Annex 12

REPORT OF THE SHARK WORKING GROUP WORKSHOP

International Scientific Committee for Tuna and Tuna-like Species
in the North Pacific Ocean

June 3-10, 2014
Keelung, Chinese Taipei

1.0 INTRODUCTION

The Shark Working Group (SHARKWG or WG) of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) held an 8-day meeting at the National Taiwan Ocean University in Keelung, Chinese Taipei, June 3-10, 2014. The primary goal of the workshop was to complete the updated north Pacific blue shark stock assessment. A secondary objective was to discuss plans for the upcoming shortfin mako shark assessment.

Suzanne Kohin, SHARKWG Chair, opened the meeting. Participants included members from Chinese Taipei, Japan, and United States of America (USA), as well as scientists from the Secretariat of the Pacific Community (SPC) who participated remotely (Attachment 1). Dr. Kwang-Ming Liu welcomed SHARKWG participants and wished everyone a productive meeting and pleasant visit to Keelung.

2.0 DISTRIBUTION OF MEETING DOCUMENTS

Six working papers were distributed and numbered (Attachment 2). Several oral presentations were also made during the meeting. All papers were approved for posting on the ISC website where they will be available to the public.

3.0 REVIEW AND APPROVAL OF AGENDA

The draft meeting agenda was reviewed and adopted with minor revisions (Attachment 3).

4.0 APPOINTMENT OF RAPPORTEURS

Rapporteuring duties were assigned to K. Piner, S. Ohshimo, T. Sippel, H. Hsu, C.-P. Chin, K. Yokawa, K.-W. Liu, W.-P. Tsai. The approved agenda (Attachment 3) indicates the rapporteurs for each item in parentheses.

5.0 REPORT OF THE SHARKWG CHAIR

The Chair of the SHARKWG provided summaries of the January SHARKWG meeting and ISC sponsored Shark Age and Growth Meeting held in La Jolla, CA, USA. Participants of the SHARKWG meeting included members from Chinese Taipei, Japan, United States of America (USA), Inter-American Tropical Tuna Commission (IATTC), and Secretariat of the Pacific Community (SPC). The group focused on reviewing the abundance indices and other input data and biological assumptions to use for the blue shark assessment update. Plans were made to complete the stock assessment based on both a Bayesian Surplus Production (BSP) model and a Stock Synthesis (SS) model that would provide complementary information to determine the north Pacific blue shark stock status.

The group of age and growth specialists from Chinese-Taipei, Japan, Mexico and the U.S. reviewed progress on age and growth studies of blue and shortfin mako sharks and discussed collaborative studies initiated at the first ISC Shark Age and Growth Workshop. The group focused on addressing uncertainties regarding shortfin mako age and growth given that the ISC SHARKWG will be conducting a shortfin mako assessment in the coming year. There are a few hypotheses about band pair deposition rates in shortfin makos and only one validation study for juvenile shortfin makos in the North Pacific. The group came up with a work plan and timeline to provide the ISC SHARKWG with updated information by their fall shortfin mako data meeting.

6.0 REVIEW OF OUTSTANDING ASSESSMENT DATA AND PARAMETERIZATION ISSUES (Hsu, Tsai)

Standardization of blue shark catch per unit effort in the North Pacific Ocean based on SPC held longline observer data for use as an index of abundance. ***ISC/14/SHARKWG-2/04***

Summary:

This report presents a Catch Per Unit Effort (CPUE) series of blue shark (*Prionace glauca*) taken in longline fisheries in the North Pacific, based on observer data held by the Secretariat of the Pacific Community - Oceanic Fisheries Program (SPC-OFP). This is used to develop a candidate time series of standardised CPUE for use as an index of abundance in an updated stock assessment.

This specific analysis was motivated by: 1) the Scientific Committee concern that the primary index of abundance in the 2013 assessment was biased due to inadequate accounting of targeting practices documented in recent studies, and 2) the recent provision by the US of updated observer data for the Hawaiian fleet that filled data gaps in SPC holdings. Previous studies have analyzed observer data for blue shark CPUE in the North Pacific (Clarke et al. 2011, Walsh and Teo 2012), however this is the first study to analyze the combination of the regional observer program dataset.

