ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО РЫБОЛОВСТВУ
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ НАУЧНОЕ УЧРЕЖДЕНИЕ
«ВСЕРОССИЙСКИЙ НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ
РЫБНОГО ХОЗЯЙСТВА И ОКЕАНОГРАФИИ»
Камчатский филиал ФГБНУ «ВНИРО» («КамчатНИРО»)

Kamchatka branch of FGBNU VNIRO (KamchatNIRO)

REPORT

(ref. № ПДД-91/19-НИР)

«Evaluation of direct and indirect potential impact of the speciallized pelagic trawl pollock fishery on the marine mammals in the West Bering Sea zone in summer-autumn period of 2019»

Brief Summary Report

Petropavlovsk-Kamchatsky, 2019

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Report consists of 69 pages, 16 tables, 3 pictures, 206 scientific sources, 1 attachment.

MARINE MAMMALS, POLLOCK, DISTRIBUTION, ABANDANCE, STOCK, BY-CATCH, FISHERT, FEEDING

The purpose of the research is to carry out an expert evaluation of the direct (accidental by-catch and death of marine mammals from fishing gear, etc.) and the indirect (catch of pollock as a potential food item) impact of pollock fishery on marine mammals in the West Bering Sea fishing zone.

During the survey generally accepted methods of marine mammals counting and observation were used; observations of the behavior of marine mammals near fishing vessels were carried out by direct recording.

Analysis of available scientific papers on marine mammals feeding, both on the American and Russian sides of the Bering Sea, as well as an expert calculation of the pollock consumption by marine mammals in the West Bering Sea zone. The impact of the pollock trawl fishery in the West Bering Sea zone on marine mammals is assessed, observations of marine mammals near fishing vessels and their possible by-catch (or interacting with the gear) in the pollock fishery are observed, photo and video materials on the behavior of marine mammals around the fishing vessels during August– October 2019.

Survey description

This research work has been conducted with the support of the Pollock Catcher Association.

The goal of the survey is to assess the direct (death of animals from fishing gear, etc.) and indirect (catch of pollock as a potential forage object) impact of specialized mid-water trawl pollock fishery on the marine mammals in the West Bering Sea zone in the summer-autumn period of 2019.

To accomplish this goal, the following tasks were set:

- analyze the available Russian and foreign scientific literature on the species composition, abundance, distribution, and basic biological indicators of marine mammals found in the West Bering Sea zone during the specialized trawl fishery for pollock;
- to analyze the literature information on the extent of the direct impact of the specialized trawl fishery for pollock in the West Bering Sea zone on marine mammals;
- give an expert assessment of the total needs of marine mammals in the food base and the relative importance of pollock in it;
- provide data on the current state of pollock resources in the research area, catch volumes and fishing structure over the past 5 years;
- expertly assess the impact of the pollack fishery on the food supply of marine mammals in the West Bering Sea zone.

Key findings of the survey

In this research, KamchatNIRO scientists studied and analyzed materials from Russian and foreign scientific literature on composition, abundance, distribution, and main biological indicators of marine mammals inhabited in the West Bering Sea zone.

Pollock plays a significant role in nutrition for only 15 species of marine mammals living in the Bering Sea. Among baleen whales, pollock is a feed source for finwal, sailfish, minke whale and humpback whale. Toothed whales are, without exception, ichthyophages. The role of fish species, including pollock, in the nutrition of representatives of neg. Predatory is crucial.

The analysis shows that pollock is of little importance in the diet of cetaceans, but may be the main component of the diet of pinnipeds, especially sea lions, northern fur seals. Fur seals feed mainly on small pollock, while sea lions feed on medium and large sized fish.

KamchatNIRO experts analyzed the available materials on the direct and indirect effects of the specialized trawl fishery for pollock in the Bering Sea (West Bering Sea zone) and concluded that pollock fishery does not have any significant negative impact on these animals.

Previous similar studies have noted the interaction between Steller Sea lions and the Pollock fishery, at least in the Sea of Okhotsk. However, such interaction did not occur in the Bering Sea due to the fact that fishing occurs during no-ice season.

