

from Burns 4/10/79  
2048

SEAL

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 18-26 -- Coastal Waters

Harvest and Hunting Pressure

Under the Federal Marine Mammal Protection Act passed October 21, 1972, the taking of all marine mammals in Alaska is limited to Alaskan Natives. There are no hunting restrictions imposed on Natives as long as the taking is not done in a wasteful manner and the animals are used for subsistence or making products within the arts and crafts industry.

Along the coast in Units 18 through 26 there are 42 settlements. In each settlement 50 or more individuals spend considerable time seal hunting. Manpower constraints precluded monitoring harvests at each village, therefore certain villages were selected as a sampling base from which harvests could be estimated for the entire Unit 18-26 area. Because of their position along the coast and their advantageous working conditions, Hooper Bay, Shishmaref, Savoonga, and Point Hope were selected as sample villages. During the years when harvest statistics, based on bounty records, were most reliable hunters from these villages took an average of 49 percent of the annual reported kill of hair seal.

In early 1973 and continuing on during 1974 a resident Native was employed in each of the four villages to record seal harvest and collect specimen material. At the end of each month collectors submitted appropriately tagged specimens and a report detailing the harvest during that period. Occasional visits were made to each village to check the accuracy of harvest data being collected, and make noted corrections where necessary.

During the calendar year 1974 the four village recorders tabulated a known harvest of 1805 hair seals. Monthly harvests showing sex and species composition are summarized for Hooper Bay, Appendix I; Savoonga, Appendix II; Shishmaref, Appendix III; Point Hope, Appendix IV; and the total for all villages in Appendix V.

Contributions of village recorders varied considerably; some did an excellent job and tabulated a high percentage of the village take, while others were less thorough. Interviews were conducted to determine the approximated number of seals killed in excess of those reported by village recorders. The total harvest at the four villages was, therefore, recalculated and estimated at 2655 hair seals (Table 1).

Table 1. Estimated hair seal harvest per village sampled, 1974.

Village	Actual recorded harvest	Estimated additional animals taken	Total estimated harvest
Hooper Bay	348	100	448
Point Hope	377	350	727
Shishmaref	645	50	695
Savoonga	<u>435</u>	<u>350</u>	<u>785</u>
Total	1805	850	2655

Throughout the 1960's harvests from the sample villages accounted for approximately 50 percent of the annual harvests for the Unit 18-26 area. This may no longer be the case. To interpret the corrected harvest levels from the sample villages, a survey was conducted at other villages in the Yukon Delta, and a biologist was stationed at Diomed (May through June) to make careful observations on numbers of seals killed.

The harvest at Little Diomed through June 30 was 129 seals (108 ringed, 2 spotted and 19 bearded). Because few seals are taken during the remainder of the year, the projected yearly kill at Diomed was estimated to be 150 animals. The average annual 1962-1967 harvest was 249 seals. Although weather, ice conditions and other environmental factors have considerable influence on the success during any given year, it appeared that seal hunting effort at Diomed is roughly half of that recorded for the 1960's. Discussions with local hunters at Diomed further substantiated the decline in annual harvests. Interviews conducted in other villages (Scammon Bay, Alakanuk and Emmonak) revealed similar declines in harvests from those of the 1960's. On the average, each household took 3 to 6 seals (mostly in the spring) in 1974, compared to a harvest of 9 to 18 per household during the early 1960's.

Although a more comprehensive coastal survey is needed, it appeared harvests from the sample villages represented approximately 25-33 percent of the total annual seal harvest for Units 18-26 during 1974. Assuming this is the case, the total kill during 1974 was on the order of 7,000 to 10,000 seals. Burns (1973) estimated the annual seal kill during 1972 of 13,525 animals. Grauvogel (unpublished data) estimated the annual seal kill in 1973 to be approximately 7,000 seals. Even a maximum harvest estimate for 1974 (10,000) seems a significant decrease from the early 1970's.

Of the known harvest of 1,805 hair seals, recorded in the 4 sample villages, ringed seals comprised 65 percent of the harvest (1,173); bearded seal 20 percent (362); spotted seal 14 percent (255); and ribbon seal 0.8 percent (15). These results were similar to the 1973 harvest with respect to species composition. The species composition of the kill reflects seasonal availability rather than hunter preference.

Ringed seal are hunted year round with the exception of a few summer months; bearded and spotted seals are only available on a regular basis during a few months in the spring and fall. As a general rule ringed seals are killed predominately from September through June, bearded seals from April through July, and spotted seals from June through October.

