

2019 At-sea Monitoring Program West-Bering Sea Zone Mid-Water Trawl Pollock Fishery

Prepared by PCA

In 2019, 6 scientific observers (5 observers from TINRO, 1 from KamchatNIRO) performed monitoring in the target mid-water trawl pollock fishery. One more scientific observer from KamchatNIRO conducted monitoring of interaction of fishing gear and vessels with marine mammals under dedicated survey on assessment of potential fishery's impact on the marine mammals. In 2019, with a support from PCA, the number of scientific observers was increased threefold - previously, monitoring of the fishery and collection of scientific and statistical information was traditionally carried out by 2-3 observers annually.

The observers worked from the beginning of June to the end of October, which made it possible to cover practically the entire season of the pollock trawl fishery in the West Bering Sea zone. In total, 7 observers worked 441 ship days. The monitoring program involved 7 large-tonnage fishing vessels (all - PCA member companies).

In total, observer monitoring covered 992 fishing operations (trawls), what equals to 7.9% of the total number of trawl operations in the pollock target fishery, or 10.8% of operations performed by the large-tonnage vessels.

Spatio-temporal modeling of fishery's observer coverage, calculated at TINRO, showed that in 2019 observer monitoring covered 72.7% of the area of operation of the fishing fleet in the northwestern part of the Bering Sea.

In total, TINRO and KamchatNIRO observers sampled 348 trawls for different types of analysis and measuring. Observers performed mass measurements (MP) of more than 70,000 specimens of pollock and more than 30,000 specimens of by-catch species. More than 18,000 pollock specimens were taken for biological analysis (BA).

There were 311 observation stations for interaction and by-catch of seabirds and marine mammals under the standard observation protocol and 130 observation stations within the framework of a specialized study on marine mammals (493 stations by all observers in total).

In 2020, PCA plans to support increasing of number of observers. As of early August 2020, 6 scientific observers from TINRO (5) and KamchatNIRO (1), as well as one scientist from the Far Eastern Branch of the Russian Academy of Sciences who works under specialized survey on direct and indirect impact of the pollock trawl fishery on seabirds have been deployed in the WBS pollock fishery. In mid-August, we planned to deploy two additional observers to cover the autumn fishing season with monitoring work. Thus, the total number of observers will be increased up to 9 persons (+2 compared to 2019).

In addition to the scientific observers, all foreign vessels operating in the WBS Zone are 100% monitored by FSB Coast Guard inspectors who are on board all the time to monitor and enforce compliance with the Fishing Rules and regulations. In 2019, there were 6 fishing vessels from Republic of Korea and China harvested pollock in the WBS. Foreign fleet is not part of the UoC.

More detailed information on the results of observer monitoring of the pollock fishery in the West Bering Sea zone by scientific observers is presented in the following reports:

- 1) *Pollock Fishery Monitoring in the Bering Sea by Scientific Observers in Summer-autumn period of 2019*. Report by TINRO, 2019.
- 2) *Studies in Target Fishery of Pollock and By-caught Species in the Bering Sea in 2019*. Report by KamchatNIRO, 2019.
- 3) *Monitoring Results of Species Composition, distribution, number of marine mammals, behavior and nature of interaction with fishing gear in the regions of target trawl fishery of pollock in the West Bering-Sea zone in summer-autumn period of 2019*. Report by KamchatNIRO, 2019.

WBS pollock fishery observers and monitoring coverage in 2019

	Russian fleet	Foreign fleet	Aggregated	SOO 2019-A
Catch, mt	349 000	50 000	399 000	793 000
Total number of observers (inspectors)	7	6	13	22
Number of observed hauls (operations)	992	1224	2216	2421
Observer vessel-days	441	691	1132	
Weight measurements of pollock, individuals	101 500	-	101 500	382 000
Biological analysis of pollock, individuals	5 100	-	5 100	15000
Observations on seabirds and marine mammals by-catch and interaction	493	-	493	2075
Fishery coverage by fishing operations	8,0%	100%	16,2%	10,04%
Observation coverage by number of vessels	8,0%	100%	13,8%	18,6%
Spatial and temporal scope of monitoring activities	72,70%	100%	72,70%	80,40%
Fishery coverage by catch volume	92,10%	100%	92,10%	88,10%

Summarized statistics on observer monitoring activities of target mid-water trawl pollock fishery in the West Bering Sea Zone in 2019

Observer	Vessel	Area	Period	Trawling depth, m	Observer stations for seabirds and mammals	Number of hauls sampled for bio-analysis	Size and mass measuring, specimens.			Biological analysis, specimens	
							Pollock	Herring	Other	Pollock	Herring
Volodin	BMRT Georgyi Moskovskiyi	West Bering Sea Zone	26.06-23.09	65-385	126	122	18442	10681	1315	650	900
Ksenofontov	BMRT 27 Syezd KPSS	West Bering Sea Zone	25.08-06.10	53-287	39	39	8126	1621	702	275	35
		Chukotka Zone	2-3.10	75-78	2	2	463	216	19	10	15
Bel'dy	BMRT Vladimir Starzhinskiy	West Bering Sea Zone	21.06-16.09	80-270	77	78	16359	4665	–	630	360
Barabashov	BMRT Ardatov	West Bering Sea Zone	19.08-13.09	100-370	31	30	6144	2267	–	–	–
Dorofeev	RTMS Astronom	West Bering Sea Zone	28.09-23.10	167-282	36	24	7424	468	895	199	129
Mikhailytin	MRKT Mekhanik Kovtun	West Bering Sea Zone	06.06-24.08	76-300	52	53	21698			1899	
Mironova (marine mammals)	BMRT Mys Olutorskiy	West Bering Sea Zone	24.08-11.10	–	130	-	–	–	–	–	–
		Karaginsky Subzone Petropavlovsk-Commandorsk subzone					–	–	–	–	–
TOTAL			441 c/c		493	348	101 505			5 102	