

**Annex 12*****STATISTICAL WORKING GROUP***

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

16-19 July 2010  
Victoria, B.C. Canada

**1.0 WELCOME AND INTRODUCTION**

Sui-Kai Chang, Chairman of the ISC Statistical Working Group (STATWG), opened the meeting and welcomed participants from Canada, Chinese-Taipei, Korea, Japan, Mexico, U.S., and WCPFC. He noted that ISC is an important international organization for tuna research which should have a comprehensive database. In order to achieve this goal the following objectives in addition to the regular agenda items were detailed: 1. Convene a metadata workshop to collect metadata from each member and unify the extent and contents of database; 2. Begin development of complete ISC data inventory; 3. Review the data reporting protocol.

The Chairman thanked John Holmes for hosting the meeting in Victoria and Izumi Yamasaki, the new ISC Database Administrator (DA), for her hard work in preparing for the meeting. Participants introduced themselves.

**2.0 APPOINTMENT OF RAPORTEURS**

The following participants were appointed as rapporteurs:

Data Inventory and Holdings: Darryl Tagami

Review of data requirements: Kevin Piner

Review of expanding database: John Childers

Sarah Shoffler was assigned to rapporteur the remainder with help from Darryl Tagami and to organize the rest of the material.

**3.0 ADOPTION OF AGENDA**

The group reviewed the agenda (Attachment 1) and the tables (Attachment 2) and revised the agenda. The Chairman reviewed the schedule: The metadata workshop would occur during the afternoon of July 16 and proceed through the first half of July 17. Then the rest of the STATWG agenda items would be addressed.

**4.0 DATA INVENTORY AND HOLDINGS**

i. *Review of catalogue and inventory* (Tables 1, 2 and 3)

The Chairman reviewed the purposes of tables 1A and 1B which were to review ISC's data catalogue and make future work plans and suggestions for improvements to the database.

Table 1A is an inventory of category I catch data - the total catch available in the ISC database. One major issue with these data was noted: The ISC Operations Manual Data Protocol stipulates that each ISC member submit Category I data: annual catch and total annual effort from the Pacific Ocean above the equator for each year and for each species caught. Some members have provided only some of the historic data or they might have provided the data to working groups instead of to the DA, and so are not available in the current ISC database.

The ISC DA will look at the WG tables to collect data for key ISC fish stocks. For the other stocks, the DA will work with individual data correspondents to either provide any still missing data or record why they are not included (e.g. they do not exist).

The ISC database may have different data than the working groups; Working group datasets may include data from non-ISC Members, may not include all available years, and may have more detailed data (in terms of fisheries and temporal-spatial structure) or data from outside the ISC area. The ISC database includes aggregated data submitted by Members according to the ISC data reporting protocol. This should be documented in stock assessments and the DA will work with the data correspondents and working groups to make this difference explicit in the database.

Prior to the meeting, the Chairman provided each Member with an inventory of its category I data. Comments were solicited for this summary from the data correspondents.

Table 1B is an inventory of the total effort by country, gear and year each Member has contributed to the ISC database. Missing parts of historical data is also an issue and members will work with the DA to provide the missing data. The Chairman pointed out additional issues with (a) covered area, (b) vessel size, and (c) vessel status in the data. These issues were clarified from the ~~Operations Manual~~ Data Reporting Protocol: total nominal effort in numbers of “active vessels” (vessels which actually made catch that year) fishing should be reported by fishery, gear and “vessel size category” for fisheries of key ISC species in the “North Pacific Ocean”.

Table 2 is a catalog and an inventory for category II data by member, species and gear in the ISC database. The ISC DA will contact members for historical data. Some species appear in this table for category II but are not in category I data, and vice versa. This means that some Members catch some species for which they are not reporting total annual catch. They are all bycatch species and the group decided to keep the status as they are at this stage.

Table 3 lists each ISC Member’s category III data in the ISC database by member, species and year. The Chairman listed two issues with this data: (1) Not all historical data are in the database, and (2) Some size data are provided by weight and some by length, or no metadata on size are included at all. Not all size data for ISC species of interest are in the database, even if the category I or II data had been provided by members. The DA will work with the data correspondents to clarify these issues and provide missing data, where appropriate.

