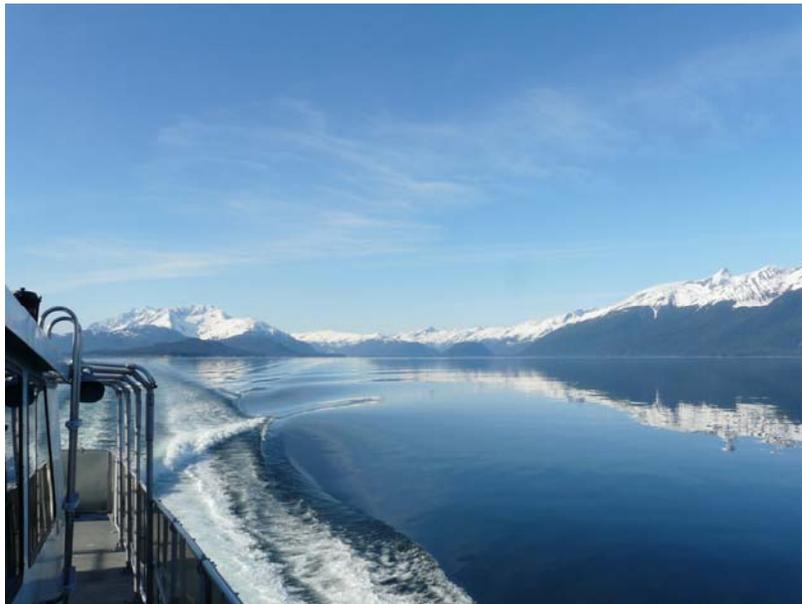


# **2009 Transportation Action Strategy**

## **Marine Mammal Survey Report**

### **Coeur Alaska Kensington Mine**



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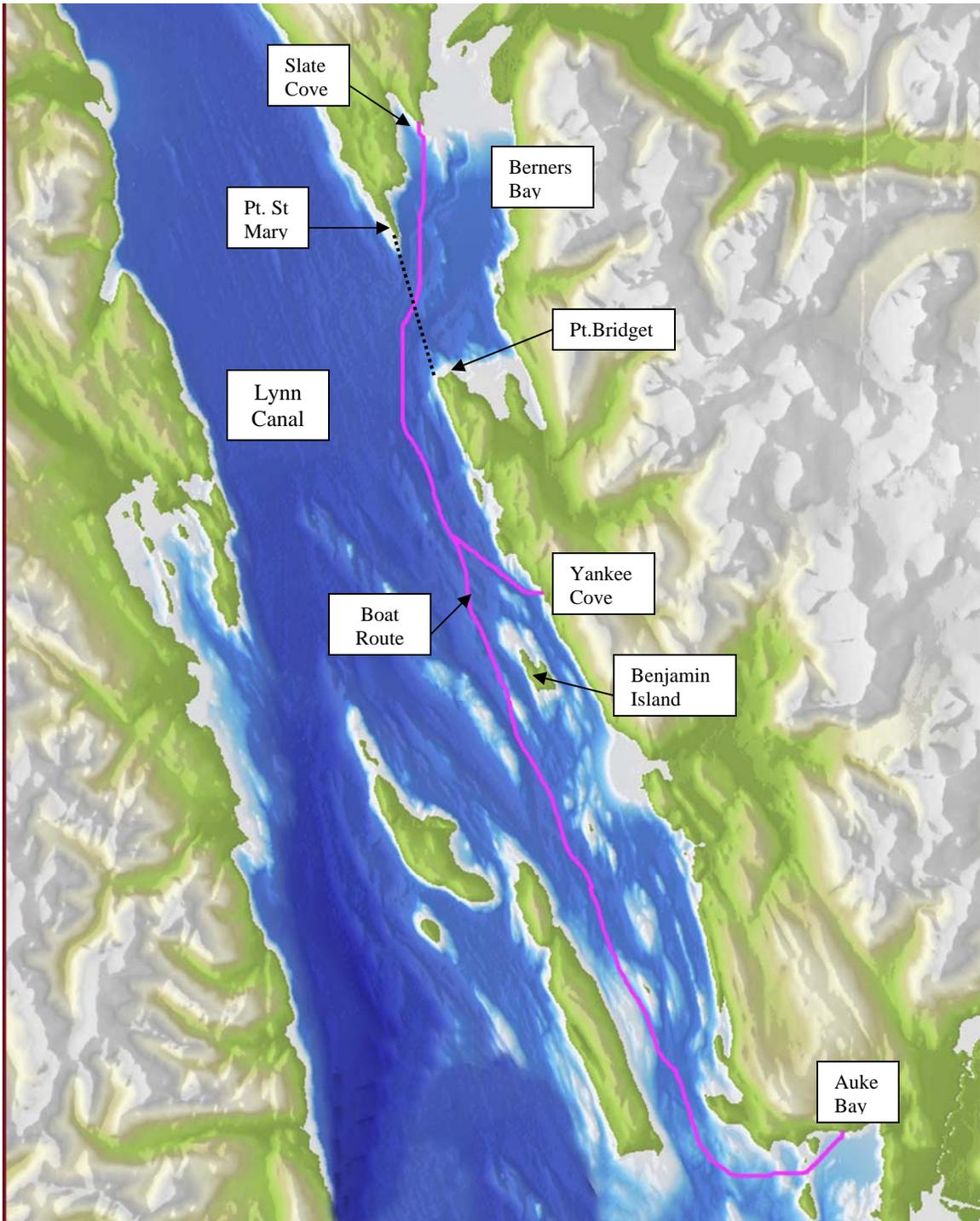
September 2009

