was exported for overseas processing. During 1996, 128 transhipments (64 purse seine and 64 longline) occurred.

52. Japan is the only distant-water nation with a bilateral access agreement. In 1996, a total of 25 longline and 35 pole-and-line vessels were licensed, with a total of 18 longline and 16 pole-and-line permit activations being issued. Joint-venture companies may be established in the near future with additional foreign partners.

2.1.12 Taiwan

53. Dr Richard Lu provided an overview of the Taiwanese fleet activities in the WCPO, referring to BP 14. In 1995, there were 42 distant-water purse seiners and 57 distant-water tuna longliners operating in the Pacific Ocean, and around 1,350 fresh-sashimi tuna longliners (20–100 Gross Registered Tonnage–GRT) operating in the coastal and offshore waters of Taiwan, elsewhere in the Pacific, and in the Indian Ocean. The total catch of tunas, billfishes and sharks was 257,805 t, of which distant-water fisheries accounted for 91 per cent, and coastal and offshore fisheries 9 per cent.

54. The total catch in the WCPO by the 42 distant-water purse seiners during 1996 was 179,440 t, comprising 161,407 t skipjack, 17,389 t yellowfin and 644 t others species. A total of 6,214 fishing sets were made with an average catch rate of 28.9 t per set. Fishing grounds were mainly in PNG, FSM and the high seas. Transhipments, destined for canneries in Thailand and the U.S.A., primarily occurred in the ports of Guam, Chuuk and Yap.

55. Taiwan's distant-water tuna longline fleet in the Pacific Ocean comprises 46 conventional vessels and 11 with extra-cold freezers. These vessels were based out of Levuka, Fiji and Pago Pago, American Samoa, and targeted albacore for the canneries in these ports. Preliminary total catch by this fleet during 1996 was 17,183 t, comprising 15,244 t albacore, 330 t bigeye, 833 t yellowfin and 776 t other species. Nominal CPUE for distant-water tuna longline fleet during 1994 was 3.32 fish per 100 hooks, and a preliminary value of around 3 fish per 100 hooks was estimated for 1995.

56. In 1996, around 470 fresh-sashimi tuna longliners (50–70 GRT) operated throughout the Pacific Ocean. These vessels were mainly based in the Philippines, Guam, Marshall Islands and Palau. Fishing effort in FSM waters reduced significantly due to the withdrawal of a major Taiwanese fishing company from this area. Estimated catch in 1996 was 12,922 t, a 9.8 per cent decrease from the 1995 catch. A preliminary nominal CPUE of 2.48 fish per 100 hooks has been estimated for 1996. Logbook coverage is still considered low for this fleet, but may improve in the future with additional funds for fleet monitoring.

2.1.13 United States

57. Dr Gary Sakagawa provided an overview of the US fisheries in the WCPO, referring to BP 5. United States commercial fisheries for tunas and billfishes in the central-western Pacific are grouped by gear and fishing area: distant-water purse-seine fishery that operates in the southwestern Pacific, longline fisheries in the north and south Pacific, pole-and-line fishery off Hawaii, troll and handline fisheries off Hawaii, and troll fisheries off Guam, American Samoa and the Northern Mariana Islands. The distant-water purse seine fishery is the largest U.S. tuna fishery in the region. It lands an average of 180,900 t annually (1992–96), consisting mainly of skipjack tuna and lesser quantities of yellowfin and bigeye tuna. In 1996, the fleet consisted of 40 vessels. The total catch was 126,100 t, a decrease from 209,600 t in 1994 and 167,600 t in 1995. Yellowfin tuna led the decline in catch from 56,400 t in 1994 to 16,100 t in 1996. Skipjack tuna followed with a decline from 151,500 t in 1994 to 100,900 t in 1996. The catch of bigeye tuna, on the other hand, increased from 1,700 t in 1994 to a record high of 9,100 t in 1996.

58. The pole-and-line fishery off Hawaii targets skipjack tuna and takes small quantities of yellowfin tuna as an incidental species. Average annual (1992–96) catch for the fishery is 718 t of skipjack tuna. In 1996, the catch was slightly above average at 780 t.

59. The longline fishery consists of two main components. One component consists of 115 large vessels, most of which are based in and land their catch in Hawaii. These vessels target swordfish and tunas for fresh-fish markets. The other component is a fleet of 13 small vessels based in American Samoa which targets albacore. In 1996, the total longline catch was stable at 9,200 t (2,700 t swordfish; 2,300 t bigeye tuna; 2,000 t sharks; 900 t yellowfin tuna; 500 t blue marlin and 400 t striped marlin), compared to 9,300 t in 1995. However, swordfish catch continued to decline from the high in 1993 of 5,900 t, and shark catches continued to increase.

60. There are more than 1,500 registered vessels commercially fishing for tunas and billfishes with handline and troll gears from bases in Hawaii and other U.S. territories. The total 1996 catch for the

fleet was 4,900 t, unchanged from 1995. The catch for this fleet has been relatively stable for the past several years. The primary species caught by troll vessels is albacore (2,200 t in 1996), and yellowfin tuna (1,100 t in 1996).

2.1.14 Wallis and Futuna

61. Mr Bernard Guegan described the current situation in Wallis and Futuna. Wallis and Futuna have bilateral access agreements with Korea and Japan, but the domestic fishery is not presently well developed.

2.2 Economic overview of the Fishery

62. Ms Anna Willock presented the economic overview of the fishery, referring the meeting to Working Paper 4. The estimated value of the catch in 1996 was US$1.65 billion, which was a small decline (4.6 per cent) compared to 1995. The estimated value of the purse seine catch was US$726 million, the longline catch an estimated US$800 million, and the pole-and-line catch an estimated US$113 million.

63. The benchmark for cannery prices is Thailand, the world's largest processor of canned tuna. In Bangkok, during 1996, cannery prices for skipjack reached a peak of US$1,200/tonne in September, having risen from a low of US$680/tonne during April. The price of yellowfin started low at US$1,050/tonne, but reached a peak of US$1,500 during September and October, and maintained this high price level until the end of the year.

64. For the longline fishery, it was noted that a decrease in annual supplies of fresh/chilled bigeye and yellowfin was experienced during 1996, a trend not seen in the previous 6 years. The fresh/chilled product now represents about 23 per cent of the total bigeye and yellowfin market. Imports of fresh/chilled bigeye and yellowfin from Pacific Island countries was around 19,000 t during 1996, a drop of 2,000 t on 1995's imports; this represents about 32 per cent of Japan's total imports of fresh bigeye and yellowfin.

65. The meeting suggested that future presentations of the economic overview of the fishery consider the following important commercial species in addition to the main tuna target species: albacore, striped marlin and swordfish.

66. It was noted that studies on the cost of fishing may be an important consideration for Pacific Islands countries in the future. In this respect, PNG has already sought assistance for a study looking at certain aspects of the cost of fishing.

3. STOCK ASSESSMENTS AND COLLECTION OF REGIONAL TUNA FISHERY DATA

3.1 Data collection by SPC/OFP

67. Mr Tim Lawson, SPC Fisheries Statistician, provided an overview of the types of data provided to, and collected by, the OFP, referring the meeting to Information Papers 1, 2 and 3. There are three basic types of data collected and provided to the OFP: catch and effort data collected via logsheets, observer data and port sampling data.

68. Catch and effort data are provided in two forms: logsheets submitted by SPC members that contain information at the operational level, and aggregated data, provided by the distant-water fishing nations. Currently, the logsheet data provide about 80 per cent coverage of the WCPO tuna fishery in the SPC Statistical Area, with near full coverage in the economic zones of Pacific island countries and territories. It was noted, however, that the coverage of domestic fleets is generally low. The OFP received the following aggregated data during the past reporting period: Taiwanese distant-water longline data for 1994 from Overseas Fisheries Development Council (OFDC) of the Council of Agriculture (COA) of Taiwan; 1994–1995 longline and 1995–1996 purse seine data for Japanese vessels from the Japan Fisheries Agency (JFA), and 1980–1995 Korean purse seine data from the National Fisheries Research and Development Institute (NFRDI), Korea.

69. Mr Peter Sharples, SPC Observer/Port Sampling Supervisor, outlined the current status of observer and port sampling data collection. During 1996–97, the OFP, through the European Union (EU)-funded *South Pacific Tuna Resource Assessment and Monitoring Project* (SPRTRAMP), continued to support the collection of biological data and/or the collection of landings data from the following ports of the region: Yap, Chuuk, Pohnpei and Kosrae in the FSM; Levuka and Lami in Fiji; Papeete in French Polynesia; Tarawa and Kiritimati in Kiribati; Majuro in Marshall Islands; Noumea in New Caledonia; Koror in Palau; Port Moresby, Kavieng, Wewak, Manus and Rabaul in PNG, Noro, Tulagi and Honiara in the Solomon Islands; and Tuimatamoana in Tonga. Support was in various forms including port sampling training, technical and financial assistance, data processing, provision of forms and provision of sampling equipment, such as calipers. Funds provided by the Government of Taiwan have allowed OFP staff to begin to address important deficiencies in data collection in Guam and in Pago Pago, American Samoa.

70. An observer programme has been operating under SPRTRAMP since early 1995, with OFP observers gathering baseline data from most of the major industrial fleets of the region. The OFP has also played a significant role in assisting member countries to establish national observer programmes, through the provision of observer training, in-country visits to provide technical support, design of data collection forms, processing of observer data and data quality assessment.

