REPORT OF THE 27th MEETING OF THE SCIENTIFIC AND TECHNICAL COMMITTEE OF THE PARTIES TO THE CONVENTION ON THE CONSERVATION AND MANAGEMENT OF POLLOCK RESOURCES IN THE CENTRAL BERING SEA

Virtual Process Meeting hosted by the Republic of Korea

10 October – 21 October 2022

1 Opening of the Meeting

Hyejin Song (Republic of Korea) opened the Scientific and Technical Committee (STC) Meeting as Chair this year. A list of the participants is provided in Appendix 1.

The Chair also served as rapporteur to compile the STC report. The following individuals served as the contact point and "voice" from each party for email exchange – the United States (Jim Ianelli), the Republic of Korea (Hyejin Song), Poland/EU (Kamil Kisielewski), Japan (Tomonori Hamatsu), the Russian Federation (Alexander Glubokov). The People's Republic of China did not participate.

2 Adoption of the Agenda

2.1. There were no comments to the presented Agenda. The Agenda (Appendix 2) was adopted.

3 Discussion of Science Issues

3.1 Update catch and effort statistics

The United States and the Russian Federation provided updated pollock catch statistics by year and region (Appendix 3). Two figures at the end of the report are provided to show the geographical/statistical areas of the Bering Sea (Appendix 4).

3.2 Review results of trial fishing

The parties reported that no trial fishing was conducted in the Convention area during the period of 2021–2022.

3.3 Review results of research cruises

Regular surveys within the U.S. zone of the Bering Sea include:

(1) Eastern Bering Sea (EBS) shelf: the annual bottom trawl survey to assess groundfish and crabs in the summer months (June to August) occurred and extended into the northern area outside of the standard survey grid (but within US waters).
Vessels chartered for the bottom-trawl survey (described in bullet above) also collected acoustic backscatter data that is compiled into a validated index for use in the EBS pollock stock assessment.

(2) The NOAA ship *Oscar Dyson* conducted a mid-water acoustic-trawl survey in the US zone over the EBS shelf region.

Cruise results from the U.S. surveys become available typically about mid-September and draft reports are made to the North Pacific Fishery Management Council (NPFMC) Plan Teams. Draft results from the bottom trawl survey have been provided to the NPFMC here. Subsequently, analysts compile stock assessment reports for review during the November and December meetings of the NPFMC so that they can deliberate on fishery management decisions for the following year. The website for these annual Plan Team reports can be found in at the NPFMC.org website. Pertinent parts of the U.S. survey and pollock stock assessments are discussed in section 3.4 below.

Japan conducts an annual salmon survey in the central Bering Sea. In the 2022 survey carried out in July and August, 4 pollock were caught (incidental to the salmon catch, 47−60 cm in fork length) in the central Bering Sea.

3.4 Review the status of Aleutian Basin Pollock stocks

The Aleutian Basin also encompasses the central Bering Sea Convention Area (see the 2 figures at the end of this report). Surveys covering the region are impractical due to the size of the area. However, the Convention established a specific area (defined in Convention Annex Part 1) around Bogoslof Island where an important component of the central Bering Sea pollock stock is thought to spawn. As noted above, the abundance of pollock is estimated during the February-March surveys conducted aboard the NOAA ship *Oscar Dyson* every 2 years and that these estimates provide an indirect indicator of central Being Sea Pollock stock abundance. However, due to funding limitations and other priorities, the Bogoslof Island survey was suspended this year; it is unclear if and when this survey will be conducted in the future.

The results of the surveys are therefore unchanged from last year and Figure 1 shows that the most recent estimate (from 2020) is about 345,000 t. Based on the standard expansion (see Annex), suggests then that the CBS stock is about 575,000 t.

