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Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

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SUMMARY REPORT

AGENDA ITEM 1 — OPENING OF MEETING

1. The Ninth Regular Session of the Northern Committee (NC9) took place in Fukuoka, Japan, from 2–5 September 2013. The meeting was attended by Northern Committee (NC) members from Canada, China, Cook Islands, Japan, Korea, Philippines, Chinese Taipei, United States of America (USA) and Vanuatu; and Observers from Federated States of Micronesia, Fiji, Kiribati, Mexico, Nauru, Palau, Papua New Guinea, Tokelau, Tuvalu, American Fishermen's Research Foundation, Greenpeace, International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), Organization for the Promotion of Responsible Tuna Fisheries, Pacific Islands Forum Fisheries Agency, Pew Charitable Trusts, US-Japan Research Institute, and World Wildlife Fund (WWF). The list of meeting participants is included as Attachment A.

1.1 Welcome

2. M. Miyahara, Chair of the NC, opened the meeting and welcomed participants to Fukuoka, Japan, particularly those from Mexico, which for the first time attended the meeting from beginning to end.

1.2 Adoption of agenda

3. A provisional agenda was adopted (Attachment B) without any changes or additions. Documents supporting the meeting were made available on WCPFC's website.

1.3 Meeting arrangements

4. Japan, as the host for NC9, briefed meeting participants on social arrangements and the meeting schedule. Japan and USA provided meeting rapporteurs (Y. Hiraoka, A. Nagata, Y. Okochi, and D. Gershman).

AGENDA ITEM 2 — CONSERVATION AND MANAGEMENT MEASURES

2.1 Report from the Thirteenth Meeting of the International Scientific Committee

5. G. DiNardo, ISC chair, provided an overview of the results from the 13th ISC meeting. The results are contained in the ISC13 meeting report, which can be found on ISC's website at: http://isc.ac.affrc.go.jp. Highlights of his presentation on the ISC13 Plenary meeting are summarized below.

> The 13th ISC plenary, held in Busan, Republic of Korea from 17–22 July 2013, was attended by members from Canada, Chinese Taipei, Japan, Korea, Mexico and the USA as well as the Western and Central Pacific Fisheries Commission. The plenary reviewed results and conclusions, which were based on new data and updated analyses of the Billfish, Shark and Pacific bluefin tuna working groups. The plenary endorsed the findings that the Pacific blue marlin and North Pacific blue shark stocks are not overfished and are not experiencing overfishing, but re-iterated that Pacific bluefin tuna are overfished and are experiencing overfishing. It further provided projections for managers to consider in crafting management measures for North Pacific albacore tuna, swordfish, and striped marlin, and updated the conservation advice of ISC12 based on these projections. The plenary reviewed the progress of the working groups and endorsed their work plans. The ISC work plan for 2013–2014 includes completing new stock assessments for albacore tuna and swordfish, and an updated Pacific bluefin tuna assessment (in time for ISC14), completing a shortfin mako shark stock assessment in 2014, enhancing database and website management, and a tuna ageing workshop scheduled for November 2014 in Shimizu, Japan. A special seminar on Pacific Ocean ecosystem and tuna dynamics was held. Plenary discussed formalizing the ISC structure and administration and began researching means of doing both. Plenary also noted the strides that working groups had made in incorporating best available scientific information into stock assessment work, enhanced stock assessment reports and the increased transparency in working group efforts. Observers from the Pew Charitable Trust, International Seafood Sustainability Foundation, and WWF attended. The plenary re-elected Gerard DiNardo for a second term as ISC chair and elected Ziro Suzuki as the new Pacific Bluefin Tuna Working Group (PBFWG) chair. The next plenary will be held in Chinese Taipei in July 2014.
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> Collaborations between Pacific regional fisheries management organizations, regional fisheries organizations, and other scientific organizations are essential to advancing science in the region and providing timely scientific advice to decision-makers. In doing so, ISC must be cognizant of agreements as well as operating rules and procedures within organizations, in particular, rules covering data sharing and the use of proprietary data. Within ISC, proprietary data will be made available to contributors and members of ISC working groups for use in the work of working groups only; they are not to be retained or shared with non-members of the working groups. There was a violation of the proprietary data sharing agreement within the ISC shark working group, which has far-reaching implications within ISC and its collaborators. To advance science in the region, adhering to standing agreements and policies is paramount.

6. There was a question regarding the process of the proposed ISC intercessional meeting in March 2014, and it was clarified that the meeting would be conducted via webinar.

7. Regarding the future work plan, the update of Pacific bluefin tuna stock assessment will be held in February 2014, and this assessment will use updated catch data and new information on recruitment. The ISC chair noted that there will be a meeting with WCPFC in November 2013 to discuss the relationship between ISC and WCPFC, particularly with regard to the Scientific Committee (SC).

8. ISC13's plenary report showed two Kobe plots for Pacific bluefin tuna. Chinese Taipei asked which of them was more appropriate to manage the stock. ISC chair mentioned that PBFWG could not achieve consensus on one or the other but the reality will probably be somewhere between the two plots.

9. With regard to blue shark, it was pointed out that SPC also conducted a preliminary stock assessment using the age structure model. Chinese Taipei mentioned that this is confusing given that ISC also conducted an assessment. The ISC chair noted that there was an agreement to conduct a collaborative blue shark stock assessment under the umbrella of ISC but the assessment conducted by the Secretariat of the Pacific Community (SPC) could not be evaluated by ISC due to insufficient time. ISC will continue to work collaboratively with SPC and the Inter-American Tropical Tuna Commission (IATTC) to conduct stock assessments of the species in the future.

10. J. Brodziak, chair of the ISC Billfish Working Group, presented the results of the blue marlin stock assessment and explained the table showing current status and biological reference points. The summary of his presentation is included as Attachment C.

11. S. Teo, a member of the ISC Shark Working Group presented the results of the blue shark stock assessment. The summary of his presentation is included as Attachment D.

12. Japan asked about the potential influences of management regulations on Hawaiian longline catch per unit of effort (CPUE). In response, S. Teo noted that the Hawaiian longline fishing data are divided into two groups: the deep set data primarily targets bigeye tuna, and shallow set data primarily targets swordfish. He also noted that turtle-related regulations for the shallow set fishery likely had large influences on fishing patterns in both fisheries.

13. Y. Takeuchi, the PBFWG chair, presented the results of the Pacific bluefin tuna stock assessment, and explained the table that shows the current status and evaluation against biological reference points. His presentation is summarized as follows.

> Y. Takeuchi reported the current stock status of Pacific bluefin tuna based on the results of the latest stock assessment conducted in November 2012 in Honolulu, USA, together with additional information available since then, that were presented at the ISC13 plenary. Based on the assessment, it was concluded that overfishing is occurring for Pacific bluefin tuna and the stock is heavily overfished. Because no single biological reference point was chosen by WCPFC, two types of Kobe plots were prepared for illustrative purpose. The results of a fishery impact analysis were also presented. The latest fishing indicator, including updated Japanese longline and troll CPUEs and latest catch trend of the Pacific bluefin tuna fishery were also presented. Japanese longline CPUE has continued to decline since 2011. Japanese troll CPUE in 2011 remains in the historical range of variation. The purse-seine catch in the western Pacific Ocean, however, mainly catching age-1 in 2012, was less than 3,000 mt, indicating a weak 2011 year class. The Japanese troll catch in 2012 was only 570 mt, which is unusually low, suggesting that 2012 year class strength is possibly very weak.
>
> The results of additional future projections under low recruitment scenarios were also presented, and highlighted the increased risk of spawning stock biomass (SSB) falling below the historical lowest level in the coming years. It was pointed out that with possible low recruitment in 2011 and 2012 and results of future projections under low recruitment, current management measure may be less effective than expected to recover the stock.

14. Korea commented on the fishery impact associated with the western Pacific Ocean purse-seine

fleet and the need to analyze the impact of each purse-seine fleet in the future, based on the difference of history of fishing and fishing ground. The PBFWG chair commented that fishery impact analysis aims to give information to the manager at the gear level, and decomposing the catch of purse-seine among the various purse-seine fisheries would require additional analyses.

15. USA commented that the projection results for the harvest scenario — which was intended to mimic the implementation of the WCPFC and IATTC measures — did not mimic them in several respects, and that the results might be overly optimistic and should be interpreted with caution. For example, the projection assumed the fishing mortality rate in the eastern Pacific Ocean would be constrained at a particular level, but the IATTC resolution does not provide for such a constraint, so in years of low recruitment the catch limit might not constrain the fishing mortality rate. The PFBWG chair answered that the working group chose these four scenarios for the 2012 stock assessment, and ISC needs advice from NC for setting appropriate scenarios for evaluating future projections. The chair commented that recruitment might have been low for last two years, and that there should be a discussion regarding the low recruitment.

16. Mexico asked what Japan's voluntary management measures are and what the objective of those measures is. The Japanese voluntary measures were explained in Agenda item 2.3.

17. Japan asked for the definition of "juvenile fish". The PBFWG chair noted that spawning starts when fish are three years old, which corresponds to around 30 kg. The chair made sure that the maturity ratio in stock assessment is currently set 20% at age-3, 50% at age-4, and 100% at age-5.

2.2 Report of the Ninth Regular Session of the Scientific Committee

18. The WCFPC Secretariat provided a summary report of SC9 (NC9-IP-02), which took place in Pohnpei, Federated States of Micronesia from 6–14 August 2013. The following key areas were highlighted:

- Review of tuna fisheries in the western and central Pacific Ocean;
- Stock status and management advice made by SC9 on key tuna species, northern stocks, sharks and billfish;
- Results of limit reference points (LRP) research on appropriate time window in the LRP $20\%SB_{F=0,t1-t2}$, and the appropriate values of X for each species in the LRP $F_{X\%SPR0}$; and
- Administrative matters and work programme and budget for 2014–2016.

19. Japan asked for more information regarding the large increase of yellowfin catch mainly due to the revision of the Indonesian catch in 2012 only, and queried how previously reported data will be revised given new information, and how in turn that might affect the yellowfin stock status. Japan also asked about SC's recommendation regarding North Pacific striped marlin.

20. The WCPFC Secretariat responded that the high yellowfin catch was estimated from revised Indonesian catch estimates of yellowfin tuna in 2012, and the high catch of larger yellowfin tuna from concentrated purse-seine activities in the central tropical portion of the western and central Pacific Ocean (WCPO). The reliability of the Indonesian catch is still uncertain and will be improved through future West Pacific East Asia Project workshops. Until such uncertainties in Indonesian catch estimates are clear, they will not be used in SPC's stock assessment. The Secretariat also noted that SC9 did not provide a specific recommendation regarding North Pacific striped marlin based on the projection, as it is waiting for the next stock assessment to be conducted.

21. As requested by SC, ISC noted that it provided projections of North Pacific striped marlin and North Pacific swordfish but no recommendation was made by SC. The ISC chair clarified that he reported to SC that although ISC planned to conduct a blue shark assessment using two different methods, ISC was only able to complete one.

22. Mexico, noting that there was no consensus in providing any management advice from SC9, asked for a brief explanation on the role of NC in conserving Pacific bluefin tuna. The WCPFC Secretariat explained that Pacific bluefin tuna is one of the northern stocks designed by WCPFC and the discrepancy was not about the science but about the role of and relationship among committees and ISC. China stated that the rules of procedure are clear and the management of northern stocks should be based on the advice from ISC.

2.3 Conservation and management measure for northern stocks

2.3.1 Pacific bluefin tuna

Reports by CCMs

23. The USA reported that its vessels do not target Pacific bluefin tuna, but that they do incidentally catch them, and there is a system in place to collect data on all bluefin tuna catches, both in the Pacific and Atlantic oceans. The USA manages exports and imports and reported that there are negligible amount of exports. Small amounts of bluefin tuna were imported from Mexico and Japan.

24. The Chair asked about the USA's recreational catch. The USA reported that within the IATTC management area, around 500 mt of Pacific bluefin tuna are caught per year by sportsmen who cannot sell that catch to local markets in accordance with domestic law.

