# FOURTH ANNUAL CONFERENCE OF THE PARTIES TO THE CONVENTION ON THE CONSERVATION AND MANAGEMENT OF POLLOCK RESOURCES IN THE CENTRAL BERING SEA

## Report of the Meeting of the Scientific and Technical Committee

**November 8 - November 10, 1998**
**Pusan, Republic of Korea**

Final, November 10, 1815

Delegations from the People's Republic of China (China), Japan, the Republic of Korea (Korea), the Republic of Poland (Poland), the Russian Federation (Russia), and the United States participated in a meeting of the Scientific and Technical (S&T) Committee in Pusan, Korea.

**1. Opening Remarks.**

Dr. Richard Marasco (United States), Chair of the Science and Technical (S&T) Committee, opened the meeting at 1400, Monday, 8 November 1999. The meeting agenda and a list of the participants are provided in Attachments 1 and 2.

**2. Appointment of Rapporteur.**

LCDR Dwight Mathers (United States), Mr. Paul Niemeier (United States), and Mr. Won Seok Yang (Republic of Korea) were appointed as rapporteurs.

**3. Adoption of Agenda.**

The Parties adopted the Provisional Agenda (Attachment 1), as modified.

**4. Discussion of Science Issues.**

4.1. Update Catch and Effort Statistics.

4.1.1. The United States stated that in the past it has had the responsibility for compiling pollock catch statistics. The United States appealed to the Parties that have not submitted updated catch statistics to do so, so that updated catch tables can be prepared.

4.1.2. Korea said that only the United States and Russia have these data, since they are the only countries fishing around the Convention Area. The United States provided a copy of its catch data for 1979-1998 (Attachment 3). Russia provided pollock catch data for 1998 and preliminary data for January-October 1999.

4.2. Present Results of Trial Fishing.

4.2.1. The Chair reminded the group that last year Poland and China indicated they were interested in conducting trial fishing in 1999.

4.2.2. Poland provided reports of its trial fishing in 1998 (Attachment 4) and 1999 (Attachment 5) and gave a verbal report for trial fishing in September 1999. During May 1999, trial fishing results were similar to 1998 and only two individual pollock specimens were caught. Results from trial fishing in September 1999 have not been completed because the vessel is at sea. However, only two individual pollock were caught during twelve days of fishing in the eastern part of the central Bering Sea. The *R/V ACAMAR* conducted trial fishing in 1998 and May 1999, and a sister ship to the *R/V ACAMAR*, the *R/V HOMAR*, conducted trial fishing in September 1999.

4.2.3. China stated that due to other commitments, it was unable to dispatch any vessels to conduct trial fishing in 1999.

4.3 Review Results of the 1998/1999 Research Cruises.

*Korean Report (Attachment 6)*

4.3.1. Korea reported on its 1999 research cruise by the *R/V TAMGU NO. 1* in May-June 1999. The survey area covered the Bogoslof Island Area and the Central Bering Sea (CBS) including some parts of the eastern Bering Sea continental shelf. The greatest relative density of pollock was found on the continental shelf area of the survey. The total biomass estimate was 416,700 mt. The density was computed at 9.5 mt/square nautical mile in the Bogoslof Island area. This was 6.3 times the 1997 value of 1.5 mt/square nautical mile. The vertical distribution of water temperature, as determined during the survey, showed the presence of a distinct cold water mass of 1° C - 3° C at depths and areas of the Donut Hole where pollock has been fished by Korean vessels in the past.

4.3.2. The U.S. asked about Figure 1 in the Korean document, which compares the Bogoslof Island area to the continental shelf area, and Figure 7, which covers the eastern most area of the Donut Hole. The U.S. asked if the Bogoslof estimate was for just the Specific Area or whether it included the entire Bogoslof region. Korea answered that the Bogoslof estimate was for the larger area, not just the Specific Area.

4.3.3. The U.S. suggested that the Parties try to use the same area for comparison of biomass. Quite often the Parties compare two different areas and that can be misleading. The U.S. asked about Figure 7 and how Korea would characterize the density of pollock in the Donut Hole area outside of Bogoslof. Korea responded that the catch density in this area was almost zero.

4.3.4. The U.S. asked what depth contour was used to distinguish the continental shelf from other areas. Korea responded that it used 200 meters. Poland asked in which part of the Donut Hole Korea found pollock larvae. Korea stated it did not find any pollock larvae in the Donut Hole. The U.S. asked what was found during the trawl survey done at station 39 in the Donut Hole. Korea stated they did not catch any pollock during that trawl.

4.3.5. Japan asked about Figure 5 and the lengths of pollock from Bogoslof Island and the continental shelf. These lengths were different than what was found during the Japanese survey, and Japan questioned why the frequency distributions were different. Korea stated the differences are due to the different times of the year that the surveys were conducted. The U.S. stated that the Bogoslof area surveyed by the Koreans included continental shelf waters in the eastern part of its track that were not part of the Japanese survey conducted by the *R/V KAIYO MARU.*

