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1991

MARINE MAMMAL OBSERVER PROGRAM FOR THE SALMON DRIFTNET FISHERY OF PRINCE WILLIAM SOUND ALASKA

FINAL REPORT

May 1, 1992

By

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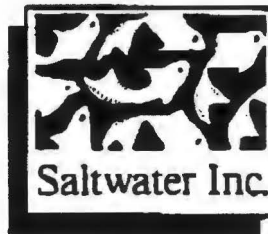
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*need full
report?*

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EXECUTIVE SUMMARY

In 1991 the National Marine Fisheries Service (NMFS) contracted Saltwater Inc. to design and implement an observer program for the Prince William Sound (PWS) salmon drift gillnet fishery. The purpose of the program was to acquire knowledge about the incidental take of marine mammals in commercial fishing operations as required by the 1988 amendments to the Marine Mammal Protection Act. This report describes the methods used and the results from that observer program.

The PWS driftnet season opened 16 May and continued through 12 October 1991. Saltwater Inc. observers were on the grounds from 16 May to 1 September 1991. During that time observers boarded 531 of the 611 registered vessels, observed some 5747 hours, and monitored 5875 complete net retrievals or roughly 5% of the estimated number of sets made during the period of observer coverage. Driftnets were monitored by observers onboard active fishing vessels and remotely by observers onboard research vessels. Observers monitored the retrieval and, where possible, the soak of nets, and recorded data associated with all marine mammal and bird encounters, including fish and gear damage, harassment, and incidental take.

The 1991 observer data suggests that marine mammal encounters (approaching within 10 meters of a net) are common in this fishery (12% of observed sets), but rarely fatal. Steller sea lions and harbor seals appear to be attracted to the gillnets where they scavenge netted salmon, while sea otters and cetaceans may inadvertently encounter nets as they pass through a fishing area. Mammals became entangled in less than 1% of the total observed sets, and 85% of the entangled animals were able to release themselves unharmed or to be released with fishermen's assistance. Entanglements resulted in serious injury or death to marine mammals in less than 0.1% of sets observed. Seven marine mammals (four porpoises, two sea lions, and one harbor seal) died or were seriously injured in the 5875 observed sets. Because so few kills were observed, extrapolation of the observer data is statistically difficult, and results in wide confidence intervals. We estimate that 83 marine mammals (95% CI=7 to 296) including 29 Steller sea lions were incidentally injured or killed in PWS driftnets between 16 May and 1 September 1991. The observer data suggests that incidental marine mammal take in the PWS driftnet fishery is not "frequent" by NMFS standards.

Nearly 2000 marine birds, representing at least 19 species, were observed within 10 meters of driftnets. Of these, 62 (3.2%) became entangled, and 53 (85.5%) of the entangled birds died prior to removal. Gulls and kittiwakes were the marine birds most commonly observed near driftnets, but murre and murrelets were the species most frequently entangled and killed. As with the mammal data, marine bird take rates were low so that extrapolation of the observer data is statistically difficult, and results in wide confidence intervals. We estimate that 993 marine birds (95% CI=334 to 2097) including 430 common murre and more than 260 marbled murrelets died incidentally in PWS driftnets between 16 May and 1 September 1991.

Table 7. Species-specific outcome of net encounters and entanglement of marine mammals during complete net retrievals observed (N = 5875) in the PWS driftnet fishery, 1991. (n = number of mammals, s = number of sets involved)

MARINE MAMMAL INTERACTION

Species	Code	Encounters			Entanglements			Incidental Death		
		n	s	% sets	n	s	% sets	n	s	% sets
Harbor seal	6	576	448	7.63	5	5	0.09	1	1	0.02
Steller sea lion	2	266	182	3.10	21	19	0.32	2	2	0.03
Sea otter	13	133	99	1.69	13	12	0.20	0	0	0
Harbor porpoise	15	21	15	0.26	7	6	0.10	3	2	0.03
Unid. pinniped	98	17	17	0.29	1	1	0.02	0	0	0
Unid. porpoise	27	1	1	0.02	1	1	0.02	1	1	0.02
Dall's porpoise	14	3	1	0.05		0				
Unid. sea lion	4	3	3	0.05		0				
Unid. whale	33	1	1	0.02		0				
Unid. marine mammal	99	2	2	0.03		0				
In N = 5875 observed retrievals:		1023			48	44	0.75 %	7	6	0.10 %

Encounters = mammal observed within 10m of active driftnet, includes entanglements

Entanglement = mammal contacted net during soak or retrieval, was released with or without assistance, includes incidental injury and death

Incidental death = serious injury or death resulting from entanglement

% sets = per cent of observed retrievals (N = 5875) involved in each interaction

Table 10. Weekly summary of observed and extrapolated incidental marine mammal take estimated from monitored nets in PWS driftnets, 15 May - 31 August 1991.

MARINE MAMMAL TAKE BY DISTRICT AND WEEK

Week	Copper River						Coghill				
	Entanglements			Mortality			Entanglement/Death				
	n	est	(95%CI)	n	est	(95%CI)	n	sps	est	(95%CI)	
May 12 - 18	2	29.8	(2-85)	3	44.8	(7-110)	1	SL	14.9	(1-56)	
19 - 25	1	21.4	(1-81)	5	107.4	(32-223)					
26 - 01	1	34.2	(1-127)	1	34.2	(1-127)					
Jun 02 - 08	0			2	44	(3-122)					
09 - 15	0			0							
16 - 22	0			0							
23 - 29	3	45.2	(7-111)	6	90.4	(30-179)					
Jul 30 - 06	4	45.9	(10-103)	7	80.3	(29-153)	1	HS	11.5	(1-44)	
07 - 13	1	11.3	(1-43)	2	22.6	(2-65)					
14 - 20	3	32.2	(4-80)	6	64.3	(21-128)	1	HP	10.7	(1-41)	
							1	UP	10.7	(1-41)	
21 - 27	2	18.8	(2-54)	4	37.6	(8-85)	2	HP	21.4	(2-62)	
Aug 28 - 03	1	4.5	(1-18)	3	13.6	(3-35)					
04 - 10	2	6.1	(2-19)	4	12.2	(4-29)					
11 - 17	0			0							
18 - 24	1	12.2	(1-46)	4	49.2	(11-110)					
25 - 31	0			0							
	21	261.6	(32-767)	47	600.6	(151-1366)	6		69.2	(6-244)	
											1 SL 13.8 (1-52)

EST. OF SEAL MORTALITY (CR only)

Rets only: n = number observed in retrievals only, includes mortality

Est = point estimate of take. 95% C.I. = confidence interval

Soak+Ret: n = number observed during net soak and retrieval, includes mortality

Sps: SL = Steller sea lion, HS = harbor seal, HP = harbor porpoise, UP = unid. porpoise; all mortalities were observed during retrieval

Coghill: the only observed entanglemen: was lethal

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