71. From July 1996 to April 1997 inclusive, SPRTRAMP staff were active on 28 fishing vessels in 13 SPC member countries, spending 527 days at sea. With the co-operation of the F.C.F. Fishery Co., Ltd, of Taiwan, a Solomon Island observer, trained under the US Multilateral Treaty Observer Programme, was contracted to carry out an inaugural observer trip on an albacore longliner (134 sea days). He collected the first observer information from this fishery and has provided a useful pilot trip for further development of an observer programme targeting this fleet.

72. The lack of aggregated catch and effort data for the significant fisheries in Indonesia and the Philippines was noted. It was later mentioned that port sampling staff, operating under the Landed

Catch and Effort Monitoring Project (LCEM) in the Philippines, had continued to collect data during 1995 and 1996.

3.2 Data collection by other SCTB participants

73. The status of fishery data collection by each country was presented and the summaries of these are listed in alphabetical order.

3.2.1 Australia

74. A logbook system was introduced for Australian longliners in 1988. Of the fishers endorsed to longline off the east coast, however, less than 50 per cent had logbooks before 1989. Field officers were employed in 1989 to visit fishers and to distribute and collect logbooks. By 1990 approximately 85 per cent of fishers had been issued with logbooks. Field support of the logbook program lapsed in 1993. However, since 1995, the Australian Fisheries Management Authority (AFMA) has mailed all endorsees requesting the submission of outstanding logbooks and an account of daily activities. AFMA estimates that about 99 per cent of longliners were regularly submitting logbooks in 1996. In 1997, AFMA initiated a size monitoring program to sample Australian longline landings.

75. There is no program to place observers on Australian longliners. However, in 1995–96 CSIRO placed observers on Cairns-based longliners as part of a research project investigating the relationship between the depth of fishing and the catch composition.

76. Since 1979, Australia has placed observers on Japanese longliners fishing under bilateral agreement in the Australian fishing zone (AFZ). The program is fully cost-recovered against access fees. Observer coverage of the fleet in the eastern AFZ was sporadic during the 1980s. Since 1989, coverage has risen, with 10–20 per cent coverage (about 20–30 ten-day trips) the target for 1997. Observers on longliners gather a variety of data, including catch composition, biological samples, size measurements, and information on targeting, fishing practices and gear. The data are held in a central database that can be linked to the logbook database. A strong emphasis is placed on collecting information on bycatch, with observers specifically monitoring discards each seventh haul. Discard monitoring has revealed significant quantities of several species that observers would normally miss when measuring fish on the work deck.

3.2.2 Federated States of Micronesia

77. The South Pacific Regional logsheets are utilised as the principle method of monitoring catches. The completion and submission of logsheets by vessels is compulsory to their agreement. It was noted that the FSM requires Japanese, Chinese and Korean translations of the Catch Return Forms for upcoming negotiations.

78. Port sampling is conducted at all FSM ports. The five Port Sampling Officers are directed to cover at least 80 per cent of the transhipments. South Pacific Regional Port Sampling forms are used and the data are entered at the Micronesian Maritime Authority (MMA) office and verified by SPC. MMA would like to see a port sampling programme developed in Guam. Improvements in the database set up by SPC are also requested to assist accessibility of the data.

79. The MMA has one of the best established observer programmes in the WCPO. The programme is currently running with 12 observers, with 33 trips already completed this calendar year.

80. Improved access of the observer programme to Japanese and Korean vessels is planned for 1997. Further training of the observers by SPC and FFA will be sought in 1997. Improved accessibility to the data in the SPC developed database is also requested.

3.2.3 Fiji

81. Fiji Fisheries Division have had several problems in collecting logsheets from domestic vessels, such as, the captains claiming that the forms are difficult to fill in. Port sampling data collection is currently conducted at the PAFCO cannery in Levuka, and Fiji Fish, Suva. Another port sampler is needed to cover the unloadings at Feeders. Fiji requested the OFP to review their new unloadings data collection form to ensure it covers the requirements of the regional form. The OFP and FFA have recently been involved in training 20 observers to work on vessels based out of Suva; it is expected that these observers will start activities next month.

3.2.4 French Polynesia

82. Catch and effort data have been collected from domestic longline vessels based out of Papeete during the past five years; these data are subsequently provided to the OFP. There is some port sampling of these vessels, but no observer activities at this stage.

3.2.5 Japan

83. Logsheet data are collected from the offshore and distant-water Japanese longline fleets, and since last year, the coastal longline fleet. It was noted that data collection from the small-scale coastal longline fishery commenced last year but coverage is low at this stage. Logsheet coverage of the offshore fleet is 80–85 per cent and for the DWFN fleet, 90 per cent. Logsheet coverage of the purse seine fleet is 100 per cent and 92–95 per cent for the offshore and distant-water pole-and-line fleets. Port sampling of the equatorial purse seine fleet began three years ago, with coverage estimated to be about 15 per cent. There is some port sampling of the longline fleet, but not as comprehensively as for the purse seine port sampling. Six observer trips were conducted during the period February–December 1996, totaling 250 days at sea; these trips provided valuable information on target and bycatch species. The OFP will make an official request for access to the coastal longline fleet catch and effort data.

3.2.6 Kiribati

84. Kiribati currently have two trained observers and hope to have more available for training in the future. Logsheet data are collected for foreign fleets and passed onto the OFP for processing, but recent data for the domestic pole-and-line and longline fleets have yet to be provided to the OFP. There is some domestic longline activity based out of Tarawa, but there is no longline port sampling of this fleet at this stage.

3.2.7 Korea

85. Logsheets are provided to National Fisheries Research and Development Institute (NFRDI) by the fishing companies for the commercially important species only. The coverage of the distant-water longline fleet is considered to be 60–80 per cent, depending on the year; for the purse seine fleet coverage in recent years has been greater than 80 per cent. Some observer activities have been undertaken.

3.2.8 New Zealand

86. All domestic and chartered vessels are required to submit logbooks to a licensed fish receiver and the coverage of fishing activity is considered to be 100 per cent. There are currently no foreign vessels operating in New Zealand waters. An observer programme, focussing on bycatch and sea-bird interaction, conducts activities on these vessels and operates for about 70–100 days per year. The National Institute of Water and Atmospheric Research Ltd. (NIWA) are currently conducting port sampling of vessels targeting albacore on behalf of the OFP.

3.2.9 New Caledonia

87. Logsheet coverage of the freezer longline vessels operating out of Noumea is considered to be good; coverage of the local fresh/chilled vessels is low, but expected to increase with the recent provision of the French-translated regional logsheet. Port sampling of these vessels has been undertaken since 1992, and more than 50,000 fish have now been sampled. An observer training course has been conducted with the aim of placement on Japanese longline vessels; at this stage, no placements have been made due to the absence of this fleet in New Caledonian waters.

3.2.10 Papua New Guinea

88. Catch and effort data are collected on the regional catch report forms designed by the Tuna Fishery Data Collection Forms Committee. This requirement is mandatory under the Fisheries Act 1994, and is enforced as a licence condition. During the last two to three years, reporting by the DWFNs has generally improved. However, logsheet reporting by the domestic fleet has been problematic. NFA will try to improve on this area during the course of this year and before the next SCTB meeting.

89. The PNG National Observer Programme commenced operation in November 1995 following one of the regional observer training workshops held in Honiara, Solomon Islands. The OFP assisted in setting up the National Observer Programme by placing their observers on foreign vessels licensed under bilateral arrangements, in order to increase the coverage of vessels from Taiwan, Korea and the Philippines. Following PNG's first observer training course held at the National Fisheries College (NFC) in Kavieng, New Ireland Province, 29 participants graduated as observers. Since November, 1995 a total of 26 observers (21 PNG observers and five SPC observers) have been placed on-board distant-water and domestic licensed vessels. Funding for the National Observer Programme is provided by the DWFNs through the bilateral arrangements.

90. Port sampling activities in PNG began in 1994 following a workshop held in Chuuk, FSM, which was sponsored by the SPRTRAMP. Following the workshop, the PNG participant returned and trained four port samplers to work in Kavieng, Wewak and Lorengau in the Manus Province.

91. Initial funding to man and equip the port sampling programme came from SPRTRAMP. Since the beginning of 1997, both the National Observer and Port Sampling Programmes have been funded by the Research and Management Branch recurrent budget and the observer funds set under the bilateral arrangements with DWFNs.

3.2.11 Solomon Islands

92. Logsheets from foreign and domestic vessels operating in Solomon Islands waters are collected and provided to the OFP. The logsheet data collection system has recently improved with the implementation of a checking system to ensure that logsheets are provided to the Fisheries Division on time. Eight observers have been trained by the OFP and FFA. These observers are currently undertaking other duties for the Fisheries Division, but it was noted that some would be released for observer duties when a SPRTRAMP observer, as proposed, was sent to be based in the Solomon Islands for a number of months.

3.2.12 Taiwan

93. Logsheets are collected from the purse seine fleet through the Deep-Sea Tuna Boat Owners and Exporters Association (TDSBEA), and from the offshore and distant-water longline fleets through fisheries administrative authorities. Sales reports collected from the Kaohsiung Municipal Government are used to correct the catch of yellowfin recorded on purse seine logsheets. Sampling of the distant-water longline fleet involves the use of a camera or a video camera, provided to the vessel, to collect bycatch and size composition information; this is currently conducted on 10 vessels in three oceans. For the offshore fleet, sampling at Tung Kang will commence shortly, and will involve interviews collecting an abstract of catch information from three vessels per day.

3.2.13 United States (Hawaii)

94. Hawaiian-based longliners are required to complete daily logsheets and coverage is considered to be 100 per cent. An observer program has covered the pelagic longline fleet with 4–5 per cent annual coverage since 1994. The programme has 8–12 observers who focus on bycatch and fisheries interaction with turtles and seabirds.