Males comprised 56 percent of the ringed seal harvest, 53 percent of the spotted seal harvest, and 48 percent of the bearded seal harvest. A similar sex composition was recorded for these species harvested during 1973. Males of these species may in fact constitute a slightly larger proportion of the population, but the sex composition of the harvest may also be influenced by the relatively greater mobility among males as reported by Burns (1967).

#### Management Summary and Recommendations

Data collected during 1973 and 1974 indicated the seal harvest in northwestern Alaska numbered less than 10,000 each year. Burns (1973) estimated the ringed seal population in the Bering-Chukchi Sea to be 250,000, the bearded seal population to be 300,000 and the spotted seal population to be 200,000; thus the total population for the three species is estimated at 750,000 animals. McLaren (1962) found that a safe annual sustainable kill for ringed seals on Baffin Island was eight percent of the total population. The eight percent figure is considered a safe harvest level for other seal species with similar reproductive potential. Harvest in Alaska represented a small percentage of the estimated total population, and even with Russia's kill of approximately 10,000 animals, the total Bering-Chukchi Sea harvest of 20,000 annually was well within the limits recommended by McLaren.

Yearly harvests in northwestern Alaska were maintained at a level near 15,000 during the 1960's with no apparent detrimental effects to any of the four resident seal species. Since the current harvest has decreased at least a third it is unnecessary to maintain the present Federal restrictions on hunting practices. All Alaskan residents should be allowed to take seals with the same restrictions as Alaskan Natives. Barter of seal skins and seal products within the state should be legalized. Until the harvest exceeds 25,000 seals annually, or eight percent of the estimated population, restrictions on the taking of seals in Alaska are unwarranted.

#### Literature Cited

- Burns, J. J. 1967. The bearded seal. Alaska Dept. Fish and Game, Juneau. 108pp. mimeo.
- \_\_\_\_\_. 1973. Marine Mammal report. Vol. XIII, Ann. Proj. Seg. Rept., Fed. Aid Wildl. Rest., Alaska Dept. Fish and Game, Juneau. 28pp. mimeo.

McLaren, I. A. 1962. Population dynamics and exploitation of seals  
in the eastern Canadian Arctic. Pages 168-183 in E. D. Leclerc and  
M. W. Holdgate, eds. The exploitation of natural animal populations.  
Blackwell Sci. Publ., Oxford.

PREPARED BY:

Carl A. Grauvogel  
Game Biologist III

SUBMITTED BY:

Oliver E. Burris  
Regional Management Coordinator

## APPENDIX I

## SEAL HARVEST BY SPECIES AT HOOPER BAY, 1974

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Ring Seal M		1	8	20	19	2	1		1	5	10		67
Ring Seal F		3	5	20	14			1	1	14	9		67
Ring Seal Unk											4		4
<b>Total Ring Seal</b>	<b>0</b>	<b>4</b>	<b>13</b>	<b>40</b>	<b>33</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>19</b>	<b>23</b>	<b>0</b>	<b>138</b>
Bearded M			1	39	17		1	2	6	12	2		80
Bearded F				30	9		1	4	16	6	7		73
Bearded Unk											1		1
<b>Total Bearded Seal</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>69</b>	<b>26</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>22</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>154</b>
Spotted M	1			1				1		8	3		14
Spotted F	2	1			1			3	2	14	3		26
Spotted Unk											2		2
<b>Total Spotted Seal</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>22</b>	<b>8</b>	<b>0</b>	<b>42</b>
Ribbon Seal	0	0	0	0	0	0	0	0	0	2	12	0	14
<b>Total Number of Seals Killed (all species)</b>	<b>3</b>	<b>5</b>	<b>14</b>	<b>110</b>	<b>60</b>	<b>2</b>	<b>3</b>	<b>11</b>	<b>26</b>	<b>61</b>	<b>53</b>	<b>0</b>	<b>348</b>