*Japanese Report (Attachment 7)*

4.3.6. Japan stated that it conducted an acoustic mid-water survey using the *R/V KAIYO MARU.* The primary objectives were to determine the geographical distribution of pollock in the SE Aleutian Basin, to collect echo integration data to determine the biomass of pollock, and to collect biological information on pollock. The survey area is shown by Figure 1 of the Japanese report and was the same survey area used by the U.S. *R/V MILLER FREEMAN* since 1988. Japan expressed its appreciation for the assistance it received in getting permission for the *R/V KAIYO MARU* to conduct this survey. The survey was conducted in two legs. Leg 1 was conducted in early February 1999 and leg 2 in late February and early March 1999. Figure 2 shows the catch of adult pollock for both legs: six tows on leg 1 and eight tows on leg 2. Table 3 shows the catch composition for each of the tows. More than 95% of the weight of the catch was pollock and the rest was mostly lanternfish. There was a clear difference between station T-106 (east of 167° W) where there were more fish under 50 cm and the other tows during that leg. The length-weight relationship and the maturity of male and female fish was also shown in the text. In the last tow on March 3, 30% were males of spawning stage. After finishing the survey, Japan concluded that most of the spawning occurred after the survey was completed. Most fish were concentrated in the Islands of Four Mountains region. In Table 6, the biomass of pollock is calculated for leg 1 and leg 2. In leg 2, the total biomass was estimated at 475,312 mt for the survey area of leg 2. The biomass for the Specific Area was estimated at 392,537 mt.

4.3.7. Korea stated that the difference in time of the surveys, February-March for Japan and June for Korea, resulted in a difference in the biomass estimates.

4.3.8. Poland stated that there was a distinct difference in density between legs 1 and 2 and that there was a similar difference in density between 1998 and 1999. Japan responded that the difference may relate to the difference in track spacing from 5 to 10 NM from leg one to leg two. Also, the fish might be migrating between the areas of leg 1 and leg 2. Poland stated that in 1997, there was a similar situation between legs 1 and 2. The U.S. stated similar differences have been observed when the survey passes are separated by three to four weeks in time. The U.S. believes this difference is due to migration of pollock.

4.3.9. The U.S. stated it would be valuable for Japan to comment on differences in equipment used by Japan and Korea this year and the U.S. in past years. Japan stated that it has used the KJ2000 since 1990 and intership calibrations with the *R/V MILLER FREEMAN* were conducted in 1993 and 1996. Japan stated that it is not easy to get a one-to-one correlation for the different survey methods, however, the output from both types of equipment is thought to be comparable.

*The United States Report (Attachments 8-10)*

4.3.10. The U.S. stated it was very grateful to Japan for conducting this year's survey while the *R/V MILLER FREEMAN* was in the shipyard and for allowing U.S. scientists to participate in the survey by the *R/V KAIYO MARU*. The U.S. highlighted a report it submitted entitled, "The Alaska Fisheries Science Center (AFSC) Bogoslof Survey Timing and Pollock Distribution (1988-1998)" (Attachment 8). Based on this document, the U.S. does not believe that the earlier timing of the *R/V KAIYO MARU* cruise, in comparison with surveys done in the past by the *R/V MILLER FREEMAN*, had any significant impact on the biomass estimate.

4.3.11. Korea asked if U.S. scientists were onboard the *R/V KAIYO MARU* for both legs 1 and 2. The U.S. responded that they were.

4.3.12. The U.S. prepared its report (Attachment 9), using the data provided by the *R/V KAIYO MARU* survey to update its historical time series. For 1999, the total biomass in the survey area of leg 2 was 475,312 mt of which, 392,537 mt was found in the Specific Area as defined in Part 1 of the Annex of the Convention. The U.S. noted that many of the figures are very similar to what was presented by Japan. The 1999 results show a slight increase in the average size of fish over that found 1998.

4.3.13. Korea asked how much pollock was found outside the Specific Area. The U.S. reported that 82,000 mt were found outside the Specific Area. Korea stated that the length composition in Table 5 is the same from 1998 to 1999. Korea noted that in 1998, the 1992 year class was very strong and asked if the 1992 year class is also strong in 1999. The U.S. stated it believed that the 1992 year class would also be strong in 1999, once the fish age data is available. Korea asked if this was an indication of a recovery in the fish stocks and whether it would result in a continued increase of the fish stocks. The U.S. said that was hard to predict. However, a year class normally peaks at year six or seven. The U.S. stated that the 1993 and 1994 year classes have been fairly weak on the eastern Bering Sea shelf. Korea asked if the 1996 year class was better than average on the eastern shelf as earlier reported. The U.S. replied that it was still too early to tell and the Parties would need to wait until 2001 to determine the strength of the recruitment of the 1996 year class to the Bogoslof region.

4.3.14. Finally, the U.S. reported on surveys conducted by the *R/V MILLER FREEMAN* on the eastern Bering Sea slope/shelf (Attachment 10) during the summer of 1999. Figure 6 shows a decrease in the average temperature in the eastern Bering Sea in 1999 -- the coldest temperatures recorded by the U.S. since the late 1970's. The colder water temperature seems to have had a significant effect on the pollock distribution in 1999. The bottom trawl biomass estimate increased from 2.21 mmt in 1998 to 3.51 mmt in 1999, an increase of 61%. The midwater biomass estimate east of 170° W was 0.94 mmt and west of 170° W was 2.41 mmt. The combined biomass estimate for the entire shelf was 6.92 mmt. Very few one year old fish were found during the 1999 survey. The 1999 survey also seems to indicate that the 1996 year class is fairly strong.

4.3.15. Korea asked if the results of the bottom trawl and acoustic trawl surveys were available for past years. The U.S. said that data were available and provided it to the group for 1979-1999 (Attachment 11).

4.3.16. Japan stated that in the 1970's, the ice concentration was very high in the Bering Sea and the water temperature was lower than in the 1990's. The U.S. pointed out that the temperature in 1999 was very low. Japan asked if there was any relationship between water temperature and the concentration of ice in the Bering Sea. The U.S. stated it did not have any information on this relationship, but that by reviewing historical data, the Parties might be able to determine trends. Japan conducted acoustic surveys from the 1970's to the 1990's and water temperature data were collected, but unfortunately this information was not collected in a systematic method, so it is difficult to compare and analyze the data.