3.2.14 Wallis and Futuna

95. As there are currently no fishing activities in Wallis and Futuna, no data are collected.

3.2.15 Forum Fisheries Agency

96. During the 9th US Multilateral Treaty licensing period, 32 observer trips were conducted on US purse seine vessels; this covered about 22 per cent of all trips conducted by this fleet during the licensing period.

3.3 Status of WPCO tuna stocks

97. Dr John Hampton, SPC Principal Fisheries Scientist, presented an overview of the current status of skipjack, yellowfin and albacore stocks in the region, referring the meeting to Working Paper 3.

3.3.1 Skipjack

98. Skipjack mortality rates have been estimated from tagging data, collected during the peak of the fishery in the early 1990s. The results indicate a low to moderate exploitation rate (0.20) averaged over all size classes, and a decline in natural mortality with size. Nominal CPUE time series for purse seine and pole-and-line fleets show no evidence of significant stock declines.

99. In the ensuing discussion, it was noted that the size-dependent discarding of skipjack may be taken account of in future stock assessment analyses. It was also noted that the size category below 30cm in the size-dependent mortality analysis mostly included small fish tagged around FADs in the Philippines, which may not be representative of the situation elsewhere in WCPO skipjack fisheries.

3.3.2 Yellowfin

100. As with skipjack, yellowfin tagging data suggest a low to moderate level of exploitation of about 0.20. Purse seine CPUE varies considerably from year to year, but has not showed a persistent decline. However, 1996 CPUEs are amongst the lowest on record. This may be due to La Nina type conditions which have operated in 1995–96, resulting in the usual contraction of the fishery towards the west. Currently, a reversion to El Nino conditions appears to be taking place, and improved catch rates may result. Longline CPUE is characterised by cyclical, rather than strong year to year variation. The long period of decline experienced since the early 1980s appears to have ceased, with an increased CPUE in 1995.

3.3.3 Albacore

101. The assessment model for South Pacific albacore has been completed, along with an analysis of the 1962–1993 data set. The results of the analysis suggest that annual exploitation rates for adult albacore are currently about 15 per cent, while those for juvenile fish are around five per cent. Biomass peaked in the 1970s and has been declining since. This appears to be due to a downwards shift in recruitment in the mid to late 1970s. Variability in recruitment since the late 1970s seems to be related to variation in the El Nino Southern Oscillation (ENSO) index, with recruitment being depressed following El Nino events.

3.3.4 Bigeye

102. Dr Naozumi Miyabe gave a brief overview of the status of bigeye tuna stock in the Pacific Ocean. Standardised longline catch rates for bigeye in the western Pacific Ocean (WPO) have been stable in recent years, but are near the lowest of the time series for existing data. In the eastern Pacific Ocean (EPO) fishery, there has been a continuous downward trend since 1990, although the catch rate in 1996 is around the same as for 1995. It was noted that work on an age-structured model is planned for the future.

103. Dr Robin Allen provided on overview of developments in the eastern Pacific Ocean (EPO) tuna fishery. Over the period 1993–1996, the purse seine catch of bigeye tuna expanded rapidly reaching 52,000 t in 1996 compared to previous annual catches, which seldom exceeded 6,000 t. The increased catches have come from newly developed techniques using floating objects. This development has extended the range of purse seine bigeye catch south of the equator and west towards 150°W.

104. The interaction of the purse seine and longline fisheries has been investigated by using cohort analysis to estimate the current population structure and projecting the population and catches forward using alternative future scenarios for fishing effort. In this work a closed eastern Pacific stock is assumed, recruitment is assumed to remain constant at levels estimated for recent years and a range of natural mortality rate used. With a natural mortality of 0.4, projecting the 1996 fishing effort forward leads to significant declines in catch for the purse seine fishery and greater declines in the longline fishery.

105. It was noted that these analyses did not take into account size-specific mortality, and this could be obtained from tagging experiments.

106. At its 58th meeting in June 1997, the I–ATTC recognised that the increases in catches of small bigeye tuna were likely to cause a reduction in overall catch of bigeye in the EPO, concluded that action should be taken to limit or reduce the fishing mortality of small bigeye tuna, and instructed the staff to convene a Working Group to evaluate management options to be considered at the 1998 annual meeting.

4. REVIEW OF RESEARCH

4.1 OFP Work Programme Review, 1996–97, and Work Plan, 1997–98

107. Dr Lewis reminded the meeting that Working Paper 2, detailing the OFP Work Programme Review for the 1996–97 reporting period and the Work Plan for the next reporting period (1997–98), was circulated two months prior to SCTB10 to enable participants to better review the details of the OFP work prior to the meeting. As such, Dr Lewis provided only a brief summary of the main activities during the 1996–97 reporting period.

108. For statistics and monitoring, the main activities included (i) the continued collection and processing of catch and effort logsheet data, which now cover almost 80 per cent of fishing activities in the SPC statistical area; (ii) the maintenance of databases containing logsheet data aggregated by time-area strata; (iii) continuation of monitoring via the port sampling and observer programmes; (iv) production of the tuna fishery yearbook and the quarterly tuna bulletin; (v) maintenance of national fishery statistics systems; and (vi) responding to the many ad hoc requests for tuna fishery statistics.

109. It was noted that sufficient coverage provided by logsheet data is important in determining estimates of catch. The overall low coverage (52%) of longline daily logsheet data was explained by the general lack of provision of logsheets from the DWFN Japanese and Korean fleets for high seas activities. However, it was noted that these data are eventually provided to the OFP in the form of aggregated data.

110. The generally poor coverage of logsheet data from the domestic fleets throughout the region was noted. There were a number of reasons provided for the poor coverage; these include: fishers are wary of giving away valuable knowledge, and no legislation is in place to ensure logsheets are filled in. The United Nations (UN) Implementing Agreement recommends that there is some obligation for fishing nations to collect and compile catch and effort data from their fleets. It was therefore suggested that a review of the coverage of logsheet data from domestic fleets should occur during the coming reporting period (ACTION ITEM 2). In addressing problems with coverage in the future, it was noted that an approach that motivates fishers to provide this information would be more amenable than merely an enforcement approach.

111. The OFP was commended on the work involved in developing a system for accessing the Tuna Fishery Yearbook information via CD ROM.

112. For biological research, the main activities during the 1996–1997 reporting period were continuing research into the age and growth of tropical tunas, the environmental determinants of

tuna fishery production, and the stock structure of bigeye tuna. This latter activity involved contracting CSIRO to perform the specific DNA-microsatellite genetic analyses.

113. The main assessment and modelling activities during the 1996–1997 reporting period involved the development of tuna movement models; Interaction between surface and longline fisheries for yellowfin; the development of an integrated model for yellowfin assessment; bio-economic modelling of WCPO fisheries; South Pacific albacore assessment; exploitation patterns of bigeye and yellowfin in the Coral Sea; the production of National Fishery Assessments; and, the continued editing of the tag-recapture databases.

114. Dr Lewis noted that an initiative to look at the bio-economic aspects of the impact of small skipjack in the purse seine fishery was proposed after Working Paper 2 was finalised and sent to participants earlier this year. This proposal has now been described and was distributed during the meeting as an insert to Working Paper 2 (Section 3.9). It was noted that it would be necessary to secure specific funding in order to undertake the study at the required level of detail.

115. Dr Lewis gave a brief overview of the OFP funding situation, in responding to SCTB9 Recommendations 1 and 2. The ongoing core activities of the OFP operate on a budget of about US$700,000, most of which is provided by Australia and France. However, most of the overall funding continues to be provided for specific short-medium term projects by other donors, which include the European Union, AusAid and Taiwan. During 1997, the Oceanic Fisheries Programme Coordinator position was moved to SPC core funding, with one other position likely to be moved to core funding in 1998.

4.2 Reports by other organisations

Inter–American Tropical Tuna Commission (I–ATTC)

116. Dr Robin Allen gave a brief overview of the current related activities of the I–ATTC. The major part of the research of the I–ATTC concerns monitoring the catch and by-catch of the EPO fisheries and assessing the tuna stocks in the EPO. While this is of general interest, most is not directly relevant to research in the WCPO. The major exception is research related to bigeye tuna, which was discussed earlier and for which two papers will be tabled at WPYRG 7.

117. Some other research has applications to tunas worldwide. In cooperation with the Hawaii Tuna Tagging Project of the PFRP, more than 1,000 bigeye were injected with OTC, tagged and released. The otoliths are being examined and will be used to validate the use of growth increments for ageing bigeye. To provide an assurance of accurate identification of small bigeye by field staff a detailed morphometric study of yellowfin and bigeye has been carried out and a publication providing a guide to identification using external characteristics is in preparation. The large tank facilities at Achotines, Panama have proved to be very successful for holding mature yellowfin tuna which are spawning on a daily basis. The focus of the research is on early life history. Field based research on the reproductive biology of yellowfin tuna has been completed and data collection for a similar study of skipjack is underway.

Pelagic Fisheries Research Programme (PRFP)

118. Dr John Sibert indicated that a working paper prepared for the WPYRG 7 meeting describes current activities of the PFRP.

CSIRO

119. Dr Robert Campbell outlined the current related work of CSIRO. This includes a bigeye genetics study and analysis of microsatellite variation for yellowfin. CSIRO have also analysed various data collected by observers active on fishing vessels operating off the east coast of Australia and presented their findings in several reports.

