

ALASKA BELUGA WHALE COMMITTEE
REPORT 01-1

Beluga Whale Surveys in the eastern Chukchi Sea, July 2001

Prepared by

Lloyd Lowry and Kathy Frost

University of Alaska
School of Fisheries and Ocean Sciences
1550 Coyote Trail
Fairbanks, AK 99709

Assisted by

Gay Sheffield and Dave Weintraub

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Alaska Regional Office
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802

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SUMMARY

The Alaska Beluga Whale Committee conducted aerial surveys for beluga whales in the eastern Chukchi Sea on five days during the period 4-9 July 2001 (Appendix A). Survey conditions were generally poor with ice, fog, and high winds often interfering with survey operations.

Beluga whales were seen in the Kasegaluk Lagoon area on all of the five flights made. Most were seen in the Cape Sabine-Omalik Lagoon region where belugas are common in most years. Whales were also seen at some of the Lagoon passes and on offshore transects. The peak single day count was on 6 July and totaled 667 animals. This is an underestimate of the total eastern Chukchi Sea population because: 1) many belugas were in offshore waters where they were not completely counted; and 2) no correction factors have been applied to account for whales that were in the survey area but were not visible because they were diving.

INTRODUCTION

In 1996, 1997, and 1998 the Alaska Beluga Whale Committee (ABWC) conducted aerial surveys to determine the distribution and abundance of beluga whales in the eastern Chukchi Sea. Emphasis was on the Kasegaluk Lagoon region, an area that has been surveyed repeatedly in previous years (Seaman et al. 1986, Frost and Lowry 1990, Frost et al. 1993, Lowry et al. 1996, 1997, Demaster et al. 1998), with some survey effort in Kotzebue Sound and along the coast between Kotzebue and Kasegaluk Lagoon. A summary of the survey findings for all three years was presented to the IWC in 1999 (Lowry et al. 1999).

During the previous ABWC surveys, survey conditions were good in 1996 and 1998 and poor in 1997. The 1996-1998 surveys found few belugas in Kotzebue Sound or along the coast between there and Cape Lisburne, but belugas were commonly seen nearshore between Cape Sabine and Icy Cape (Lowry et al. 1999). Peak counts were 1,035 in 1996 (on 30 June) and 1,172 in 1998 (on 6 July). During 1996 and 1998 peak counts, belugas were seen both nearshore and offshore in sea ice. When the 1998 count was made, four of five whales that had been equipped with satellite tags near Point Lay were more than 200 km to the northeast of the main concentration, far from the area covered by the surveys (Lowry et al. 1999). Results from additional satellite tagging studies in 1999 again showed that whales were often offshore during early-mid July when aerial surveys are usually conducted (Suydam et al. in press).

As part of its regular program of stock assessments, the ABWC conducted aerial surveys of beluga whales in the eastern Chukchi Sea again in July 2001. Objectives were to count beluga whales nearshore in the Kasegaluk Lagoon region, and to test the feasibility of counting belugas offshore in the region between Cape Sabine and Point Barrow.

METHODS

Methods used for the aerial surveys were similar to those used for previous ABWC aerial surveys in the Chukchi Sea (Lowry et al. 1999). The aircraft was a high-wing, twin-engine AeroCommander (N7UP). Observers were Lloyd Lowry and Kathy Frost. All transects were flown at 120 knots. Survey altitude was intended to be 1000 ft, but lower altitudes were often required due to fog and low ceilings. Most surveys were coastal surveys which were flown with the aircraft centerline approximately 0.6 nm off shore (Figure 1). When large aggregations of beluga whales were located along the coast, as many animals as possible were positioned to one side of the survey track line, and two to four passes were made while observers counted whales on both sides of the aircraft. The group sizes presented in this report are the sum of the maximum estimates from each side of the aircraft. Offshore lines were flown usually at a spacing of 5 or 10 nm between centerlines. On offshore lines observers counted whales in a strip 0.5 nm wide on each side, offset 0.125 nm from the centerline of the aircraft. Strip widths were measured by inclinometers and marked on the aircraft windows with grease pencils.