25. Japan asked whether the bluefin tunas are adults or juveniles, and what their status is within IATTC limits. The USA said that they are juveniles, and that the recreational catch is not exempt from IATTC limits but simply that IATTC measures do not address recreational fishing. IATTC addresses only commercial catches. The USA further responded that USA purse-seine vessels catch Pacific bluefin tunas in a "pulse" if the fish migrate northward, and there is no bilateral arrangement between the USA and Mexico.

26. The Philippines reported no catches of Pacific bluefin tuna in 2011 and its fleet does not target bluefin. The Philippines is, however, currently investigating reports of large catches of bluefin. Responding to a question from the Chair regarding fishing for spawning fish in Philippine waters, the Philippines responded that it is conducting research and is identifying several areas of high volumes of tuna larvae, but more needs to be done to verify whether they are Pacific bluefin tuna larvae. The Philippines requested assistance for a larvae identification study.

27. Chinese Taipei reported that it authorized 513 vessels to fish for Pacific bluefin tuna in 2013, which is below the limit established in 2010. Chinese Taipei implemented a catch documentation scheme in its exclusive economic zone that requires a Pacific bluefin tuna to be tagged before it is landed, and that its estimated weight and location of the catch be reported to Chinese Taipei's national fishery agency. Fishery agency staff have been weighing and measuring Pacific bluefin tuna at landing sites for the last three years to strengthen the data collection system; the sampling rate is nearly 100%. Chinese Taipei reported that it had no exports of Pacific bluefin tuna, and that imports were currently at 2.5 mt for 2013. Responding to the Chair, Chinese Taipei said its fishery agency authorizes licenses — the vessels are all longliners — and there is no limit on vessel size although the average length is around 20–25 m. When

the Chair noted that the catch per vessel seemed quite low, Chinese Taipei reported that the status of the fishery has impacted its ability to catch bluefin.

28. Japan asked how Chinese Taipei monitors bycatch of Pacific bluefin tuna caught by vessels other than licensed vessels. Chinese Taipei responded that it has a limit of 660 licenses for Pacific bluefin tuna and such vessels should be registered before landing. Responding to Japan, Chinese Taipei clarified that the vessels catch spawners during their fishing season of April through July on the northeastern and eastern part of the island.

29. Japan introduced NC9-DP-01, which reviewed Pacific bluefin tuna fisheries and management in Japan. Japan reported that, on average, 12,496 mt of Pacific bluefin tuna were caught in the years 2002–2004, which are the reference years of CMM 2012-06. Japan indicated that most vessels were in the troll fishery, which consists of small artisanal vessels (less than 5 gross registered tons), whereas about 60% of the annual catch was caught by purse-seine vessels, making effective management difficult. Japan also explained the management scheme for each fishery. It has implemented a registration system for the artisanal fishery since April 2011 and more than 13,000 vessels are registered. Japan announced that the introduction of a limited entry system for artisanal fishing is in process to ensure that total fishing effort by those fisheries does not increase from the current level. In addition, Japan mentioned the trade statistics, which indicate that 2,661 mt of Pacific bluefin tuna were imported and 19 mt were exported in 2012.

30. Japan then presented meeting paper NC9-DP-09, which provides information on the characteristics of Japanese artisanal fisheries for Pacific bluefin tuna. This was in response to a request by the USA at NC8 and a question raised by Mexico at ISC13 and again at this meeting. Japan highlighted that these fisheries are carried out throughout coastal areas of Japan by small fishing vessels with one or two persons on board; 13,144 vessels were registered and about 80% of them were smaller than 5 mt, and that the proportion of the fishing gear used are: troll – 53%, handline – 37%, coastal longline – 8%, and other gear types – 2%. Japan also explained the operational patterns of this fishery at three major fishing grounds. Japan stated that the fishing season for Pacific bluefin tuna is a few months, and artisanal fishermen are engaged in other fisheries when Pacific bluefin tuna are not available.

31. The USA thanked Japan for the level of detail provided on its artisanal fisheries and the aggressive measures that Japan is taking to control and address the fishing by that fleet. The USA said it looked forward to this Japanese initiative.

32. Mexico asked Japan to provide more details on the average weight and size of the fry that are caught by artisanal fisheries. Japan said that fish caught for human consumption are generally about 5 kg while those caught for aquaculture are usually less than 1 kg. Mexico also thanked Japan for providing detailed information.

33. Chinese Taipei asked Japan whether the number of artisanal vessel was confirmed and which authority is responsible for authorization. Japan responded that the number is preliminary and the vessels are authorized by the national government.

34. Korea reported that it has 24 purse-seine vessels catching Pacific bluefin tuna but that it prohibited the catch of Pacific bluefin tuna of 20 kg equal to or less than 20 kg. It is exceptionally allowed when i) there is need for scientific studies and research, ii) juveniles are needed for stock enhancement, iii) juveniles are needed as fry for aquaculture, or iv) juveniles are incidentally caught. Furthermore, Korea's large-scale, purse-seine operators have been observing a voluntary closure period from March 14 to April 19 (based on a lunar calendar) to reduce the bycatch of juvenile Pacific bluefin tuna. Korea said it improved its electronic statistics system for Pacific bluefin tuna in 2012 in order to increase its accuracy.

Korea also reported on a study on the operational characteristics of the Korean purse-seine fishery conducted by a scientific observer on board as a response to the request from NC8. There was no Pacific bluefin tuna catch during daytime fishing, and accurate ratio of identifying Pacific bluefin tuna before casting was 33%. The report also suggested that Pacific bluefin tuna are detectable by high-frequency sonar. Korea stated that further analysis is necessary, particularly in the high season for mackerel (September to January), and they required additional time to analyze the result.

35. Japan also presented meeting paper NC9-DP-10. It mentioned that according to the data from the Busan fish market and Japanese import statistics, no significant difference in fishing pattern is observed between Korean purse-seine and Japanese purse-seine activities but similarities are found such as the low Pacific bluefin tuna ratio, and the opportunistic catch pattern of Pacific bluefin tuna. Japan also pointed out that the catch of Pacific bluefin tuna was concentrated over several days and, according to these data, only a limited number of vessels caught Pacific bluefin tuna.

36. Several participants asked Korea for more information on its domestic programme. The USA noted that Korea prohibits catches of bluefin tuna that are 20 kg or less, but exempts catches for aquaculture and incidental catches or bycatch. Given that, the USA asked which vessels are controlled by the catch prohibition. Korea said that 24 purse-seine vessels must abide by the Ministerial Directive but were allowed to catch Pacific bluefin tuna as bycatch. Responding to the Chair, Korea said its purse-seine fleet has decreased from the 32 vessels that operated in 2002. Later, Korea provided information of catch data by individual vessels and stated that the fact that the top five large purse-seine vessels and their ratio of Pacific bluefin tuna catch differ year to year demonstrates the unintended nature of Pacific bluefin tuna catches and that there seems to be no particular vessel targeting Pacific bluefin tuna. The Chair said that the fact the majority of vessels catch 0 (no) Pacific bluefin tuna indicates that the Pacific bluefin tuna catch is avoidable.

37. Japan asked Korea how it established the 20-kg threshold. Korea referred to a scientific paper published in the past and quoted the definition (weight) of juvenile Pacific bluefin tuna according to a 2009 scientific paper: the average weight of age-3 Pacific bluefin tuna is 24.7 kg. Korea also requested further discussion on juvenile Pacific bluefin tuna weight.

38. The Chair asked the PBFWG chair for an appropriate definition for juvenile Pacific bluefin tuna for management purpose. The PBFWG chair responded with 30 kg.

39. Chinese Taipei asked Korea to clarify its statement that fishing effort on Pacific bluefin tuna has been reduced. Korea said that the number of purse-seine vessels has decreased.

40. Japan said there is a substantial amount of catches of juvenile Pacific bluefin tuna by Korean purse-seine vessels and they are mostly being exported to Japan. Japan suggested that if Korea strictly implements its domestic programme, that catch cannot be exported to Japan. Korea responded that Pacific bluefin tuna accounted for 1.8% of its total catch in 2012.

41. Japan took issue with Korea's calculation, and said that Korea should not compare its catch of Pacific bluefin tuna with its total catch for a single year because bluefin tuna are caught during a limited portion of the year and not at other times.

42. Canada reported that it does not retain Pacific bluefin tuna in any of its fisheries but, as a concerned NC member, has an interest in ensuring the sustainable management of the stock.

43. Mexico reported on its adherence to and compliance with IATTC conservation measures for Pacific bluefin tuna.

44. The Chair asked Mexico how it evaluates the catch. Mexico answered that it has 100% observer coverage to report on the catch but precise estimation is difficult during transfer from purse-seine vessels to transfer pens and the over or under estimation by captains can still occur. Therefore, Mexico intends to use surveillance cameras during transfer to obtain better catch estimates. In response to Japan, Mexico clarified that it introduced a daily reporting system to accurately record Pacific bluefin tuna catches and avoid overharvest of the catch quota established for 2013. Its fishery is closed in July.

Discussion on the new conservation and management measure

45. Japan presented its proposal (NC9-DP-06) to refine the conservation and management measure **(**CMM) for Pacific Bluefin Tuna. Japan's proposal specifies that total fishing effort for 2014 should stay below the annual average from 2002–2004, eliminating the exemption for artisanal fisheries. The proposal also calls for reducing catches of juveniles for 2014, significantly below the annual average from 2002–2004, and eliminating the exemption for Korea.

46. Canada welcomed Japan's proposal and stated that there is an obvious need to reduce fishing mortality on juvenile Pacific bluefin tuna. The USA also endorsed the direction of Japan's proposal and said that it is important to reduce overall catch of Pacific bluefin tuna, both the targeted catch and bycatch. Korea suggested that NC10 discuss fishing effort and catch limits reporting for Pacific bluefin tuna. Korea said it prefers to finish a five-year research plan (which includes data collection) that is scheduled to end in 2014, before discussing the strengthening of Pacific bluefin tuna management. Japan questioned the need for taking more time to make management changes, noting that Pacific bluefin tuna is heavily depleted and that it has started strengthening the management of its more than 13,000 artisanal vessels within in two years.

47. Japan presented additional information on its plan to strengthen the monitoring of recruitment of age-0 Pacific bluefin tuna, which includes a wider and more prompt data collection and feedback mechanism. The USA noted that the key fishery is the western Japan purse-seine fishery, which is reported to take age-0 and age-1 Pacific bluefin tuna, and asked if the monitoring tool will be useful in controlling catches of that fishery. Japan said that most of the juveniles taken in that fishery are age-1, not age-0, and the monitoring plan will help manage that fishery.

48. The Philippines noted that the protection of spawning areas is based on the monitoring in the northern waters and supported the Japanese proposal.

49. Cook Islands asked what concrete way was available to reduce current fishing mortality. Japan mentioned that its proposal is the reduction plan from now to the next stock assessment, and the main point developed is the deletion of all exemptions. This proposal was based on the ISC recommendation of an immediate reduction, and that management measures will be improved further subject to the results of the 2014 stock assessment. The final measure will be decided after the next stock assessment update. However, the interim reduction of 15% is a necessary urgent response at this stage.

50. The Philippines supported the Japanese proposal that deletes the exemption and said that the measure should address all fisheries, not only the coastal fishery, in order to protect the Pacific bluefin tuna stock. Chinese Taipei and Vanuatu also supported Japan's proposal, especially the removal of the exemption clause and the recruitment monitoring system based on ISC's recommendation.

51. China pointed out that the reference level of the measure, as well as the definition of juvenile, should be clearly stipulated in the measure to assess its implementation by CCMs.

52. Korea said that the definition of bycatch should be clarified because only small numbers of Pacific bluefin tuna are caught during the chub mackerel fishing season and it is not sure whether it can monitor the catch of Pacific bluefin tuna during the fishing of large adult chub mackerel. Japan pointed out that the scientific evidence requires governments to take action regardless if Pacific bluefin tuna is bycatch or targeted catch.

