

Sea Otter Distribution and Relative Abundance

Cross Sound-Icy Strait Survey Summary

11 May, 1999

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Observer: D. H. Monson
Pilot: P. Kearney (Cordova Air)
Aircraft: Bellanca Scout

The purpose of the survey was to provide documentation on the distribution and relative abundance of sea otters in the Cross Sound/ Icy Strait area of southeast Alaska, including Glacier Bay. The results of repetitive surveys are intended to provide a description of the process of recolonization of the waters around Glacier Bay by sea otters. The surveys are in support of a cooperative project being conducted by NPS, NMFS, UAF, ADFG and USGS to describe the effect of commercial fisheries on the abundance of Dungeness crab populations in the Glacier Bay area (MADS, Multi-Agency Dungeness Study). Additionally, these data will be useful in describing the effects of sea otter recolonization on marine resources in Glacier Bay.

Methods: We attempted complete coverage of all shoreline habitat out to the 20 fathom contour. Flight tracks parallel to shore were flown where water less than 20 fathoms extended more than 1 km offshore (e.g. Dundas and Berg Bays). Surveys were flown at 55-65 knots, at an altitude of 300 ft. Surveys were conducted on 11 and 12 May, 1999. Survey conditions consisted of clear skies and wind velocities from 0 to 10 knots, although generally calm. Seas were calm to 1' and swells < 1' except in Cross Sound where swells were 3'. Survey conditions were considered very good to excellent.

Results: Survey results for Icy Straits and Cross Sound are provided in Table 1., using area designations provided by Pitcher (1989). The total adult count of 362 is lower than previous counts, but does not include Glacier Bay proper which was surveyed with line-transect methods at this same time (see Bodkin et al. 1999). We estimated 384 sea otters occupied Glacier Bay proper in May 1999 (Table 2) which when added to the Icy Straits/Cross Sound count yields 777 sea otters (including pups). Also included in Table 2 are the results of past

distribution and relative abundance surveys since 1994. Pitcher (1989) counted 308 sea otters in Icy Straits/Cross Sound in 1987 and 307 in 1988. Sea otters at that time did not

Table 1. Results of 1999 Cross Sound/ Icy Straits sea otter survey. Pitchers # refers to area designations used by Pitcher (1989)

<u>Survey Area</u>	<u>adults/ pups</u>	<u>Pitcher's area</u>
Cape Spencer-Pt. Wimbledon	6/0	6006
Pt. Wimbledon-Pt. Dundas (outer Dundas Bay)	27/0 ¹	6006
Pt Dundas-Pt. Gustavus (not inc. area within GLBA survey)	17/0	6005
Pt. Gustavus-Porpoise Is.	19/0 ¹	6007
Beardslee Islands -- (see spring 99 survey data, Bodkin et al 1999)		
Cannery Pt.-Crist Pt. (Port Fredricks not surveyed)	0	6008
Crist Pt.-Gull Cove	97/3	6002
Lemesurier Is.	67/17	6004
Gull Cove-Pt. Lavina (inc. Idaho Inlet)	90/0 ¹	6002
Inian Islands	18/4	6003
Pt. Lavina-Column Pt.	21/7	6001
<u>TOTAL</u>	<u>362/31</u>	

¹ indicates concentrations of otters presumed to be male by the lack of dependent pups.

apparently occur east of Idaho Inlet, and were not known to occur in Glacier Bay. We are now seeing female sea otters with dependent pups in lower Glacier Bay and at least to South Marble Island. This would indicate at least some large groups in this area have been made up of young females which are now maturing to reproductive age.

The pup count of 31 is also low but again does not include pups observed along the west shore of Glacier Bay near Pt. Carolus or the pups observed in the N. Beardslee Islands. Several pups were also observed near Pt. Gustavus which are not included here.

We continue to advise caution regarding inference to changes in population abundance using the counts obtained in these surveys. They are designed to document the distribution

of sea otters and relative abundance. We do not estimate the proportion of sea otters we do not see, nor do we systematically sample the survey area. We also have used different aircraft with different flight characteristics over time. However, It does appear that sea otters are continuing to expand their range into Icy Straits and Glacier Bay. The large numbers of females with pups at Lemesurier Is. and east of Gull Cove suggest a source of animals for continued range expansion to the east and north into Glacier Bay.

Table 2. Sea otter counts from aerial surveys in Cross Sound, Icy Straits and Glacier Bay, 1994-1999. Counts are presented as adults/ pups, and a period equals no data. The Scout is a Bellanca Scout and the 172 and 185 are Cessnas.

	date	May 94	May 95	Mar 96	Aug 96	May 97	Mar 98	May 99
	Aircraft	Scout	Scout	172	172	Scout	185	Scout
survey area								
Spencer-Pt Wimbleton		69/20	60/9	31/4	19/2	43/3	8	6
Pt Wimbleton-Pt. Dundas		37/1	23	18	52	24	52	27
Pt Dundas-Pt Gustavus		0	12/1	41/1	178/4	10	1	17
Glacier Bay Proper		.	5	39	0	21	209	384*
Excursion Inlet		7	1
Pt Couverdon		2	.
Pt Gustavus-Porpoise Is.		29/0	94/1	73	2/1	161	8	18
Cannery Pt-Crist Pt		0	0	0	0	0	0	0
Crist Pt-Gull Cove		55	15/3	30/1	17/1	92/15	23	97/3
Lemesurier Is.		33/8	62/23	56/2	47/8	143/32	10	67/17
Gull Pt-Pt Lavina		77	81	48	141	94	3	90
Inian Is.		31/9	36/16	11/1	30/12	31/8	10	18/4
Pt Lavina-Column Pt		100/31	159/73	42/3	94/21	148/25	31	21/7
Total		431/69	547/126	389/12	580/49	767/83	364	746/31

* Adjusted population estimate (includes pups)

Literature cited:

Bodkin, J.L., G.E. Esslinger, and D.H. Monson. 1999. Estimated sea otter population size in Glacier Bay, 8-13 May, 1999. Unpublished report to Glacier Bay National Park and Preserve. USGS, Alaska Biological Science Center, Anchorage, Alaska. 13 pages.

Pitcher, K.W. 1989. Studies of Southeastern Alaska sea otter populations: Distribution, abundance, structure, range expansion, and potential conflicts with shellfisheries. Final Report Part I. U.S. Fish and Wildlife Service Cooperative Contract No. 14-16-0009-954.