RESULTS

Surveys were flown on 5 days during the period 4-9 July 2001 (Appendix A). In general conditions for surveying were poor, with fog, wind, and ice in much of the area that interfered with surveys.

The coastal region between Kotzebue Sound and Cape Sabine was surveyed only on 4 July and no belugas were seen. Belugas were seen in the Cape Sabine-Omalik Lagoon region on every survey, with largest counts on 5 and 6 July (Figure 1; Table 1). Belugas were also seen north of Point Lay at 11 Mile Pass on every survey, with the largest count on 7 July.

We flew offshore transects on three days. On 5 and 7 July we sighted a few belugas, but conditions for seeing and counting whales were very poor (winds 15-25 knots, many whitecaps, and intermittent fog). Sea conditions were much better on 6 July and we counted 55 whales on 180 nm of offshore lines, in spite of problems with fog and low ceilings.

DISCUSSION AND CONCLUSIONS

In 2001 we wanted to count belugas both in their usual coastal concentration areas and also in waters offshore from Kasegaluk Lagoon. Our peak count of whales along the coast in 2001 (612 animals) was lower than in 1996 (1,035) or 1998 (1,172), but was similar to peak counts made in some other previous years (Lowry et al. 1999). In 2001, conditions were often windy even nearshore, and whitecaps and waves very likely caused some undercounting of whales (DeMaster et al. 2001).

Conditions for surveying in offshore areas were usually very poor in 2001, and many belugas undoubtedly were missed in the high Beaufort states we encountered (DeMaster et al. 2001). Nonetheless, some belugas were seen on each day when we flew offshore lines, and the distribution of sightings suggests that whales occurred in a large area offshore. The ABWC attached satellite tags to two belugas on 3 July 2001, and those animals spent most of their time in an area 10-20 nm north of Icy Cape during the time of our surveys (Figure 2).

Because of the poor weather conditions, results from our counts are not sufficient to accurately estimate the total number of belugas in the Kasegaluk Lagoon region in 2001. Our count of 55 belugas on 180 nm of offshore lines suggests a relatively high density ($0.3/\text{nm}^2$), and it seems likely that whales were numerous throughout the area offshore of Kasegaluk Lagoon. In future years additional effort should be given to surveys of both coastal and offshore waters in the Kasegaluk Lagoon region in order to develop an accurate estimate of the total size of the eastern Chukchi Sea beluga whale population.

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Table 1. Counts of beluga whales in the eastern Chukchi Sea, July 2001.

Location	4 July	5 July	6 July	7 July	9 July
Cape Sabine- Omalik Lagoon	43	405	500	246	43
Naokok Pass (South Pass)	70	--	--	--	--
Lagoon near Pt. Lay	--	--	25	13	6
Akunik Pass (11 Mile Pass)	15	40	86	200	55
West of Icy Cape	--	--	1	11	--
Offshore transects	--	5	55	9	--
TOTAL	137	450	667	479	104

APPENDIX A. DAILY SURVEY SUMMARIES

4 July 2001: Flew a coastal survey from Kotzebue to the north end of Kasegaluk Lagoon, and a partial survey over ice to Barrow. Windy with fog and low ceilings, and ice to the shore at Icy Cape and to the west. A total of 137 belugas was counted.

5 July 2001: Flew a coastal survey of Kasegaluk Lagoon, offshore lines, and a partial survey over ice off Peard Bay. Windy with fog and low ceilings. A total of 450 belugas was counted.

6 July 2001: Flew a coastal survey of Kasegaluk Lagoon and offshore lines. Light winds, fog and low ceilings. A total of 667 belugas was counted.

7 July 2001: Flew a coastal survey of Kasegaluk Lagoon, offshore lines, and a partial survey over ice between Icy Cape and Barrow. Windy with fog and low ceilings. A total of 479 belugas was counted.