53. Mexico supported the deletion of exemptions from the CMM and stated that the introduction of catch limits is preferable to ambiguous effort limits.

54. Korea presented its proposal (NC9-DP-07) to remove ambiguity in the CMM for Pacific bluefin tuna by requiring each CCM to identify fishing effort on and catches of juvenile Pacific bluefin tuna during the 2002–2004 period. Korea reiterated that the longer the collection of such data is delayed, the more difficult it gets for NC to establish a reliable baseline to which all members can agree, and that a reliable baseline is of a great importance in terms of compliance evaluation.

55. Japan asked Korea how the Korean proposal accommodates ISC's recommendation to reduce the catch of juvenile Pacific bluefin tuna. Korea explained that it intended to modify the CMM, but clarification was needed regarding the definition of bycatch, which should apply to Korea's Pacific bluefin tuna catch. Korea intends to take action in 2015. Japan commented that the stock is now at a depleted level and requested that Korea take appropriate action in order to meet international requirements rather than prioritizing their domestic situation.

56. The USA commented that the table suggested by Korea will be useful for i) understanding the current situation with the Pacific bluefin tuna fishery, and ii) developing the future management measure. For that, data on fishing effort, targeted catch, and bycatch should be known. As for the current measure, the USA noted that a reduction of 15% is the minimum requirement that should be applied immediately, and suggested using the words "require" or "request" instead of "encourage" in the Japanese proposal. In addition, the USA mentioned that the revision of fishing effort and catch would be needed with IATTC's involvement.

57. The USA presented its concept paper for NC to take actions: first, immediate strengthening of the CMM, such as requiring a reduction of juvenile catches; second, creating a rebuilding plan for Pacific bluefin tuna; and third, developing a long-term management framework. The USA asked participants to consider adopting a rebuilding target of 20% of the unfished SSB, up from about 4% currently, within 10 years. In response to a question from Japan, the USA said the target of 20% is a starting point for the discussion, but that it would like NC to adopt a firm target in order to request advice from ISC. The Chair stated that NC should establish a rebuilding plan at NC10.

58. Japan suggested setting the rebuilding target as the historical median of SSB of Pacific bluefin tuna, to be discussed at NC10, along with the new stock assessment. Japan emphasized that all participants should share the burden of recovering the stock according to their proportion of the overall Pacific bluefin tuna catch. The USA questioned whether such a target would be sufficient, given that the assessment indicates that the stock has been overfished during majority of the assessment period.

59. A representative for Greenpeace, the Pew Charitable Trust and WWF urged WCPFC to reduce both adult and juvenile Pacific bluefin tuna mortality without delay and establish a rebuilding plan with catch limits to restore the stock to a healthy condition within 10 years. All exemptions should be removed and the catch should be documented. The representative stated that fishing should not continue without changes made to the CMM this year.

60. CCMs discussed the text of the draft new CMM for Pacific bluefin tuna to be recommended to WCPFC based on the proposals made by Japan and Korea. The discussion was conducted based on the Japanese proposal. On the matter of deletion of exemptions for artisanal fisheries as well as Korean fisheries, Korea reiterated its position that it could not agree to the deletion of its exemption, although it could support the deletion next year at NC10.

61. Japan strongly urged Korea to change its position, saying that the depleted condition of the stock does not allow such an exemption to continue, and that CCMs (including Korea) discussed very constructively how to control the catch of bigeye tuna, including bycatch, in the week before NC9, and the Korean position this week contradicts that of the week before.

62. The Chair expressed his wish to produce an agreed text of the recommendation for Pacific bluefin tuna to WCPFC, and urged Korea to reconsider. However, because Korea was not in a position to accept the deletion of the exemption of the Korean fishery, NC agreed to send the recommendation (Attachment E) to WCPFC, along with Korea's reservations on the deletion of the exemption of the Korean fishery. Korea stated that its reservation is not on the minimum 15% reduction of juvenile Pacific bluefin tuna catch below the 2002–2004 annual average level, rather, Korea's reservation is on the application of such a reduction to Korea in 2014. At NC9, all NC members (with the exception of Korea) urged Korea to withdraw the reservation by the December Commission meeting. If Korea's reservation stands in December, the Chair will call a meeting of NC to solve the issue. Korea stated that it would not withdraw its reservation at the 2013 annual meeting of the Commission.

63. NC also agreed to develop at NC10 a rebuilding programme, including appropriate target and time frame to achieve it, which would be based on new information to be provided by ISC. NC discussed specific questions for ISC, and it was determined that participants would consult with each other intersessionally to improve the request for ISC before December. The draft request at the conclusion of the meeting is provided as Attachment F. In addition, NC9 also requests that ISC produce a catch and effort data table of juvenile and adult Pacific bluefin tuna for the reference year (2002–2004), taking into account Annexes 1 and 2 in Korea's proposal (DP-07).

2.3.2 North Pacific albacore

64. ISC presented its response to NC8's request on North Pacific albacore (NC9-IP-03). The information and advice on biological reference points for North Pacific albacore are summarized below.

> Gerard DiNardo presented information on potential reference points for North Pacific albacore, as well as the reliability of key biological parameters (e.g. steepness, natural mortality and maturity) and fishery data (selectivity), requested to the ISC Albacore Working Group (ALBWG) by NC8 (WCPFC-NC9-2013/IP-03). While there is always uncertainty in biological parameters and fisheries data, the available data used by ISC in its most recent North Pacific albacore stock assessment is considered best available scientific information. ALBWG will reassess the available information as it prepares for the next albacore stock assessment scheduled for completion in July 2014.
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> NC requested advice on expected future yields and variability under low, average and high historical recruitment scenarios over a 10-year projection period to assist with determining the suitability of candidate reference points identified in the 2011 stock assessment. Additional information in the form of the estimated probability of breaching the Interim Management Objective (the average of the 10 historical lowest years of SSB) and several biomass depletion levels for each candidate reference point harvest scenario was also requested from ALBWG. The information was presented to NC for consideration. It was noted that given the current stock

assessment model structure (steepness h = 1.0), F_{Max} is theoretically equivalent to F_{MSY}. However, F_{Max} is not well estimated by the 2011 stock assessment model because the yield curve is extremely flat, which places F_{Max} well beyond historical or observed fishing mortality during the stock assessment time period.

Estimated F-ratios of candidate reference points assuming two different constant harvest scenarios ($F_{2002–2004}$, $F_{2006–2008}$) were presented to determine whether reference point levels are exceeded. It was noted that $F_{2002–2004}/F_{RP}$ ratios are consistently higher than $F_{2006–2008}/F_{RP}$ ratios with a maximum difference of 16%. None of the candidate reference points are exceeded (ratio > 1.0) under an F-current ($F_{2006–2008}$) harvest scenario, although the F_{MED} and $F_{50\%}$ reference points are close to this threshold.

Provisional information to assess the influence of environmental variability on candidate reference points was presented, in particular the effects of regime shifts on values of F_{SPR}.

65. The USA and Canada invited other participants to work in the margins of NC9 to begin developing reference points to form the basis of a precautionary approach management framework for North Pacific albacore.

66. While agreement could not be reached on suitable limit reference points, progress was made on the concept paper tabled by the USA regarding a precautionary management framework for North Pacific albacore, which provides the elements to be included in the future management framework for the species. Participants appreciated the USA's initiative. It was agreed that the paper will be discussed at NC10 in conjunction with the new stock assessment results. The USA's proposal is attached as Attachment G. Participants also agreed to re-submit to ISC the questions posed at NC8 so that their responses can be updated based on the 2014 stock assessment.

2.3.3 North Pacific swordfish

67. ISC presented its response to NC8's request on North Pacific swordfish (NC9-IP-03) and a summary of the presentation is included as Attachment H. Based on information provided by ISC and using the Commission's hierarchical approach, the USA proposed that the swordfish stock be considered as a level 1 stock, in which case F_{MSY} is an appropriate F-limit for the stock. Japan pointed out that the swordfish assessment is conducted using a surplus production model, which automatically provides B_{MSY} at about 50% of carrying capacity, while for other species, such as bigeye and yellowfin tuna, the reference point is 20%, which is considered to be a proxy of B_{MSY} under the age-structured model. Japan stated that it could not, therefore, support the USA's proposal.

68. There was no agreement on an appropriate limit reference point and it was decided to discuss the matter further at the next NC meeting.

2.4 Conservation and management measures for other species

2.4.1 Bigeye, yellowfin and skipjack tunas (CMM 2012-01)

69. Considering that a constructive discussion is under way to revise the current measure, there were no discussions on this item.

2.4.2 North Pacific striped marlin

70. The USA stated that overfishing is occurring on North Pacific striped marlin and that action by WCPFC is necessary, noting that existing catch limits are not adequate.

2.4.3 Sharks

71. In response to a proposal by Japan, **NC agreed to request the Commission to ask the Scientific Committee to evaluate whether North Pacific blue shark should be a northern stock**, as the majority of the stock and its catch seems to be found in the area north of 20°N.

2.4.4 Seabirds

72. There were no discussions on this item.

2.4.5 Sea turtles

73. There were no discussions on this item.

AGENDA ITEM 3 — REGIONAL OBSERVER PROGRAMME

74. There were no discussions on this item.

AGENDA ITEM 4 — VESSEL MONITORING SYSTEM

75. There were no discussions on this item.

AGENDA ITEM 5 — DATA

5.1 Review of the status of data and data gaps for northern stocks

76. ISC and participants discussed data protocols and the sharing of data. The ISC chair reported that there was an incident where an ISC member's data were taken outside of ISC and analyzed, and that this is a violation of ISC's data sharing protocol. NC emphasized the importance of data integrity to the provision of data by members. In addition, several concerns were raised about participants that did not share data with ISC in a timely fashion. The Chair suggested a future discussion on data reporting and compliance.

AGENDA ITEM 6 — COOPERATION WITH OTHER ORGANIZATIONS

77. There were no discussions on this item.

AGENDA ITEM 7 — FUTURE WORK PROGRAMME

7.1 Review of the Commission's Independent Performance Review

78. Recommendations from the Commission's independent performance related to NC were reviewed (NC-WP-02). The adopted response of NC is included as Attachment I.

7.2 Work programme for 2014–2016

79. NC9 revised and adopted its future work plan (Attachment J).

AGENDA ITEM 8 — OTHER MATTERS

8.1 Administrative arrangements for the Northern Committee

8.1.1 Secretariat functions and costs

80. There was no discussion on Secretariat functions and costs of NC.

8.1.2 Rules of procedure

81. There were no discussions on this item.

8.1.3 Management Objective Workshop

82. The Secretariat introduced management options document prepared by the Management Objectives Workshop Expert Working Group (NC9-WP-01). NC9 noted the implications of the document.

8.3 Next meeting

83. Japan offered to host NC10 in early September 2014, with specific dates to be determined, taking into account the views of other members.