Inconsistency in the use of names or codes for gears and species was also pointed out as an important issue in the three Tables. This issue was further addressed by the Metadata Workshop.

In the future, ISC will provide an inventory annually and the group was asked if the current format was appropriate for this exercise. It was pointed out that the current formats reference the data inventory formats of SPC and IOTC. There was a suggestion that sample size should be included in database.

ii. *Comparison of data holdings by ISC and WCPFC (Table 4)*

The group was asked to review Table 4 which is a first effort to compare category II and III data holdings of ISC and WCPFC by species and gear for HMS fisheries north of the equator for albacore tuna, striped marlin, Pacific bluefin tuna, and swordfish. The WCPFC data inventory for category II and III data was provided by SPC which manages the WCPFC database under contract, and included information for northern stocks only. In general, for the large-scale fisheries, WCPFC has more data than ISC and, for the small-scale fisheries, ISC has more data than WCPFC.

It was noted that some members have submitted the data to working groups rather than to the DA and so the data holdings by the ISC in the table is not complete yet. John Childers offered to provide the working group catch tables and data submission files for category I, II, III submitted previously to 2006 by August 1, 2010. The DA will work on this data to produce a more complete inventory before WCPFC/SC meeting in August. It was agreed to provide this revised table the ISC Chairman by September 15, 2010, and to provide the final table again when the above mentioned missing historical data from members were recovered. The data gaps between ISC and WCPFC will be identified in the future.

It was also noted that there is a discrepancy between data in WCPFC holdings in Table 4 and available data in WCPFC Report (2009). It was noted that it would be helpful for a WCPFC or SPC technical person to attend the ISC meetings. Since Table 4 does not include category I data, it was agreed that ISC STATWG should request the category 1 data holdings from the WCPFC.

**5.0 REVIEW OF DATA REPORTING PROTOCOL (including Web-submission) (Inf-1) AND MEMBER PERFORMANCE (Report-card) (Table 5)**

*5.1 Data Reporting Protocol*

The STATWG was asked to review draft revisions to the data reporting protocol, which were intended to clarify it, and to make suggestions or a recommendation to the plenary. Significant revisions include language indicating that the ISC database does not retain anything other than categories I-III data; that category I, all fleet-combined category II data, and all samples-combined category III are public domain; and that all categories I-III data are to be submitted to the DA. The plenary will review revisions to the entire ISC Operations Manual of which the revised data reporting protocol will be a part. The STATWG provided revisions which will be included in the version the plenary will review.

*5.2 Member performance*

The group reviewed a member performance report card for data reporting. Current performance is based on whether data of a category has been submitted or not. This is a first step and further discussion will be needed in the next STATWG whether to consider if the submitted data are

complete (e.g., all species data are submitted) or not. Mexico explained its submission of marlin data to BILLWG and requested that its performance be changed from NA (not available) to Good (submitted before July 1). A revised report card is attached as (Attachment 4).

## **6.0 IDENTIFICATION OF DATA ITEMS AS PUBLIC DOMAIN FOR PUBLISHING IN ISC WEBSITE**

Category I data submitted to ISC are considered public domain. If the revised Data Reporting Protocol is adopted in the plenary, then all fleets combined category II and all samples combined category III data will become public domain.

## **7.0 REVIEW OF DATA REQUIREMENTS FOR STOCK ASSESSMENT AND FISHERY MONITORING (RAPPORTEUR: K. PINER)**

Species Working Groups reported on availability, timeliness and problems with data in conducting their work.

*Billfish*- The Billfish WG Chairman reported that a complete inventory of billfish catch is needed. The comparison of the ISC and WCPFC catch databases will allow the Billfish WG to more thoroughly investigate available WCPFC data for possible future use. In addition to catch, better biological (e.g. size and sex distribution of the catch) and life history (e.g. growth and maturity schedules) information is also needed. The Biological Sampling Plan (BSP) presented to ISC9 was designed to address this issue.

### Discussion:

It was noted that all stock assessment WGs have had good cooperation on inventories of catch and biological data with the IATTC because of its participation at ISC WG meetings. To further coordination with the WCPFC, it was proposed that a joint meeting of WCPFC, IATTC and ISC statistic WG Chairman be held at the upcoming 6<sup>th</sup> regular session of the Scientific Committee (SC) in Tonga. The WCPFC representative volunteered to coordinate this meeting.