4.3.17. The Chair suggested that the Parties consider a workshop that would look at the relationship of environmental factors and the pollock biomass.

4.4 Review and Update Status of Pollock Stocks

4.4.1. *Relative and Absolute Abundance of Pollock Resources in the Aleutian Basin.*

4.4.1.1. The U.S. commented that, as in past years, it was difficult to estimate the absolute pollock biomass based on the data available. Last year, the conclusion was that there was insufficient data to estimate the absolute abundance of pollock in the Aleutian Basin, despite the research efforts of the Parties.

4.4.1.2. Russia stated that it only had preliminary data for 1999 because the *R/V TINRO* was still underway and provided the following estimates (in thousands of mt) for the Navarin Basin (east of 176° E) and western Bering Sea (west of 176° E) (WBS) pollock biomass based on bottom trawl surveys (BTS) and echo integration (EIT) surveys in 1998-1999.

| | | BTS | EIT | Total | Catch |
|---|---|---|---|---|---|
| 1998 | Navarin | 320.2 | 87.8 | 408 | 643.6 |
| 1999 | Navarin | 250 | <100 | <350 | 416.2** |
| 1998 | WBS | 119 | 48 | 167 | 76.1 |
| 1999 | WBS | 37* | 39* | 76* | 37.0** |

* - Data are only for Olutorsky and Karaginksy Bays .
**- Data are for January - October 1999.

Russia has found an unusual distribution of pollock in the Navarin Basin area, possibly due to a reduction in the ocean temperature. There was also a reduction in the plankton biomass throughout the area. As a result, there is an unusual distribution of pollock in the Navarin region as well as a reduction in the biomass. Russia believes the reduction of pollock relates to changes in oceanographic conditions. Further, the 1998 and 1999 year classes do not appear strong.

4.4.1.3. Russia provided an appropriate report of its findings (Attachment 12).

4.4.1.4. The U.S. inquired as to fish sizes in the Navarin area. Russia stated that 36-40 cm was the average length and these fish were predominately from the 1996 year class. The U.S. asked how the surveys from 1998 compare to 1999, since they were done by two different vessels. Russia stated the data is very similar since the vessels/equipment used were very similar. Russia also conducted an intership calibration between the two vessels. Russia stated that its data indicated there was no migration of pollock from the western Bering Sea to the Aleutian Basin this year.

4.4.1.5. The U.S. reiterated that, like last year, there is insufficient data available to directly determine the Aleutian Basin pollock biomass (see last 1998 Annual report, item 5.6.1.a), despite the research efforts of all the Parties. Korea agreed.

4.4.1.6. Japan stated that it also understands that the data are not sufficient for the Parties to make an estimate of the absolute biomass of pollock. However, Japan noted it had devoted significant effort to estimating pollock biomass in the Aleutian Basin, citing its deployment of the *R/V KAIYO MARU* as one example of these efforts. Japan noted it would also support a workshop on how environmental factors have affected the absolute pollock stocks, as suggested earlier by the Chair. Japan agreed that the data is insufficient to estimate the pollock biomass in the Aleutian Basin, but believes that the data collected this year by the *R/V KAIYO MARU* could be used in the biomass estimation.

4.4.1.7. Poland stated it also agreed with the U.S. China indicated it had no comment at this time.

4.4.2. *Biomass of Pollock in the Area Identified in Annex Part 1 (B) [Specific Area].*

4.4.2.1. The Chair reminded the group of the wording of the Annex Part 1 (B).

4.4.2.2. Japan stated that according to its report (Attachment 7, Table 6), the biomass estimate for pollock in the CBS Specific Area is 392,537 mt.

4.4.2.3. The U.S. suggested the following statement be used: *Only one estimate of the absolute abundance of pollock for the Specific Area is available for 1999, the survey made by the Japanese R/V KAIYO MARU. That estimate was 392,537 mt. Based on past intership calibrations between the R/V KAIYO MARU and the R/V MILLER FREEMAN, this estimate is comparable to the U.S. R/V MILLER FREEMAN surveys. According to Annex Part 1 (C), the R/V KAIYO MARU estimate of 392,537 mt represents 60% of the Aleutian Basin pollock biomass, which means the biomass for the Aleutian Basin would be 654,000 mt. This amount is less than the 1.67 mmt outlined in the Annex Part 1 (C).* **The Parties agreed with this statement.**

4.5. Work Plan for 2000.

4.5.1. Japan stated that it intended to do one more research cruise in 1999 and provided a cruise plan (Attachment 13) for the research planned in the high seas area of the Bering Sea. The *R/V KAIYO MARU NO. 3* (473 GT) will depart Kushiro, Japan on November 15, 1999 and conduct a Donut Hole survey from November 23 - December 3, 1999. The research will include collection of information about pollock distribution in the Donut Hole by using the vessel's acoustic system and the collection of biological samples by using a mid-water trawl.

4.5.2. The U.S. asked if the vessel would use a quantitative acoustic system for the survey and Japan indicated it would not. The U.S. further stated that November and December is an important time of year to conduct a research cruise to determine the relative abundance of pollock and asked if future cruises during this time would have space for scientists from other Parties. Japan answered that that would not be possible for this year, due to the timing of the cruise, but if there are similar cruises in the future, Japan would welcome the participation of other Party scientists.