AGENDA ITEM 9 — ADOPTION OF THE SUMMARY REPORT OF THE NINTH REGULAR SESSION OF THE NORTHERN COMMITTEE

84. NC9 adopted the Summary Report of its Ninth Regular Session.

AGENDA ITEM 10 — CLOSE OF MEETING

85. The meeting was closed on 5 September 2013.

Attachment A

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

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Attachment B

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

AGENDA

AGENDA ITEM 1 OPENING OF MEETING

1.1 Welcome
1.2 Adoption of agenda
1.3 Meeting arrangements

AGENDA ITEM 2 CONSERVATION AND MANAGEMENT MEASURES

2.1 Report from the Thirteenth Meeting of the International Scientific Committee
2.2 Report of the Ninth Regular Session of the Scientific Committee
2.3 Conservation and management measures for the northern stocks
  2.3.1 Pacific bluefin tuna (CMM 2012-06)
  2.3.2 North Pacific albacore (CMM 2005-03)
  2.3.3 North Pacific swordfish
2.4 Conservation and management measures for other stocks
  2.4.1 Bigeye, yellowfin and skipjack tunas (CMM 2012-01)
  2.4.2 North Pacific striped marlin (CMM 2010-01)
  2.4.3 Sharks (CMM 2010-07, CMM 2011-04 and CMM 2012-04)
  2.4.4 Seabirds (CMM 2012-07)
  2.4.5 Sea turtles (CMM 2008-03)

AGENDA ITEM 3 REGIONAL OBSERVER PROGRAMME

AGENDA ITEM 4 VESSEL MONITORING SYSTEM

AGENDA ITEM 5 DATA

5.1 Review of the status of data and data gaps for northern stocks

AGENDA ITEM 6 COOPERATION WITH OTHER ORGANIZATIONS

6.1 ISC
6.2 IATTC

AGENDA ITEM 7 FUTURE WORK PROGRAMME

7.1 Review of the Commission's Independent Performance Review
7.2 Work Programme for 2014–2016

AGENDA ITEM 8 OTHER MATTERS

8.1 Administrative arrangements for the Committee
  8.1.1 Secretariat functions and costs
  8.1.2 Rules of Procedure
  8.1.3 Management Objective Workshop (MOW)
8.2 Next meeting
8.3 Other business

AGENDA ITEM 9 ADOPTION OF THE SUMMARY REPORT OF THE NINTH REGULAR SESSION OF THE NORTHERN COMMITTEE AND RECOMMENDATIONS TO THE COMMISSION

AGENDA ITEM 10 CLOSE OF MEETING

Attachment C

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

SUMMARY OF NORTH PACIFIC BLUE MARLIN STOCK ASSESSMENT

Information on stock status, stock projections, and potential conservation advice, as well as information on stock identification and distribution, catches, data and assessment, biological reference points, and special comments were summarized by the ISC Billfish Working Group chair.

The Pacific blue marlin (*Makaira nigricans*) stock area consisted of all waters of the Pacific Ocean and all available fishery data from this area were used for the stock assessment. Pacific blue marlin catches exhibited an increasing trend from the 1950s to the 1980s and then fluctuated without trend. In the 1990's the catch by Japanese fleets (Fig. 1) decreased while the catch by Taiwanese, WCPFC, and some IATTC member countries increased (Fig. 1). Overall, longline gear has accounted for the vast majority of Pacific blue marlin catches since the 1950's (Fig. 2).

Catch and size composition data were collected from ISC countries (Japan, Taiwan and USA), some IATTC member countries, and WCPFC (Table 1). Standardized catch per unit of effort data used to measure trends in relative abundance were provided by Japan, USA and Chinese Taipei. The Pacific blue marlin stock was assessed using an age-, length-, and sex-structured assessment Stock Synthesis 3 (SS) model fit to time series of standardized CPUE and size composition data. Sex-specific growth curves and natural mortality were used because of the known sexual dimorphism of adult blue marlin. The value for steepness was $h = 0.87$. The assessment model was fit to relative abundance indices and size composition data in a likelihood-based statistical framework.

Table 1: Reported catch (mt), population biomass (age-1 and older, mt), female spawning biomass (mt), relative female spawning biomass (SSB/SSB_{MSY}), recruitment (thousands of age-0 fish), fishing mortality (average F, age-2 and older), relative fishing mortality (F/F_{MSY}), and spawning potential ratio of Pacific blue marlin.

Year	2005	2006	2007	2008	2009	2010	2011	Mean[1]	Min[1]	Max[1]
Reported catch	23,962	21,100	18,554	17,709	18,147	19,388	17,430	17,792	9,160	25,510
Population biomass	73,812	70,945	72,102	72,453	70,694	76,089	78,663	99,151	70,694	128,228
Spawning biomass	22,730	21,574	21,701	23,003	23,486	22,988	24,990	40,723	21,574	67,224
Relative spawning biomass	1.17	1.11	1.12	1.18	1.21	1.18	1.29	2.10	1.11	3.46
Recruitment (age 0)	914	889	718	689	1177	705	825	879	508	1177
Fishing mortality	0.36	0.32	0.27	0.26	0.28	0.27	0.23	0.21	0.09	0.38
Relative fishing mortality	1.12	1.01	0.85	0.81	0.87	0.84	0.72	0.66	0.28	1.18
Spawning potential ratio	15%	18%	21%	23%	22%	22%	25%	31%	15%	56%

[1] During 1971–2011

Estimates of total stock biomass of Pacific blue marlin show a long-term decline. Population biomass (age-1 and older) averaged roughly 123,523 mt from 1971–1975, the first five years of the assessment timeframe, but then declined by approximately 40% to an average of 78,663 mt in 2011 (Fig. 3). Female spawning biomass was estimated to be 24,990 mt in 2011. Fishing mortality on the stock (average F, age-2 and older) averaged roughly F = 0.26 during 2009–2011. There was no apparent long-term recruitment trend. Overall trends in spawning stock biomass and recruitment indicate a long-term decline in spawning stock biomass and suggest a fluctuating pattern without trend for recruitment (Fig. 3). Kobe plots depict the stock status in relation to MSY-based reference points (see below) from the base case SS model (Fig. 4). Kobe plots indicate that the Pacific blue marlin spawning stock biomass decreased to the MSY level in the mid-2000s, and since then has increased slightly. The base case assessment model indicates that the Pacific blue marlin stock is currently not overfished and is not subject to overfishing relative to MSY-based reference points.

Biological reference points were computed with the base case assessment model (Table 2). The point estimate of maximum sustainable yield was MSY = 19,459 mt. The point estimate of the spawning biomass to produce MSY (adult female biomass) was SSB_{MSY} = 19,437 mt. The point estimate of F_{MSY}, the fishing mortality rate to produce MSY (average fishing mortality on ages 2 and older) was F_{MSY} = 0.32 and the corresponding equilibrium value of spawning potential ratio at MSY was SPR_{MSY} = 18%. The point estimate of $F_{20\%}$ was 0.29 and the corresponding estimate of $SSB_{20\%}$ was 26,324 mt.

Table 2: Estimated biological reference points derived from the Stock Synthesis base case model where "MSY" indicates maximum sustainable yield-based reference points, "20%" indicates reference points corresponding to a spawning potential ratio of 20%, F is the instantaneous annual fishing mortality rate, SPR is the annual spawning potential ratio, and SSB is the female spawning stock biomass.

Reference point	Estimate
$F_{2009\text{-}2011}$ (age 2+)	0.26
$SPR_{2009\text{-}2011}$	23%
F_{MSY} (age 2+)	0.32
$F_{20\%}$ (age 2+)	0.29
SPR_{MSY}	18%
SSB_{2011}	24,990 mt
SSB_{MSY}	19,437 mt
$SSB_{20\%}$	26,324 mt
MSY	19,459 mt

Based on the results of the stock assessment the stock is not currently overfished and is not experiencing overfishing. The stock is nearly fully exploited. Stock biomass has declined since the 1970s and has been stable since the mid-2000s with a slight recent increase. Because blue marlin is mostly caught as bycatch, the direct control of catch amounts is difficult. The Working Group recommends that fishing mortality not be increased from the current level in order to avoid overfishing. Last, it was noted that the lack of sex-specific size data and the simplified treatment of the spatial structure of Pacific blue marlin population dynamics were important sources of uncertainty.

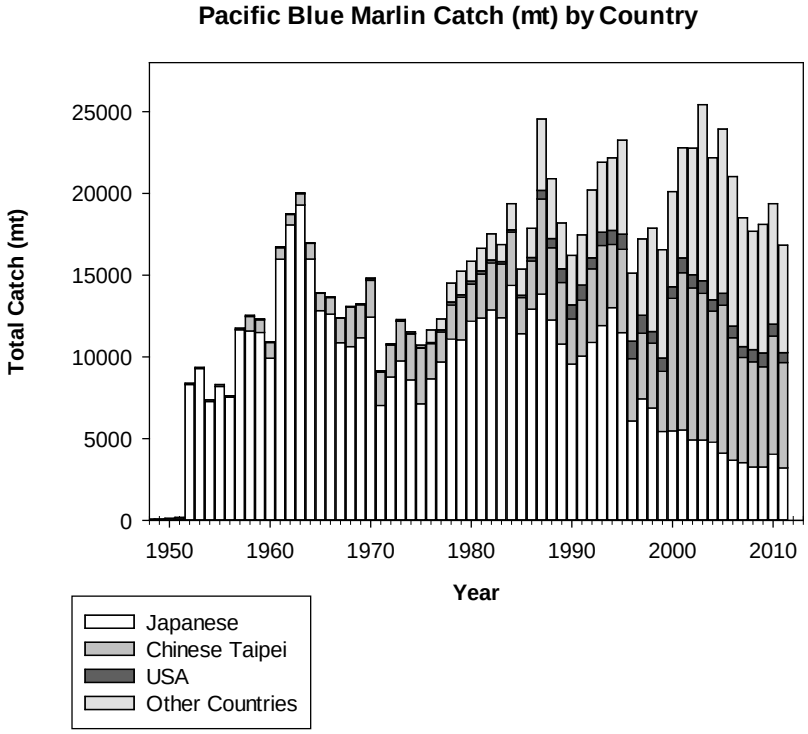

Figure 1: Pacific blue marlin (*Makaira nigricans*) catches (mt) in the Pacific Ocean by country (for Japan, Chinese Taipei, USA and other countries).

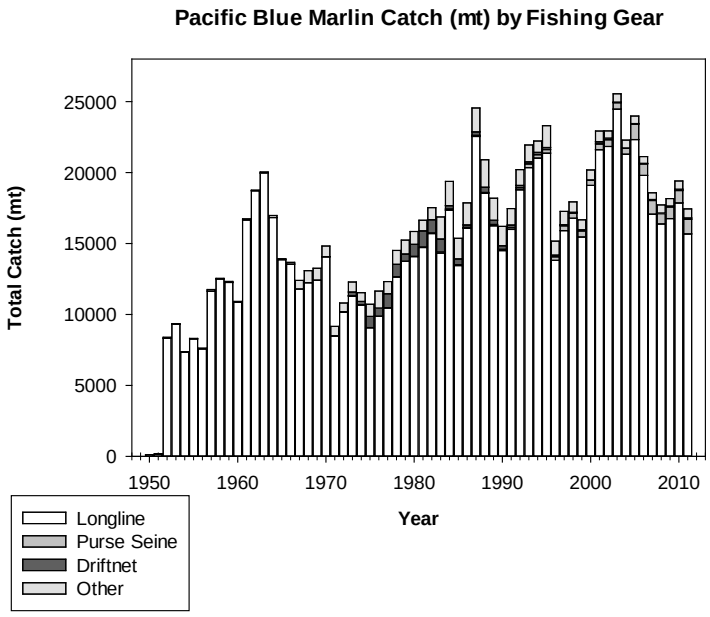

Figure 2: Pacific blue marlin (*Makaira nigricans*) catch data (mt) by fishing gear from 1952–2011 used in the base case Stock Synthesis model.

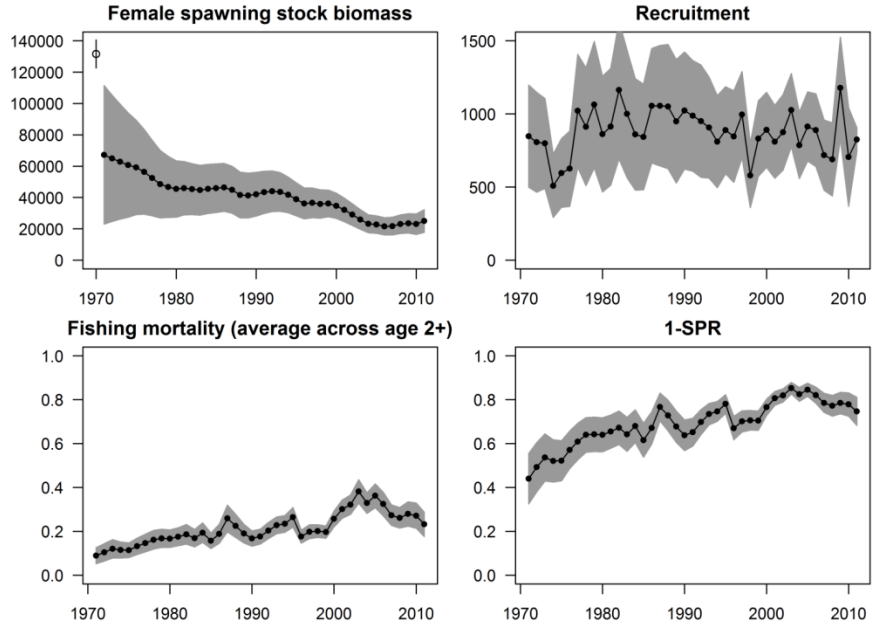

Figure 3: Estimates of female spawning stock biomass (top left panel), recruitment (top right panel), fishing mortality (bottom left panel) and fishing intensity (bottom right panel) from the Stock Synthesis base case model (point estimate, solid circle) with +/- 1.96 standard deviation shown (shaded area).

