REPORT OF THE WORKING GROUP ON JOINT SURVEYS OF THE SUBCOMMITTEE ON NON-ANADROMOUS SPECIES

The Working Group on Joint Surveys met October 31, 1981, in Vancouver, Canada. R. G. Bakkala and L. L. Ronholt, both of the United States, served as coordinators of the sessions and T. M. Sample of the United States served as rapporteur. Because of time limitations at the INPFC meetings held in Vancouver and the large number of items to be discussed, deliberations were continued in Seattle, Washington, during the week of November 2-6.

1. PARTICIPANTS. The following persons took part in the working group sessions:

JAPAN
- I. Ikeda
- K. Okada
- K. Wakabayashi
- K. Imamura

UNITED STATES
- R. G. Bakkala
- E. S. Brown
- L. L. Ronholt
- T. M. Sample
- J. J. Traynor
- T. K. Wilderbuer
- H. H. Zenger

Interpreters for the session in Vancouver were M. Kondo and S. Tamura.

2. AGENDA. The following agenda items were discussed during the meeting:

1. Joint report on the 1979 cooperative U.S.-Japan survey in the eastern Bering Sea
   A. Review of sections completed
      (1) Review of introductory sections
      (2) Review of results of the demersal trawl survey
      (3) Review of results of the U.S. hydroacoustic survey
      (4) Review of the Japanese hydroacoustic survey
   B. Other sections of the report
   C. Data report
   A. Status of data  
   B. Stratification  
   C. Vessel calibration  
   D. Data analysis  
   E. Reporting of results  

3. 1981 joint U.S.-Japan demersal trawl survey of the eastern Bering Sea  
   A. Data exchange  
   B. Data analysis  
   C. Reporting of results  

4. Planning the 1982 joint U.S.-Japan demersal trawl and hydroacoustic survey of the eastern Bering Sea  
   A. Demersal trawl survey  
      (1) Survey area  
      (2) Scheduled vessel effort  
      (3) Deployment of effort  
      (4) Comparative fishing experiment  
      (5) Data collection  
      (6) Data exchange  
      (7) Data analysis  
      (8) Reporting of results  
   B. Hydroacoustic survey  
      (1) U.S. survey  
      (2) Japanese survey  

5. Japanese longline survey  

6. Future meetings  

3. TERMS OF REFERENCE. The Terms of Reference of the working group were:  
   (a) To facilitate the finalization of a report on the results of the 1979 U.S.-Japan joint survey of Bering Sea groundfish through (1) review introductory draft sections of the report, (2) review result sections of demersal trawl and hydroacoustic portions of the report, and (3) discuss progress on final sections of the report.  
   (b) To review the status of a report on the results of the 1980 U.S.-Japan survey of the Aleutian Islands region through (1) review of the current status of data bases, (2) agreement on methods of analysis of combined data sets, and (3) agreement on organization and formats of reporting of results.  
   (c) To discuss procedures for data exchange, subsequent analysis and reporting of data obtained from the 1981 joint U.S.-Japan demersal trawl survey of the eastern Bering Sea.  
   (d) To discuss plans for the 1982 joint U.S.-Japan demersal trawl and hydroacoustic surveys of the eastern Bering Sea through (1) discussions of the preliminary survey design and anticipated vessel participations and schedules and (2) review procedures for the standardization of data collections, exchange, and analytical methods.
4. **JOINT REPORT ON THE 1979 COOPERATIVE U.S.-JAPAN SURVEY IN THE EASTERN BERING SEA.**


Representatives from both countries agreed that revisions to the discussion and interpretation of findings section were necessary to incorporate results of the hydroacoustic surveys and to provide cohesion between the demersal and pelagic observations of pollock concentrations. The United States suggested the possible adaptation of a computer program (originated by Canada to examine Pacific cod populations) to project ages based on length composition of pollock. This may provide a useful comparison to results of aging techniques on scales and otoliths of pollock. The United States will re-examine the age composition of pollock relative to data collected from areas inside and outside the U.S. hydroacoustic region and from information collected during the Japanese Aleutian Basin hydroacoustic survey. Pollock size composition data from the Aleutian Basin area as well as size population breakdowns at depths greater than and less than 50 fm will be reviewed for possible incorporation into the pollock section. The United States also proposed to include findings on pollock growth, if available, from the 1980 cooperative Aleutian Island survey for comparative purposes with the eastern Bering Sea stocks.

The United States will revise the pollock results section to clarify methods of combining information from the hydroacoustic and demersal surveys and also describe the possible age group selectivity of the midwater trawls. Japan will finalize results on their hydroacoustic survey which the United States will incorporate into the final draft. Japan will also provide the United States with additional information in terms of CPUE (kg/ha) from their Aleutian Basin hydroacoustical survey to be included in the report. A new introduction to the pollock results section will be drafted by the United States to describe the history and importance of pollock in the Bering Sea.

U.S. scientists agreed to compile all preliminary sections of the joint report by the end of 1981, and it is anticipated that the edited, final version will be submitted to INPFC by mid-1982.

(b) Other Sections of the Report. The United States will draft the Summary, Appendices, and Literature Cited sections of the final report. Review and agreement on newly completed drafts will be facilitated through correspondence.

(c) Data Report. The United States prepared an outline and table format examples for the data report for Japanese review.