National Marine Fisheries Service (NMFS)

120. The work of NMFS involving the behaviour of tropical bigeye and yellowfin is closely associated with the work of the PFRP. There are currently several collaborative studies being undertaken by NMFS, which include a review of the evolution of fishing power of purse seine sets. NMFS will continue to be responsible for the monitoring and processing of data collected from the US purse seine fleet operating in the WCPO. It was noted that the work involved in ensuring 100 per cent coverage of unloadings with port sampling was a major task.

Bureau of Resource Sciences (BRS)

121. Dr Derek Staples outlined three activities of relevance to the SCTB. The first was the convening of a conference (in collaboration with the Department of Fisheries, Canada) on "at-sea monitoring" to be held in Australia next year. The conference will cover observer programs, vessel monitoring systems, and other at-sea monitoring activities. The second activity involves hosting an expert consultation (in collaboration with FAO) on "indicators of sustainable development of fisheries". The bureau is also examining techniques of monitoring and assessing the impact of fishing on non-target species, including Australia's tuna fisheries.

French Polynesia

122. A research programme called ECOTAP (Study of tuna behaviour through acoustics and longline fishing) started in French Polynesia two years ago with the participation of EVAAM (Etablissement pour la Valorisation des Activités Aquacoles et Maritimes), ORSTOM (French Institute of Research and Development in Co-operation) and IFREMER (French Institute of Research and Development into the Exploration of the Sea). The objectives of the programme are to study tuna behavior by equipping longlines with time-depth recorders, conduct acoustic surveys, study the vertical and horizontal distribution of the tunas in the EEZ, and examine environmental conditions associated with longline fishing.

123. The three year programme is now at the end of the field survey stage after 300 days at sea. It is planned to present the results of this study at the next SCTB.

Food and Agriculture Organisation (FAO)

124. Dr Jacek Majkowski briefly outlined FAO's activities of relevance to the SCTB. He pointed out that at the beginning of this year, FAO had completed the printing of : (i) the Proceedings of the Second FAO Expert Consultation on Interactions of Pacific Tuna Fisheries, and (ii) an atlas of commercial catches of tuna and billfishes in the Pacific Ocean.

125. The atlas is now being extended to the global scale by FAO and will be available on computer media. A global synopsis of tuna and tuna-like species is also being prepared by FAO in digital form.

The main tuna species will be included in FAO's database *PopDyn,* which will be useful to stock assessment work. A global review of bycatches of tuna fisheries will be completed by FAO in 1998.

126. Recognising the importance of tuna fisheries interaction involving bigeye tuna, FAO assisted I–ATTC with the organisation of the Work Meeting on Bigeye Tuna held in La Jolla, USA in November 1996. Following the recommendations of that meeting, the project may co-sponsor, (i) a global modelling workshop on bigeye tuna to be held in La Jolla, California, USA, this year, and (ii) a publication of guidelines on how to distinguish juvenile bigeye tuna from yellowfin.

127. Following recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT) symposium held in the Azores in 1996, FAO, in collaboration with tuna bodies and major international technical programmes, may organise an Expert Consultation on the Precautionary Approach to Tuna Fisheries: Biological and Technological Research. A small technical meeting may be convened in 1998 to prepare for this consultation.

National Taiwan University (NTU)

128. Ongoing research, in collaboration with, and funded by, the Council of Agriculture, includes stock assessments on the tropical and temperate tunas (skipjack, yellowfin, bigeye and albacore) and billfishes for all oceans.

5. REVIEW OF CATCHES OF NON-TARGET, ASSOCIATED OR DEPENDENT SPECIES IN THE WCPO TUNA FISHERY

5.1 Summary of available data

129. Mr Tim Lawson introduced this agenda item and reminded the meeting that it was included as a means of addressing SCTB9 Action Items 3 and 4, dealing with bycatch and discards in the WCPO tuna fisheries. The OFP has completed the work to satisfy SCTB9 Action Item 3, but time constraints and the placement of observers on an opportunistic basis, preventing the establishment of the sampling design, meant that SCTB9 Action Item 4 has not yet been completed.

130. Mr Peter Sharples then provided an outline of observer data collection, which is fundamental to estimating bycatch and discards in the fishery. The SPC observer programme has four full-time observers. These observers participate on various fishing vessels and assist observer programmes in member countries.

131. Throughout the SPC region, additional bycatch estimation is possible through data collected by observer programmes in PNG, Fiji, Palau, FSM, Kiribati, Solomon Islands and Marshall Islands. Reasons for success and failure in observer programmes in member countries were discussed. To date, the FSM has the most successful observer programme, largely due to the presence of a tuna biologist who coordinates observer activities. Programs in Fiji and PNG have recently trained observers, but the programs have received little success in the past due to financial difficulties. Programmes in Palau, Kiribati, Solomon Islands and Marshall Islands have also had difficulty in achieving results.

132. Adequate organization remains the most significant problem in conducting domestic observer programs. It was recommended that the OFP consider placing its scientific observers in key ports where national programmes are experiencing difficulties (See SCTB10 Action Item 3). Solomon Islands was identified as a priority, and Palau and Marshall Islands were identified as being of next highest importance.

133. Another problem discussed under this topic was the different ability levels of observers throughout the region. Specifically, it was noted that it may be necessary to classify observers based on experience and assign certain aspects of the data collection depending on their abilities. For example, it was suggested that only the more experienced observers would be able to provide reasonable estimates of by-catch on purse seine vessels.

134. The difficulty in matching the fishing set data reported on catch logsheets to the set data collected by observers was identified as a problem that will be reviewed in the coming year.

135. The majority of observer placements in the SPC region occur opportunistically, and there was discussion on how bycatch estimation may improve through observer placement according to a sampling design. Since 1993, the I-ATTC has had 100 per cent observer coverage of the purse seine fleet in the ETP, and Dr Robin Allen offered their data to use in developing an appropriate sampling design for the WCPO purse seine fishery. Though the 100 per cent observer coverage is ideal, developing a sampling plan to estimate bycatch in the WCPO based on the ETP data may not be appropriate, because bycatch rates are much higher in the ETP. It was noted that organisations that conduct observer programmes in the region should use the systematic sampling methods, as described in the instructions of the regional observer forms.

5.2 Review of bycatch and discards in the WCPO tuna fishery

136. Mr Tim Lawson presented WP. 7, *Estimation of bycatch in central and western Pacific tuna fisheries: preliminary results*. Bycatch data have been collected under national and regional observer programmes since 1992 for longline and 1994 for purse seine. The national observer programmes include those of the Federated States of Micronesia, Marshall Islands, Nauru and Papua New Guinea, while the regional programmes include the US Multilateral Treaty observer programme managed by FFA and the SPC observer programme. The observer data held at SPC which can be used for examining bycatch include a total of 785 longline sets covering 11 fishing nations over a five-year period, and 1,516 purse-seine sets covering 9 fishing nations over a three-year period.

137. Preliminary estimates of bycatch for each species were obtained by multiplying an estimate of the average catch rate determined from observer data by an estimate of total effort. The standard error of the estimate of the mean catch rate was used to obtain a standard error of the estimate of the bycatch, and the relationship between the standard error of the catch rate and the sample size was used to obtain rough estimates of the amount of sampling required for a given level of reliability of the bycatch estimate.

138. It was noted that there appeared to be considerable variation in the level of experience of the observers, with many observers having made only a single trip. Data collected by certain observers whose data were judged to be unreliable by their supervisors were excluded from the analysis.

139. Average catch rates were estimated by pooling all available observer data; that is, the observer data were not stratified by year or other factors. The results should therefore be considered only as indicative of the magnitude of bycatches.

140. Longline bycatch species were defined as all species other than albacore, bigeye or yellowfin. Preliminary results indicate that longline bycatch represents 42 per cent of the total catch, with shark species representing 23 per cent of the total catch. The most important longline bycatch species was blue shark, followed by blue marlin, swordfish, striped marlin, wahoo, sailfish, black marlin, escolars, silky shark, thresher shark and oceanic white-tip shark. Eighteen other species were caught in significant quantities. For bycatch species for which the appropriate unit of catch is number of individuals, rather than weight, the turtle species group was found to be important.

141. Purse-seine bycatch species were defined as all species other than bigeye, skipjack and yellowfin. Preliminary results indicate that purse-seine bycatch represents 0.7 per cent of the total catch, with bycatch from unassociated sets of 0.5 per cent and with bycatch from associated sets of 0.9 per cent. The most important purse-seine bycatch species or species groups were the shark species group and rainbow runner. The only other species caught in significant quantities were frigate tuna, oceanic triggerfish, mackerel, black marlin, mahi mahi and blue marlin.

142. Coefficients of variation for estimates of longline catches were less than 10 per cent for fifteen species, including the three target species, while for purse-seine catches, the coefficients of variation were less than 10 per cent only for skipjack, the most important target species. In contrast, the number of purse-seine sets sampled was twice as great as the number of longline sets sampled. The lower level of reliability of estimates of purse-seine bycatch, compared to longline bycatch, as measured by the coefficient of variation, is due to greater variability in purse-seine catches of bycatch species. One implication of this result is that the level of sampling required for reliable estimates of purse-seine bycatch will, in general, be greater than for longline bycatch. The level of sampling required for reliable estimates was found to vary considerably, for both longline and purse seine, depending on the species and on the fishing nation.

143. The question arises whether the available observer bycatch data are representative of the fisheries, and, hence, will result in unbiased estimates. In order to fully examine the accuracy of the bycatch estimates, the effects of various factors, such as year, quarter and area, on the variation in average catch rates will need to be explored.