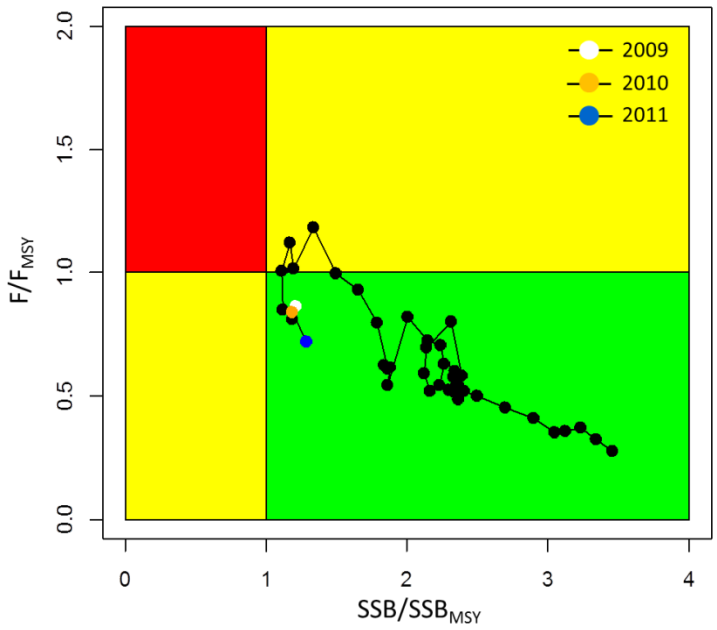

Figure 4: Kobe plot showing Pacific blue marlin stock status in relation to maximum sustainable yield (MSY)-based reference points for the Stock Synthesis base case model with respect to relative fishing mortality.

Attachment D

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

SUMMARY OF BLUE SHARK STOCK ASSESSMENT

S. Teo, member of the ISC Shark Working Group (SHARKWG), presented the recently completed Bayesian Surplus Production North Pacific blue shark stock assessment. The assessment was completed in April 2013 using fishery data through 2011.

Stock biomass and fishing mortality levels were estimated using a state-space Bayesian surplus production model (BSP2) that fit estimated catch to standardized catch per unit of effort (CPUE) data compiled by the SHARKWG from 1971 through 2011. Annual catch estimates were derived for a variety of fisheries by nation and compiled into a single catch time series for input into the BSP2 model. The SHARKWG developed annual estimates of standardized CPUE for several fisheries and used criteria to select representative indices for the assessment. Standardized CPUE from the Japanese shallow longline fleet that operates out of Hokkaido and Tohoku ports for the periods 1976–1993 and 1994–2010 were used as measures of relative population abundance in the base case assessment. A Fletcher-Schaefer production model was fit in a likelihood-based statistical framework, with priors assigned to several parameters, including the intrinsic rate of population increase (r) and the ratio of initial biomass to carrying capacity (B_{init}/K). Bayesian posteriors of model parameters and derived outputs from the base case model were used to characterize stock status.

The SHARKWG recognized uncertainties in the procedures used to estimate catch and standardized CPUE series, and in the selection of input parameters and priors. The influence of these uncertainties on biomass trends and the 2011 fishing mortality level was assessed by constructing 21 sensitivity scenarios, which were designed to capture the maximum range of uncertainty in the input information, using alternative data and/or parameterizations.

Stock projections of biomass and catch of blue shark in the North Pacific from 2012–2031 were conducted assuming 21 alternative harvest scenarios and starting biomass levels. *Status quo* catch and F were based on the average over the recent five years (2006–2010). Estimated catch from 2011 was not used for projections due to the impact of the March 2011 Great East Japan Earthquake on Japanese fishing effort. A simulation model was used for annual projections, and included uncertainty in the population size at the starting year of stock projection, fishing mortality and productivity parameters.

Based on the trajectory of the base case model, median stock biomass of blue shark in 2011 (B_{2011}) was estimated to be 456,000 mt. Median annual fishing mortality in 2011 (F_{2011}) was 7.14% of B_{2011}. Catch in 2011 (C_{2011}) was estimated to be 75% of replacement yield (*REPY*). Stock status is reported in relation to maximum sustainable yield (*MSY*). Stock biomass in 2011 was approximately 60% higher than B_{MSY} and F_{2011} was estimated to be well below F_{MSY}.

While results varied depending upon the input assumptions, there was general agreement in nearly all scenarios in terms of the key model results: stock biomass was near a time-series high in 1971, fell to its lowest level in the late 1980s, and subsequently increased gradually and has leveled off at a biomass similar to that at the beginning of the time-series. A scenario using CPUE data for the Hawaii-based deep longline fleet for 1995–2011 in place of the Japan shallow longline index for 1994–2010, showed a continual decline in stock biomass from 1971–2011. However, the Hawaii index was not considered to be representative of the stock due to the relatively small amount of catch and spatial coverage and the potential impact of regulatory changes in the fishery.

Future projections of the base case model show that median blue shark biomass in the North Pacific will remain above B_{MSY} under the catch harvest policies examined (status quo, +20%, -20%). Similarly, future projections under different fishing mortality (F) harvest policies (status quo, +20%, -20%) show that median blue shark biomass in the North Pacific will remain above B_{MSY}.

Projections under different catch and fishing mortality policies were also conducted for the maximum and minimum catch model scenarios. In all cases, patterns of trajectories were essentially the same as for the base case, and the projected stock biomass remained above B_{MSY}. Projected stock biomass was lower for runs with either catch or F 20% above current, as expected, but remained above B_{MSY}.

Model inputs for this assessment have been improved since the previous assessment and provide the best available scientific information. However, there are uncertainties in the time series for estimated catch and abundance indices for blue shark in the North Pacific, as well as for many life history parameters used to estimate stock productivity. Available catch composition information demonstrates evidence of spatial and temporal stratification by size and sex. The use of other modeling approaches, if sufficient data are available, may provide additional insights into stock dynamics.

Conservation advice put forward by the ISC plenary based on the assessment results is provided below:

> Based on the base case and most alternative model scenarios, the North Pacific blue shark stock is not overfished and overfishing is not occurring. Future projections of the base case model show that median blue shark biomass in the North Pacific will remain above B_{MSY} under the catch harvest policies examined (status quo, +20%, -20%). Similarly, future projections under different fishing mortality (F) harvest policies (status quo, +20%, -20%) show that median blue shark biomass in the North Pacific will remain above B_{MSY}. The stock is in a healthy condition and current levels of F are sustainable in the short and long term. Due to data uncertainties, improvements in the monitoring of blue shark catches and discards, as well as continued research into the biology and ecology of blue shark in the North Pacific are recommended.

Attachment E

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

Conservation And Management Measure For Pacific Bluefin Tuna

The Western and Central Pacific Fisheries Commission (WCPFC):

Recognizing that WCPFC6 adopted Conservation and Management Measure for Pacific bluefin tuna (CMM2009-07) and the measure was revised twice since then (CMM2010-04 and CMM2012-06) based on the conservation advice from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) on this stock, which again highlighted the importance that the level of F is decreased below the 2002–2004 levels, particularly on juvenile age classes;

Expressing grave concern for the latest stock status provided by ISC 13 that Pacific bluefin tuna "biomass level is near historically low levels and experiencing high exploitation rates above all biological reference points (BRPs) commonly used by fisheries managers, and that the risk of spawning stock biomass (SSB) falling below the historically lowest level will increase under $F_{2007–2009}$ conditions;

Noting the conservation advice provided by ISC 13 that:
- further reduction of fishing mortality, especially for juvenile fish is needed to reduce the risk of SSB falling below its historically lowest level; and
- strengthening the monitoring of recruitment is highly recommended to comprehend the trend of recruitment in a timely manner;

Also noting that ISC will update its stock assessment with latest information available by February 2014;

Recognizing the importance of development of reference points for conservation and management of Pacific bluefin tuna in 2014;

Further recalling that paragraph (4), Article 22 of the WCPFC Convention which requires cooperation between the Commission and the IATTC to reach agreement to harmonize CMMs for fish stocks such as Pacific bluefin tuna that occur in the Convention Areas of both organizations;

Adopts, in accordance with Article 10 of the WCPFC Convention that:

1. The interim management objective for Pacific bluefin tuna for 2014 is to ensure that the current (02-04 annual average) level of fishing mortality rate is not increased in the Convention Area.

2. Commission Members, Cooperating Non-Members and participating Territories (hereinafter referred to as CCMs) shall take measures necessary to ensure that total fishing effort by their vessels fishing for Pacific bluefin tuna in the area north of 20 degrees north shall stay below the 2002–2004 annual average

levels for 2014. Such measures shall include those to reduce all catches of juveniles (age 0-3 (less than 30 kg)) significantly below* the 2002–2004 annual average levels for 2014.

3. CCMs, in particular those catching juvenile Pacific bluefin tuna, shall take measures to monitor and obtain prompt results of recruitment of juveniles each year. An emergency rule shall be developed in 2014 that stipulates specific rules all CCMs shall comply with when a drastic drop of recruitment is detected.

4. Consistent with their rights and obligations under international laws, and in accordance with domestic laws and regulations, CCMs shall, to the extent possible, take measures necessary to prevent commercial transaction of Pacific Bluefin tuna and its products that undermine the effectiveness of this CMM, especially measures prescribed in the paragraph 2 above. CCMs shall cooperate for this purpose.

5. CCMs shall cooperate to establish a catch documentation scheme (CDS) to be applied to Pacific bluefin tuna as a matter of priority.

6. CCMs shall also take measures necessary to strengthen the data collecting system for Pacific bluefin tuna fisheries in order to improve the data quality and timeliness of all the data reporting.

7. CCMs shall submit to ISC by December 15th, 2013 all the catch and effort data until 2012 of juvenile and adults of Pacific bluefin tuna.

8. CCMs shall report to Executive Director by 31 July measures they used to implement paragraphs 2, 3, 6, 10 and 11 of this CMM. CCMs shall also monitor the international trade of the products derived from Pacific bluefin tuna and report the results to Executive Director by 31 July. The Northern Committee shall annually review those reports CCMs submit pursuant to this paragraph.

9. The Northern Committee at its regular session in 2014 shall review this CMM based on the stock status and conservation advice for Pacific bluefin tuna provided by ISC14 in 2014 and take further actions, including substantial catch reduction of juveniles (age 0-3, less than 30 kg).

10. The WCPFC Executive Director shall communicate this Conservation Management Measure to the IATTC Secretariat and its contracting parties whose fishing vessels engage in fishing for Pacific bluefin tuna and request them to take equivalent measures in conformity with this CMM.

11. To enhance effectiveness of this measure, CCMs are encouraged to communicate with and, if appropriate, work with concerned IATTC contracting parties bilaterally.

12. The provisions of paragraph 2 shall not prejudice the legitimate rights and obligations under international law of those small island developing State Members and participating territories in the Convention Area whose current fishing activity for Pacific bluefin tuna is limited, but that have a real interest in fishing for the species, that may wish to develop their own fisheries for Pacific bluefin tuna in the future.