*Albacore*- The Albacore WG Chairman reiterated the issues outlined by the Billfish WG (importance of complete catch, biological and life history information). Furthermore, it may be necessary to follow up on the progress of the implementation of the albacore sampling and BSP programs.

### Discussion:

It was noted that NC requested the WCPFC secretariat arrange for administrative funding support for the ISC, for data administration, website administration, albacore sampling and BSP. All participants agreed that the albacore and BSP programs were needed to fill the biological and life history data gaps.

*Pacific Bluefin Tuna*- The Pacific Bluefin Tuna WG Chairman reiterated that unreported catch from some ISC member nations is an uncertainty in the current stock assessment. In addition, some non-ISC members may also have PBF catch that is not included in the WG catch table.

**Discussion:**

The STATWG advised that the PBFWG Chair contact the WCPFC directly for a catch table of PBF by country (data request form). The STATWG Chair will assist in this request if necessary.

**8.0 REVIEW OF EXPANDING DATABASE****8.1 *Historical fishery data rescue***

Pacific bluefin tuna data has been collected back to WWII; the quality of data is under examination. Albacore data (catch and metadata) has been collected for the US and Canadian troll fisheries. The BILLWG has obtained some Spanish data for swordfish.

**8.2 *Archiving metadata***

A metadata workshop was convened to discuss this issue. Results of the workshop are contained in Attachment 5. The STATWG approved and adopted the metadata workshop report including the four recommendations of the metadata workshop.

**8.3 *Incorporating fishery bycatch data***

STATWG 2009 developed a table for Members to submit bycatch data. This table was to be discussed in BCWG in 2010, and the BCWG postponed the discussion until the future of BCWG is determined in plenary. No further discussion was made in this STATWG.

**8.4 *Pacific fishery catch data for key ISC stocks***

Albacore catch was obtained from SPC and have been incorporated in the albacore WG database.

**9.0 REVIEW OF ISC DATA MANAGEMENT FUNCTIONS AND STATWG PERFORMANCE**

The ISC DA responsibilities agreed to by ISC9 were reviewed. The group discussed making the responsibilities consistent with the data reporting protocol as well as other changes to the responsibilities. The group agreed that it should not suggest changes to the DA responsibilities for the time being, at least until the new DA has had a chance to come up to speed. In 2011, STATWG will review changes proposed during this workshop.

The group discussed that now that there was an active DA for ISC, the structure and function of the STATWG might change in the future. It discussed the need to monitor the changes and clarifications to the data reporting protocol and to database that the STATWG established during this workshop. The STATWG will revisit the need for and structure of the STATWG in 2011.

**10.0 FUTURE WORK PLAN**

1. By September 1, 2010, each Member will correct/confirm the gear by area that its fisheries use to the Metadata-Table 1 (list of fishing fleets used for HMS in the North Pacific).
2. By December 1, 2010, the ISC DA will communicate with each Member data correspondent to complete Metadata-Table 2 (summary of metadata of each member).

3. By March 1, 2011, the DA will correct the current user manual and provide it to Members and WG data correspondents to review.
4. By September 1, the STATWG Chairman will contact WCPFC to acquire WCPFC's inventory of category I data.
5. By August 1, 2010, John Childers will provide the working group catch tables and data submission files for category I, II, III submitted previously to 2006. The DA will work on this data to produce a more complete data catalogue and inventory before WCPFC/SC meeting in August 2010.
6. By September 15, 2010, the STATWG Chairman will work with the DA to complete an up-to-date version of data catalogue and inventory and circulate it to Member data correspondents and ISC Chair.
7. By July 1, 2011, the DA will work with Member data correspondents to recover missing historical data and missing information (for on Category I-III data) identified in section 4.0 of this report and based on the inventory received from WCPFC identified in point 5 (above) and produce complete inventory for review in STATWG 2011.
8. The PBFWG Chairman will communicate with the SPC DA about the bluefin catch table and report back to STATWG in 2011.
9. Revised codes in the metadata workshop that are to be reviewed and adopted in STATWG 2011, will be incorporated into the database and the database user manual after STATWG 2011.
10. The ISC DA will cooperate with the ISC webmaster to develop a trial data portal for Members data correspondents to test data submission.