## APPENDIX II

## SEAL HARVEST BY SPECIES AT SAVOONGA, 1974

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Ring Seal M	15	8	7	4	14	9				3	24	95	179
Ring Seal F	3	4	4	3	6	20				8	35	38	121
Ring Seal Unk										1			1
<b>Total Ring Seal</b>	<b>18</b>	<b>12</b>	<b>11</b>	<b>7</b>	<b>20</b>	<b>29</b>				<b>12</b>	<b>59</b>	<b>133</b>	<b>301</b>
Bearded M										1		1	2
Bearded F										2	1		3
Bearded Unk										3			3
<b>Total Bearded Seal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>8</b>
Spotted M			2	1	6	1	11	6		31	9	1	68
Spotted F			2	1	9	1	4			15	2		34
Spotted Unk									16	8			24
<b>Total Spotted Seal</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>15</b>	<b>2</b>	<b>15</b>	<b>6</b>	<b>16</b>	<b>54</b>	<b>11</b>	<b>1</b>	<b>126</b>
Ribbon Seal	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Number of Seals Killed (all species)</b>	<b>18</b>	<b>12</b>	<b>15</b>	<b>9</b>	<b>35</b>	<b>31</b>	<b>15</b>	<b>6</b>	<b>16</b>	<b>72</b>	<b>71</b>	<b>135</b>	<b>435</b>

## APPENDIX III

## SEAL HARVEST BY SPECIES AT SHISHMAREF, 1974

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Ring Seal M						68				40	19		127
Ring Seal F					10	49				50	15		124
Ring Seal Unk						186				12	5		203
<b>Total Ring Seal</b>	0	0	0	0	10	303	0	0	0	102	39	0	454
Bearded M										19			19
Bearded F										37			37
Bearded Unk						36				11			47
<b>Total Bearded Seal</b>	0	0	0	0	0	36	0	0	0	67	0	0	103
Spotted M						1				23			24
Spotted F						5				30			35
Spotted Unk									22	6			28
<b>Total Spotted Seal</b>	0	0	0	0	0	6	0	0	22	59	0	0	87
Ribbon Seal	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Number of Seals Killed (all species)</b>	0	0	0	0	10	345	0	0	22	228	39	0	645

## APPENDIX IV

## SEAL HARVEST BY SPECIES AT POINT HOPE, 1974

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Ring Seal M	42	6				3							51
Ring Seal F	18					9							27
Ring Seal Unk		5	60	25	15	92				5			202
Total Ring Seal	60	11	60	25	15	104	0	0	0	5	Unk	Unk	280
Bearded M						5							5
Bearded F						4							4
Bearded Unk						88							88
Total Bearded Seal	0	0	0	0	0	97	0	0	0	0	Unk	Unk	97
Spotted M													
Spotted F													
Spotted Unk													
Total Spotted Seal	0	0	0	0	0	0	0	0	0	0	Unk	Unk	0
Ribbon Seal	0	0	0	0	0	0	0	0	0	0	Unk	Unk	0
Total Number of Seals Killed (all species)	60	11	60	25	15	201	0	0	0	5	Unk	Unk	377



## APPENDIX V

## SEAL HARVEST BY SPECIES AT ALL VILLAGES MONITORED, 1974

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Ring Seal M	57	15	15	24	33	82	1		1	48	53	95	424
Ring Seal F	21	7	9	23	30	78		1	1	72	59	38	339
Ring Seal Unk		5	60	25	15	278				18	9		410
<b>Total Ring Seal</b>	<b>78</b>	<b>27</b>	<b>84</b>	<b>72</b>	<b>78</b>	<b>434</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>138</b>	<b>121</b>	<b>133</b>	<b>1173</b>
Bearded M			1	39	17	5	1	2	6	32	2	1	106
Bearded F				30	9	4	1	4	16	45	8		117
Bearded Unk						124				14	1		139
<b>Total Bearded Seal</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>69</b>	<b>26</b>	<b>133</b>	<b>2</b>	<b>6</b>	<b>22</b>	<b>91</b>	<b>11</b>	<b>1</b>	<b>362</b>
Spotted M	1		2	2	6	2	11	7		62	12	1	106
Spotted F	2	1	2	1	10	6	4	3	2	59	5		95
Spotted Unk									38	14	2		54
<b>Total Spotted Seal</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>16</b>	<b>8</b>	<b>15</b>	<b>10</b>	<b>40</b>	<b>135</b>	<b>19</b>	<b>1</b>	<b>255</b>
Ribbon	0	0	0	0	0	0	0	0	0	3	12	0	15
<b>Total Number of Seals Killed (all species)</b>	<b>81</b>	<b>28</b>	<b>89</b>	<b>144</b>	<b>120</b>	<b>579</b>	<b>18</b>	<b>17</b>	<b>64</b>	<b>367</b>	<b>163</b>	<b>135</b>	<b>1805</b>