4.5.1. *Data Exchanges.*

The U.S. stated in the past that this group has attempted to compile catch and effort data for pollock, but there is no set procedure for this. The U.S. suggested that this process be formalized to some extent and that the data be provided at the beginning of the meeting so it can be used by all the Parties. The U.S. provided catch statistics (Attachment 3). The Chair asked that all the Parties provide catch and effort data to the group.

4.5.2. *Cooperative Research Plans for 2000.*

4.5.2.1. Korea stated it has conducted research from the Bogoslof Island area to the Donut Hole in 1994-1997 and 1999. Korea is planning to conduct a research cruise with the *R/V TAMGU NO. 1* from the Bogoslof Island area and the central Bering Sea in 2000. Korea was not sure of the exact date of the cruise, but will provide the detailed plan for the cruise once it is confirmed. The U.S. asked if Korea knew whether it would conduct a survey during the winter spawning time, or if it would survey at similar times as in previous years. Korea responded it could not say at this time. The U.S. stated that it would be very helpful if Korea could conduct its cruise during the winter spawning time. This would allow an intership calibration between the *R/V TAMGU NO. 1* (Korea) and the *R/V MILLER FREEMAN* (U.S.).

4.5.2.2. The U.S. reported on its research plans for 2000 (Attachment 14). The plans are primarily centered in the eastern Bering Sea. The U.S. highlighted its February 2000 plan to conduct an echo integration survey of the pollock biomass in the EBS. This will be followed by the *R/V MILLER FREEMAN*'s standard annual Bogoslof Island EIT survey in late February and early March 2000. There is space available for one or two scientists from the other Parties for the Bogoslof Island survey. The U.S. also has plans for two summer surveys. The U.S. was unable to go into the Russian EEZ during 1998 and 1999 and asked for assistance from Russia for permission to extend the 2000 survey into the Russian EEZ. The U.S. provided internet websites (in Attachment 14) that would have more comprehensive and detailed descriptions of these cruises.

4.5.2.3. Korea inquired as to the purpose of the February 11-27, 2000 cruise. The U.S. responded that there are some very specific issues in the U.S. regarding Steller sea lion interactions with the U.S. commercial fishery. To address these concerns, the U.S. intends to conduct this winter survey to study this issue.

4.5.2.4. Russia provided the following schedule and summary of its research plan for 2000:

| **Project** | **Dates** | **Region** | **Agency** |
|---|---|---|---|
| Bottom Trawl | Aug-Sep | WBS and Navarin | TINRO-Center |
| Acoustic Trawl | Sep-Oct | WBS and Navarin | TINRO-Center |
| Bottom Trawl | Summer | Anadyr Bay | Anadyr Bay Div. TINRO Cen. |
| MW Trawl (Juv.) | Summer | WBS | Kamchat NIRO |
| Observer/Exp. Fishing | May-Oct | Navarin | TINRO-Center (Charter) |

Russia plans to conduct its standard western Bering Sea survey during August-October of September and plans to continue a special project sampling biological data and tests with experimental fishing gear, which is a continuation of a project from 1999. The EIT and bottom trawl survey will be conducted from the 12 mile territorial sea to the continental shelf and inside

the 12 mile territorial sea a bottom trawl survey will be used. Russia stated that VNIRO and TINRO center would support the U.S. request to continue the *R/V MILLER FREEMAN* survey into the Russian EEZ and would welcome an intership calibration between the *R/V MILLER FREEMAN* and the *R/V PROFESSOR KAGANOVSKIY*. Korea asked if there were plans to conduct a survey in the winter season. Russia responded that it would not be able to do surveys in the winter season due to icing in the survey area. April is the spawning time, but ice prevents surveys. Russian scientists are predicting an even colder winter in 2000 based on the lower water temperatures it has observed in the area.

4.5.2.5. Japan stated that at this time, it has no survey plans 2000. Poland stated it might like to participate on the U.S. cruise on the *R/V MILLER FREEMAN*. China stated it might also send its scientists to participate with the other Parties' research cruises to carry out joint research. The Chair recommended that Parties wishing to participate in another Parties' research cruise notify that Party as soon as possible so accommodations can be arranged.

4.5.3. *Other Items.*

4.5.3.1. The Chair suggested that this might be the time to discuss holding a workshop to allow scientists from various countries to exchange ideas on how environmental changes have affected the abundance of pollock in the CBS. The U.S. supported the suggestion and stated that it would be willing to host such a workshop. Russia supported the idea of a workshop and has been compiling information on changes in the Bering Sea ecosystem over the last several years. Such a workshop would allow the Parties the opportunity to pool and exchange data. Japan supported the idea of a workshop, but it was unable to commit at this time. Japan asked if this workshop could also discuss stock structure.

4.5.3.2. The U.S. suggested that the group discuss trial fishing plans for 2000. Korea stated that trial fishing should be discussed in the Annual Conference, since it must first be determined if there will be an AHL. The U.S. stated that this issue is raised each year and that components of trial fishing plans should be discussed in the S&T Committee. The U.S. stated it was also very interested in obtaining salmon that have been taken during past trial fishing efforts and asked the Parties to provide the samples to the U.S. for analysis. The Chair noted that any discussion of trial fishing here does not prejudice future AHL discussions. Poland stated it would support the AHL discussion now.

4.5.3.3. China stated it was also very interested in the AHL discussion. Despite the research efforts of the Parties, it has been very difficult to accurately estimate the absolute biomass of pollock in the Convention Area. China suggested the Parties conduct more research, with increased cooperation between the Parties, to better estimate the pollock biomass.

4.6. Allowable Harvest Level (AHL).

4.6.1. The Chair reminded the group that the S&T does not set the AHL, but it provides recommendations to the Plenary, which then sets the AHL.