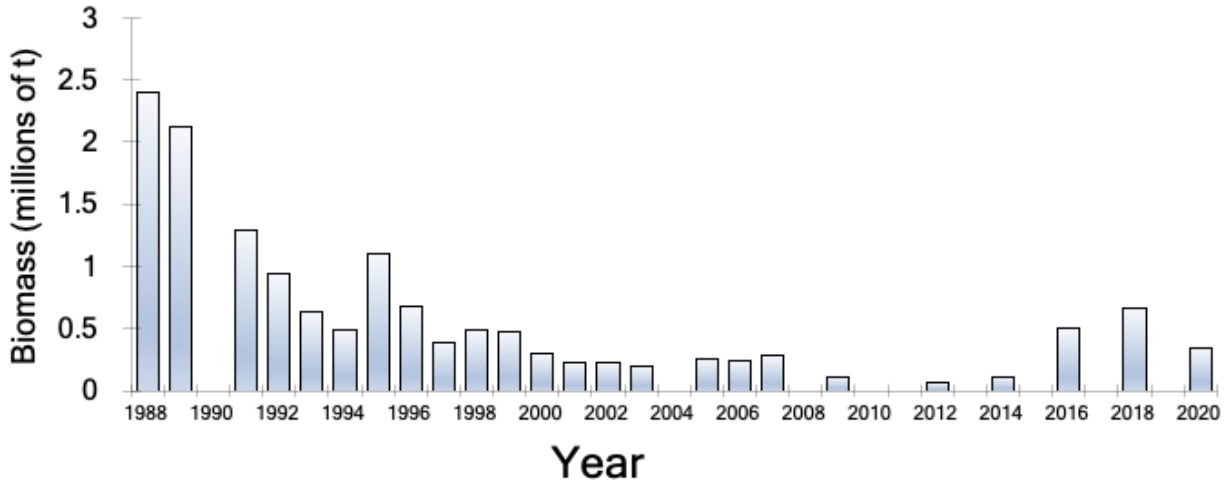

Figure 1. Biomass estimates obtained during acoustic-trawl surveys for walleye Pollock in the Bogoslof Island area, 1988-2020. The United States conducted all the surveys; except for the 1999 survey, which was conducted by Japan. There was no survey in 2021 and the 2022 survey was suspended.

Russian EEZ of the Bering Sea: Northwestern Bering Sea bottom trawl pollock survey was conducted aboard TINRO R/V Professor Kaganovskiy during August-September 2021. Pollock biomass was

estimated at 0,815 million tons and abundance 2,352 billion fish off bottom. Pollock distribution are covered mainly the shelf area from convention line to northern Anadyr Bay. Pollock of the 2020 year-class dominated among immature fish by abundance (31,0%) and among mature fish the 2014-2017 year-classes (37,2%) appeared relatively high in the northwestern Bering Sea off bottom. The 2020 ecointegration midwater trawl (EIMWT) and bottom trawl surveys data and 2021 bottom trawl surveys data indicates that the 2017-2020 year-classes may lead to a possible some increase in recruitment to the exploitable part of the pollock stock in 2022-2024.

The 2017-2020 year-classes appeared during shifts in temperature conditions towards cooling in the Bering Sea. Usually, high abundant pollock year-classes appear during such shifts in thermal regime in the Bering Sea (2000, 2006, 2008 and 2012). The appearance of high abundant year-classes during periods with high annual gradients in water temperature is clearly seen across the entire period of recent observations in the Bering Sea. The appearance of high-abundant 2006, 2008 and 2012 year-classes were associated with thermal regime shift in the Bering Sea, when the abundance of large zooplankton species was relative high. This supports the idea on the existence of relationship between zooplankton abundance and survival of pollock yearlings during winter period.

The abundance and biomass of the Bering Sea pollock became close at average level in 2021.

The western Bering Sea pollock biomass in the Karaginskiy and Olutorskiy Bays area still stay at relatively low level since the late 1990s, at the same time had appeared some trend of recruitment increasing. The western Bering Sea pollock biomass was estimated by bottom trawl surveys in 2017 at 121,5 ths tons and 377,8 ths tons in 2020.**Pollock in the U.S. Eastern Bering Sea (EBS):** The EBS pollock spawning biomass in 2008 was at the lowest level since 1980. The stock increased steadily and peaked in 2016 and since has averaged a decline of about 12% per year. Recent biomass estimates (of spawning and age 3+ biomass) appear to be mainly impacted by the decline in abundance of the 2012 and 2013 year classes. Spawning biomass was projected to be slightly below B_{MSY} in 2022; however, the stock condition is not being subjected to overfishing, is not overfished nor approaching an overfished condition.

Aleutian Islands region: The estimated spawning biomass reached a minimum level in 1999 and then has generally increased. Low levels of fishing mortality along with improved recruitment is thought to be responsible for the increase in stock condition. The Aleutian Islands pollock stock is not being subjected to overfishing, is not overfished, nor is approaching an overfished condition.

Bogoslof region: The estimated biomass in the Bogoslof Island area has been increasing in recent years. The latest survey (2020 by the NOAA ship Oscar Dyson) resulted in a biomass estimate of 345,000 t (note that the management advice will use a recent survey average value for catch advice). There have been no directed fisheries on the stock since 1991. Total allowable catches have been set to zero under terms of the Convention on the Conservation of Pollock Resources in the Central Bering Sea. The trigger level for a TAC to be authorized has been specified in the Convention.

The United States provided the following summary information on pollock stocks status for the Bering Sea by region. The table below is extracted from the U.S. document that summarizes the status and catch specifications of the pollock stocks in the Bering Sea-Aleutian Islands (BSAI) management areas in the U.S. EEZ. All units are in metric tons. The catches for 2022 are projected estimates for the year.