144. The difference in species composition and levels of bycatch between the EPO and the WPO were noted. One explanation, that the EPO is biologically richer than the WPO, was provided. It was further suggested that a breakdown of bycatch by associated set types (e.g. FAD, log, etc.) would provide a more useful comparison in the future.

145. The estimated level of turtle bycatch in the longline fishery, based on observer data, was discussed, and it was suggested that observer programmes should strive to identify turtles to the species level in the future.

146. Observer activity should obtain representative information by trying to adequately cover the WCPO tuna fisheries. As such, the OFP will seek assistance in observer placements with the following fleets in the coming year:

- Korean distant-water longline fleet;
- Japanese distant-water longline fleet;
- French Polynesian domestic longline fleet;
- PNG domestic longline and purse seine fleets;
- Western and American Samoan domestic fleets, and
- the Tongan longline fleet.

6. FUTURE OF THE SCTB

147. Dr Lewis introduced Working Paper 5, *The Future of the SCTB* (see Annex II for the final version), which was developed by the sub-committee assigned by SCTB9 to review the structure and format of SCTB meetings, and related working groups (SCTB9 Action Items 1 and 2).

148. In the week preceding SCTB10, MHLC2 had identified specific areas to progress the establishment of a management arrangement for the pelagic fisheries of the WCPO. MHLC2 had indicated a preference for utilising existing structures in establishing the regional arrangements, including the associated scientific arrangements. Other factors relevant to the future of SCTB included, (i) a decision by the 1996 SPC Conference that future reviews of SPC programmes should occur no more frequently than once every three years; (ii) concern that non-SPC members were not full participants in SCTB meetings, and (iii) the need to streamline the activities of existing working groups, such as SPAR, to avoid duplication.

149. The ensuing discussion raised several points requiring clarification, and subsequent enhancement to WP 5. The most significant points raised were:

- It was noted that the 'clients' of SCTB output should be identified. The 'clients' are likely to be any future management regime, but at the moment, scientists themselves are the important 'clients' who use this information. Participation at SCTB on an individual basis tends to reinforce the notion that it is currently separate from any management obligation;
- There was some confusion over the established FFA Species Working Groups, which are more aligned to in-zone management, and the SCTB Species Working Groups. To avoid confusion, the SCTB groups would be referred to as 'Species Research Groups', and would conduct their work over an area designated as the range of that species stock.

150. In summary, SCTB10 strongly supported the sub-committee's recommendations (See Recommendation 1). In particular, the meeting agreed that:

1. SCTB had not been particularly effective in reviewing the OFP's work programme, and that a smaller group appointed by SPC would provide a better means of providing independent review and technical input to the program;
2. "ownership" of the advice produced by the scientific arrangement would be determined by the regional management arrangement, when it was established;
3. the SCTB should focus on the review of research and exchange of data, along the lines specified by the UN Implementing Agreement; and
4. a Statistics Working Group and research groups to assess the status of the four major commercial tuna species in the region should be formed under the SCTB.

151. The SCTB terms of reference were revised to reflect these recommendations.

The Standing Committee on Tuna and Billfish provides a forum for scientists and others with an interest in the tuna stocks of the western and central Pacific region to meet to discuss scientific issues related to data, research and stock assessment. Its aims are to:

1. Coordinate fisheries data collection, compilation and dissemination according to agreed principles and procedures;

2. *Review research on the biology, ecology, environment and fisheries for tunas and associated species in the western and central Pacific Ocean;*
3. *Identify research needs and provide a means of coordination, including the fostering of collaborative research, to most efficiently and effectively meet those needs;*
4. *Review information pertaining to the status of stocks of tunas and associated species in the western and central Pacific Ocean, and to produce statements on stock status where appropriate;*
5. *Provide opinion on various scientific issues related to data, research and stock assessment of western and central Pacific Ocean tuna fisheries.*

152. Issues and levels of support would dictate the intensity of activity in each species research group, with scope for the formation of other working groups (e.g., swordfish, marlin, bycatch) when warranted. SCTB10 subsequently proposed the following chairs for each working group:

Statistics Working Group	Mr Tim Lawson
Skipjack Research Group	Mr Joel Opnai
Yellowfin Research Group	Dr Gary Sakagawa
Bigeye Research Group	Dr Naozumi Miyabe
Albacore Research Group	Mr Dan Su'a

153. SCTB would play a key role in coordinating and reviewing the activities of the working groups. SCTB10 nominated 'Akau'ola as the *ex-officio* chair of the next meeting of SCTB. SCTB10 asked that the OFP continue to provide administrative and coordinative support for SCTB meetings and the Species Research Groups. The OFP should consult with CRGA/SPC Conference and the SPC Executive to obtain feedback on the proposed changes (See SCTB10 Action Item 1). With the agreement of those bodies, SCTB10 expected that the new structure would commence operation by mid-1998, with the next SCTB meeting to be held under the revised terms of reference. SCTB10 intended that the removal of SPC as "owner" of the SCTB would promote the data exchange and research collaboration functions of the group.

6.2 International Developments

154. Dr Tony Lewis introduced this item by listing several significant fora that have occurred during the past twelve months: The second Multilateral High-level Conference on the Conservation and Management of highly Migratory Tuna Stocks of the WCPO, held in Majuro the previous week, the meeting of the Interim Scientific Committee (ISC) on North Pacific Tuna and Tuna-like species, held in Tokyo, Japan, during May 1996, and the World Meeting of Bigeye Tuna, held in La Jolla, USA during October 1996.

155. Several relevant international developments were then raised by participants of the meeting; these include :

- The initiatives of the Convention on the International Trade in Endangered Species (CITES) in reviewing shark by-catch and in establishing a Marine Species Working Group; and,

- the consideration of 'eco-labelling' of tuna products, a joint initiative proposed by the Marine Stewardship Council / World Wildlife Foundation and Union Leader.

The meeting suggested that, given the importance of these issues in regional tuna fisheries, further information should be gathered for the next SCTB.

7. OTHER BUSINESS

156. Dr Jang-uk Lee informed participants of the upcoming PICES meeting to be held in South Korea from 17th–24th October, and extended an invitation to all interested parties.

III. REVIEW OF SCTB9 RECOMMENDATIONS AND ACTION ITEMS

RECOMMENDATION 1

SCTB 9 urged the OFP to continue efforts to secure stable funding for the programme. SPC core-funding for critical positions within the OFP would provide considerable assistance in this regard.

It was noted that significant progress had been made during the past year with an OFP position now supported by SPC core funding for the first time. The position of Oceanic Fisheries Coordinator is now covered by SPC core funding, with the possibility of another key OFP position moving to core funding during the coming year.

RECOMMENDATION 2

The OFP should secure, as a priority, funding support for those activities previously identified as high priority, but not currently guaranteed funding. Maintenance of the catch/effort database and statistical monitoring has been identified as one such broad activity, for which funding is not guaranteed.

A proposal for support of the Fisheries Statistician position under SPC core funding was discussed during the past year, and will be further considered during the coming year.

ACTION ITEM 1

The OFP prepare a working paper for SCTB10 regarding the establishment of a Fisheries Statistics Working Group and working research groups for albacore, bigeye, skipjack, yellowfin and billfish. In this review, consideration should be given to how existing arrangements (e.g. WPYRG, SPAR) might be affected by the proposed structure.

SCTB10 Working Paper 5, "The Future of SCTB" (Annex II), outlines the proposed structure of future Standing Committees, and how the existing arrangements (i.e. WPYRG and SPAR) will be integrated into the structure in the future.

ACTION ITEM 2

The sub-committee established by SCTB8 to review the format of future SCTB meetings should present its conclusions to SCTB10. In so doing, it should consider the background paper prepared under Action Item 1, as well as the following issues raised during SCTB9:

- *the possible advantages of a thematic approach;*
- *the need to circulate papers in advance;*
- *the relevance of the current SCTB terms of reference, which were established in 1988;*
- *consider participation on an equal basis;*
- *the possibility of conducting some of the current SCTB agenda in other fora; and*
- *the need to discuss national research initiatives undertaken by fishing nations and coastal states*

The conclusions of deliberations by the sub-committee were described in SCTB10 Working Paper 5, "The Future of SCTB" (Annex II), which was ultimately adopted by SCTB10. This paper addresses the issues of the relevance of current SCTB terms of reference, and participation to SCTB on an equal basis.

It was also noted that, for the first time, one entire SCTB 10 agenda item was dedicated to a theme: 'bycatch and discards in the WCPO', and that the overview of the OFP work programme (Working Paper 2) was distributed two months prior to the SCTB10 meeting.

ACTION ITEM 3

The OFP present a summary of species by-catch data collected by observers at the next SCTB. This summary should include the level of coverage for the observer data and consider variations in by-catch by fleet, area and time period.

Summary information on bycatch data held at SPC was presented in WP. 6, *Estimation of bycatch in central and western Pacific tuna fisheries: preliminary results.* The document also presented preliminary estimates of fleet-wide catches of non-target species based on observer data.

ACTION ITEM 4

Given the significance of by-catch issues, it was suggested that the OFP should prepare a strategic and operational plan for selectively monitoring by-catch and circulate this prior to the SCTB 10.

This action item was not addressed due to time constraints, and because, in the foreseeable future, placements of observers will continue to be problematic and therefore conducted on an opportunistic basis. On the other hand, it is expected that during 1997/98, analysis of the effects of various factors on average catch rates determined from observer data will be carried out, and that such an analysis will be relevant to the design of observer programmes.