## **11.0 CONCLUSION AND RECOMMENDATIONS**

### *11.1 Conclusions*

The group has made considerable progress in developing data catalogue/inventory, developing and revising metadata, clarifying database reporting requirements, and standardizing terms for the ISC database. This is important to the ISC and its working groups data systems, therefore the Chair thanks the efforts of the DA and the cooperation of the participants. However, it is recognized that this is just an initial step and will need the continuous supports of data correspondents of each member and data manager of each WG to complete the tasks.

### *11.2 Recommendations*

1. Encourage working group data managers and member Data Correspondents to work with the DA.
2. Data Correspondents should continue updating metadata in collaboration with WGs and should provide metadata with all data submissions to the DA.
3. WG data managers should inform the DA of any Member updates to historical data submissions when they occur so that the DA is aware of updates that Members should submit by the following July 1.
4. Metadata workshop recommendations:
  - a. Working groups and Members should adopt the revised codes that will be incorporated into the database and the database user manual after STATWG 2011.

- b. DA should include only two levels of gear categorization in the ISC database for key ISC species. Further details for ~~on~~ stocks assessed by ISC WGs will be the responsibility of the WGs.
  - c. ISC should use FAO codes in the database where possible.
  - d. ISC should apply for membership and participate in the Coordinated Working Party for Fisheries Statistics (CWP), which meets every two years, so that ISC can be involved in harmonization of data collection methods and code standardizations with other RFMOs.
5. STATWG recognizes that the data to be collected from the BSP are still needed by WGs and encourages ISC to continue seeking WCPFC funding for the program.
  6. The STATWG requests clarification from ISC regarding who will supervise and who will track progress of the DA, given that the DA resides in the Office of the Chair (ISC) and the work plan was established by the STATWG.

## 12.0 OTHER MATTERS

### *12.1 Reconciliation of WCPFC and ISC Data Holdings*

The WCPFC representative introduced a draft document for SC6 on Reconciliation of WCPFC and ISC data holdings. The group briefly discussed the document and determined that it would provide comments to the WCPFC-SC once the WCPFC provided a final draft document to ISC.

### *12.2 Demonstration of data submission through internet*

The DA provided a demonstration of how to submit data through the data portal on the internet and pointed out current issues with data submission. The Chairman indicated that Members were encouraged to submit data through the internet.

#### Discussion

One major issue with the database is that the database is very strict about accepting data; it will reject submissions when only some items are missing. The group decided that the data submission should still be accepted, and an error message generated; the DA will then work with the data correspondents to fix the errors and the DA will develop a diagnostic mechanism to deal with this. The database will be changed to allow blank values but only in non-key fields; the DA will identify key fields to maintain the quality of the database but allow for some variation, where appropriate. The data correspondents will include NA in fields where there is no data to differentiate it from blank fields.

The DA will revise the database user manual to reflect changes discussed here and in the metadata workshop.

### *12.3 Data correspondents*

The group reviewed and confirmed the data correspondents:

Canada – John Holmes

China – D. Xiaojie (Not present to confirm)

Chinese-Taipei – Zhong-Yo Chen

Japan – Koji Uosaki

Korea –Joon-Taek Yoo

19 July 2010

STATWG

Mexico – Miguel Cisneros and Michel Dreyfus  
U.S. – John Childers

**13.0 ADOPTION OF REPORT**

The group adopted the report and adjourned at 3:30 pm on 19 July 2010.

## **Attachment 1**

### **AGENDA**

Statistical Working Group

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

16-19 July 2010  
Victoria, B.C., Canada

1. Welcome and Introduction
2. Appointment of Rapporteurs
3. Adoption of Agenda
4. Tabling of Documents
5. Data Inventory and Holdings
  - i. Review of catalogue and inventory (Tables 1, 2 and 3)
  - ii. Comparison of data holdings by ISC and WCPFC (Table 4)
6. Review of Data Reporting Protocol (including Web-submission) and Member Performance (Reporting-card) (Table 5)
7. Identification of Data Items as Public Domain for Publishing in ISC Website
8. Review of Data Requirements for Stock Assessment and Fishery Monitoring - Including a report from the Species Working Groups regarding availability, timeliness and problems with data in conducting their work
9. Review of Expanding Database: (a) Historical fishery data rescue; (b) Archiving metadata; (c) Incorporating fishery bycatch data; and (d) Pacific fishery catch data for ISC key stocks
10. Review of ISC Data Management Functions and STATWG Performance
11. Future Work Plan
12. Conclusion and Recommendations
13. Other matters
14. Adoption of Report
15. Adjournment