13. The provisions of paragraph 12 shall not provide a basis for an increase in fishing effort by fishing vessels owned or operated by interests outside such developing coastal State, particularly Small Island developing State Members or participating territories, unless such fishing is conducted in support of efforts by such Members and territories to develop their own domestic fisheries.

* CCMs are required to reduce their juvenile fish catches at least by 15% below 2002–2004 annual average levels in 2014.

Attachment F

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

NORTHERN COMMITTEE'S REQUEST TO ISC REGARDING PACIFIC BLUEFIN TUNA

For the purpose of evaluating the performance of various management scenarios with respect to rebuilding the stock of Pacific bluefin tuna, the Northern Committee requests advice from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) on the following.

Under an appropriate range of future recruitment scenarios (for example, but not necessarily limited to: high, low, historical average), the probability of achieving each of five particular SSB levels (10%, 15%, 20%, and 25% $SSB_{recent,F=0}$, and historical median SSB) within 10 and 15 years under each of the harvest scenarios listed below. For each scenario, expected average yield over the final three years of the projection is also requested.

	Western and Central Pacific Ocean			**Eastern Pacific Ocean**
	Fishing effort in Pacific bluefin tuna fisheries	**Juvenile catches**	**Adult catches**	**Catches**
1	2002–2004 avg.	15% reduction from 2002–2004 avg.		5,500 mt/yr
2	2002–2004 avg.	15% reduction from 2002–2004 avg.	15% reduction from 2002–2004 avg.	5,500 mt/yr
3	2002–2004 avg.	15% reduction from 2002–2004 avg.	15% reduction from 2002–2004 avg.	4,675 mt/yr
4	2007–2009 avg.	15% reduction from 2002–2004 avg.		4,675 mt/yr
5	2002–2004 avg.	25% reduction from 2002–2004 avg.		4,125 mt/yr
6	2002–2004 avg.	50% reduction from 2002–2004 avg.		2,750 mt/yr
7	15% reduction from 2002–2004 avg.	25% reduction from 2002–2004 avg.		4,125 mt/yr

For those scenarios in which, for at least some fisheries, catches are limited but fishing effort (and thus F) is not, ISC is requested to run projections such that F in those fisheries is constrained to no greater than double the 2002–2004 average level.

For the purpose of developing a mechanism that establishes specific rules for CCMs in the event of a drastic drop in recruitment, ISC is requested to provide information regarding the range of historical variation in recruitment, such as in terms of standardized CPUEs for particular fisheries, or other

appropriate measures. Specifically, information for the low recruitment period during the 1980s, and for the last 10 years, is requested.

Attachment G

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

PRECAUTIONARY MANAGEMENT FRAMEWORK FOR NORTH PACIFIC ALBACORE (USA Concept paper)

Introduction

At the Sixth Regular Session of the Northern Committee (NC), Canada submitted a paper (WCPFC-NC6-DP02) on the development of a precautionary fishery management regime for the northern stocks. Building on this paper, NC7 agreed to a three-year work programme to develop a precautionary management framework for North Pacific (NP) albacore.

Important elements of a precautionary management framework including management objectives, limit and target reference points for stock size and fishing mortality, and associated decision rules (e.g. pre-agreed actions that will be taken in the event that a limit reference point is breached). Under the NC's work programme, NC9 is tasked with agreeing on appropriate reference points and decision rules.

In accordance with Convention Article 6, and as set out in the Northern Committee work programme, NC will further develop a precautionary management framework for North Pacific albacore as follows:

1. Management objectives

To build upon the fundamental management objectives for highly migratory fish stocks as set out in the Convention, NC will work to establish specific management objectives for NP albacore fisheries. In doing so, NC will contribute to, and consider the outcomes of, the Commission's "Management Objectives Workshop" initiative.

2. Biological reference points

Following the hierarchical approach adopted by the Commission:

Level	Condition	LRPs
Level 1	A reliable estimate of steepness is available.	F_{MSY} and B_{MSY}
Level 2	Steepness is not known well, if at all, but the key biological (natural mortality, maturity) and fishery (selectivity) variables are reasonably well estimated.	$F_{X\%SPR_o}$ and either X%SB_o or X%$SB_{current,F=0}$
Level 3	The key biological and fishery variables are not well estimated or understood.	X%SB_o or X%$SB_{current,F=0}$

- NP albacore is to be treated as a Level 2 stock.[1]
- The limit reference point for the fishing mortality rate, or F-limit, is $F_{[\ ]\%SPR}$.[2]
- The limit reference point for the stock size, or B-limit, is [ ]$\%SB_{current,F=0}$.[3,4]

NC will work to establish a control rule in which the F-limit decreases with decreasing B, of the type illustrated in Canada's 2010 paper (WCPFC-NC6-DP02).

Once specific fishery management objectives have been adopted, NC will work to establish target reference points for F and/or B, the purpose of which will be to guide the formulation of management strategies such that the fishery management objectives are achieved.

3. Decision rules

NC will develop and recommend management strategies for the stock that ensure that the risk of F exceeding F-limit and of B decreasing below B-limit is very low. With respect to the B-limit, NC will use a risk level of [ ] percent. With respect to the F-limit, until target reference points are established, NC will account for risk by designing management strategies such that F is unlikely to exceed [ ] percent of the F-limit. NC will periodically request the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) to evaluate the performance of a suitable range of alternative management strategies with respect to these limits and risk levels.

In the event that, based on information from ISC, the fishing mortality rate exceeds the F-limit for at least one year, NC will, at its next regular session, or intersessionally if warranted, recommend a conservation and management measure that can be expected to reduce F to less than the F-limit within one year of its adoption.

In the event that, based on information from ISC, the spawning stock size decreases below the B-limit at any time, NC will, at its next regular session, or intersessionally if warranted, adopt a reasonable timeline for rebuilding the spawning stock to at least the B-limit and recommend a conservation and management measure that can be expected to achieve such rebuilding within that timeline. Furthermore, NC will develop management strategies that are consistent with pre-agreed on levels of F specified in any adopted control rule.

NC will work to establish specific pre-agreed on management measures that would be automatically triggered upon breaching a limit and/or warning reference point.

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[1] This determination is based on the information provided by ISC (see NC9-IP-03).

[2] This F-limit replaces the interim F-limit, $F_{SB\text{-}ATHL}$.

[3] Based on the information provided by ISC (see NC9-IP-03), B-limit should be X$\%SB_{current,F=0}$ (unfished SB) rather than X%SB_0 (initial SB) because the estimate of the latter is highly uncertain.

[4] The F-limit and B-limit are specified such that the B-limit serves as a second line of defense behind the F-limit, as follows: If the stock were fished at the F-limit, SB would be expected to average about a particular level associated with that level of F, but would vary above and below that level due to variation in recruitment, natural mortality, and other environmental factors. To accommodate such expected natural variation, it is appropriate that SB be allowed to decrease some amount below the level associated with the F-limit before taking the serious corrective action that would be triggered by breaching the B-limit. The greater the stock's expected natural variation, the greater that allowance should be (to a certain point). A stock's natural mortality rate, M, is a crude indicator of the degree of natural variation in SB that would be expected under a constant fishing mortality rate. Therefore, it is appropriate to set the B-limit at (1-M) times the proportion of unfished SB that would be expected, on average, when fishing at the F-limit. For NP albacore, M is estimated to be 0.25, so the B-limit is set at [ ]% of unfished SB.

Attachment H

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

SUMMARY OF ISC'S RESPONSE TO NC8'S REQUEST ON NORTH PACIFIC SWORDFISH

The Ninth Regular Session of the Northern Committee (NC9) reviewed a working paper that addressed a request by the Eighth Regular Session of the Northern Committee (NC8) to the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) Billfish Working Group to conduct stock projections for the western and central North Pacific Ocean (WCNPO) swordfish stock. The requested projections included information on expected yields and their variability under alternative harvest rates and biological reference points. Updated catch information for WCNPO swordfish through 2012 was gathered from ISC member countries and all other available sources. The potential limit reference points to set the harvest rate scenarios for NC8's request included three scenarios: 1) the most recent three-year average harvest rate (scenario 1); 2) the harvest rate set at fractions of H_{MSY}, ranging from 0.5–1.5 in multiples of 0.25 (scenarios 2.1 to 2.5); and 3) the harvest rate set at the maximum historic harvest rate during 1951–2012 (scenario 3). Parameters of the WCNPO production model were reevaluated using the updated catch data during 2007–2012 (Fig. 1.1). Revised estimates of biological reference points were virtually identical to those from the 2009 stock assessment: MSY = 14.4 thousand mt, B_{MSY} = 57,300 mt, and H_{MSY} = 0.26. Estimates of the exploitable biomass of WCNPO swordfish showed the same trends as in the 2010 stock assessment (Fig. 1.2). Exploitable biomass in 2012 was estimated to be 80,800 mt (±26.4), or 41% above B_{MSY}. Similarly, estimates of the harvest rate of WCNPO swordfish also exhibited the same trends as in the 2010 stock assessment (Fig. 1.3). The harvest rate in 2012 was estimated to be 12% (±5%), or about 54% below H_{MSY}. Overall, the updated stock status information indicated that the WCNPO swordfish stock was not overfished or experiencing overfishing in 2012 relative to MSY-based reference points. Projection results indicated that expected WCNPO yields would increase under most of the alternative harvest rate scenarios and that expected WCNPO biomass would be reduced to below B_{MSY} in 2017 (Table 1 and Fig. 2.2) under some of the harvest rate scenarios. Projection results for the probabilities of breaching biomass depletion reference points indicated that the there was a high probability that exploited biomass would be reduced to below B_{MSY} in 2017 for some of the higher harvest rate scenarios.

Table 1: WCNPO swordfish projection results by harvest scenario for expected catch biomass (mean, thousands of mt) and its standard deviation (Stdev), expected exploitable biomass (mean, thousands of mt) and its standard deviation (Stdev), and the probability of breaching biomass depletion reference points of B10, B20, B30, B40, and B_{MSY}.

	Scenario S1		Scenario S2.1		Scenario S2.2		Scenario S2.3		Scenario S2.4		Scenario S2.5		Scenario S3	
Variable	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev
Catch 2013	10.68	5.367	10.68	4.098	16.1	6.166	21.44	8.215	26.78	10.26	32.12	12.31	26.78	10.56
Catch 2014	10.64	4.989	10.64	3.629	14.98	5.093	18.56	6.339	21.44	7.405	23.63	8.329	21.44	7.697
Catch 2015	10.66	4.838	10.67	3.414	14.4	4.595	17.07	5.493	18.83	6.164	19.76	6.658	18.82	6.442
Catch 2016	10.67	4.737	10.69	3.275	14.03	4.278	16.13	4.973	17.2	5.437	17.39	5.731	17.19	5.701
Catch 2017	10.71	4.689	10.73	3.192	13.81	4.08	15.52	4.655	16.12	5.008	15.82	5.208	16.11	5.261
Biomass 2013	82.15	23.85	82.15	23.85	82.15	23.85	82.15	23.85	82.15	23.85	82.15	23.85	82.15	23.85
Biomass 2014	81.87	19.86	81.87	19.57	76.45	18.26	71.11	17.11	65.77	16.15	60.43	15.4	65.77	16.33
Biomass 2015	82.01	17.5	82.07	17.04	73.46	15.25	65.4	13.79	57.75	12.62	50.53	11.71	57.73	12.84
Biomass 2016	82.25	15.93	82.35	15.37	71.66	13.33	61.86	11.8	52.82	10.67	44.53	9.84	52.78	10.9
Biomass 2017	82.49	14.91	82.62	14.29	70.5	12.08	59.5	10.6	49.48	9.623	40.49	8.96	49.43	9.866
Pr(Breach B10)	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.03	0.00	0.04	0.00	0.03
Pr(Breach B20)	0.00	0.05	0.00	0.05	0.00	0.05	0.00	0.06	0.01	0.09	0.04	0.19	0.01	0.09
Pr(Breach B30)	0.01	0.10	0.01	0.10	0.01	0.11	0.02	0.14	0.08	0.27	0.28	0.45	0.08	0.28
Pr(Breach B40)	0.03	0.18	0.03	0.18	0.04	0.20	0.11	0.32	0.36	0.48	0.70	0.46	0.38	0.48
Pr(Breach BMSY)	0.09	0.29	0.09	0.28	0.13	0.34	0.40	0.49	0.77	0.42	0.94	0.23	0.77	0.42