4.6.2. Korea asked if it might be allowed to have the Korea Deep Sea Fisheries Association make a presentation that would explain Korea's position. The Chair stated that if the presentation was of a scientific nature, it would be appropriate here, otherwise such a presentation should be made at the Plenary. Korea stated it is aware of its duties and responsibilities as a Contracting Party

and since 1993 there has been a moratorium on fishing in the Convention Area. Korea stated that the current requirement of a biomass of 1.67 mmt is not based on scientific data, but on the consensus of the Parties. The Conference should make decisions on AHL based on the consensus of the Parties. Korea suggested that the goal of the Convention is to conserve, manage and optimally use the pollock resources and suggested that the Korean AHL proposal (Attachment 15) would do that. The fishing countries need to have the cooperation of the coastal countries for this proposal. Korea asked the Parties to consider the current 1.67 mmt threshold for the fishery and whether it should be reduced.

4.6.3. Russia presented a chart based on recent survey data that demonstrated the relationship between the pollock biomass on the EBS shelf and the Bogoslof area. At the present time the EBS biomass estimate is 6-7 mmt and the Bogoslof Island pollock biomass is not expected to increase until the EBS biomass increases to approximately 10 mmt. Russia estimated that at the present time, there is no evidence that the Bogoslof Island pollock biomass would increase significantly over the next three to five years. Russia suggested that it is the responsibility of fisheries managers to explain to the fisherman of all Parties that until the pollock stocks recover, the AHL should continue to be set at zero. Korea asked for the data Russia used to compile the chart and asked that in the future these types of documents be provided in a more timely fashion so that they can be studied prior to the Conference and be fully discussed at the Conference. Korea stated that according to the Convention, the AHL should be established every year based on the biomass estimates.

4.6.4. Korea tabled a proposal on AHL and INQ in 2000 (Attachment 15) that outlined two options and reminded the group that at the Third Annual Conference the Parties agreed that the Korean proposal would be considered at future meetings. Under option one, AHL would be 50,700 mt and an INQ for each Party set at 8,450 mt. Under option two, based on the exploitation rate, AHL would be between 42,380 and 50,693 mt and INQ for each Party be set at between 7,063 and 8,449 mt.

4.6.5. Japan stated it can understand the Russian statement that the Parties cannot expect to fish for pollock in the near future and that must be conveyed to fishermen of all Parties. On the other hand, it is a fact that the fisherman have difficulty accepting an AHL of zero that has been maintained for too many years without a recovery of the resources. Japan is mindful that the effort to set AHL according to the Aleutian Basin Biomass would result in an AHL of zero. Each Party must also be accountable to its fishermen and it might be possible to set a very low AHL. Although this AHL is scientifically reasonable, however, it might not be commercially viable for the fishermen. Therefore, it would give the fishermen a reasonable explanation for why the fishery in the Donut Hole has not been resumed. In order to convey this explanation to the fishermen, the Parties should consider setting the AHL at some level other than zero.

4.6.6. Korea provided additional explanation of the proposals it tabled. Korea is seriously worried about when the pollock fishery can be reopened in the central Bering Sea. Korea reiterated its contention that the 1.67 mmt threshold is not based on scientific data. Korea stated that its proposal may not be the best, but it is a starting point for setting an AHL. Korea asked why the Parties conduct scientific surveys, for science or for the fishermen. The aim of scientific survey are to manage pollock stocks, but the Parties need to be wary of arbitrary numbers like the 1.67 mmt number. Korea asked for support for its proposal. The Chair asked Korea if it believes the 1.67 mmt number is not based on science, then why does Korea use the 1.67 mmt number as the starting point for its proposal. The Chair also stated the reason surveys are conducted is to

preserve the resource, not only for current fishermen, but so that future fishermen can also participate in the fishery. Korea responded that 1.67 mmt figure is what is in the Convention, so that is why it is used, but suggested it might be necessary for the group to reconsider the 1.67 mmt figure.

4.6.7. China stated that the 1.67 mmt amount was established when the Convention was signed. It is possible that the 1.67 mmt amount may not be met for an additional seven years. If that happens, the Parties should consider a different method to set AHL than what is currently in the Convention.

4.6.8. Japan referred to Article VII-1, which stipulates that the AHL shall be established by the Annual Conference based on an assessment of the Aleutian Basin biomass by the S&T Committee. Further, Article VII-2 provides for an alternate mechanism to set the AHL if there is no consensus among the Parties. Japan asked for confirmation that its interpretation of Article VII (that the Parties could still set an AHL under Article VII-1, even if the biomass is estimated at less than 1.67 mmt) was correct.

4.6.9. The Chair stated that it seemed that the discussion had drifted to the method used to set AHL, which is more the purview of the Plenary. If the S&T is to consider an alternate method of setting AHL, it must be based on science.

4.6.10. Korea stated that the Parties had all taken great efforts to conserve and manage the pollock stocks. It emphasized that it did not see the need to stay with the 1.67 mmt number if the Parties decide to set an AHL. Poland stated that a direct method, such as the Korean proposal, could be used to set an AHL.

4.6.11. China stated that it is possible that the 1.67 mmt figure was established at a time when there was insufficient scientific data available. After seven years of moratoriums and data gathering, the scientific information is now available to adjust that 1.67 mmt figure.

4.6.12. Japan tabled its proposal for setting an AHL for 2000 (Attachment 16). Japan suggests that an AHL should be established, even if it is small. Japan proposed an AHL of 5,300 mt when recruitment of 27,000 mt (average value of 1995-99) is expected and an AHL of 9,700 mt when a recruitment of 104,000 mt (average value of 1997-99) is expected. Japan arrived at these AHL levels using the best scientific information available and believes these levels are safe enough to maintain sustainable yields given the current level of the biomass.

