

Sea Otter Distribution and Relative Abundance

Cross Sound - Icy Strait

2-3 March 1998

G.G. Esslinger

6 March 1998

Observer: G.G. Esslinger
Pilot: Mike Sharp (NPS pilot)
Aircraft: Cessna 185 on wheel skis

The purpose of this survey was to provide documentation on the distribution and relative abundance of sea otters in the Cross Sound / Icy Strait area of southeast Alaska. The results of repetitive surveys are intended to provide a description of the process of recolonization of 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 affect of commercial fisheries on the abundance of Dungeness crab populations in the Glacier Bay area.

Methods: We surveyed sea otter habitat by flying parallel to shore in a Cessna 185. Our goal was to fly the survey at 75 knots, at an altitude of 500 feet, but for safety reasons, this was not always possible and the implications will be discussed below. Surveys were conducted on 2 and 3 March 1998 with clear skies and wind velocities from 0 to 25 knots. Seas were calm to 4' and survey conditions were considered fair to good in most areas and poor in others. Strong winds prevailed from the north on both days so sea conditions varied greatly depending upon exposure. Observation conditions were generally worse on the second day because winds were stronger and survey sites were more exposed. As a result, wind turbulence forced us to survey at least 600' off the water in some areas. This survey was based out of Juneau and included a second observer with no prior aerial survey experience. Our total flight time of 9.2 hours included travel to/from Juneau and one round trip from Gustavus to Juneau for the pilot.

Results: The following is a summary of the resurvey results using area designations provided by Pitcher (1989).

<u>Survey Area</u>	<u># sea otters</u>	<u>Pitcher's count area #</u>
Cape Spencer-Pt. Wimbledon	8	6006
Pt. Wimbledon-Pt. Dundas	52	6006
Pt Dundas-Pt. Gustavus	1	6005

(not inc. Glacier Bay proper)

Pt. Gustavus-Porpoise Is.	8	6007
Glacier Bay proper	209	-
Excursion Inlet	7	6007
Pt. Couverden	2	6009
Cannery Pt.-Crist Pt. (Port Fredrick not surveyed)	0	6008
Crist Pt.-Gull Cove	23	6002
Lemesurier Is.	10	6004
Gull Cove-Pt. Lavinia (see comments on Idaho Inlet below)	3	6002
Inian Islands	10	6003
Pt. Lavinia - Column Pt.	31	6001
TOTAL	364	

Discussion: The total count of 364 is much lower than the previous count of 767 in May 1997 for several reasons. The aircraft, speed, altitude, and observation conditions during this survey obviously decreased sea otter detection. The Cessna 185, being a larger, more powerful airplane than the Scout, must fly faster (≥ 75 knots) and higher ($\geq 500'$) in order to maintain a reasonable safety margin. Increased speed gives the observer less time to spot otters and increased altitude makes it difficult to see otters, especially in kelp. Due to the seating configuration of a Cessna 185, observations were restricted to the starboard side of the airplane which made it more difficult to cope with glare at times. Small pups were not detectable and large pups not distinguishable from adults for the reasons listed above plus the fact that binoculars would not focus properly through the bubble shaped window.

Sea otters have occupied Cross Sound, Port Althorp and Idaho Inlet for several years now, but counts from these areas in particular are not comparable to previous surveys. From Point Wimbledon to Cape Spencer and Column Point to Point Lavinia, heavy Nereocystis cover made it made it nearly impossible to see otters from the altitude ($\geq 600'$) and speed (≥ 75 knots) at which we were flying. Nereocystis was not a problem in Idaho Inlet, but high winds made observation conditions unacceptable and precluded a complete survey of this area.

The number of sea otters counted in Glacier Bay proper (209) is much higher than previous aerial survey counts. However, boat-based counts in March and April of 1996 approached this number. The northward expansion continues with the recent occupation of Fingers Bay (62). Large groups of sea otters were sighted for the first time in this part of Glacier Bay last winter when a group of 30 to 40 was observed by a halibut tracking crew near Netland Island in early January 1997.

Likely the same group was observed in the north finger of Fingers Bay during a sea duck survey on 18 March 1997 with 45 otters. This group left the area prior to the 3 May 1997 aerial survey.

On the eastern limits of sea otter distribution, 6 otters were counted in Excursion Inlet despite heavy whitecapping. Excursion has not been surveyed for several years so we are not sure how long sea otters have been there. To the south, 17 sea otters were observed in heavy sea conditions between Quartz Pt. and Pt. Adolphus, a stretch of coastline previously unoccupied by sea otters.

The noticeable lack of sea otters at Lemesurier Island (10) is inconsistent with prior surveys. This area usually has a relatively high number of females with pups (143/32 in August 1997). The Lemesurier count may have been affected by the fact that it was surveyed at high tide and kelp beds were absent. Pleasant Island also yielded relatively few animals. The large concentration of sea otters seen near Flapjack Island (112) during this survey may be the same group of males seen at Pleasant Island Reef (122) in August 1997.

For the record, southeast residents say the "El nino" winter of 1997/98 has been very mild and we did not encounter any sea ice or snow cover at lower elevations.

We wish to reiterate our caution regarding inference to changes in population abundance using 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. However, it appears that sea otters continue to expand their range into Icy Straits and Glacier Bay.

Continued reports from Glacier Bay Park Service USGS staff and community residents will allow us to better describe what appears to be, at this time, seasonal changes in the distribution of sea otters, as well as provide opportunities for studying the ecological effects of sea otters as they reoccupy former habitat.