Area	Year	Biomass	Overfishing Level (t)	Acceptable Biological Catch (t)	Total Allowable Catch (t)	Catch (t)
1.E Bering Sea	2015	12,073,000	3,330,000	1,637,000	1,310,000	1,321,574
	2016	15,486,000	3,910,000	2,090,000	1,340,000	1,352,681
	2017	13,794,000	3,640,000	2,800,000	1,345,000	1,359,181
	2018	10,964,000	4,797,000	2,592,000	1,364,341	1,379,288
	2019	9,892,000	3,914,000	2,163,000	1,397,000	1,409,346
	2020	8,693,000	4,085,000	2,043,000	1,425,000	1,367,236
	2021	8,145,000	2,594,000	1,626,000	1,375,000	1,376,258
	2022	6,839,000	1,469,000	1,111,000	1,111,000	1,097,684
2.Aleutians	2015	223,489	36,005	29,659	19,000	915
	2016	239,584	39,075	32,227	19,000	1,257
	2017	250,881	43,650	36,061	19,000	1,507
	2018	256,899	49,291	40,788	19,000	1,860
	2019	255,323	64,240	52,887	19,000	1,663
	2020	257,233	66,973	55,120	19,000	3,202
	2021	292,967	61,856	51,241	19,000	1,840
	2022	308,525	61,264	50,752	19,000	2,726
3.Bogoslof	2015	67,063	21,200	15,900	100	733
	2016	106,000	31,906	23,850	500	1005
	2017	106,000	130,428	60,800	500	185
	2018	434,760	130,428	60,800	450	14
	2019	434,760	183,080	137,310	75	8
	2020	378,262	183,080	137,310	75	9
	2021	378,262	113,479	85,109	250	8
	2022	378,262	113,479	85,109	250	256

2022 catch estimates are preliminary

3.5 Factors affecting recovery of the stocks

No new information was provided.

3.6 The effects of the moratorium and its continuation

No new information was provided.

3.7 Methodologies to determine Acceptable Biological Catch (ABC) and Allowable Harvest Level (AHL)

There were no new methods proposed.

3.8 Recommendation on AHL

No new information was provided. In the past, the Parties have used Annex Part 1 of the Convention to establish AHL. The AHL level has been set at zero; because the minimum biomass level needed to trigger a non-zero AHL according to the Convention Annex has not been reached.

The Russian Federation recommends that the AHL remain at zero since the Convention Annex Part 1 trigger level has not been reached.

3.9 Research Plans

The United States plans to conduct its next survey on pollock in the Bogoslof area in 2023 (during a 2 week period in February-March). Other survey plans by the Parties (United States and Russia) in their EEZ waters are expected to continue as in previous years.

Japan plans to conduct its salmon survey (that may catch pollock incidentally) in the central Bering Sea in 2023.

4 Discussion of Enforcement and Management Issues

The US Coast Guard monitors the region and noted that no known fishing vessel incursions occurred based on their surveillance.

4.1 Violations of the Convention.

No new information was provided; but no IUU fishing in the Convention area was known to have been reported in 2020.

4.2 Terms and conditions for trial fishing for the following year

The Committee recommended that the terms and conditions for trial fishing remain the same as in the previous years. Trial Fishing is addressed in Article X, paragraph 4 of the Convention. In general, any trial fishing intention needs an application and trial fishing plan to be approved by the Scientific and Technical Committee. No Party has applied for trial fishing in 2020 to the Scientific and Technical Committee.

5 Other Issues and Recommendations

5.1 Future Meetings of the Scientific and Technical Committee

Unless otherwise noted, the next meeting of the Committee will be held virtually as they have since 2010. The Party that will host this meeting shall be determined at the Annual Conference. Given improvements on how virtual meetings can be held, the STC:

- **recommended** that if a virtual meeting occur in the future, that set hours and presentations be made via virtual meeting software (instead of just exchanging emails);
- **recommended** that a document sharing system be adopted and to the extent practical, presentations and working papers be distributed in advance to encourage and stimulate discussion; and
- **noted** that measures to ensure the preservation and future record system of STC meetings be maintained via the internet.

6 Report to the Annual Conference

The Chair of the Scientific and Technical Committee will convey the Scientific and Technical Meeting Report to the Annual Conference.

7 Closing Remarks

The Chair thanked all participants of the STC for their discussions and help in compiling this written report. The Chair closed the STC Meeting on 21 October 2022.