## **Attachment 2**

### Table and Document List

July 16-19, 2010  
Victoria, B.C., Canada

Table 1A	Catalogue of Category I (total catch) in ISC database, by species and by country.
Table 1B	Catalogue of Category I (total effort) in ISC database by country.
Table 2	Catalogue of Category II (catch/effort) in ISC database, by country and by species.
Table 2	Appendix - species codes used in Categories I-III.
Table 3	Catalogue of Category III (size) in ISC database, by country and by species.
Table 4	Comparison of data holdings of ISC and WCPFC for Category II and III data.
Table 5	Data reporting card for 2008-2009 data.
(Inf-1)	Data protocol - data reporting and exchange requirements
(Inf-2)	Responsibilities of the ISC database administrator (DA)
(Inf-3)	Reconciliation of WCPFC and ISC Data Holdings: Draft MoC from WCPFC (WCPFC)

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**Attachment 4: ISC data submission report card (revised 2010/07/19)**

Country	Data should be submit					
	2008			2009		
	Cat. I	Cat. II	Cat. III	Cat. I	Cat. II	Cat. III
CAN	Good	Good	Good	Good	Good	Good
CHN	NA	NA	NA	NA	Good	NA
JPN	Good	Good	Good	Fair	Fair	NA
KOR	Good	Good	Good	Good	Good	Good
MEX	Good	NA	NA	Good	Good <sup>(1)</sup>	Good <sup>(1)</sup>
TWN	Good	Good	Good	Good	Good	Good
USA	Fair	Fair	Fair	Fair	Fair	Fair

Note: (1) Only marlins of sport fishery data was provided.

## Status

Good	Before July 1
Fair	Within July
Poor	After August
NA	Not available

**Attachment 5*****METADATA WORKSHOP***

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

16-17 July 2010  
Victoria, B.C., Canada

**1.0 INTRODUCTION**

Sui-Kai Chang, STATWG Chairman, was elected Chairman the Metadata Workshop. He welcomed participants from Canada, Chinese-Taipei, Korea, Japan, Mexico, U.S, and WCPFC, and reiterated that the Metadata Workshop had two objectives: to review metadata and to standardize codes in the ISC database. Sarah Shoffler was appointed coordinating rapporteur for this session, while Izumi Yamasaki and John Childers were appointed rapporteurs for updating and revising the tables the group was to review. The group reviewed the agenda (Attachment A). Three tables and six documents (Members' metadata summary reports) were provided to the Members (Attachment B).

**2.0 REVIEW OF METADATA ON CATEGORIES I, II AND III FROM MEMBERS****2.1 *Review of types of fisheries in the North Pacific (M-Table 1)***

The group reviewed the working table of fishing gears used in the total catch tables in order to standardize fishery names in data submissions from ISC Members to the ISC database. Errors were identified and revised. The group pointed out that the data reporting needs to be standardized (e.g. there are several names for one gear type). The Chairman's suggestion was to first list gear (longline/gillnet/etc.), then coastal/offshore/distant water.

Definition of coastal/offshore/distant water was discussed. Japan and Chinese-Taipei define them by size of the vessel. US, Korea and Mexico define fisheries by distance or area. Canada's fishery consists of a single albacore troll fishery. .

M-Table 1 was revised during the meeting for each Member (and WG) to verify the gear by area that its fisheries use. Members and working groups will review the appropriateness of the new standardizations in the draft table over the next year. The table will be further reviewed STATWG in 2011 for accuracy and the standardized names of fishing fleets (fishing gear + area) in the table are recommended to be used across different ISC WGs.

The group discussed the difference between the WG and the ISC database data. It was decided that ISC DA will collect total catch data from Members for all ISC species no later than July 1 of each year, as specified in the data reporting protocol. WGs will manage the total catch data of their respective species. If Members submit updates or revisions to total catch to WG data

correspondents after the July 1<sup>st</sup> annual submission, the data correspondent will notify the ISC DA who can then verify that the updates are included in formal submissions at the following July 1 submission. This protocol will eliminate inconsistent data between working groups and the ISC database. It was noted the ISC database may have different data than the working groups; Working group datasets may include data from non-ISC Members, may not include all available years, and may have more detailed data (in terms of fisheries and temporal-spatial structure) or data from outside the ISC area.