ACTION ITEM 5

The national fishery reports presented to SCTB9 were considered an increasingly valuable source of information. Future national fishery reports should consider the following points:

- *national fishery reports by SPC members should give highest priority to information concerning their domestic fleets, including the total number of vessels active in each fleet, and the total catch, by species, of each fleet;*
- *national fishery reports for distant-water fleets should present information concerning the activities of their fleets within the SPC statistical area, with additional information for the Pacific Ocean beyond the SPC statistical area, where appropriate;*
- *all national fishery reports should include information on catches of billfish and other by-catch species; and,*
- *where possible, national fishery reports should include tuna fishery statistics for the past five years.*

National Fishery Reports have been tabled as Background Papers to SCTB10. The points listed in this Action Item were answered to some degree in these papers, but several issues, such as the general poor coverage of domestic fleets and information on the catches of billfish and other bycatch species are areas where further attention will be required by the SCTB group in the future.

ACTION ITEM 6

The economic review of tuna industry development, prepared by FFA, should include trend analyses, within a 5 year time frame, for SCTB10.

SCTB10 Working Paper 4, Economic Overview of the Tuna Fishery, provides trend analyses over a 5 year time frame.

ACTION ITEM 7

The OFP should be prepared to respond to requests for tuna resource assessments at a national level, providing adequate resources are available. Such assessments might include standing biomass and throughput estimates, where this is possible.

Mr Keith Bigelow was employed by SPC/OFP in late 1996, with his main duties to prepare national tuna fishery assessments, where requested. During the past six months, he has completed national tuna fishery assessments for Tonga and the Cook Islands, and is expected to begin assessments for the Marshall Islands and PNG during the next six months.

During the last reporting period, the OFP also completed tuna resource profiles for Papua New Guinea and Western Samoa. This work was undertaken on a contract basis to the South Pacific Project Facility (SPPF).

IV. SCTB10 RECOMMENDATIONS

RECOMMENDATION 1

Recognising the need to modify the terms of reference of SCTB in order to provide a more efficient and effective forum for scientific debate and a vehicle for research/data coordination and collaboration in which all participants will be equal partners, the 10th SCTB recommends:

- That "review of the OFP work programme" be removed from the SCTB terms of reference and the SPC provide an alternative means of critical, peer review of the OFP in line with its current policy;

- The *Terms of Reference* of the SCTB be amended as follows:

  1. *Coordinate fisheries data collection, compilation and dissemination according to agreed principles and procedures;*

  2. *Review research on the biology, ecology, environment and fisheries for tunas and associated species in the western and central Pacific Ocean;*

  3. *Identify research needs and provide a means of coordination, including the fostering of collaborative research, to most efficiently and effectively meet those needs;*

  4. *Review information pertaining to the status of stocks of tunas and associated species in the western and central Pacific Ocean, and to produce statements on stock status where appropriate;*

  5. *Provide opinion on various scientific issues related to data, research and stock assessment of western and central Pacific Ocean tuna fisheries.*

- In the interests of openness and transparency, participation in SCTB should not be restricted, but would specifically encourage the participation of scientists from countries having an interest in the tuna fisheries of the region. The following statement on participation is therefore proposed:

  Participation in the Standing Committee on Tuna and Billfish is open to scientists and others with an interest in the tuna fisheries of the western and central Pacific Ocean. The participation of scientists from coastal states and territories of the region, scientists from countries whose vessels fish in the region, and scientists from international tuna fisheries management organisations, is particularly encouraged.

- That, in order to streamline the existing system of regional scientific cooperation in tuna fisheries and enable a more comprehensive treatment of the stocks impacted by those fisheries, the SCTB forms a statistics working group and various species research groups to coordinate and promote collaborative research leading to stock assessments.

  1. *Statistics working group will compile, evaluate and disseminate fisheries data, particularly in the form required by species research groups*

  2. *Species research groups will coordinate and promote collaborative research leading to stock assessment. At this stage four species working groups are to be formed: skipjack, yellowfin (taking over the role of the WPYRG), bigeye and albacore (taking over the role of the SPAR).*

V. SCTB10 ACTION ITEMS

ACTION ITEM 1

That OFP seek endorsement of the revised terms of reference and structure of SCTB from the SPC Executive and the SPC Conference/CRGA.

ACTION ITEM 2

In view of the increase in domestic fishery activities throughout the region, it was suggested that the OFP review the coverage of catch logsheet data collected from domestic fleets. This review should be conducted in collaboration with member countries having domestic fleets.

ACTION ITEM 3

The OFP consider placing its scientific observers, on a medium term basis, in key ports where national observer programmes are experiencing difficulties in achieving observer placements.

(Solomon Islands was identified as a priority for such an exercise. Palau and Marshall Islands were also mentioned as countries that would benefit.)

VI. LIST OF PAPERS

WORKING PAPERS

WP.1 Report of the Ninth Meeting of the Standing Committee on Tuna and Billfish, Noumea, New-Caledonia, 22–23 July 1996

WP.2 Oceanic Fisheries Programme Work Programme Review 1996–97 and Work Plans for 1997–98.

WP.3 Status of Tuna Stocks in the Western and Central Pacific Ocean.

WP.4 Economic Overview of the Tuna Fishery.

WP.5 The Future of SCTB.

WP.6 Estimation of Bycatch in Central and Western Pacific Tuna Fisheries: Preliminary Results.

INFORMATION PAPERS

IP.1 OFP Data Catalogue

IP.2 South Pacific Commission Tuna Fishery Yearbook 1996

IP.3 Implementation of South Pacific Regional Logsheets

IP.4 Oceanic Fisheries Programme Bibliography 1996–1997.

IP.5 Regional Tuna Tagging Project: draft excerpts from a proposed Technical Report.

IP.6 Bigeye Catch Estimates in the Western and Central Pacific Ocean, with Implications for Port Sampling Programmes.

IP.7 Preliminary Estimates of Longline Billfish Catch in the Western and Central Pacific Ocean

BACKGROUND PAPERS

BP.1 Future Arrangements for Data Exchange, Tuna Research and Stock Assessment: A Proposal by the South Pacific Commission.

BP.2 Report of the Second Meeting of the Tuna Fishery Data Collection Forms Committee, Brisbane, Queensland, Australia, 11–13 December 1996.

BP.3 National Fishery Report – French Polynesia

BP.4 Tuna Fishing in New Caledonia

BP.5 U.S. Commercial Fisheries for tunas and billfish in the central-western Pacific, 1992–1996

BP.6 National Fisheries Report – Tuna and Billfish Fisheries of the North-Eastern Australian Fishing Zone

BP.7 National Fisheries Report – New Zealand

BP.8 FSM National Fishery Report

BP.9 Korean Tuna Fisheries in the Western Pacific Ocean

BP.10 Treaty on Fisheries between the Government of certain Pacific states and the Government of the United States of America

BP.11 Tuna and Billfish Fisheries of Fiji's Fishing Zone

BP.12 Papua New Guinea - National Fishery Report

BP.13 Review of Japanese Tuna Fisheries in the Western Pacific Ocean and the fishing activities in 1996

BP.14 Taiwan Tuna Fisheries in the Western Pacific Ocean

BP.15 PNG National Observer and Port Sampling Programme

BP.16 Report of the domestic tuna fisheries of the Solomon Islands

VII. LIST OF PARTICIPANTS

Australia

Mr Peter Ward
Fisheries Biologist
Bureau of Resource Sciences
Fisheries Resources Branch
P.O. E11
Kingston ACT 2604
pjw@mailpc.brs.gov.au

Dr Derek Staples
Director, Fisheries Resources Branch
Bureau of Resource Sciences
P.O. Box E11
Kingston ACT 2604
djs@mailpc.brs.gov.au

Dr Robert Campbell
Commonwealth Scientific & Industrial Research Organisation (CSIRO)
Division of Marine Research
G.P.O. Box 1538
HOBART, TAS 7001
robert.campbell@marine.csiro.au

Federated States of Micronesia

Mr Tim Park
Tuna Biologist
Micronesian Maritime Authority
P.O. Box Ps 122
PALIKIR, POHNPEI 96941
email : mmafish@mail.fm

Fiji

Mr Robin Yarrow
Permanent Secretary
Coordination and Strategic Planning
Government Building
SUVA

Mr Subodh Sharma
Ministry of Agriculture, Fisheries Forest & ALTA
Fisheries Division
Private Mail Bag
Raiwaqa
Fax : 361 184

Mr Iliavi Tuwai
Ministry of Agriculture, Fisheries, Forest & ALTA
Fisheries Division
Private Mail Bag
Raiwaqa
Fax : 361 184

Mr Maciu Lagibalavu
Ministry of Agriculture, Fisheries, Forest & ALTA
Fisheries Division
Box 3165
Lami
Fax : 361 184
fji@ffa.gov.sb

French Polynesia

Mr Stephen Yen
Biologiste des pêches
Etablissement pour la Valorisation des Activités Aquacoles et Maritimes (EVAAM)
B.P. 20
PAPEETE – TAHITI

Japan

Mr Takayuki Matsumoto
Tropical Section
National Research Institute of Far Seas Fisheries
5–7–1 Orido
Shimizu-shi, Shizuoka-ken 424
matumo@enyo.affrc.go.jp

Dr Naozumi Miyabe
Chief, Tropical Tuna Section
National Research Institute of Far Seas Fisheries
5–7–1 Orido
Shimizu-shi, Shizuoka-ken 424
miyabe@enyo.affrc.go.jp

Kiribati

Mr Ribanotake Awira
Fisheries Officer
Ministry of Natural Resources Development
Fisheries Division
P.O. Box 276
BIKENIBEU, TARAWA
riba@mnrd.gov.ki