## **Introduction**

Coeur Alaska's Berners Bay/Lynn Canal Transportation Plan (January 2008) includes the adoption of standard operating guidelines to ensure minimal disruption of marine mammals in the area from marine traffic. Some guidelines are designed to minimize impacts throughout the year, while others are specific to the spring eulachon and herring spawning runs when marine mammals congregate in large groups. This report describes monitoring activities conducted during the April/May 2009 eulachon spawning season. The Coeur Alaska crew transportation vessel during this period was the m/v Sentinel, an 88ft single-hulled vessel with two 1200hp engines and crew of four people that transited between Slate Cove and Auke Bay or Yankee Cove (Figure 1). No helicopters were used to transport crew during this time.

## **Methods**

Designation of the eulachon spawning season requires some information to be gathered regarding marine mammal activity within Berners Bay as this is a good indicator that eulachon migration is underway. One source of this information is the ADFG herring spawning aerial survey data for Lynn Canal, posted on the internet at <http://documents.cfl.adfg.state.ak.us/TopicContents.po#Herring>. These updates usually include a brief summary of the location of marine mammal concentrations. Coeur also conducts aerial, terrestrial or marine based surveys to monitor marine mammal numbers within Berners Bay. These surveys are undertaken by Coeur environmental personnel or contractors with experience of observing marine mammals. In addition, the Coeur transportation vessel boat crew records their own observations in the vessel log, including distance to any marine mammals encountered. Survey results are faxed to the NMFS Office of Protected Resources within 24 hours. When Coeur's marine mammal surveys and ADFG herring surveys show a substantial increase in marine mammals within Berners Bay, the eulachon spawning season is declared to have commenced.



**Figure 1:** Boat route to Slate Cove, Berners Bay from Auke Bay or Yankee Cove. Line between Pt Bridget and Pt St Mary's defines the area inside which, the 13 knot speed limit applies.

During the eulachon spawning run a marine mammal observer accompanies the Coeur transportation vessel on all crew transfers to help adjust the daily routing into Slate Cove to avoid congregations of marine mammals. The marine observer keeps vigil from the bridge of the vessel and uses binoculars as needed to identify marine mammals. Photography is used to assist with counting total numbers present since at any one time a portion of the group may be submersed or in motion and difficult to count.

Vessel trips are also kept to no more than two or three per day and the vessel maintains a low, constant speed of 13 knots within the bay (within an imaginary line drawn between Point St. Mary and Point Bridget – Figure 1). Fuel shipments by barge are also restricted during the eulachon spawning period. The spawning period typically lasts for 2-3 weeks by which time marine mammal observations have declined again and the spawning season may be declared to have ended.

