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Report on the 1978 Grey Seal Damage Survey

by

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ABSTRACT

We present the result of a grey seal damage survey conducted during 1978. The area surveyed was the eastern shore of Nova Scotia from Halifax County to Scatarie, Cape Breton, and involved 105 licensed fishermen. Results of the survey indicate that, using maximum damage cost estimates, costs to fishermen range from \$0-\$300 per fisherman per season with an overall average of \$105.00. Assuming all fishermen suffered damage at this mean rate results in a maximum cost per season of \$157,000.

RESUME

Nous décrivons dans le présent document les résultats d'un relevé effectué en 1978 des dommages causés par le phoque gris. La région couverte comprenait la côte est de la Nouvelle-Ecosse, depuis le comté d'Halifax jusqu'à Scatarie (Cap-Breton) et impliquait 105 détenteurs de permis de pêche. Les résultats indiquent qu'en estimant au maximum le coût des dommages, on arrive à des montants compris entre 0 \$ et 300 \$ par pêcheur et par saison, la moyenne générale étant de 105 \$. A supposer que tous les pêcheurs aient subi des dommages équivalant à la moyenne, le coût total par saison serait de 157 000 \$.

Fishermen utilizing stationary fishing gear are subject to competition from other predators which damage their gear in an attempt to feed on the catch. Sharks, whales, otters, sea birds, seals and other animals are known to rob gear and cause damage. This damage, and loss of catch results in decreased profits to the fisherman and could, in some cases, make fishing unfeasible. Mansfield and Beck (1977) report that grey seals are known to cause damage to three major types of gear: gillnets, (both drifting and set) trap nets, and lobster pots. It was found that damage to these gears was most extensive in four areas namely the eastern shore of Nova Scotia from Sheet Harbour to the St. Mary's River, Cape Canso to Louisbourg, the south shore of the Northumberland Strait from Cape George to Pictou, and the Miramichi estuary. The present report deals only with the area from Halifax County to the northeast shore of Cape Breton. Mansfield and Beck (1977) stated that data obtained from questionnaires and personal interviews with fishermen in this area during 1975, indicated that losses in gear of up to \$1,000 per year could occur. While a best estimate of average losses was given as \$300.00 per man per year. These figures referred only to gear damage and did not take into account losses due to lost catch. The data for the present report was generated from a survey conducted by Ms. D. Lawrence in 1978. Ouestionnaires were sent out to a number of fishermen in each statistical district in the study area and they were asked to fill them out on a weekly basis. A copy of this questionnaire is provided in Appendix A.

Table 1 gives the results of this survey. The number of fishermen column refers to the number of individuals from which completed questionnaires were received for the entire 1978 season.

The total days fished was calculated by assuming that every week a fisherman fished represents 7 fishing days. This assumption appears justified in the case of stationary gear in that the usual procedure is to place the gear in the water at the beginning of the season and leave it in place until the end of the season. Therefore, even though the nets or traps may not be tended

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every day, the gear is fishing seven days a week. Damage days indicate the total number of fishing days for which damage from any source was reported by the fisherman in the particular statistical district. The total number of damage days, for which the damage was reported to have been caused by seals, is given as "seal damage days". If during a given period it was indicated that damage from more than seals alone had occurred, and the number of days, or amount of damage, attributable to each source was not ascertainable, all damage was arbitrarily attributed to seals. Total cost of damage represents the total maximum dollar cost for all damage incurred. Appendix A shows that the fishermen were asked to indicate a range of cost for each weeks damage. When calculating total maximum cost the upper limit of the cost category indicated was used.

Using this approach, that is assuming that mixed damage is wholely caused by seals, and using the upper limit of the indicated cost ranges in calculating damage cost will tend to ensure that estimates of seal damage cost are maximum estimates.

To arrive at an estimate of the total cost of seal damage, the proportion of seal damage days to total damage days was calculated for each district and that proportion of the total damage cost taken as total seal damage cost. The mean cost attributable to seal damage per season per fisherman is given in Figure 1. This indicates that costs range from 0 to \$300.00 per season per fisherman with an overall average cost of \$105.00. The most affected area range from Sheet Harbour to Scatarie Is. with maximum damage occurring in Guysborough County in the area of Country Harbor with a second focus in Richmond County, Cape Breton.

In 1978 there were approximately 1,500 licensed fishermen in the area from Halifax County to Scatarie, Cape Breton. If all fishermen had suffered seal damage at the mean rate calculated in the present report the total cost to fishermen in the area would have been approximately \$157,000. This figure of course represents an absolute maximum and will be reduced by the proportion of licensed fishermen using mobile gear which is not susceptible to damage by seals. In addition, a large proportion of the damage reported during this study was from the gillnet groundfish component of the fishery. Since March of 1979 the groundfish gillnet fishery has been removed from Guysborough County, one of the most affected areas, and plans are to phase out this fishery entirely, thus reducing the total costs further.

In conclusion in 1978 grey seal damage costs to fishermen between Halifax and Scatarie Is. (the most heavily affected area) ran at approximately \$105.00 per fisherman per season. This represented a maximum total cost of \$157,000 dollars, assuming all licensed fishermen used stationary gear. This total will be reduced both by the proportion of fishermen fishing mobile gear and the reduction of the groundfish gillnet fishery.