New Caledonia

Mr Régis Etaix-Bonnin
Ingénieur chargé des pêches
Service Territorial de la Marine Marchande et des Pêches Maritimes
B.P. 36
98845 NOUMEA

New Zealand

Dr John McKoy
Director of Fisheries Research
National Institute of Water and Atmospheric Research Ltd (NIWA)
P.O. 14901
WELLINGTON
j.mckoy@greta.niwa.cri.nz

Papua New Guinea

Mr Joel Opnai
Executive Manager
Fisheries Management & Industry
Support Division
National Fishery Authority
P.O. Box 2016
Port Moresby, National Capital District

Philippines

Mr Reuben A. Ganaden
Assistant Director
Department of Agriculture
Bureau of Fisheries and Aquatic Resources
860 Quezon Avenue, Quezon City
Metro Manila 3008

ROC/Taiwan

Dr Hsueh-Jung Lu
Fisheries Data Division
Overseas Fisheries Development Council
of the Republic of China
19 Lane 113
Roosevelt Rd, Sect.4
TAIPEI
hjlu@ms1.hinet.net

Dr Chi-lu Sun
Institute of Oceanography
National Taiwan University
P.O. Box 23–13
TAIPEI,Taiwan,ROC
chilu@ccms.ntu.edu.tw

Republic of Korea

Dr Jang-Uk Lee
Department Director,
Fisheries Resources Department
National Fisheries Research and
Development Institute (NFRDI)
408–1 Shirang-Ri, Kijang-up
Kijang-County, Pusan 619–900
julee@haema.nfrda.re.kr

Mr Seon Jae Hwang
Deep Seas Fisheries Resources Division
National Fisheries Research and
Development Institute (NFRDI)
408–1 Shirang-Ri, Kijang-up
Kijang-County, Pusan 619–900
sjhwang@haema..nfrda.re.kr

Solomon Islands

Mr Sylvester Diake
Director of Fisheries
Ministry of Agriculture and Fisheries
P.O. Box G13
HONIARA

Tonga

'Akau'ola
Secretary of Fisheries
Ministry of Fisheries
P.O. Box 871
Nuku'alofa

United States of America

Dr Gary Sakagawa
Chief, Pelagic Fisheries Resource Division
NMFS - Southwest Fisheries Science Center
P.O. Box 271, La Jolla, CA 92038
Gary.Sakagawa@noaa.gov

Mr Al Coan
National Marine Fisheries Service - NMFS
Southwest Fisheries Science Center
P.O. Box 271, La Jolla CA 92038
coan@nokaoi.ucsd.edu

Ms Kitty M. Simonds
Executive Director
Western Pacific Fishery Management Council
1164 Bishop Street
Suite 1405
Honolulu, Hawaii 96813
kittym.simonds@noaa.gov

Mr Paul Dalzell
Biologist
Western Pacific Fishery Management Council
1164 Bishop Street
Suite 1405
Honolulu, Hawaii 96813
Paul.dalzell@noaa.gov

Dr John Sibert
Program Director
Pelagic Fisheries Research Program
School of Ocean and Earth Science Technology
University of Hawaii at Manoa
1000 Pope Road, MSB 612
Honolulu 96822, Hawaii
jsibert@soest.hawaii.edu

Mr David Itano
Researcher
Pelagic Fisheries Research Programme
Hawaii Institute of Marine Biology
University of Hawaii at Manoa
P.O. Box 1346
Coconut Island, Kaneohe 96744–1346
Hawaii
ditano@iniki.soest.hawaii.edu

Wallis and Futuna

Mr Bernard Guegan
Chef de Service
Service de l'Economie Rurale et de la Pêche
AKAAKA
B.P. 19
MATA'UTU
98600 UVEA

Organisations

Food and Agriculture Organization of the United Nations

Dr Jacek Majkowski
Fisheries Resources Officer
Fisheries Resources Division
Food and Agriculture Organization of the United Nations (FAO)
Via delle Terme di Caracalla
00100 ROME, Italy
jacek.majkowski@fao.org

Forum Fisheries Agency

Mr Karl Staisch
Co-ordinator, Observer and Monitoring Programme
Forum Fisheries Agency
P.O. Box 629
HONIARA
karls@ffa.int

Ms Anna Willock
Fisheries Management Adviser
Forum Fisheries Agency
P.O. Box 629
HONIARA
annaw@ffa.int

Inter-American Tropical Tuna Commission

Dr Robin Allen
Deputy Director
Inter-American Tropical Tuna Commission (IATTC)
8604 La Jolla Shores Drive
La Jolla
California 92037–15–8
rallen@iattc.ucsd.edu

Secretariat

Mr Julian Dashwood
Manager, Fisheries Programme
juliand@spc.org.nc

Dr Tony Lewis
Oceanic Fisheries Coordinator
tonyl@spc.org.nc

Dr John Hampton
Principal Fisheries Scientist
johnh@spc.org.nc

Mr Tim Lawson
Fisheries Statistician
timl@spc.org.nc

Mr Peter Williams
Fisheries Database Supervisor
peterw@spc.org.nc

Mr Peter Sharples
Port Sampler Observer Supervisor
peters@spc.org.nc

Mr Keith Bigelow
Fisheries Research Scientist
keithb@spc.org.nc

Mr Babera Kaltongga
Research Officer Data
baberak@spc.org.nc

ANNEX I
TENTH MEETING OF THE STANDING COMMITTEE ON TUNA AND BILLFISH
OPENING ADDRESS
Mr Robin Yarrow
16th June 1997
Nadi, Fiji.

It is an honour, as well as a pleasure, to be here today to address you, and open this the 10th Standing Committee on Tuna and Billfish, with an impressive representation of our Pacific Island countries, fishing nations, and research organizations. I believe that this is also the largest SCTB yet convened, a fitting tribute on its tenth anniversary.

This widening support can only auger well for the future of this key scientific group which must play a central role in the sustainable utilisation of a region's single most important renewable resource.

Fiji is very pleased to be able to host this meeting, the second occasion on which it has done so since SCTB's inception in 1988, and we are aware of the very significant contribution that Standing Committee as made in providing an opportunity to review the work of the SPC's Oceanic Fisheries Programme as well as assist it in its work.

We note that this meeting occurs at an important time for the region, with the second Multilateral High-level Conference on the Conservation and Management of highly Migratory Tuna Stocks of the Western and Central Pacific Ocean having been held in Majuro, Marshall Islands just last week, and having made, I understand, significant progress towards the development of appropriate management arrangements for the oceanic resources of the region.

It is a personal honour for me to have played a small part in this vital ongoing process as chairman of MHLC 1 which, by way of two very professional keynote papers through SPC as secretariat, was a major one that, as chair, I especially appreciated.

A key element in this process of course will be the provision of scientific advice on the condition of the stock, concerns regarding catch data - all issues raised at a Technical Consultation held last year in Noumea, as follow-up to MHLC 1 and issues which SCTB will address further this week.

The research conducted by the OFP and its predecessors has made a major contribution to what we know of our stocks of tuna in the region, but much more remains to be done. Current uncertainties over the valuable bigeye stocks provide a good example of this, as does one of your agenda items this week on by-catch, or the species taken in association with tunas, certainly an emerging issue on many an international agenda. Much of what needs to be done in securing the provision of the best scientific advice to guide the conservation and management of our tuna resources can only be achieved by cooperative efforts - cooperation in the provision of data, the pooling of knowledge and cooperation in research leading to much-needed stock assessment. SCTB in its present format, we should acknowledge, probably falls someway short of that goal. This week, I believe, you will consider ways in which the SCTB might better fill that role, to involve all participants more fully in the consultative process, to streamline the large work agenda

that SCTB addresses, and to look at how SCTB might function in anticipation of increased needs for scientific advice in the not too distant future. This is an important task in the current climate of change in our region, important to both our island countries and our partners, the fishing nations, well represented I am pleased to note, here in the SCTB.

Later in the week, you will also meet, as the Western Pacific Yellowfin group, to focus specifically on yellowfin and bigeye tuna issues.

I wish to take advantage of this opportunity to express appreciation to funding agencies for their ongoing assistance as well as to other organisations and individuals for the support provided. May I also pay credit to the staff of the programme, under Dr Tony Lewis's leadership, for their continued high calibre work.

You have a challenging time ahead in these next few days. It is imperative, as we all know, that the "best science" be utilised in ensuring that the decisions that must be taken are the right ones - this is perhaps the overriding challenge. I wish you well in these endeavours and look forward to hearing of the outcome of your efforts. It is now my pleasure to declare this 10th SCTB open.

ANNEX II

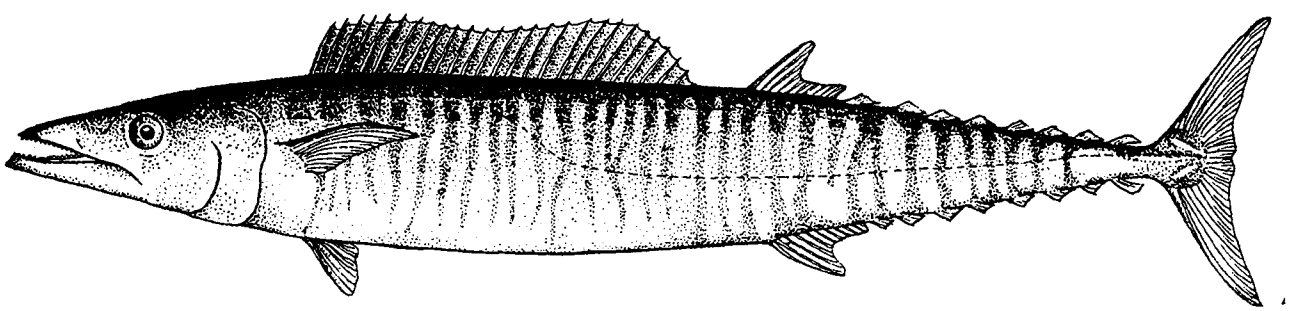
TENTH STANDING COMMITTEE ON TUNA AND BILLFISH

16–18 June 1997

Nadi, Fiji.