9 July 2001. Flew a coastal survey of Kasegaluk Lagoon, offshore lines, and a partial survey over ice off Peard Bay. Very windy with fog and low ceilings. A total of 104 belugas was counted.

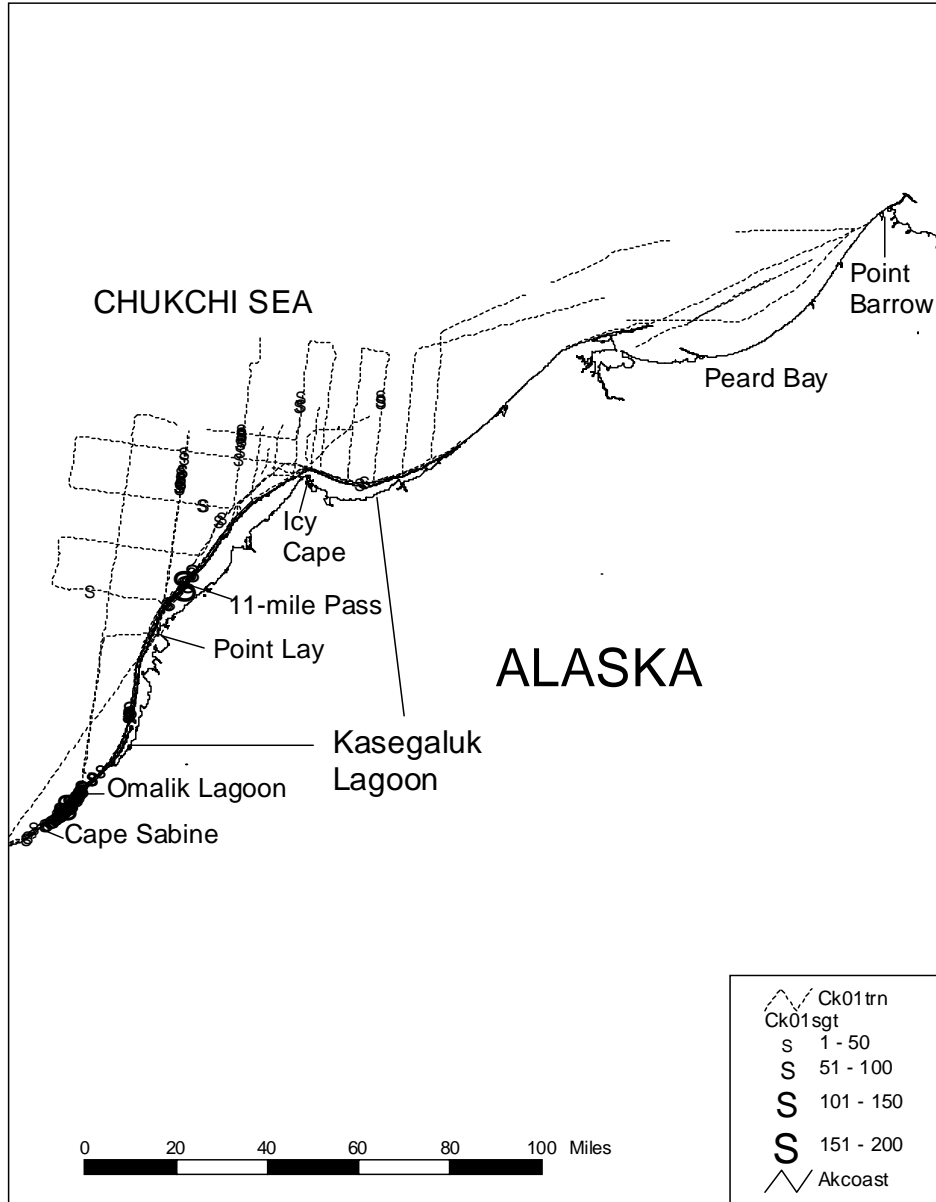


Figure 1. Map of the Kasegaluk Lagoon area showing flight lines and beluga sightings made during ABWC aerial surveys conducted 4-9 July 2001.