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Appendix 2. Agenda

1. Opening of the Meeting

2. Adoption of the Agenda

3. Discussion of Science Issues

    3.1 Update catch and effort statistics
    3.2 Review results of trial fishing
    3.3 Review results of research cruises
    3.4 Review the status of Aleutian Basin Pollock stocks
    3.5 Factors affecting the recovery of the stocks
    3.6 The effects of the moratorium and its continuation
    3.7 Methodologies to determine the Allowable Biological Catch (ABC) and Allowable Harvest Level (AHL)
    3.8 Recommendation on AHL
    3.9 Research plans

4. Discussion of Enforcement and Management Issues

    4.1 Violations of the Convention
    4.2 Terms and Conditions for Trial Fishing for the following year

5. Other Issues and Recommendations

6. Report to the Annual Conference

7. Closing Remarks

Appendix 3: Table of pollock catches in the Bering Sea.

Table 1. All-nation historical catch of pollock from the Bering Sea, in metric tons, 1977-2021. **Sources:** Reported by the Parties to the Convention, *2021 values preliminary

Year	Olyotorskiy-Karagin (W of 170W)	Navarin Region (E of 170W)	Donut Hole	Bogoslof	Aleutian Region	Eastern Bering Sea	Total Bering Sea
1977	265,000				7,625	978,370	1,250,995
1978	417,000				6,282	979,431	1,402,713
1979	546,000				9,504	935,714	1,491,218
1980	825,000				58,156	958,280	1,841,436
1981	1,133,000				55,516	973,502	2,162,018
1982	976,000				57,978	955,964	1,989,942
1983	1,006,000				59,026	981,450	2,046,476
1984	252,000	503,000	181,200		81,834	1,092,055	2,110,089
1985	134,000	488,000	363,400		58,730	1,139,676	2,183,806
1986	297,000	570,000	1,039,800		46,641	1,141,993	3,095,434
1987	349,000	463,000	1,326,300	377,436	28,720	859,416	3,403,872
1988	475,000	852,000	1,395,900	87,813	30,000	1,228,721	4,069,434
1989	345,000	684,000	1,447,600	36,073	15,531	1,229,600	3,757,804
1990	582,000	232,000	917,400	151,672	79,025	1,455,193	3,417,290
1991	326,000	178,000	293,400	316,038	98,604	1,195,664	2,407,706
1992	282,000	315,000	10,000	241	52,352	1,390,309	2,049,902
1993	288,000	389,000	1,957	886	57,132	1,326,609	2,063,584
1994	204,000	288,900	NA	556	58,659	1,329,373	1,881,488
1995	79,000	427,300	Trace	334	64,925	1,264,247	1,835,806
1996	34,000	753,000	Trace	499	29,062	1,192,781	2,009,342
1997	30,000	735,000	Trace	163	25,940	1,124,433	1,915,536
1998	25,000	719,000	Trace	8	23,798	1,102,159	1,869,965
1999	46,000	639,000	Trace	29	1,010	989,680	1,675,719
2000	15,000	507,000	Trace	29	1,244	1,132,710	1,655,984
2001	25,000	526,000	-	258	825	1,387,197	1,939,280
2002	8,000	370,000	-	1,042	1,177	1,480,776	1,860,995
2003	14,600	411,200	-	24	1,649	1,490,779	1,918,252
2004	6,200	424,500	-	0	1,158	1,480,552	1,912,410
2005	4,400	446,800	-	0	1,621	1,483,022	1,935,843
2006	3,900	462,500	-	0	1,745	1,488,031	1,956,176
2007	62,600	587,900	-	0	2,519	1,354,502	2,007,521
2008	50,632	507,127	-	9	1,278	990,578	1,549,624
2009	26,052	328,517	-	73	1,662	810,784	1,167,089
2010	43,352	319,543	-	176	1,289	810,186	1,174,546
2011	37,189	336,690	-	173	1,208	1,199,041	1,574,300
2012	26,300	390,040	-	71	975	1,205,222	1,622,608
2013	29,800	358,900	-	57	2,964	1,270,770	1,662,491
2014	15,100	342,400	-	427	2,375	1,297,422	1,657,724
2015	11,000	383,500	-	733	913	1,321,584	1,717,730
2016	6,900	442,600	-	1,005	1,257	1,352,681	1,804,442
2017	6,300	431,300	-	185	1,507	1,359,182	1,798,474
2018	8,000	392,100	-	14	1,860	1,379,287	1,781,261
2019	12,300	403,300	-	8	1,664	1,409,337	1,826,609
2020	11,689	381,725	-	9	3,205	1,367,229	1,763,857
2021	21,469	366,574		49	1,512	1,338,252	1,727,856
2022							

Appendix 4: Map of the Bering Sea and the Bogoslof (518) area