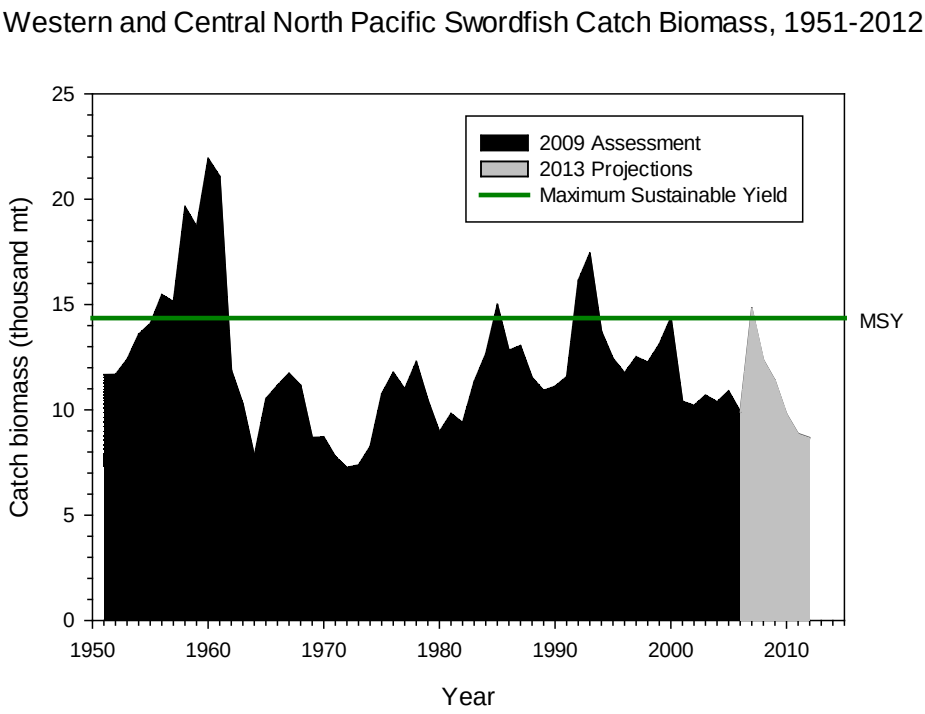

Figure 1.1: Estimates of catch biomass of WCNPO swordfish during 1951–2012 used for stock projections.

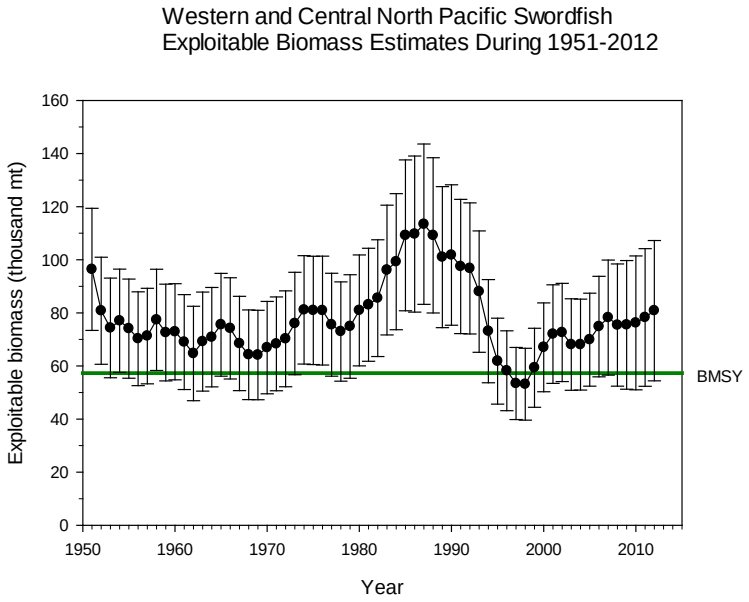

Figure 1.2: The years 1951–2012 were used for stock projections.

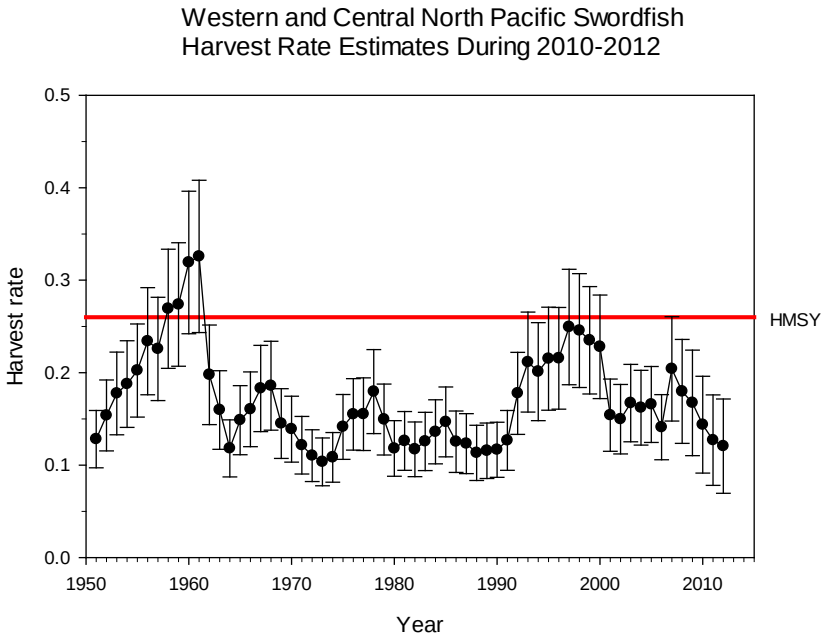

Figure 1.3: Estimates of harvest rates for WCNPO swordfish (± 1 standard error) during 1951–2012 used for stock projections.

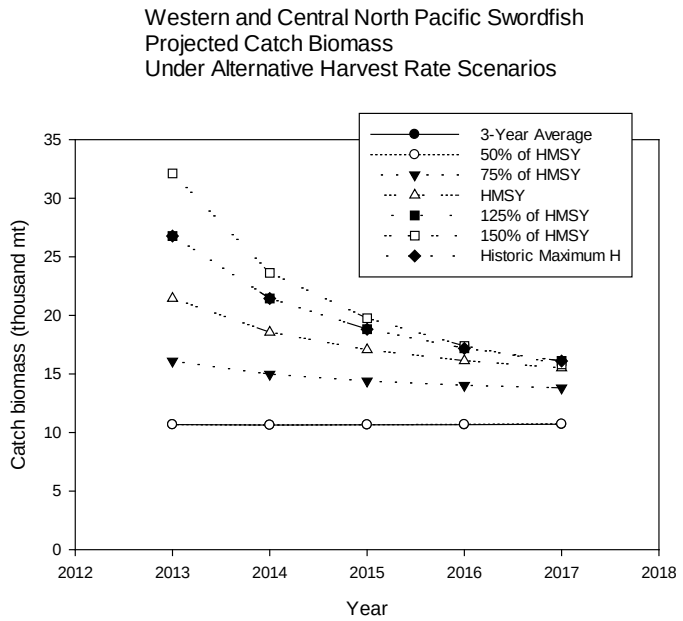

Figure 2.1: Projections of expected catch biomasses of WCNPO swordfish during 2013–2017 under alternative harvest scenarios.

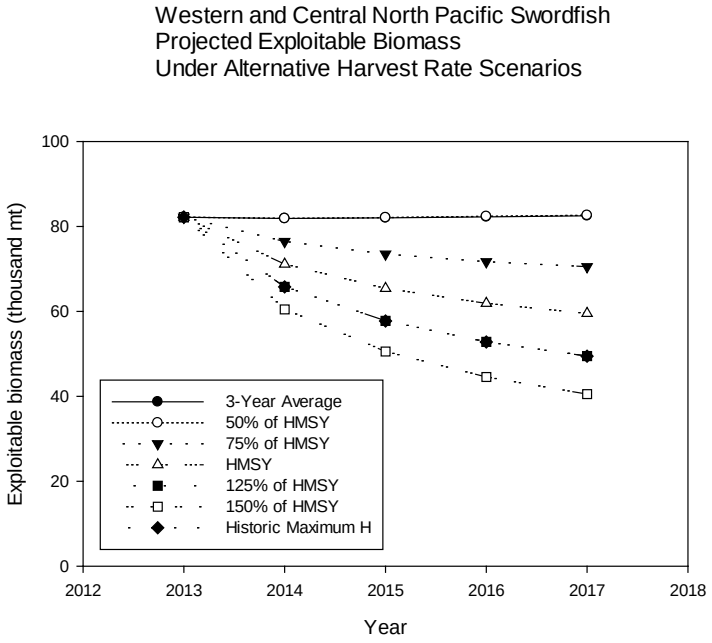

Figure 2.2: Projections of expected exploitable biomasses of WCNPO swordfish during 2013–2017 under alternative harvest scenarios.

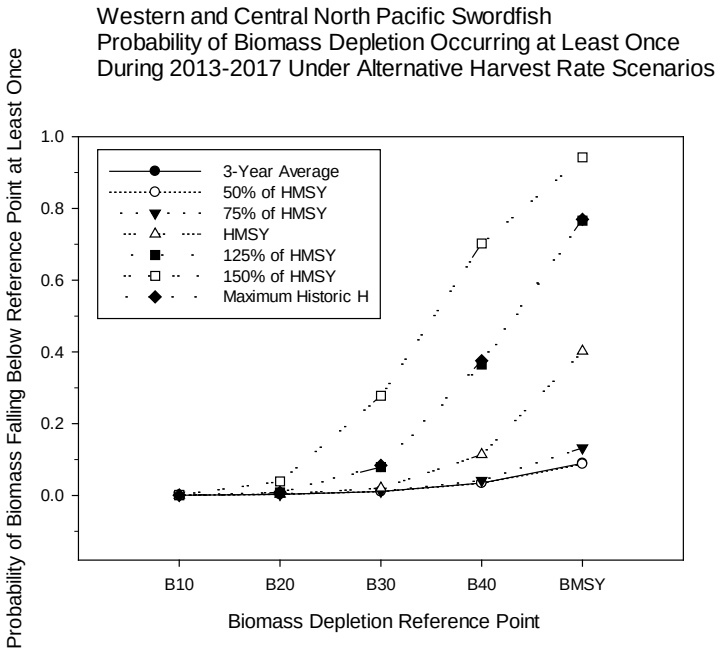

Figure 2.3: Projected probabilities of breaching biomass depletion levels for WCNPO swordfish during 2013–2017 under alternative harvest scenarios.