The sections of this report include a) a summary of the exploratory data analysis of blue shark (BSH) CPUE in the north Pacific ocean, b) a brief presentation of the method used to standardize the CPUE trend for blue sharks, c) model diagnostics, and d) a discussion of the quality of the available data and the relative strengths and weaknesses of the standardization procedures.

Initial data analysis based on boxplots and linear models indicated that SST, 5˚ latitudinal band and month were important factors in explaining the variation in observed CPUE. The standardized CPUE series for blue sharks in the north Pacific based on SPC held observer data

covering the years 1993 - 2009. The negative binomial approach was used to standardize longline observer data. The step plot shows that the inclusion of SST had the most impact on the trajectory.

Discussion:

SPC provided the diagnostic results of their CPUE standardization. There were still some concerns raised by WG regarding the low coverage rate of the observed sets and some residual plots that may reflect a problem with the fitting. It was noted that the SPC coverage ratio is relatively low compared to that for the Hawaii fishery. It was also noted that the data represent fewer than 3000 sets after removing the Hawaii data yet the model tried to estimate greater than 300 parameters. An additional table to show the historical observation coverage ratio by flag would be useful in the future. It was acknowledged that the index had already been accepted for use in the assessment, so the review here was to make sure the content in the WP is sufficient to support the assessment report and an external desktop review. **The WG requested that SPC add a column to table 4 to show the standardized CPUE value in addition to the CPUE/max values shown.**

Hawaii longline blue shark catch rate standardizations: a summary and recompilation of information submitted to the ISC SHARKWG in 2011-2014. ***ISC/14/SHARKWG-2/05***

Summary:

This document consists primarily of information previously submitted to the SHARKWG, with a blue shark *Prionace glauca* catch rate standardization analysis from 2012, an updated analysis provided in January 2014, and a new addendum to the latter document. This document is provided in response to inquiries from the SHARKWG chair regarding previous work about catch rate standardizations for blue shark in the Hawaii-based pelagic longline fishery. The inquiries questioned data quality, use and preparation, statistical accuracy and validity, and conformity to appropriate standards of scientific rigor and integrity.

Discussion:

It was noted that the data in the table in the WP differ slightly from the assessment data received from the US scientists in January. **The authors were requested to review the table and provide a revised WP that reflects the final assessment data.**

Age and sex specific natural mortality of the blue shark (*Prionace glauca*) in the North Pacific Ocean. ***ISC/14/SHARKWG-2/03***

Summary:

An understanding of natural mortality for blue sharks in the North Pacific Ocean was motivated by a desire for age and sex specific natural mortality estimates for a length based integrated stock assessment model. The SHARKWG recognized the potential to develop age and sex-specific natural mortality estimates for blue shark (*Prionace glauca*) in the North Pacific Ocean based on published literature and documents submitted to the SWG. Sex specific mortality-at-age for north Pacific blue shark were estimated based on length-at-age from two different sources in the Pacific, Hsu et al. (2011) and Nakano (1994).

Discussion:

Although WG wondered about why the natural mortality (based on Hsu et al. 2011 information) estimated from Chen and Watanabe (1989) showed a U-shape pattern, these curves were not used in the BSP or SS3 analysis. Some members suggested WG should also try the constant Natural mortality estimation methods, e.g. Hoenig (1983)'s method. **After some discussions, WG confirmed that the age-specific natural mortality estimates provided in the paper were the best to use in the stock assessment model.**

7.0 REVIEW OF NORTH PACIFIC BLUE SHARK ASSESSMENTS

Bayesian Surplus Production (BSP) Modeling

Stock assessment and future projections of blue shark in the North Pacific Ocean by Bayesian surplus production model using revised data. ***ISC/14/SHARKWG-2/01***

Summary:

This working paper reports results of the revised stock assessment for north Pacific blue shark using a state-space Bayesian Surplus Production (BSP) model. In this assessment, five CPUE indices, Japan offshore shallow longline CPUE for 1976 to 1993 (JE), Japan offshore and distant water logline CPUE for 1994 to 2010 (JL), Hawaii deep-set longline CPUE (HW), SPC longline CPUE (SP) and Taiwan large-scale longline CPUE (TW), were used to account for a full range of uncertainties associated with stock dynamics. Catch data for the assessment period, 1971-2011, were used. In assessment, we set up eight reference cases that the model was fitted to either each of four indices (JL_Ref, HW_Ref, SP_Ref and TW_Ref) alone or the combination of one of the four with JE index (JEJL_Ref, JEHW_Ref, JESP_Ref and JETW_Ref).

