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UNCLASSIFIED

2018-19
Office of Naval Research Arctic Research
Activities
Incidental Harassment Authorization After
Action Report

October 7, 2019

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Office of Naval Research Arctic Research Activities – Incidental Harassment Authorization After Action Report for 2018-19

INTRODUCTION

The U.S. Navy prepared this After Action Report in compliance with the National Marine Fisheries Service (NMFS) Incidental Harassment Authorization under the Marine Mammal Protection Act (MMPA) for the ONR Active Research Activities in 2018-19. The IHA was provided to ONR with a date of September 21, 2018 and covered scientific experiments in the Beaufort Sea from September 20, 2018 through September 19, 2019. An IHA reflecting changes in the experimental plan to change the location and number of acoustic sources was dated September 9 and covers activities from September 10, 2019 through September 9, 2020. Since the new IHA (2019-2020) superseded the old IHA (2018-2019) on September 10, this after action report describes activities that took place from September 20, 2018 to September 9, 2019.

In paragraph 6 of the 2018-19 IHA, the required information in the report is given

- (1) Acoustic source use
- (2) Marine Mammal Sightings
- (3) Number of Shutdowns during monitoring
- (4) An estimate of the number of marine mammals taken during the activity

This information will be provided in sections (1)-(4) below.

The research activities included cruises by the USGS *Healy* (September-October 2018) and the R/V *Sikuliaq* (September 2018). The *Healy* began a transit to the Action Area from Dutch Harbor of September 5, 2019 and commenced the deployment of active acoustic sources requiring an IHA on September 10, 2019.

(1) Sound Sources used

Of the modeled acoustic sources listed in Table 1-1 of the 2018-19 IHA, only the Navigation sources were deployed. All these sources were deployed at fixed locations. Only 7 fixed deployments of the planned 12 fixed sources actually occurred. No deployments of drifting sources or towed sources took place. The tomography sources were not deployed and the spiral wave sources was not deployed.

The seven Navigation sources transmitted 1 minute every four hours over the period of the IHA. These sources were all deployed by the USGS *Healy*. These are the only acoustic source for which takes were requested, other than noise from icebreaking from the USGS *Healy*.

Table 1-2 of the 2018-19 IHA provided a list of de minimis sources. From this list, only ADCP's (from the *Healy*) were used.

(2) Individual marine mammal sighting information

The following marine mammal sightings occurred on the USGS *Healy* during the 2018-19 IHA period:

22-Sep	1542	76- 24.632N	140- 16.508W	SEAL	1	LAYING ON ICE
24-Sep	1731	76- 22.693N	145- 06.592W	POLAR BEAR	1	WALKING
2-Oct	1458	80- 32.289N	136- 58.735W	SEAL	1	SWIMMING
4-Oct	0845	80- 16.580N	140- 53.710W	POLAR BEAR	2	ROAMING
11-Oct	0950	74- 33.070N	146- 13.806W	POLAR BEAR	3	SWIMMING OPEN OCEAN
15-Oct	1510	66- 14.766N	168- 27.121W	HUMBACK	1	SWIMMING
18-Oct	1010	54- 17.81N	166- 39.050W	HUMBACK	1	SURFACING
	1019	54- 16.50N	166- 38.360W	HUMBACK	1	SURFACING

In addition, one diving sei whale was reported from the USGS *Healy* at 74-08.41 N and 166-30.254 W on September 9, 2019 (the last day of the 2018-19 IHA).

Marine Mammal Sightings from the R/V *Sikuliaq* during the 2018 cruise

Date	Time AKDT	Lat (N)	Lon (W)	Observation
20 Sep	1950	73° 00.3'	148° 40.7'	3 Polar Bears
24 Sep	1305	71° 49.2'	151° 15.6'	1 spotted seal
24 Sep	1348	71° 52.5'	151° 15.5'	2 seals (unknown)
25 Sep	0845	72° 49.2'	155° 45.1'	13 walrus
25 Sep	1030	73° 01.2'	156° 38.5'	1 polar bear
25 Sep	1154	73° 08.9'	157° 22.3'	3 walrus
25 Sep	1246	73° 17.8'	157° 31.6'	Approx. 12 walrus
25 Sep	1330	73° 22.6'	157° 47.4'	Approx. 40 walrus
25 Sep	1440	73° 29.1'	157° 46.8'	Approx. 12 walrus
25 Sep	1446	73° 29.9'	157° 46.3'	2 walrus
26 Sep	2033	73° 07.6'	159° 32.0'	2 walrus
27 Sep	1442	72° 11.6'	161° 06.2'	1 seal
27 Sep	1533	72° 02.1'	161° 13.3'	1 seal

(3) Mitigation Shutdown

No mitigation shutdowns occurred. Marine mammals were only sighted during ship transits and no marine mammals were observed during deployments of either passive oceanographic or navigation source moorings.

(4) Take Estimate

No dead or injured animals were observed during the period of the 2018-19 IHA. No take of marine mammal was observed *in situ*. The only relevant estimate of take comes from the navigation sources that were left behind and the icebreaking activity.

The authorized take numbers (level B only, only behavioral responses unless indicated) were

- (i) 92 beluga whales
- (ii) 3,071 ringed seals
- (iii) 5 bearded seals

These take estimates were obtained from the NAEMO model for all sources that could have been included, with the exception of the 5 bearded seals which was recommended by NMFS in case take could be observed *in-situ*. As this was not the case (i.e no takes were observed *in-situ*), the estimates for bearded seals are based the modeled result of 0.39 takes per year.

The entire modeled time for icebreaking events (4 days) was needed to perform the experiments. Therefore, the estimates assume that all modeled icebreaking takes did occur. According to the OEA prepared by the Navy the takes from icebreaking would be:

26 Beluga whales
 1,246 Ringed Seals (including 1 TTS)
 0 Bearded Seals

Note that for the 2018-19 IHA the icebreaking capable of producing a sound pressure level of ~190 dB was presumed to occur for 24 hours a day. This is now considered unrealistic but as it was used for the 2018-19 IHA, we are presenting here what we consider to be very conservative estimates of take from icebreaking.

For the takes from the navigation sources, we can based an estimate on the modeled results for all non-icebreaking sources, which were

66 beluga whales
 1,826 Ringed Seals
 0.39 bearded seals

However, only the navigation sources were deployed, and that only 7 out the 15 planned navigation sources were actually deployed, there were far fewer acoustic transmission than requested in the IHA application. Therefore we estimate (conservatively) that only one-third of these takes are counted towards the estimate, producing a non-icebreaking total of

22 beluga whales
 609 Ringed Seals
 0.13 bearded seals.

When added to the icebreaking sources, we have a total estimate of

48 beluga whales
1855 Ringed seals
0.13 bearded seals

Based on the limited number of sources actually employed, it is evident that the estimated take is significantly less than the requested take.