Attachment I

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2–5 September 2013

NC9'S RESPONSES TO RECOMMENDATIONS FROM THE COMMISSION'S PERFORMANCE REVIEW

Section	Recommendation	NC's responses
3.4.5. Subsidiary bodies of the Commission	• It is recommended that terms of reference be developed for the Northern Committee (NC) which, *inter alia*, align the scope of responsibilities for NC and the Commission with respect to applicable stocks and species, as well as promote the consistency of management approaches with those of the Commission.	• Annex I of the Commission's Rules of Procedure provided terms of reference (TOR) for NC
5.3.3. Limit reference points	• The Commission should review the current situation regarding the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean's (ISC's) development of reference points, including for North Pacific albacore;	• NC has been taking care of this issue as a matter of priority
6.3.1. Vessel monitoring system (VMS)	• It is recommended that NC resolves a VMS implementation date for the Convention Area north of 20°N and west of 175°E. Not only should a fixed date be proposed for consideration by the Technical and Compliance Committee (TCC) and the Commission, but any phased approach or any suggested exemptions should only be considered if strong justification for such deviations is provided; and	• Done with no exemptions
North Pacific striped marlin	• Concerns expressed over the continued lack of an assessment for the North Pacific striped marlin stock appear justified; • The Panel was concerned by the fact that information on the assessments undertaken by ISC was not readily available or accessible, and, therefore, recommended that transparency in this regard be considerably improved. Most	• ISC conducted North Pacific striped marlin stock assessment in 2012 and SC8 reviewed. • ISC assessments are routinely peer reviewed and presented to WCPFC.

	noticeably, and ideally, all assessments undertaken by the ISC should be peer reviewed and the results of these reviews made readily available for scrutiny by both the Secretariat of the Pacific Community (SPC) and the WCPFC's Scientific Committee (SC); • ISC, SPC and SC should be strongly encouraged to ensure that such an assessment is collectively undertaken in 2012; • This assessment should be undertaken in conjunction with that recommended for the Southwest Pacific striped marlin; and • To achieve and expedite the above, the Commission's attention is drawn to a need to clarify ISC's standing in respect of North Pacific striped marlin, as well as in relation to relevant provisions of the Convention and WCPFC Rules of Procedure	• Done • Done • Done
North Pacific albacore	• Note should be taken of the current situation regarding assessment of North Pacific albacore, particularly the independent review of the current North Pacific albacore measure by ISC; and • It may be worth considering that current North Pacific albacore measure be reviewed to ensure that it is able to actually restrain fishing mortality, particularly in light of past data shortcomings.	• Noted. Next assessment is planned in 2014 and will address these recommendations. • NC has initiated process to review CCM's implementation of the existing CMM
Pacific bluefin tuna	• Note should be taken of the current situation regarding assessment of Pacific bluefin tuna; and • WCPFC is encouraged to update its Pacific bluefin assessments, reduce Pacific bluefin fishing mortality to 2002/2004 levels and provide for monitoring of fishing mortality for age 0 to 3 fish.	• Current CMM 2012-06 addressed monitoring of juvenile fishing mortality. • ISC conducted full stock assessment in 2012 and SC reviewed in 2013. This may strengthen the measure.
North Pacific swordfish	• Note should be taken of the current situation regarding assessment of North Pacific swordfish; and the WCPFC is encouraged to update its North Pacific swordfish assessments in 2013 at the latest.	• According to 2010 stock assessment and 2013 projection, ISC advised that this stock is healthy.
5.6. Quality and provision of scientific advice	• Provide a mechanism to allow SC to request scientific information directly to ISC; • Clarify the respective roles of WCPFC's SC and ISC in providing advice to NC and SC. As the statutory WCPFC scientific advisory body, SC should lead endorsement of work done by the Commission's scientific advisors (see above); and • Subject to the above, the Commission is encouraged to clarify the role of ISC, and its associations with the Commission and SC, particularly in respect to direct exchanges of scientific information and advice;	• A mechanism was proposed through a revised memorandum of understanding (MOU) but rejected at WCPFC7. • Current mechanism is outlined in existing MOU between WCPFC and ISC. • The role should be clarified to ensure that the best scientific advice be provided to NC.

North Pacific striped marlin	• The Panel urges that a new assessment of the stock be done as a matter of priority; • Despite the measure 2010-01 is a positive step to reduce fishing mortality for the species, the panel noted that the stipulation of a proportionate reduction in paragraphs 4 and 5 of the measure makes it difficult to figure out what is the actual catch limit for the species. This measure, including eventual catch limits, shall be revised upon the results of the new assessment to ensure that fishing mortality for the species is compatible with Convention objectives	• North Pacific striped marlin stock assessment was completed in 2012 and SC provided advice to the Commission. ISC also made a projection in 2013 and SC reviewed. • The Commission will review and update the current CMM 2010-01 in the future.
North Pacific albacore	• Considering that the stock of North Pacific albacore has been assessed and is presently not overfished nor suffering overfishing (see Section 5.2), the present measure (2005-03), limiting the level of fishing effort to the one in 2005, despite old, seems to be adequate and commensurate with the status of the stock. • The Panel welcomes the independent review of the current ISC North Pacific albacore CMM, to ensure that fishing mortality is restrained in any future formulation of the measure.	• Noted • Noted
Pacific bluefin tuna	• The present status of the Pacific bluefin tuna stock is not clear from available documents, particularly with respect to specific biological reference points, including present fishing mortality in relation to F_{MSY} or $F_{0.1}$, for instance. This limitation makes it very difficult for the Panel to assess the status of the stock and the adequacy of current CMM; • It is noted that CMM 2010-04 will be reviewed by NC in 2012 based on new ISC stock assessment for Pacific bluefin tuna; • In respect of the above, the Panel notes that SC has repeatedly advised a reduction of Pacific bluefin tuna fishing mortality to 2002–2004 levels or below. In particular, the reduction of juvenile (0–3 year) fishing mortality has also been advised, and NC has been requested to monitor it; • The Panel urges the Commission to take account of the results of the new stock assessment and to develop biological reference points and clear harvest rules for this species as a matter of priority;	• ISC recently conducted stock assessment of Pacific bluefin tuna. Based on this assessment, NC and the Commission understand the status of Pacific bluefin tuna. • Done • NC has been taking care of this as a matter of priority • NC has been taking care of this as a matter of priority
North Pacific swordfish	• Although the North Pacific swordfish stock was assessed not to be overfished or suffering from overfishing, in 2009, the Panel encourages the Commission to consider advice offered by SC9 on the scheduled NC assessment of North Pacific swordfish in 2013.	• ISC Billfish Working Group is planned to complete updated North Pacific swordfish stock assessment in 2014.

Attachment J

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Northern Committee
Ninth Regular Session

Fukuoka, Japan
2-5 September 2013

WORK PROGRAMME FOR THE NORTHERN COMMITTEE

Work areas	Objectives	1-year tasks		
	2014-2016	2014	2015	2016
1. Northern stocks		Consider other management options than the existing management measures, if appropriate.		
a. Monitor status; consider management action	Review status and take action as needed for:[1] **North Pacific albacore** Tasks (A)Review members' reports on their implementation of CMM 2005-03 (1)Estimate the proportion of the total catch of albacore in the North Pacific Ocean (in the Convention Area, and/or across the entire North Pacific Ocean, as appropriate) that is effectively subject to the effort limits mandated in the CMM. (2) Determine how total effort across	Review the compiled members' reports and identify and rectify shortcomings	Review the compiled members' reports and identify and rectify shortcomings	Review the compiled members' reports and identify and rectify shortcomings

[1] In the event that the Commission, in accordance with paragraph 5 of Annex I of the Commission Rules of Procedure, adds additional stocks, such as the northern stock of striped marlin, to the list of stocks understood to be "northern stocks", this work programme will be revised to include periodic status reviews and consideration of management action for such stocks.

Work areas	Objectives	1-year tasks		
	2014-2016	2014	2015	2016
	those fisheries has changed from 2002 through 2012 through a review of members' reports of annual fishing effort by their vessels "fishing for" NP albacore fisheries. (B) Establish a precautionary approach-based management framework, including: (1) recommend appropriate reference points; (2) agreeing in advance to actions that will be taken in the event each of the particular limit reference points is breached (decision rules); (3) recommend any changes to CMM 2005-03.	Finalize Task (B) (1) and (2)	Recommend any changes to CMM 2005-03 (Task(B)(3))	
	Pacific bluefin tuna	Review reports from CCMs on their domestic management measures and trade. Obtain and review an updated assessment and establish a rebuilding program with interim target and limit levels as well as emergency measures in case of recruitment drop and, as appropriate, CDS.		
	Establish a precautionary-approach based management framework, including: (1) recommend appropriate reference points; (2) agreeing in advance to actions that will be taken in the event each of the particular limit reference points is breached (decision rules); (3) recommend any	Recommend new CMM in accordance with the rebuilding program.	Start consideration of Task (1) and (2).	

Work areas	Objectives	1-year tasks		
	2014-2016	2014	2015	2016
	changes to the rebuilding program. **<u>Swordfish</u>** Establish a precautionary-approach based management framework, including: (1) recommend appropriate reference points; (2) agreeing in advance to actions that will be taken in the event each of the particular limit reference points is breached (decision rules). **<u>Striped marlin</u>** (if agreed by the Scientific Committee and Commission).	Finalize interim management objective and reference points in light of ISC. Review implementation of applicable CMM.	Obtain and review a full assessment and consider appropriate management action.	
b. Data	Achieve timely submission of complete data needed for assessments, formulation of measures, and review of Commission decisions Consider systems to validate catch data	CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission Encourage submission to Commission of Pacific bluefin tuna, North Pacific albacore and North Pacific striped marlin data from all CCMs and make available to ISC	CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission Encourage submission to Commission of Pacific bluefin tuna, North Pacific albacore and North Pacific striped marlin data from all CCMs and make available to ISC	CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission Encourage submission to Commission of Pacific bluefin tuna, North Pacific albacore and North Pacific striped marlin data from all CCMs and make available to ISC
c. Scientific support	Provide support for scientific studies	Encourage voluntary contribution for NC's list of priority scientific projects		
2. Non-target, associated, dependent species				

Work areas	Objectives	1-year tasks		
	2014-2016	2014	2015	2016
a. Seabirds	Consider appropriate implementation of methods to minimize catch and mortality.	Review implementation of CMM-2012-07 in the Northern area	Review implementation of CMM-2012-07 in the Northern area	Review implementation of CMM-2012-07 in the Northern area
b. Sea turtles	Consider appropriate implementation of methods to minimize catch and mortality.	Review mitigation research results and consider management action	Review mitigation research results and consider management action	Review mitigation research results and consider management action
c. Sharks	Consider appropriate implementation for CMM-2010-07 in the Northern area.	Review scientific advice from ISC, if any, and consider management options on two shark species (blue shark and mako shark).	Review scientific advice from ISC, if any, and consider management options on two shark species (blue shark and mako shark).	Review scientific advice from ISC, if any, and consider management options on two shark species (blue shark and mako shark).
3. Review effectiveness of decisions	Annually review effectiveness of conservation and management measures and resolutions applicable to fisheries for Northern stocks	Review effectiveness of North Pacific albacore measure (CMM 2005-03), including member's reports on their interpretation and implementation of fishing effort control.	Review effectiveness of North Pacific albacore measure (CMM 2005-03), including member's reports on their interpretation and implementation of fishing effort control.	Review effectiveness of North Pacific albacore measure (CMM 2005-03), including member's reports on their interpretation and implementation of fishing effort control.
		Review effectiveness of Pacific bluefin tuna measure. (CMM2012-06 or its succeeding measure)	Review effectiveness of Pacific bluefin tuna measure. (CMM2012-06 or its succeeding measure)	Review effectiveness of Pacific bluefin tuna measure. (CMM2012-06 or its succeeding measure)
4. ROP(Paragraph 9, Attachment C of CMM2007-01)		Review implementation of ROP for fishing vessels operating in north of 20N.	Review implementation of ROP for fishing vessels operating in north of 20N.	Review implementation of ROP for fishing vessels operating in north of 20N.
5. VMS		Review implementation of VMS for fishing vessels operating in north of 20N.	Review implementation of VMS for fishing vessels operating in north of 20N. .	Review implementation of VMS for fishing vessels operating in north of 20N.
6. Cooperation with other organisations				
a. ISC		Consider action to support ISC.	Consider action to support ISC.	Consider action to support ISC.
b. IATTC	Following Article 22.4, consult to facilitate consistent management	Have consultation to maintain consistent measures for NP	Have consultation to maintain consistent measures for NP	Have consultation to maintain consistent measures for NP

Work areas	Objectives	1-year tasks		
	2014-2016	2014	2015	2016
	measures throughout the respective ranges of the northern stocks	albacore and northern Pacific bluefin tuna	albacore and northern Pacific bluefin tuna	albacore and northern Pacific bluefin tuna