Discussion:

The WG discussions centered on two issues:

1) The WG noted that the issue of the post model pre data (PMPD) runs containing little or no probability of $B<B_{msy}$ was a concern expressed during the Scientific Committee (of the WCPFC). The WG investigated the causes of this with additional model runs adjusting the priors on α, r and K and changing of the catch trajectory. A model with a flat catch series of average historical catch and a tighter prior on *K* produced a PMPD with 50% probability of $B_{current}<B_{msy}$. However, the WG was unable to produce a PMPD that included much probability of being overfished given the current catch series. **After the investigation (which included input from the model developer), the WG concluded that although this issue remains an area for future research, the results based on the use of data should accurately reflect the dynamics.**
2) The WG considered the results from a retrospective analysis of the BSP model (presentation only). The retrospective analysis was completed for all possible combinations of alternative CPUE series. A model fit using the Taiwanese CPUE showed the smallest retrospective change in absolute abundance, and a model using the SPC observer CPUE showed the largest. Hawaii and SPC CPUE had the clearest retrospective patterns. The WG was unable to determine if the retrospective analysis could be used to judge the reliability of the different indices as measures of stock relative abundance. However, **none of the retrospective patterns were judged to be of enough concern to exclude the model results from consideration.**

The WG noted that the model structure was the same as described in the January workshop report except that a process error originally set with a SD=0.05 was changed to SD= 0.07 to help resolve some model conflict between data series. **The WG agreed to use the results of the BSP modeling to draw conclusions about stock status. The model run using JPN early and late CPUE indices was chosen as the reference case model as proposed in WP01. Furthermore, the WG agreed to use the results from all sensitivity runs to characterize uncertainty**.

Stock Synthesis (SS) Modeling.

Stock assessment of Blue Shark in the North Pacific Ocean using Stock Synthesis.
ISC/14/SHARKWG-2/02

Summary:

This paper presents an updated age-based statistical catch-at-length stock assessment of blue shark in the North Pacific Ocean (NPO). The assessment uses the stock assessment model and computer software known as Stock Synthesis (SS3). The main differences between the present assessment and that presented to SC9 are 1) the inclusion of revised CPUE series; 2) changing the time period of the model to 1971-2012 to utilize earlier catch estimates and later indices of abundance; 3) more structured examination of exploitation levels prior to the start time of the model; and 4) sex-specific estimates of natural mortality-at-age based on growth studies from the north Pacific. Due to uncertainty in the input data and life history parameters, multiple models were run with alternative data/parameters. These models with different combinations of input datasets and structural model hypotheses (axes of uncertainty) were used to assess the plausible range of stock status for blue shark. Reference case model(s) are presented here for the purpose of assessing model performance. It is expected that the most appropriate model run(s) upon which to base management advice will be determined by the WCPFC Scientific Committee considering the recommendations from the ISC Plenary.

Discussion:

The WG noted that the primary axis of uncertainty (regarding stock status) in the stock assessment was the assumption of the shape of the Low Fecundity Spawner-Recruit (LFSR) relationship. The magnitude of the initial equilibrium catch assumption was also important on stock status conclusions. The WG noted that the sigma-R (recruitment deviation penalty) used in the modeling was quite small implying little recruitment variability or little information on recruitment in the data. **The WG recommended assuming a greater recruitment variability (0.3) than presented as the reference case in WP02 (0.1) to be more biologically realistic and to allow extra freedom to better fit the CPUE data.** Because this larger variance will cause a slightly larger bias correction, the WG recommended that the maximum bias adjustment setting in the model be used to compensate for this issue. The choice of recruitment penalty had little impact of model results.

The WG noted that the SS model used CPUE and catch data through 2012, which was not the WG agreement based on discussions over email in April 2014. The WG had recommended against using 2012 data as catch estimates were not available for the majority of fleets. A model (the reference case) was run using only the data through 2011 and the same model specifications provided in the WP, and results showed that estimated dynamics were not influenced by the inclusion of 2012 data (for the reference case model specification see below). **The WG**

concluded that the models using 2012 data were sufficient for making stock conservation advice.