4.6.13. The Chair clarified that the survey biomass is always one year behind the year in which the Parties attempt to set AHL at the Annual Conference, Japan has attempted to estimate the biomass for 2000 using known recruitment and mortality rates.

4.6.14. The U.S. commented on the Japanese proposal and how it relates to the methodology used to determine the pollock biomass in the U.S. EEZ. The U.S. has similar difficulty calculating recruitment, mortality and growth, but it attempts to use the best available data each year in determining these figures. The U.S. considers a minimum stock size biomass below which the U.S. would not allow fishing. Implementing a precautionary approach to management, the North Pacific Fishery Management Council has determined that the stock in the Bogoslof Island Area and its relationship to the Aleutian Basin stock is too low to allow fishing without an adverse impact on related marine resources in the area. The U.S. firmly believes that the stocks

will someday recover to a point that fishing can be allowed under the current AHL provisions. The Parties need to exercise patience, as we have seen in other fisheries, it may take time for the stocks to recover. We need to continue to apply this precautionary approach.

4.6.15. The Chair distributed a draft statement summarizing the discussion regarding AHL, to be presented to the Plenary. The Parties revised the draft and agreed to the following statement:

> *The Scientific and Technical Committee notes that Article VII of the Convention states that, "The Annual Conference shall establish by consensus the AHL for the succeeding year, based upon an assessment of the Aleutian Basin pollock biomass by the Scientific and Technical Committee." It is the opinion of the Committee that information is not currently available to directly determine the size of the Basin pollock biomass. As prescribed by Article IX, paragraph 4, the Committee indicates that the pollock biomass for the Specific Area as determined by the United States institution designated pursuant to paragraph (a) of the Annex shall be deemed to represent 60% of the Aleutian biomass. For 1999, the FAJ determined that the biomass of the Specific Area was 392,537 mt. Expanding this estimate to the entire Basin yields a biomass estimate of 654,228 mt. This is the best estimate of the 1999 Aleutian Basin pollock biomass. It is 1,015,772 mt below the required 1,670,000 mt minimum established by Part 1(c) and (d) of the Annex to the Convention in order for a fishery to occur and to set the AHL at the level of 130,000 mt.*
>
> *Article IX, paragraph 4 states that, "The Scientific and Technical Committee shall make recommendations to the Annual Conference with respect to the conservation and management of pollock, including the AHL for the succeeding year." During these discussions, the Korean and Japanese delegations surfaced two approaches each for setting the AHL, even though it is a small amount. The Scientific and Technical Committee received technical clarification about the approaches, but did not reach a consensus on them. The Scientific and Technical Committee believes that the Parties may consider these and other approaches in determining AHL for the coming year.*
>
> *The Parties should review the effects of the moratorium, which has been implemented until now, and the rationale for further keeping the moratorium, and, furthermore, take necessary measures to identify the causes of non-recovery of the pollock resources in the Central Bering Sea in spite of the 7-year moratorium.*

4.6.16. Korea commented on the statement and thanked the Chair for the consideration the statement gives to the Korean proposal; however setting the AHL must still be discussed. The Korean proposal might be one method that could be used. Korea stated it intends to further discuss this during the Plenary session later this week.

4.7 Other Issues.

4.7.1. *Report on the Pollock Stock Structure and Identification Workshop.*

4.7.1.1. The Chair thanked Japan for hosting this workshop.

4.7.1.2. Japan stated that the workshop was carried out with the assistance of all the Parties. To make the workshop even more fruitful, the Parties still have some issues pending: sampling problems, which country should analyze the samples, and what should be the deadline to complete the work. To facilitate future cooperation, Japan suggested that each Party designate a contact person to help coordinate these efforts. Additionally, Japan would like to see the results of the workshop presented in the near future for all the Parties. **The Chair asked each Party to provide him, by January 1, 2000, with the name of its contact person.**

4.7.1.3. Korea stated that the workshop revealed some new methods to help in the stock identification process and asked that the U.S. provide the other Parties training in these methods. The U.S. said it would investigate future training opportunities.

4.7.1.4. The Chair stated that the Japanese proposal for a follow-up session to present the results of the workshop should be left up to those contact people to coordinate in the next 1-2 years. The Chair suggested that the S&T report reflect that the S&T will continue to consider the timing of a follow-up session, possibly in 2001.

4.7.2. *Prey/Predator Relationship Between Alaska Pollock and Marine Mammals such as Steller Sea Lions.*

4.7.2.1. Japan stated that, based on discussions from last year's meeting, a paper (Attachment 17) was drafted and circulated to the Parties with the request for comments by September 15, 1999, but no comments have been received, although the U.S. did provide some input during the Pollock Stock Structure and Identification Workshop in Japan. The driving force behind this document is that despite the moratorium, there has not been a recovery in the pollock stocks. The paper proposes some reasons why recovery has not occurred. One reason could be environmental changes in the region. Another reason could be the predator/prey relationship, since adult pollock are known to eat juvenile pollock. Additionally, marine mammals feed on pollock in great numbers. According to Japan's estimates, several hundred thousand tons of pollock are consumed by marine mammals each year. The extent of the impact of this predator/prey relationship is not fully understood and needs further study. If any of the other Parties have further information on the ecosystem approach and the predator/prey relationship, Japan would appreciate receiving such information so it could further update and improve this paper.