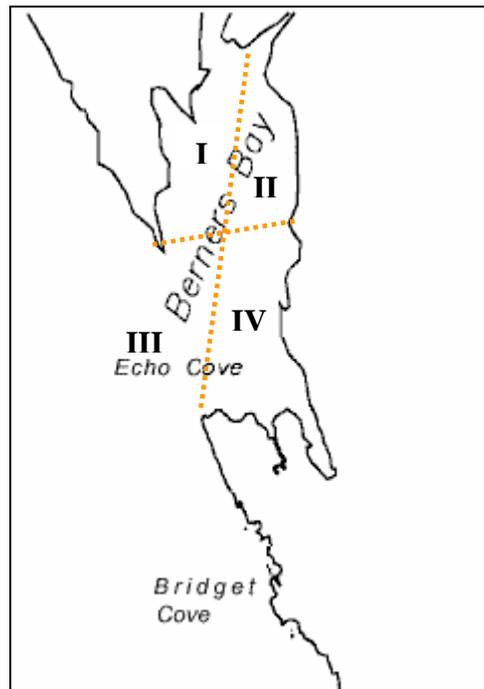
Marine mammal observations are categorized into zones by dividing Berners Bay into four quadrants (Figure 2). The first quadrant covers north-east Berners Bay including Slate Cove, the second covers north-west Berners Bay, the third is the south-west and outer part of the bay (including the Benjamin Island Steller sea lion haulout) and the fourth is the south-east quadrant including Cascade Point.

## **Results**

Transportation vessel trips in the spring of 2009 followed the schedule in Table 1 after May 5. Prior to May 5, all departures were from Auke Bay. A one-way trip from Auke Bay to Slate Cove takes around two hours and consumes approximately 200 gallons of fuel depending on wind and sea conditions (pers comm. Bill Church, Sentinel captain). A one-way trip from Yankee Cove to Slate Cove is about 50 minutes and consumes around 85 gallons of fuel. The shorter transit time also means less time for marine mammal encounters.

Day	Time	Departure
Mon	5:40 AM	Auke Bay
Tues	2:00 PM	Yankee Cove
Wed	6:00 AM	Yankee Cove
Wed	3:00 PM	Yankee Cove
Thur	3:00 PM	Yankee Cove
Fri		No boat
Sat		No boat
Sun		No boat

**Table 1:** Boat schedule, Spring 2009.



**Figure 2:** Berners Bay quadrants.

Between April 13 and May 14, forty-one surveys were completed from the m/v Sentinel and five surveys were made from Slate Cove dock. Some movement of Steller sea lions from quadrant III to quadrant I appeared to occur between April 14 and 27 as numbers declined in QIII and increased in Q1. In early April Steller sea lions are observed at the haul out on Benjamin Island (Figure 3), but numbers decline during April as animals move into Berners Bay.

There was a substantial increase in numbers of Steller sea lions in Slate Cove on April 29 so the eulachon spawning run was declared to have started and the standard operating guidelines for the run put into effect on April 30. Special measures taken during the eulachon run included having a marine observer on the vessel during all trips made and maintaining a speed of 13 knots within the Berners Bay. Regular transit speed is closer to 17 knots. Only one or two round-trips were made on four out of every seven days during the spawning period, which was the normal operating schedule at the time. The fisheries crew who were conducting daily salmon fry counts at Slate Creek used kayaks to transit across Slate Cove to avoid using motorized craft during the eulachon run (Figure 4).

Slate Cove had the most observations of Steller sea lion rafts with up to 100 animals in one raft (Figures 5, 6). Groups of around twenty Harbor seals were also observed in Slate Cove (Figure 7). Quadrant III had the most observations of humpback whales, killer whales and Harbor porpoises. Numbers of marine mammals in the Slate Cove quadrant (QI) declined again after May 10 with only three sea lions remaining in the area. The spawning season was declared at an end on May 14.

Up to 200 Steller sea lions, four humpback whales, 100 Harbor seals and five killer whales were observed at any one time within Berners Bay in 2009. QIII had the most Steller sea lion observations, partly because this quadrant is bisected by the ferry route each time. QIV had the fewest observations, but it is furthest from the observer. No recordable encounters with marine mammals occurred during the 2009 eulachon spawning season.