5. **JOINT REPORT ON THE 1980 COOPERATIVE U.S.-JAPAN ALEUTIAN ISLAND SURVEY.** U.S. and Japanese scientists reviewed the current status of data collected during the 1980 cooperative Aleutian Island survey. Inconsistencies between the United States and Japanese data sets were resolved so they could be merged into one common data base.
(a) Status of Data. Most segments of the joint data base have been verified and corrected with the exception of the haul file which is nearing finalization. Age data files for both nations have not yet been completed since reading and interpretation of age structures have been delayed. Additionally, U.S. data sets have been converted to metric units for standardization with Japan in the common data base.

(b) Stratification. Stratification alterations and subsequent redelineation of the survey area were discussed. Both U.S. and Japanese scientists agreed that the southern boundary of subarea 5 (Bowers Bank) be re-established at 52°30' north latitude. This resulted in only slight modifications to area calculations on the continental slope and upper shelf.

(c) Vessel Calibration. Both nations reviewed and discussed analytical approaches for calculation of relative fishing power coefficients between vessels involved in the 1980 survey. Trawl stations to be included in the examination were identified.

(d) Data Analysis. Analysis of the data sets, including computer generated plots, will be conducted by U.S. scientists at the NWAFC. U.S. scientists will also begin examination of relative fishing power coefficients between survey vessel and commence calculation of mean CPUE, relative abundance by species and species group, and other biological stock descriptors. When examination of age structures has been finalized, the resultant data will be incorporated into the final analysis.

(e) Reporting of Results. The United States will prepare an outline for the final report subject to Japanese approval.


(a) Data Exchange. Japanese scientists are currently editing their data collected during the 1981 survey and anticipate completion for exchange by December 1981. Some problems are presently being resolved such as calculation of trawl width. Japan will transmit their edited data on standard U.S. recording forms to be keypunched and entered onto the NWAFC computer system by the United States. Results of the analysis of the comparative fishing experiments calculated by Japan will be made available to the United States as soon as they are available. U.S. scientists will send Japan the results of the United States' portion of the 1981 survey and copies of any original data sets that Japan may request. Additionally, the United States will provide all results of the analysis of the combined data sets.

(b) Data Analysis. It is anticipated that methods of data analysis will proceed in a manner similar to that used for the 1979 joint survey data. Data sets will be analyzed separately by nation and then combined.

(c) Reporting of Results. The United States proposed that the format established for the 1979 U.S. eastern Bering Sea data report be followed to facilitate the presentation of results of the 1981 joint survey.

(a) Demersal Trawl Survey. It is anticipated that the 1982 cooperative survey will be of the same magnitude of the joint survey conducted in 1979. The survey area will extend from Unimak Pass and the Alaskan Peninsula north to the latitude of St. Lawrence Island and from nearshore waters of the Alaskan coast to depths of 600 fm on the continental slope and may extend northward to encompass the region of Norton Sound. The United States initially plans to have three research vessels available to begin in late May. Two vessels will be involved in the demersal survey while the third conducts the hydroacoustic study. Japan expects to have one or possibly two research vessels available for participation in late June or early July but this is contingent on budget allocations.

U.S. research vessels will, as during 1979, be primarily restricted to the waters of the continental shelf while the Japanese vessels sample waters of the slope. As work progresses and time permits, Japan will also examine waters of the shelf.

Side-by-side trawling exercises to determine relative catchability coefficients between vessels will be conducted. Japan proposed that at least two comparative trawling sites be identified. Japanese scientists suggested that one site be relatively shallow and the other deep to obtain better data on diverse depth related species assemblages. Both the United States and Japan agreed that at least 20 repetitive sets at each location were necessary to validate the experiment. The United States agreed to review historical catch data to determine appropriate vessel calibration sites. The United States will provide Japanese vessels with data loggers and systems tapes to record information during this survey.

A U.S.S.R. research vessel may be available for participation in a portion of this survey and the United States will pursue this possibility. It was suggested that a Soviet vessel could extend the survey region west of the U.S.-U.S.S.R. convention line of 1867 and into the Gulf of Anadyr.

U.S. scientists proposed that separate samples of pollock scales and otoliths be collected by both nations for subsequent validation studies of aging techniques. Possible tagging studies of pollock were also considered. At the request of Japan, the United States may provide gear experts and mensuration equipment to assess the performance of Japanese sampling trawls.

(b) Hydroacoustic Survey. The United States anticipates the hydroacoustic survey to encompass the area examined during the 1979 survey and to extend into waters less than 50 fm. One U.S. vessel will be involved and operations will be conducted on a 24-hour basis. U.S. scientists requested that other vessels monitor and annotate midwater sign outside the hydroacoustic survey area for subsequent examination and delineation of stock concentrations. Japanese scientists stated that Japan would not be able to participate in the hydroacoustic survey during the summer months but may conduct hydroacoustic investigations during the winter.
8. **JAPANESE LONGLINE SURVEYS.** U.S. scientists stated that the Japanese longline surveys provide valuable information on the condition of sablefish stocks and would like the survey area covered to extend from the Aleutian Islands region into the eastern Bering Sea.

9. **FUTURE MEETINGS.** The next meeting of the working group was proposed to take place during the week following the U.S.-Japan bilateral meetings in May.