Literature Cited

Mansfield, A., and B. Beck. 1977. The grey seal in eastern Canada. Fisheries and Marine Service Technical Report No. 704.

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Statistical district	No. of fishermen	Total days fished	No. of total damage days	Total no. of Total Cost damage days of Damage (\$) caused by seals		Proportion of total damage caused by seals	Total cost of seal damage	Cost per fisherman per season	
6	2	105	10	0	200	.0	0	0	
7	14	955	73	37	3,950	.44	1,826	130	
8	8	738	70	57	2,350	.81	1,903	238	
9	10	582	52	48	510	.92	469	46	
14	11	423	14	12	570	.86	490	44	
16	12	739	346	305	4,200	.88	3,696	308	
17	9	211	27	24	500	.89	445	49	
19A	19	1,499	319	262	3,580	.82	2,935	154	
19	10	588	147	95	2,900	.65	1,885	188	
20A	4	256	6	0	1,316	.0	0	0	
23	6	860	53	0	8,000	.0	0	0	

Table 1. Results of the 1978 grey seal damage survey.

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FIGURE 1. Seal damage indicated in cost per fisherman for 1978.

		NAME :
		STATISTICAL AREA:
		DATE: Nov. 27/78
	INSHORE	GEAR DAMAGE SURVEY
DID 2	YOU EXPERIENCE GEAR DAMAGE 8 INCLUSIVE.)	THIS WEEK? (IF NO, PLEASE OMIT QUESTIONS Yes No
. WHE	N DID DAMAGE OCCUR?	Sunday Thursday Monday Friday Tuesday Saturday Wednesday
WHA	T TYPE OF GEAR WAS DAMAGED? Groundfish gillnet(s) Surface gillnet(s) Fish trap(s)	Lobster trap(s) Salmon gear Other (describe)
WHA	T POINT OF LAND.)	IN DAMAGES! (DISTANCE FROM SHORE, ADDAGENT TO
. HOW	WAS THE GEAR DAMAGED? DESCR	RIBE
	T DO YOU THINK CAUSED THE GE	EAR DAMAGE, AND WHY?
. wha	T DO YOU THINK CAUSED THE GE	EAR DAMAGE, AND WHY?
. WHA	T DO YOU THINK CAUSED THE GE WHAT GEAR WAS REPAIRED, IF WHAT DO YOU ESTIMATE THE CO \$0-\$50\$15D- \$50-\$100\$200- \$100-\$150\$250-	ANY?
. WHA . A. B.	T DO YOU THINK CAUSED THE GE WHAT GEAR WAS REPAIRED, IF WHAT DO YOU ESTIMATE THE CO \$0-\$50\$15D- \$50-\$100\$200- \$100-\$150\$250- HOW MANY HOURS DID IT TAKE Less than one hour One - five hours	ANY?
. WHA . A. B. C.	T DO YOU THINK CAUSED THE GE WHAT GEAR WAS REPAIRED, IF WHAT DO YOU ESTIMATE THE CO \$0-\$50	ANY?

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8.	Α.	DID YO	U STOP	FISHING	THIS	WEEK	AS	A	RESULT	OF	GEAR	DAMAGE?	Yes	No	
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B. IF YES, INDICATE NUMBER OF NETS OR TRAPS, AND THE NUMBER OF DAYS EACH NOT FISHED.

9.	DESCRIBE YOUR FISHING LOCATIONS FOR GEAR WHICH WAS NOT DAMAGED WHILE BEING FISHED THIS WEEK. (DISTANCE FROM SHORE, ADJACENT TO WHAT POINT OF LAND)
10.	A. DID YOU EXPERIENCE LOSS OR DESTRUCTION OF CATCH WITHOUT GEAR DAMAGE? Yes No
	B. IF YES, WHAT DO YOU THINK CAUSED THE LOSS OR DESTRUCTION OF CATCH, AND WHY? (DESCRIBE HOW CATCH WAS DAMAGED IN YOUR EXPLANATION.)
11. a.	WHAT WAS YOUR CATCH, BY SPECIES AND GEAR TYPE, THIS WEEK? Species Gear Type
	No. of Damaged Nets or Traps No. of Undamaged Nets or Traps
	Total Catchlbs. Damaged Fishlbs.
	Percent of catch from damaged gear (estimated)
b.	Species Gear Type
	No. of Damaged Nets or Traps No. of Undamaged Nets or Traps
	Total Catch lbs. Damaged Fish lbs.
	Percent of catch from damaged gear (estimated)
-	Coop Turo
c.	Species Gear Type
	No. of Damaged Nets of Traps No. of Undamaged Nets of Traps
	Dotal Latter IDS. Damaged Fish IDS.
	Percentage of Catch from damaged gear (estimated)
d.	Species Gear Type
	No. of Damaged Nets or Traps No. of Undamaged Nets or Traps
	Total Catchlbs. Damaged Fishlbs.
	Percent of catch from damaged gear (estimated)