## *2.2 Member reports on metadata*

Members made oral presentations on their metadata (M-Doc 1-6), much of which has been incorporated into a table summarizing metadata by country and gear (M-Table 2). For each fishery, the group reviewed (1) how categories I-III data were collected and manipulated and (2) information on data quality which it collected. The Chairman suggested that this table be appended to the ISC database.

Although Members provided metadata, some key information is still missing and some of the written reports were made available only in the meeting period. Therefore, the group did not complete a summary table during the meeting. Members were tasked with completing and revising the table and presenting it to the DA by the end of July 17. The DA will work with data correspondents to further revise the table for presentation at ISC11

## **3.0 REVIEW OF ISC DATABASE CONTENT AND STANDARDIZATION OF CODES (M-Table 3)**

The group reviewed M-Table 3 summarizing the content of the ISC database and codes used in the database. They clarified the meaning of a number of codes which will be included in the ISC database user manual. Corrections to the current user manual will be made by March 1, 2011 for Members and WG data correspondents to review. Revised codes will be incorporated into the database and the database user manual after STATWG 2011. The group agreed that only two levels of gear categorization should be included in the ISC database: the first level is gear, and the second level is fleet. Further details on stocks assessed by ISC WGs will be the responsibility of the WGs.

## **4.0 CONCLUSION AND RECOMMENDATIONS**

### *4.1 Conclusions*

The group recognized the need and importance of having complete ISC metadata and standardized names of fishing fleets and codes for the ISC and WG databases. M-Table 1, 2 and 3 were revised during the meeting. The ISC DA will communicate with data correspondents and WG data managers to ensure completeness and confirm M-Table 1 and M-Table 2 which, together with a revised M-Table 3, will be provided to STATWG in 2011 for its finalization. M-Tables 1-3 are still preliminary and are therefore not included in this workshop report.

### *4.1 Recommendations*

1. Working groups and Members should adopt the revised codes that will be incorporated into the database and the database user manual after STATWG 2011.
2. Include only two levels of gear categorization in the ISC database for key ISC species. Further details on stocks assessed by ISC WGs will be the responsibility of the WGs.
3. ISC should use FAO codes in the database where possible.
4. ISC should apply for membership and participate in the Coordinated Working Party for Fisheries Statistics (CWP), which meets every two years, so that ISC can be involved in harmonization of data collection methods and code standardizations with other RFMOs.

## **5.0 ADOPTION OF REPORT**

The group adopted the report and adjourned on 19 July 2010.

**Attachment A**

**AGENDA**

Metadata Workshop

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

16-19 July 2010  
Victoria, Canada

1. Welcome and Introduction
2. Election of Chair and Appointment of Rapporteurs
3. Adoption of Agenda
4. Tabling of Documents
5. Review of Metadata on Categories I, II and III from Members
  - i. Review of types of fisheries in the North Pacific (M-Table 1)
  - ii. Members report on metadata (For each fishery, how the categories I-III data were (i) collected, (ii) manipulated and (iii) information on data quality) (M-Table 2)
6. Review of ISC Database Content and Standardization of codes (M-Table 3)
7. Conclusion and Recommendations
8. Adoption of Report
9. Adjournment

**Attachment B**

Metadata Workshop –

(The following documents were reviewed by the MDWS for internal use only.)

- M-Table 1 List of fishing fleets for HMS in the North Pacific Ocean
- M-Table 2 Summary table of metadata by country and gear, from countries' metadata summary report.
- M-Table 3 Content of ISC database and codes used in the database.
- M-Doc 1 Summary for Taiwanese data (Category I, II, III).
- M-Doc 2 Submission of Korean Fisheries Statistics for the North Pacific Ocean to the ISC in 2010
- M-Doc 3 Submission of Mexican for North Pacific Ocean to the ISC
- M-Doc 4 Canadian Pacific Albacore Fishery Data
- M-Doc 5 United States of America ISC Metadata
- M-Doc 6 Japanese Fishery Statistics for the North Pacific Ocean

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