The WG discussed the approach to characterize stock status and uncertainty in stock status using the results presented. The WG considered if stock status should be presented as a probabilistic statement or based on a single best estimate with uncertainty. Although a probabilistic approach was thought to be the more realistic method, the WG was unable to develop the probabilistic stock status determination due to the inability to assign weights to the many model runs. **Therefore, the WG decided to use all 1080 runs to describe the range in uncertainty and a single reference case model to characterize stock dynamics and status.**

The reference case model was specified with these key settings: 1) length composition downweighted to account for observation error (not catch weighted composition), 2) low fecundity spawner recruit with moderate compensation (beta=2 and S_frac=0.3), 3) initial equilibrium catch =40,000 mt, 4) mortality based on growth by Nakano, 5) Sigma-R =0.3, and 6) Japanese early and Japanese late CPUE used to provide stock trends.

The WG concluded that it would use results of the SS models in combination with the BSP results to characterize stock status. Stock status and conservation advice will be based on 2011 estimates. The WG noted that model results from both the BSP and SS models were relatively consistent regarding stock status.

8.0 SHORTFIN MAKO SHARK INFORMATION GATHERING

Overview of catch, size and catch rate data for shortfin mako shark *Isurus oxyrinchus* from the Hawaii-based pelagic longline fishery: 1995-2012. ***ISC/14/SHARKWG-2/06***

Summary:

This working paper (WP) presents preliminary statistical information about catch, size, and catch per unit of effort (CPUE) for shortfin mako shark caught by the Hawaii-based pelagic longline fishery in 1995-2012. The data come from the records of the Pacific Islands Regional Observer Program (PIROP) submitted to the Pacific Islands Fisheries Science Center (PIFSC). This WP informs the Shark Working Group of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) about the data available at the PIFSC. Results included a description of spatial and temporal distribution of fishing effort, catch, size frequency, and annual mean nominal CPUE. Overall, shortfin mako size frequency data showed no significant temporal trends in both the deep-set and shallow-set sector. The deep-set sector annual mean nominal CPUE between 1995 and 2012 showed some variability along the years, but the values remained relatively stable in general. For the same period, the mean nominal CPUE for the shallow-set sector showed a much higher variability than the deep-set sector; it increased substantially after the re-opening of the sector in 2004, and then decreased continuously over the past decade.

Discussion:

It was suggested that further analyses examine the effects of 1) observer coverage ratio change at 2000, 2) uses of circle hooks and 3) regulation of the prohibition of landing of whole sharks in Hawaii in the recent years. **It was not clear if the size and sex data reported was for all catch or only the retained sharks. The authors will report back on that issue.**

It was noted that the hooks used changed with regulations imposed in the shallow-set fishery in 2004. Some studies have looked at the effect of hook type on shark catch rates but the results are inconclusive. **Hook type (circle vs. J or tuna hooks) may not influence the catch rate of sharks. The WG should compile the studies in order to have a better understanding of the potential effects.**

Other discussion on shortfin makos:

ISC SHARKWG chair announced that the final data preparatory meeting for shortfin mako will be in Mexico in November or December, and the stock assessment meeting will be held before the end of April 2015. Before the Mexico data prep meeting, the Chair suggested that the WG discuss a shortfin mako assessment workplan at the one day meeting in July, and follow up in late summer with a 1-2 day webex meeting in order to advance progress on data prep. In the fall data preparatory meeting, the catch, discard and CPUE of shortfin mako shall be reported. After that, the stock assessment of shortfin mako will be concluded in the spring and the assessment report prepared for the 2015 ISC Plenary. The ISC Chair proposed that the stock assessment meeting of shortfin mako could be held in China as the Chinese delegation welcomes a SHARKWG meeting there. The SHARKWG acknowledged the generous offer of China to host a SHARKWG meeting, but for the assessment meeting, there will be specific technological needs for data sharing and analysis and the expectation that many Japanese, Taiwanese and US scientists need to attend, therefore it is less practical to have the assessment meeting in China. The Chair will follow up with China to plan a future meeting there.

Taiwanese scientists proposed that several workshops on biology of shortfin mako may be necessary, because the biological characteristics of shortfin mako for the stock assessment are not well understood. The proposal was considered important, but scheduling could be challenging for a several day onsite meeting. The Chair will propose a webex meeting or a short subgroup meeting to be held in conjunction with one of the other scheduled meetings. Japanese scientists requested that the workshop meeting is separated from data preparation meeting. There are also some concerns that the group has not identified what the highest priorities are and what can be addressed before the next assessment. Age validation is needed to use a typical growth curve, but validation for all size classes and regions is not likely before the fall meeting. Several growth scenarios may need to be considered when conducting the assessment.