**Slate Cove**

**Pt. St. Mary**

**Point Bridget**

**Lynn Canal**

**Bridget Cove and Mab Island**

**Yankee Cove**

**Benjamin Island**

**Date** \_\_\_\_\_ **Time** \_\_\_\_\_

**Observer** \_\_\_\_\_

**Weather** \_\_\_\_\_

**Visibility** \_\_\_\_\_

**Wave height/conditions** \_\_\_\_\_

**Counts of Marine Mammals Observed:**

**Sea Lions** \_\_\_\_\_ **Seals** \_\_\_\_\_

**# of sea lion rafts** \_\_\_\_\_

**Humpbacks** \_\_\_\_\_ **Orcas** \_\_\_\_\_

**Porpoise** \_\_\_\_\_ **Other** \_\_\_\_\_

**Comments:**

On map, include route, location and number of marine mammals or other significant information. L = sea lion, S = harbor seal, H = humpback, P = harbor porpoise, K = killer whale, O = other

Fax to 586-7012, NMFS Division of Protected Resources

**Figure 3:** Survey form used for marine mammal observations.

**Table 2: Summary of Marine Mammal Observations.**

No.	DATE	TIME	OBSERVERS	TYPE	ROUTE	WEATHER	VIS	Wave Ht (Ft)
1	4/13/09	7:15	Liz Flory	M/V Sentinel	Auke bay- Slate Cove	clear/calm	Excellent	<1
2	4/14/09	16:00	Jill Michalak	M/V Sentinel	Slate Cove-Auke Bay	sunny	Good	0
3	4/15/09	6:00	Char Gutierrez	M/V Sentinel	Auke bay- Slate Cove	clear/calm	Excellent	0
4	4/15/09	17:20	Jill Michalak	M/V Sentinel	Slate Cove-Auke Bay	Overcast	Excellent	0
5	4/15/09	6:00	Char Gutierrez	M/V Sentinel	Auke bay- Slate Cove	clear/calm	Excellent	0
6	4/16/09	16:30	Katie Goodwin	M/V Sentinel	Slate Cove-Auke Bay	PC	Good	0
7	4/22/09	9:30	Char Gutierrez	Visual/Slate Dock	Kayak to Slate Creek	Overcast/LR	Good	0
8	4/20/09	5:45	Katie Goodwin	M/V Sentinel	Auke bay- Slate Cove	Overcast	Good	0
9	4/20/09	7:20	Char Gutierrez	M/V Sentinel	Slate Cove-Auke Bay	Mostly Clear	Excellent	0
10	4/21/09	15:00	Char Gutierrez	M/V Sentinel	Slate Cove-Auke Bay	PC	Good	0
11	4/22/09	16:00	Erik Chadwell	M/V Sentinel	Slate Cove-Auke Bay	clear/calm	Excellent	0.5
12	4/22/09	6:00	Char Gutierrez	M/V Sentinel	Auke bay- Slate Cove	clear/calm	Good	3
13	4/22/09	17:30	Liz Flory	M/V Sentinel	Slate Cove-Auke Bay	sunny	Excellent	<1
14	4/27/09	7:45	Erik Chadwell	M/V Sentinel	Slate Cove-Auke Bay	clear/calm	Good	0
15	4/27/09	6:30	Liz Flory	M/V Sentinel	Auke bay- Slate Cove	clear/calm/sunny	Excellent	0
16	4/28/09	8:30	Char Gutierrez	Visual/Slate Dock	Slate Dock-Slate Creek	clear/calm/sunny	Excellent	0
17	4/28/09	15:30	Katie Goodwin	M/V Sentinel	Slate Cove-Auke Bay	clear/calm/sunny	Excellent	<1
18	4/29/09	16:00	Erik Chadwell	M/V Sentinel	Slate Cove-Auke Bay	clear/calm	Good	0
19	4/29/09	16:45	Char Gutierrez	M/V Sentinel	Slate Cove-Auke Bay	clear/calm/sunny	Excellent	0
20	4/29/09	6:00	Jill Michalak	M/V Sentinel	Auke bay- Slate Cove	clear/calm/sunny	Excellent	0
21	4/29/09	17:00	Liz Flory	Visual/Slate Dock	Kayak to Slate Creek	clear/calm/sunny	Excellent	0
22	4/30/09	15:00	Jane Sullivan	M/V Sentinel	Auke bay- Slate Cove	clear/calm/sunny	Excellent	0
23	4/30/09	17:00	Jane Sullivan	M/V Sentinel	Slate Cove-Auke Bay	clear/calm/sunny	Excellent	0
24	4/30/09	9:00	Liz Flory	Visual/Slate Dock	Kayak to Slate Creek	clear/calm/sunny	Excellent	0
25	5/4/09	6:00	Jane Sullivan	M/V Sentinel	Auke bay- Slate Cove	L.Rain	Good	0
26	5/4/09	7:30	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	Overcast	Excellent	0
27	5/5/09	14:30	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	0
28	5/5/09	16:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	clear/calm/sunny	Excellent	0
29	5/6/09	6:15	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	Overcast	Fair	<1
30	5/6/09	7:45	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	L.Rain	Fair	<1
31	5/6/09	15:45	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	Overcast/LR	Good	0
32	5/6/09	17:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	Overcast/LR	Good	0
33	5/7/09	15:30	Jane Sullivan	M/V Sentinel	Auke bay- Slate Cove	PC	Good	0
34	5/10/09	9:00	Katie Goodwin	Visual/Slate Dock	Kayak to Slate Creek	clear/calm	Good	0
35	5/11/09	16:00	Jane Sullivan	M/V Sentinel	Auke bay- Slate Cove	clear/calm/sunny	Excellent	>8
36	5/11/09	8:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	>5
37	5/12/09	15:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	>2
38	5/12/09	16:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	clear/calm/sunny	Excellent	>3
39	5/12/09	7:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	0
40	5/12/09	8:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	clear/calm/sunny	Excellent	0
41	5/13/09	6:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	0
42	5/13/09	19:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	clear/calm/sunny	Excellent	0
43	5/13/09	16:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	clear/calm/sunny	Excellent	0
44	5/13/09	17:00	Jane Sullivan	M/V Sentinel	Slate Cove-Yankee Cove	clear/calm/sunny	Excellent	0
45	5/14/09	16:00	Jane Sullivan	M/V Sentinel	Yankee Cove-Slate Cove	windy/OC	Good	>2
46	5/14/09	17:00	Jane Sullivan	M/V Sentinel	Slate Cove-Auke Bay	windy/OC	Good	0