4.7.2.2. Korea supported the suggestion of Japan and called upon the U.S. and Russia to provide information on the geographic distribution of marine mammals, namely Steller sea lions, within their EEZs.

4.7.2.3. The U.S. stated it did not fully understand the intent of the Japanese paper, but stated that the information Japan was calling for in the paper is presently being collected in the U.S. to satisfy a domestic legal requirement to update an Environmental Impact Statement (EIS). The Chair explained that the U.S. annual domestic groundfish plan has a section on ecosystem management and the U.S. could provide that information to the other Parties. Much of this information, including stock assessment is currently available on the internet and encouraged other Parties to post such information on websites.

**5. Discussion of Enforcement and Management Issues.**

5.1. Number and Priority Placement of Observers Required by Article XI.

5.1.1. The Chair of the Enforcement/Management Group, Captain J.V. O'Shea (U.S.) summarized the observer issue and what still needs to be decided. This item was an issue from the last intersessional in September 1998. At that time, there were strong feelings from the Parties on this issue. Primary concerns are the cost of carrying more than one observer, and having an equal opportunity to place observers on other Party vessels. To resolve this issue, Poland developed a proposal for the placement of observers. The proposal is a good starting point for this discussion. Some of the other Parties were concerned that Polish proposal differentiated between coast States and non-coastal States. This is an important and complicated issue for all Parties. A dedicated meeting might be necessary to resolve these issues.

5.1.2. Korea stated that at the last meeting most of the Parties had agreed that Article XI-5(a) allowed for one non-flag State observer on the vessel for conservation and management. Regarding the priority of placement for the observers, there should be a fair method for placing observers, especially if the number of observers available is different than the number of vessels requiring observers.

5.1.3. Japan stated that its position has been presented many times and is similar to Korea's position. Japan recommended for next year or the following year, as the budget allows, for a small number of experts to meet to discuss this matter. The Enforcement/Management Chair stated that in order for such a workshop to succeed, a fair amount of work would need to be conducted prior to the workshop. The Chair of the Enforcement/Management Committee offered to communicate with designated representatives of the other Parties to begin a dialogue on this issue with the intent of conducting a workshop at a later date. Japan agreed with this suggestion and added that the key person for each Party should compile its country's views on this subject to be submitted to the Chair of the Enforcement/Management Committee who would then develop a compromise proposal to be returned to all Parties in preparation for a workshop, prior to the next Annual Conference.

5.1.4. Korea stated the Japanese suggestion is reasonable, but Korea offered another solution. Flag States could place observers in an alphabetically method, e.g., China, Japan, Korea, Poland, Russia, and the United States.

5.1.5. Poland supported the U.S. proposal to exchange correspondence to resolve this issue and asked that the U.S. provide guidelines for the discussion so all the Parties would have a common starting point.

5.1.6. **The Chair asked that each Party provide the name of its expert for this issue to the Chair of the Enforcement/Management Committee, Captain O'Shea, by January 1, 2000 who will request specific information from the Parties on this. By June 1, 2000, the results of this exchange will be reported to the S&T with recommendations for an intersessional meeting.**

5.1.7. Russia stated it would help to have a list, during this meeting, of the most important items regarding this. The U.S. stated it would provide such a list.

5.1.8. Attachment 18 is a Memorandum from the Chair of the Enforcement/Management Group requesting points of contact from each Party on this observer issue.

5.2. Methods to Determine Catch Weight.

5.2.1. The U.S. stated this was also a complicated issue with many methods available for determining catch weight. At the Third Annual Meeting, the Parties reached consensus that until the best method to determine catch weight is decided, scales or volumetrics (calibrated bins and codends) would be used.

5.2.2. Korea, Japan, and China supported the idea of testing these two methods for a one to five year time period and then reviewing the results in order to determine the best method. At present China stated it uses a measured codend method and a product recovery rate method to determine catch weight.

5.3. Components of a Management System.

5.3.1. The U.S. stated that this has also been a complex issue. During the Third Annual Meeting, the Parties agreed that an INQ Management System would be used when fishing is resumed. Pending items include: fishing season, a representative party to provide data to the other Parties, reporting schedule (weekly, biweekly, monthly), and a Japanese proposal which calls for a review of INQ allocation after three years and possible changes to the allocation process.

5.3.2. **Fishing seasons.** The U.S. advocates a fishing season with a specific start and end date, while many of the other Parties favor a season that would last throughout the year (Jan-Dec).

5.3.3. Japan stated its position is to have a year-round fishing season from January 1 - December 31. However, the timing of the Annual Conference must also be considered since that is when AHL and INQs are established. The Annual Conference is normally held near the end of the year in November or December. Once the AHL and INQs are known, fisheries managers and fishermen can plan their fishing for the following year. Because this process takes time, Japan would suggest, as an example, a fishing year, from March 1-February 28. Japan believes a 12-month fishing season would have less impact on the pollock stocks than a shorter season. Because all the Parties have different fishing seasons and fishing locations, and are affected by environmental conditions, it would be difficult for the group do decide on a set season. For all of these reasons, Japan is not in favor of a fixed fishing season. On the other hand, Japan can understand that a year round fishery might cause some difficulties for enforcement. While Japan favors a year round fishery, for ease of enforcement Japan would consider a fixed fishing season.

5.3.4. The Chair stated that he agreed that once the decisions are made at the Annual Conference it does take time for the fishermen to prepare to fish, so a March 1 start date for the fishery makes sense. By the same token, it would also be useful for Parties to compile the results of their fishing efforts prior to the Annual Meeting. This would mean the season should end before the Annual Conference.