The WG proposed that the analysis of spatial structure of shortfin mako will be necessary and, as has been done in the BILLWG, should be done first to understand the stock structure. If spatial patterns are observed, fishing selectivity will need to be examined by area. Therefore, the size and sex data should be compiled by members of the working group before the data preparation meeting. Each country should submit these data so the WG can collaboratively analyze and make maps of shortfin mako distribution in support of the assessment. **It was agreed that the spatial pattern by size and sex is important and will contribute to defining area stratification, if needed, for the assessment. WG members will work to share data and try to provide such information during a webex meeting or by email before the fall data prep meeting.**

Taiwan and Japan are planning PAT-tag studies for shortfin mako in the winter season in the Northwest Pacific. PAT-tag studies for shortfin mako have also been conducted in the waters off California. Analysis of behavior of shortfin mako will be valuable for assessing population dynamics.

Other biological information of shortfin mako were discussed. It was suggested that the shark WG should discuss the biological uncertainty of shortfin mako shark, including the reproductive cycle. It was also suggested the SHARKWG should discuss the size distribution and selectivity differences among fisheries for shortfin mako shark in the upcoming July or November meeting.

9.0 ROUTINE ASSIGNMENTS FOR THE ISC PLENARY

The SHARKWG Chair reminded WG members to begin preparing catch tables of total retained landings of shortfin mako and blue shark for the Plenary. A spreadsheet of last year's submission will be circulated in order for the national correspondents to provide their data.

10.0 FUTURE SHARKWG MEETINGS

A tentative schedule for upcoming WG meetings was adopted:

July 12, 2014 Taipei, Chinese Taipei	Finalize blue shark stock assessment information for the Plenary; conduct work for the Plenary; finalize shortfin mako assessment work plan
Late summer, 2014 1-2 day webinar	Review progress and assignments on shortfin mako data prep and biological inputs
Fall/Winter 2014 Location TBD, Mexico	Shortfin mako data prep meeting
Spring 2014 Location TBD	Shortfin mako assessment meeting

11.0 OTHER MATTERS

No other matters were discussed.

12.0 CLEARING OF REPORT

The Report was reviewed and the content provisionally approved by all present. The Chair will make minor non-substantive editorial revisions and circulate a revised version to all WG members shortly. The report will be finalized in time for the ISC Plenary in July.

13.0 ADJOURNMENT

The Chair expressed her gratitude to Dr. Kwang-Ming Liu and his staff, all the Taiwanese participants, and the Taiwan Fisheries Agency for their assistance with meeting logistics and for their incredible hospitality. The delicious and plentiful food and local excursion were exceptional! The Chair thanked all participants for attending and for their hard work resulting in

a carefully conducted, collaborative assessment. She indicated that she will be in touch regularly over the coming month to finalize the assessment report and looks forward to seeing many of the participants in July at the SHARKWG and Plenary meetings in Taipei.

The meeting was adjourned at 15:54 on June 10, 2014.

14.0 LITERATURE CITED

Chen, S., and S. Watanabe. 1989. Age dependence of natural mortality coefficient in fish population dynamics. Nippon Suisan Gakkaishi 55(2): 205–208.

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Hoenig, J.M. 1983. Empirical use of longevity data to estimate mortality rates. Fishery Bulletin. 82: 898-903.

Hsu, H. H., S. J. Joung, G. T. Lyu, K. M. Liu, and C. C. Huang. 2011. Age and growth of the blue shark, *Prionace glauca*, in the northwest Pacific. ISC/11/SHARKWG-2/INFO02. 20 pp.

Nakano, H. 1994. Age, reproduction, and migration of blue shark in the North Pacific Ocean. Bull. Nat. Res. Inst. Far Seas Fish. 31: 141-256.