No.	DATE	COUNTS OF MM OBSERVED QI - NW Berners					COUNTS OF MM OBSERVED QII - NE Berners						COUNTS OF MM OBSERVED QIII - Outer Berners						COUNTS OF MM OBSERVED QIV - SE Berners					
		SSL	Rafts	HS	HW	KW	SSL	Rafts	HS	HW	KW	HP	SSL	Rafts	HS	HW	KW	HP	SSL	Rafts	HS	HW	KW	HP
1	4/13/09				1							200												
2	4/14/09	1							2			200												
3	4/15/09	1		1	1																2			
4	4/15/09				2																			
5	4/15/09																							
6	4/16/09	1							1			100			1									
7	4/18/09			45																				
8	4/20/09	4							1			35			4			6						
9	4/20/09	1							2			120												
10	4/21/09	1										2			1				1					
11	4/22/09	1						100				150			1			7						
12	4/22/09														3									
13	4/22/09			20								6			1			2						
14	4/27/09	5		20					2			3			3						2			
15	4/27/09	41	1	20								50						2				5		
16	4/28/09	50	1	20	2																			
17	4/28/09			6	2							2			12		3	4			2			
18	4/29/09	2			1							51			1									
19	4/29/09	200	3	1	1							103			3	5			1					
20	4/29/09			2	2							10				3						3		
21	4/29/09	120	3																					
22	4/30/09			6	1							41						2						
23	4/30/09	28		6								40			1									
24	4/30/09	130		20																				
25	5/4/09	3			1							20												
26	5/4/09	3										30	1											
27	5/5/09	2							1															
28	5/5/09	18															8							
29	5/6/09				1										10									
30	5/6/09			2	1																			
31	5/6/09	1		1	1				1															
32	5/6/09	2																						
33	5/7/09	2																						
34	5/10/09	10	1																					
35	5/11/09			1								3												
36	5/11/09											2												
37	5/12/09																							
38	5/12/09	2								1														
39	5/12/09	3		3																			5	
40	5/12/09																						4	
41	5/13/09			1																				
42	5/13/09									1														
43	5/13/09	3		1						1														
44	5/13/09																							
45	5/14/09																2	4						
46	5/14/09	1														2	3	5						
	Totals	636	9	176	17	4	0	0	102	11	0	0	1203	1	12	42	28	40	1	0	3	12	0	0



**Figure 4:** Transiting Slate Cove during the eulachon run 2009.



**Figure 5:** Steller sea lion raft, Slate Cove.



**Figure 6:** Steller sea lion raft near Slate Cove, April 30, 2009.



**Figure 7:** Harbor seals, Slate Cove, April 30, 2009.