At-sea specialized monitoring survey conducted by KamchatNIRO observer, and a group of observers fron TINRO and KamchatNIRO in June – October 2019 on the trawl pollock fishery, as well as herring and cod in the West Bering Sea zone, there were no cases of mortality or by-catch of sea lions and other marine mammals in fishing gear. Moreover, Steller sea lions were never registered near the ship. Perhaps this is due to the very low abundance of sea lions in the area and the disappearance of many coastal rookeries of the specie.

For most species of marine mammals encountered, their presence in the fishery for pollock, herring and cod was not associated with the operation of the fishing fleet. Obviously, animals live in these areas and are likely to feed on the same fish flocks that are fished. Pollock fishing in the Bering Sea may also have a positive effect on some of the species of marine mammals such as minke whale, humpback, and sea lion.

The total biomass of pollock in the West Bering Sea zone currently estimates at about 1.7 million tons, and corresponds to the multi-year average level. During the previous 5 years in the northwestern part of the West Bering Sea zone (to the east of 174'0), the use of pollock quotas by the Russian fleet was high and amounted to about 400 thousand tons per year or about 90 % of the recommended TAC.

According to KamchatNIRO estimates, in the West Bering Sea zone the annual consumption of pollock by marine mammals can reach about 184 thousand tons per year, which is less than 10% of the total stock of pollock in the West Bering Sea zone. Thus, marine mammals do not have any shortage of feeding pollock in the area.

At present, to monitor the situation with possible by-catch of marine mammals in fishing gears, it is necessary to continue monitoring work on fishing vessels at sea by observers. As an alternative monitoring methods are proposed to be considered such as using of video recording devices (automatic photo recorders) on all types of vessels using different fishing gear (including Danish seiner).

Appendix 1. Status of marine mammals inhabited in the West Bering Sea zone

Common name	Latin name	Russian Red Book, 2000	Kamchatka Red Book	IUCN, 2000	CITES
Blue whale	*Balaenoptera musculus*	I	I	EN-A1abd	I
Finwhale	*Balaenoptera physalis*	II	II	EN-A1abd	I
Sei whale	*Balaenoptera borealis*	III	III	EN-A1abd	I
Minke's whale	*Balaenoptera acutorostrata*	–	–	LR-nt	I
Greenland whale	*Balaena mysticetus*	I	I	LR-cd	I
Biskayan right whale	*Eubalaena glacialis*	I	I	EN-C1, D	I
Gray whale	*Eschrichtius robustus*	I	I	CR-D	I
Humpback whale	*Megaptera novaeanglia*	I	I	VU-A1ad	I
Baird's whale	*Berardius bairdii*	–	–	LR-cd	I
Sperm whale	*Physeter macrocephalus*	–	–	VU-A1bd	I
Killer whale	*Orcinus orca*	–	–	LR-cd	II
White whale	*Delphinapterus leucas*	–	–	VU-A1abd	II
Harbor porpoise	*Phocoena phocoena*	IV	IV	VU-A1cd	II
Dali’s porpoise	*Phocoenoides dalli*	–	–	LR-cd	II
Bering Sea beaked whale	*Mesoplodon stejnegeri*	IV	IV	DD	II
Cuvier's beaked whale	*Ziphius cavirostris*	III	III	DD	I
Sea otter	*Enhydra lutris lutris*	V	V	EN-A1a	II
Steller sea lion	*Eumetopias jubatus*	II	II	EN-A2a	–
Northern fur sea	*Callorhinus ursinus*	–	–	V-A2b	–
Ribbon seal	*Histriophoca fasciata*	–	–	DD	–

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Common name	Latin name	Russian Red Book, 2000	Kamchatka Red Book	IUCN, 2000	CITES
Larga seal	*Phoca vitulina largha*	–	–	DD- A2b	–
Bearded seal	*Erignathus barbatus*	–	–	LC	–
Ringed seal	*Pusa hispida*	–	–	LC	–