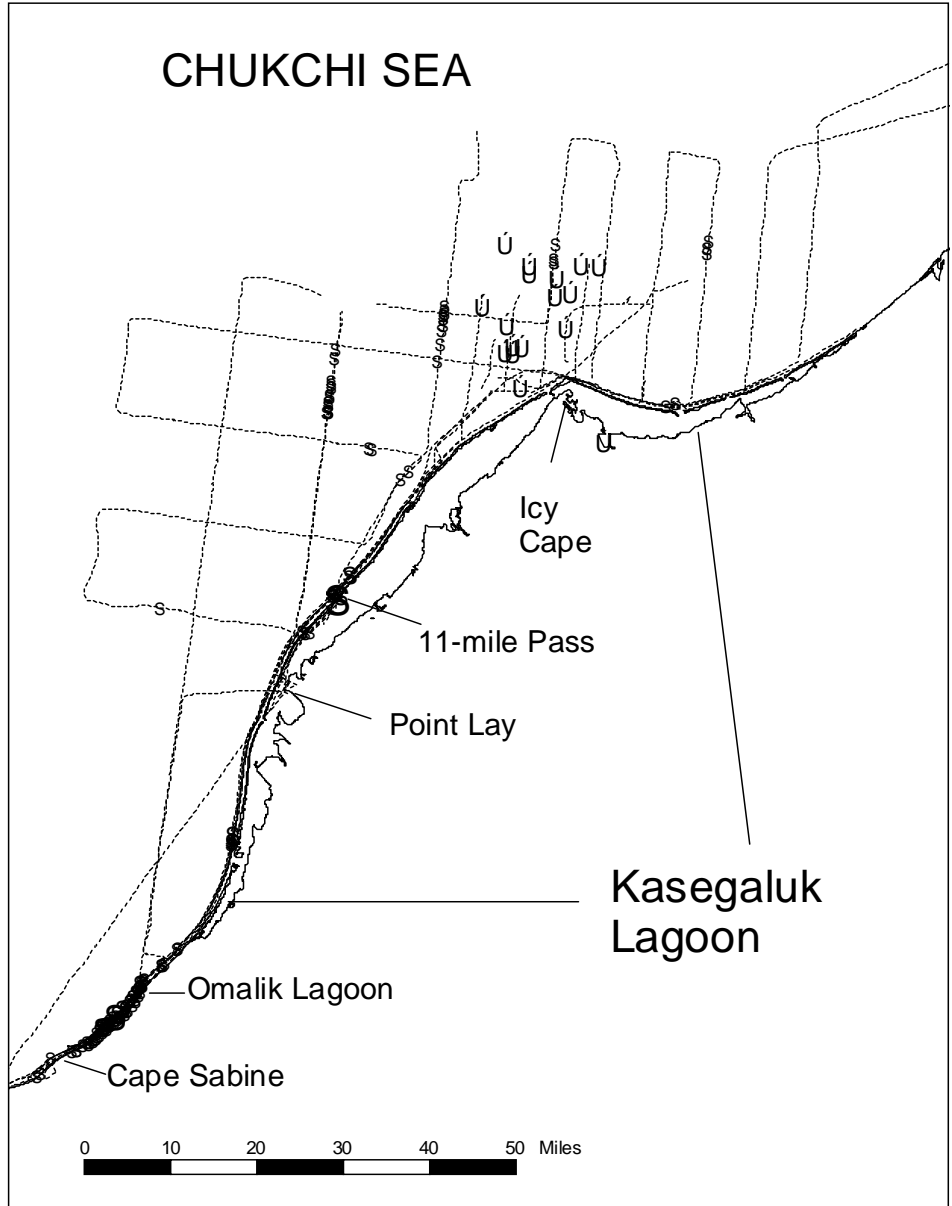


Figure 2. Map of the Kasegaluk Lagoon area showing flight lines, beluga sightings (circles), and locations of two satellite-tagged whales (stars) during 4-9 July 2001.