5.3.5. The U.S. agreed with the Chair's statement and with what Japan stated that preparations for fishing may require extensive time. The U.S. is also aware that once fishing resumes the

Parties will be fishing on a recently recovered stock and the Parties should proceed with caution. The Parties should allow time to analyze the data and examine the impact of the reopened fishery on the pollock stocks.

5.3.6. China stated that with a fixed season, there could be more of a race for the fish as the Parties try to fish their quota. China advocates a year round fishery, but also understands that this could be more difficult for fisheries law enforcement.

5.3.7. Japan agrees with China on the merits of a year round fishery. Japan could not support the Chair's suggestion if it means the fishery would be closed for half of the year. The Chair clarified his view that whatever season is decided upon, the Annual Conference should have the data for the most recent fishing season so that informed decisions can be made by the Annual Conference.

5.3.8. Japan stated that it can understand the concept of having the data for the Annual Meeting has merit; however, until fishing is resumed it is difficult to predict what problems might exist, especially since the Parties are advocating a new type of fishing using INQs. Accordingly, Japan believes a trial period is necessary before the "best" system can be decided upon. Therefore, the Parties should set a trial period with a year round fishery starting January 1 to gain experience and identify problems.

5.3.9. Korea stated it favors a year round fishery. With an INQ fishery it is not necessary to have fishing seasons.

5.3.10. The Chair reminded the Parties of the need for the best and most complete data available for the Annual Conference in order to make informed decisions. Korea suggested changing the date of the Annual Conference, to better correspond to the fishing season. Poland stated the season should begin on January 1 and run until the AHL has been reached and suggested that the statistical data not available for the Annual Conference of one year could be presented at the following year's Annual Conference.

5.3.11. **The Chair stated consensus could not be reached on this issue, but two different proposals were discussed, a year round fishery and a fixed fishing season.**

5.3.12. **Data.** The U.S. stated it favored weekly catch reporting, while Korea advocated biweekly reporting and Japan had proposed monthly reporting. The U.S. stated weekly reporting would allow for better management of the rebuilt pollock stocks and to build confidence in each of the Parties management of their INQ. However, to facilitate progress, the U.S. supported the Korean proposal for an interim period pending reexamination.

5.3.13. **A number of Parties suggested alternative catch reporting schemes. The Korean proposal, to report catches every two weeks, was agreed upon by the S&T Committee.**

5.3.14. **Reallocation of Quota.** Japan summarized its proposal originally tabled at the September 1998 Intersessional and tabled at the Third Annual Conference to potentially reallocate quota after three years.

5.3.15. The U.S. responded that it did not support the Japanese proposal. A Party should not be penalized and lose quota if it chooses to not fully fish its quota or is unable to fully fish its quota

due to unforeseen circumstances, or to further the objective of the Convention to promote conservation and management of the pollock stocks and their long-term sustainability.

5.3.16. Korea stated it could not accept the Japanese proposal and stated it did not believe the proposal complied with Article VIII-1 and the Annex Part 2-(c) of the Convention.

5.3.17. Japan responded with clarification of its earlier statement. The U.S. stated that the Japanese proposal would penalize a Party's right not to fish, but that is not the intent of the proposal. The intent of the proposal is the full utilization of AHL. Regarding the Korean statement of reallocating AHL, Japan believes the Japanese proposal complies with Article VIII-1 of the Convention and is not a transfer of quota. Japan agrees with Korea and the right of Parties to use its INQ per the Annex Part 2-(c). Japan would agree to an equal allocation of INQ if this practice could be reviewed after three years.

5.3.18. Korea stated that by Annex Part 2-(c) each Party has a right to equal allocation of AHL. Korea and the U.S. stated they did not agree with the Japanese proposal to reallocate quota. Poland stated it believed the Japanese proposal was an answer to Article VIII-2 and agrees that the division of INQ should be divided equally among the Parties. .

5.3.19. **The Chair noted that the Japanese proposal was discussed by the Parties, but the Parties could not reach consensus on its implementation.**

**6. Other Matters and Recommendations.**

6.1. Meeting Schedule.

The Chair reminded the Group that earlier the Group had discussed the possibility of a meeting in 2000 regarding observers. The Parties agreed that next year's S&T would be held in conjunction with and just prior to the Annual Conference.

6.2. Other Matters.

There were no other matters discussed.

**7. Report of the S&T to the Annual Conference.**

The Parties **adopted** the report and **recommended** the Annual Conference accept its recommendations

**8. Closing Remarks.**

The Chair closed the meeting at 1815 on Wednesday, 10 November 1999.

**List of Attachments**

1. S&T Agenda.
2. List of S&T participants.
3. U.S. EEZ Catch Figures 1979-1999.
4. Poland 1998 Trial Fishing Report.
5. Poland 1999 Trial Fishing Report.
6. Korean 1999 R/V Report.
7. Japan 1999 R/V Report.
8. U.S. AFSC Bogoslof Survey Timing and Pollock Distribution (1988-1998).
9. U.S. 1999 Research Report.
10. U.S. Pollock Midwater Abundance on the EBS Shelf/Slope During Jun-Jul 1999.
11. U.S. Pollock Biomass Estimates 1979-1999.
12. Russian Pollock Stock Assessment Documents
13. Japan Nov-Dec 1999 R/V Cruise Plan.
14. U.S. Research Plans for 2000.
15. Korean Proposal on AHL and INQ in 2000.
16. Japanese Proposal on AHL for 2000 in the CBS.
17. Japanese Issue Paper on the Ecosystem Approach for the CBS.
18. Memorandum from the Enforcement/Management Chair