WORKING PAPER 5

THE FUTURE OF THE SCTB



Oceanic Fisheries Programme (OFP)

South Pacific Commission

Noumea, New Caledonia.

June 1997

BACKGROUND

The Standing Committee on Tuna and Billfish was established in 1988, as an advisory body to the Tuna and Billfish Assessment Programme (TBAP), the predecessor to the OFP. Its role was to be purely advisory and consultative, to assist in the conduct of pelagic fisheries research through the provision of expertise, information and technical advice.

The *Terms of Reference* of the Committee were to advise the SPC's Regional Technical Meeting on Fisheries on biological research on stocks which support oceanic fisheries for tuna and billfish in the SPC region, by

- assisting with the rigorous scientific review of the work of the TBAP and suggesting improvements to the scope and techniques of the TBAP's research.
- assisting and advising on the acquisition of relevant data to the TBAP, specifically that relating to fishing activity on the high seas surrounding the EEZs of SPC member countries
- arranging collaboration between SPC staff and outside workers on problems of mutual interest

The *Composition* of the SCTB, intended to promote the participation of DWFNs and coastal states, both SPC members and non-members, was to generally consist of the following

- the TBAP Chief Scientist (now OFP Coordinator) or his representative
- a representative of the Forum Fisheries Agency
- scientists from countries with a commitment to tuna fishing in the SPC region, specifically including both island states and distant-water fishing nations
- technical experts invited by the Fisheries Coordinator as necessary to assist in the analysis of specific problems

The SCTB has thus been mandated to address the needs of SPC. After ten years of operation, it is timely to review the TOR, participation and structure of SCTB because:

1. The SPC Conference in 1996 decided as a matter of policy that programme review meetings involving SPC core funding would be held no more frequently than once every three years. This means that the Regional Technical Meeting on Fisheries (RTMF), to which SCTB reports, is likely to be held once every three years, unless extra-budgetary funding is found to fund additional meetings. Under these circumstances, it would be more appropriate if the OFP review role of SCTB (at which it has not been particularly effective in any case) were removed from its TOR and carried out separately.

2. While DWFNs and other coastal states which are not SPC members now regularly participate in SCTB meetings, some of these participants feel that their "ownership" of the committee, which is essentially an SPC committee, is limited. Thus, they feel that their full participation in the committee is compromised, which has implications for data sharing and research cooperation.

3. There is a need to streamline existing arrangements for regional scientific cooperation. Currently, two species-oriented groups exist in addition to SCTB - the Western Pacific Yellowfin Research Group (WPYRG) and the South Pacific Albacore Research Group (SPAR). Other species-based groups may also be necessary in the near future. There is a certain amount of duplication of work carried out by these groups that could be avoided by bringing them all under the SCTB banner.

In this paper, we present a recommendation of the 10th SCTB for the strengthening of SCTB to take account of its current shortcomings and better deal with present day issues related to data collection, research and stock assessment. One outcome of this is that SCTB would absorb the existing species-based groups, WPYRG and SPAR.

REVISED TERMS OF REFERENCE

The proposed revision to the TOR removes the OFP peer review role of the SCTB. Regular technical review of the OFP remains an important issue, but this would be accomplished by other means within the SPC structure[1]. Focus would then be on issues of data collection and exchange, research and stock assessment, and critical analysis of scientific results. The proposed TOR are as follows:

The Standing Committee on Tuna and Billfish provides a forum for scientists and others with an interest in the tuna stocks of the western and central Pacific region to meet to discuss scientific issues related to data, research and stock assessment. Its aims are to:

1. *Coordinate fisheries data collection, compilation and dissemination according to agreed principles and procedures;*
2. *Review research on the biology, ecology, environment and fisheries for tunas and associated species in the western and central Pacific Ocean;*
3. *Identify research needs and provide a means of coordination, including the fostering of collaborative research, to most efficiently and effectively meet those needs;*
4. *Review information pertaining to the status of stocks of tunas and associated species in the western and central Pacific Ocean, and to produce statements on stock status where appropriate;*
5. *Provide opinion on various scientific issues related to data, research and stock assessment of western and central Pacific Ocean tuna fisheries.*

PARTICIPATION

In the interests of openness and transparency, participation in SCTB should not be restricted, but would specifically encourage the participation of scientists from countries having an interest in the tuna fisheries of the region. The following statement on participation is therefore proposed:

Participation in the Standing Committee on Tuna and Billfish is open to scientists and others with an interest in the tuna fisheries of the western and central Pacific Ocean. The participation of scientists from coastal states and territories of the region, scientists from countries whose vessels fish in the region, and scientists from international tuna fisheries management organisations, is particularly encouraged.

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[1] It is envisaged that technical review of the OFP would take place prior to RTMF, i.e. normally every three years. The review would be undertaken by a review team appointed by SPC. It is envisaged that the team would have technical expertise as well as Pacific Island country or territory involvement.

PROPOSED STRUCTURE

The proposed structure would consist of the SCTB itself and a number of working groups.

A ***Statistics Working Group*** would be established to agree on standards for the collection, reporting, verification and dissemination of data on fisheries, and also to compile, maintain, evaluate and disseminate fisheries data. The major output of this group would be to provide data bases for the species working groups in a form suitable for the research problems being addressed. Another important output of the group could be to compile aggregate data bases in a form suitable for publication (perhaps on the WWW). The format of the FAO atlas of Pacific tuna fisheries (in which data are aggregated over fishing nation) might be a useful starting point for such published data.

Species Research Groups would be formed to undertake collaborative research and assessments of the stocks of interest to SCTB. It is envisaged that research groups for skipjack, yellowfin (continuing the role of WPYRG), bigeye and South Pacific albacore (continuing the role of SPAR) would initially be formed. Other research groups, e.g. billfish, shark and other non-target species, could be formed as the need arises and according to the interest of participants. The major objective of these groups would be to coordinate and promote collaborative research ultimately leading to stock assessments.

OPERATION

SCTB

SCTB would continue to meet annually to pursue its terms of reference. Participants would elect a Chairperson, who would serve in that role for one or two years. The activities would be publicised by way of an annual meeting report or proceedings. Activities could also be reported via a WWW home page. It is envisaged that meeting procedures would continue to be orderly but informal. Any decision making would be by consensus.

The OFP would continue to act as secretariat, providing administrative and technical support for meetings and for statistics working group and research group activities. It would also attempt to locate sources of funding to support the participation of Pacific Island countries. A possible agenda outline for a SCTB meeting is given below.

SAMPLE AGENDA OUTLINE

Pre-meeting

- Meeting of statistics working group to review and update data bases, and any other statistics matters.
- Meetings of species research groups as required.

Meeting proper - Session 1

- Preliminaries
- Overview of the fisheries
- Reports by statistics working group and species research group coordinators

Session 2

- Research reports (institutional reports)

- Research coordination

Session 3
- Stock assessment theme - presentations and discussion focused on a particular species (which could change each year)

Session 4
- Trans-species theme - e.g. concept of "stocks" for HMS, environmental studies, developments in stock assessment methods
- Management-related issues requiring scientific input - e.g. appropriateness of input vs output controls, definition of appropriate reference points, definition of stock boundaries

Session 5
- Stock status statements
- Approval of report
- Selection of themes for next meeting

Statistics working group and species research groups

Each group would have a coordinator appointed by SCTB, and participation in the groups would be open. The groups would follow research plans formulated by SCTB. It is anticipated that contact among group members could be effected by correspondence, ideally using the internet. If meetings of the groups are required, these could be held immediately prior to the annual SCTB meeting. The working group coordinators would present a summary report on the year's activities to SCTB. Periodically, each working group would provide a detailed series of presentations for that meeting's stock assessment theme.

IMPLEMENTATION PROCEDURE

The following procedure for implementing the re-structuring of SCTB is suggested:

1. This meeting:	Elect SCTB Chairperson, nominate group coordinators, provide general objectives and guidelines for group activities.
2. October 1997:	SPC Secretariat will report/seek approval for the changes as they affect SPC at the 1997 CRGA and South Pacific Conference in Canberra.
3. 1997–98:	Coordinators begin to form their groups and begin, through correspondence, to formulate draft work plans.
4. 1997–98:	It might be desirable to have a meeting of the SCTB Chairperson and group coordinators sometime in the next year. The purpose of this meeting would be to plan for the SCTB meeting under its new format in mid–1998. An opportunity may arise to hold such a meeting during the many regional meetings planned for the next year.
5. Mid–1998	11th SCTB meeting.

RECOMMENDATION

Recognising the need to modify the terms of reference of SCTB in order to provide a more efficient and effective forum for scientific debate and a vehicle for research/data coordination and collaboration in which all participants will be equal partners, the 10th SCTB recommends:

- That SPC provide an alternative means of critical, peer review of the OFP in line with its current policy;

- That SCTB adopt the revised terms of reference and participation guidelines, as given above; and

- That, in order to streamline the existing system of regional scientific cooperation in tuna fisheries and enable a more comprehensive treatment of the stocks impacted by those fisheries , the SCTB forms a statistics working group and various species research groups to coordinate and promote collaborative research leading to stock assessments.