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Attachment 1: List of Participants

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Attachment 2. Meeting Documents

WORKING PAPERS

ISC/14/SHARKWG-2/01	Stock assessment and future projections of blue shark in the North Pacific Ocean by Bayesian Surplus Production model using revised data. Norio Takahashi, Minoru Kanaiwa, Seiji Ohshimo, Tim Sippel, and Kotaro Yokawa (norio@affrc.go.jp)
ISC/14/SHARKWG-2/02	Stock assessment of Blue Shark in the North Pacific Ocean using Stock Synthesis. Joel Rice, Shelton Harley, and Mikihiko Kai (joelr@spc.int)
ISC/14/SHARKWG-2/03	Age and Sex Specific Natural Mortality of the Blue Shark (*Prionace glauca*) in the North Pacific Ocean. Joel Rice and Yasuko Semba (joelr@spc.int)
ISC/14/SHARKWG-2/04	Standardization of blue shark catch per unit effort in the North Pacific Ocean based on SPC held longline observer data for use as an index of abundance. Joel Rice and Shelton Harley (joelr@spc.int)
ISC/14/SHARKWG-2/05	Hawaii longline blue shark catch rate standardizations: a summary and recompilation of information submitted to the ISC SHARKWG in 2011-2014. William Walsh and Gerard DiNardo (Gerard.DiNardo@noaa.gov)
ISC/14/SHARKWG-2/06	Overview of catch, size, and catch rate data for shortfin mako shark *Isurus oxyrinchus* from the Hawaii-based pelagic longline fishery: 1995-2012. Felipe Carvalho and Gerard DiNardo (felipe.carvalho@noaa.gov)

INFORMATION PAPER

ISC/14/SHARKWG-2/INFO01	Demographic analysis of the shortfin mako shark, *Isurus oxyrinchus*, in the Northwest Pacific using a two-sex stage-based matrix model. Wen-Pei Tsai, Chi-Lu Sun, Andre´ E. Punt, and Kwang-Ming Liu (kmliu@mail.ntou.edu.tw)
ISC/14/SHARKWG-2/INFO02	The effects of Sigma-R on the stock assessment results of North Pacific Blue Shark. Mikihiko Kai, Shigehide Iwata, Minoru Kanaiwa, Seiji Ohshimo, and Kotaro Yokawa (kaim@affrc.go.jp)

Attachment 3. Meeting Agenda

SHARK WORKING GROUP (SHARKWG)

INTERNATIONAL SCIENTIFIC COMMITTEE FOR TUNA AND TUNA-LIKE SPECIES IN THE NORTH PACIFIC

INTERCESSIONAL WORKSHOP AGENDA

June 3-10, 2014

National Taiwan Ocean University (NTOU)
R.307 Building of College of Life Sciences
2 Pei-Ning Road, Keelung, Taiwan

Meeting Hours: 09:30-17:00

There will be a reception sponsored by the Taiwan Fishery Agency the evening of June 3 at the Evergreen Hotel.

1. Opening of SHARKWG Workshop
    a. Welcoming remarks
    b. Introductions
    c. Meeting arrangements
2. Distribution of documents and numbering of Working Papers
3. Review and approval of agenda
4. Appointment of rapporteurs
5. Summary of the January 2014 Workshop and current meeting objectives
6. Review of outstanding assessment data and parameterization issues (Hsu, Tsai)
    a. SPC CPUE index
    b. Hawaii CPUE index
    c. Natural Mortality
7. Review of North Pacific Blue Shark assessments
    a. Bayesian Surplus Production modeling of north Pacific blue shark (Piner, Liu)
    b. Stock Synthesis modeling of north Pacific blue shark (Sippel, Yokawa)
        i. Examine model diagnostics and conduct further analyses if needed
        ii. Compare models and select consensus run(s) for best scientific information on north Pacific blue shark
        iii. Finalize model results, sensitivities and projections, retrospective analysis
        iv. Formulate conservation information considering model uncertainty

v. Develop/finalize assessment report (Report deadline of July 1) develop outline and identify individuals to help finalize the report
vi. Finalize all supporting WG papers for assessment time series

8. Shortfin mako shark information gathering (Ohshimo, Chin)
    a. Review life history matrix, identify information gaps and high priority work assignments
    b. Review fishery metadata table
    c. Discuss fishery and size data availability
    d. Discuss preliminary model choices
    e. Establish data submission templates and deadlines
    f. Develop shortfin mako shark assessment workplan
9. Routine assignments for the ISC Plenary
    a. Catch tables
10. Future SHARKWG meetings
11. Other matters
12. Clearing of report
13. Adjournment