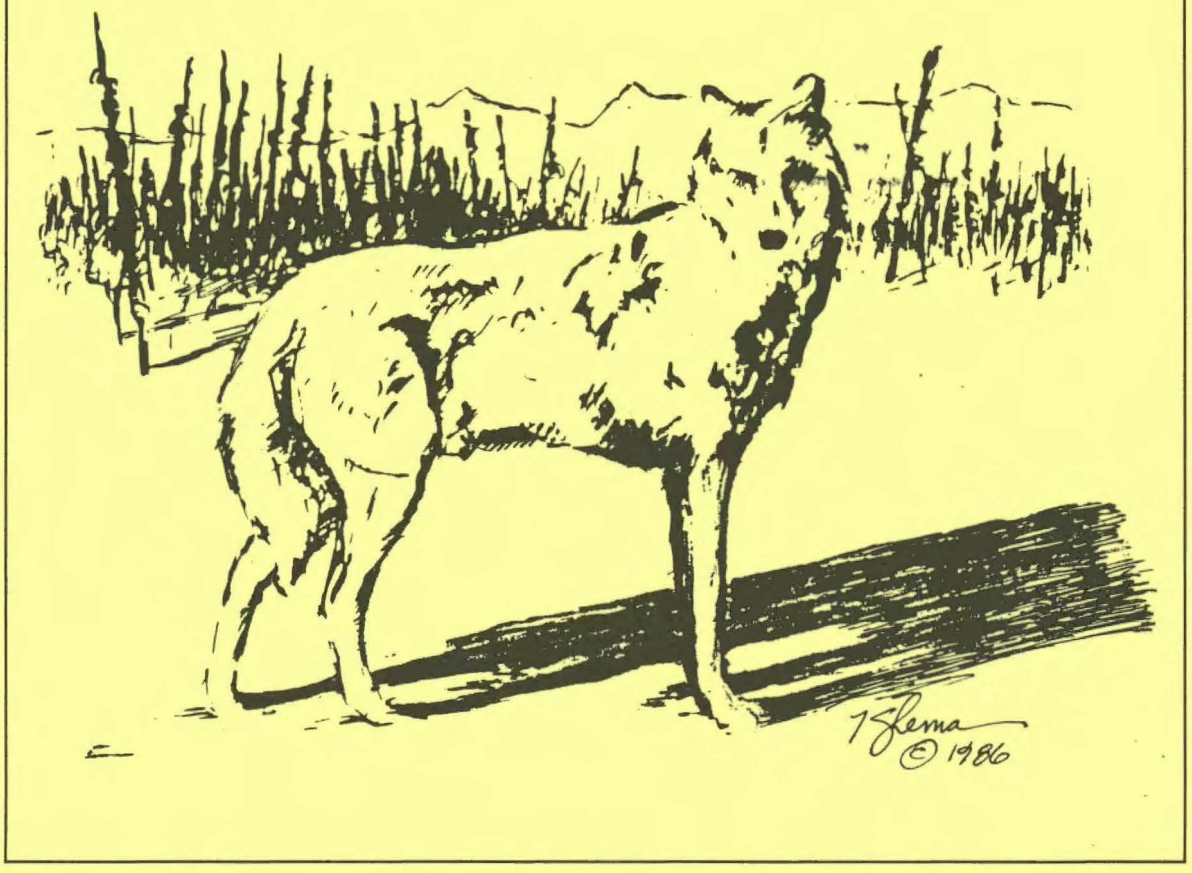
Alaska Department of Fish and Game
Division of Game
Federal Aid in Wildlife Restoration
Annual Report of Survey—Inventory Activities

WOLF



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STATEWIDE POPULATION STATUS AND HARVEST OF WOLVES

Game Division staff estimate that the pre-trapping, fall/winter 1985 wolf population in Alaska was between approximately 4,900 and 6,200 animals statewide. Estimates of the number of wolves, number of packs, and the 5-year trend of the status of wolves by game management unit/subunit are given in Table 1. It is important to recognize that these are conservative estimates and that the quality of the estimates varies among the game management units because the information from which the estimates are derived is not comparable from 1 unit to another. Sources of information include aerial surveys, incidental sightings, sealing records, reports from the public, and from other agencies. However, different combinations of information were used in deriving estimates for any given game management unit, so direct comparisons of estimates between 2 or more units should not be made. Finally, population estimates given in Table 1 for any particular game management unit may differ from the estimate given in the report on that unit if the estimates were made for different times of the year. For example, the estimates in Table 1 are, for the most part, fall/winter pre-trapping estimates, while some of the population estimates presented in the following reports are spring, post-trapping estimates.

The statewide harvest of wolves during the 1985-86 regulatory year is estimated to have been between 673-780 animals. At the time this report was prepared, statewide sealing records showed a minimum of 673 wolves taken, and hearsay evidence from the public indicates that approximately 100 additional wolves were taken but not sealed. The geographic distribution of the harvest, based on sealing records, is given in Table 2. The reader should be aware that the number of animals sealed, as reported in Table 2, may not agree with the number reported in individual game management unit S&I reports that follow. Any differences are usually attributable to information being received late and after the individual GMU reports had been prepared. In most cases, the differences are small.

The documented harvest of wolves during the 1985-86 season was the lowest since sealing began in 1971-72. Although the number of wolves harvested in 1985-86 was higher than it was in 1984-85 in 10 units (Units 1, 3, 7, 10, 12, 14, 15, 18, 20, and 26), the reverse was true for the remaining 14 units where wolves occur. The reduced harvest in these units was substantial enough that the total statewide harvest in 1985-86 was 35% lower than the 1984-85 harvest. This reduced harvest is correlated with method of take. In 1984-85, ground shooting accounted for 61% and trapping or snaring accounted for 34% of

the harvest (Table 3). In 1985-86 ground shooting accounted for 41% and trapping or snaring accounted for 52% of the harvest. Since the number of wolves taken by trapping or snaring was essentially the same in both seasons, it is evident that essentially all of the reduction in harvest from 1984-85 to 1985-86 is attributable to the reduction in take by ground shooting. The marked difference in weather between the 2 harvest seasons probably accounts for the substantial difference in harvest by ground shooting. In 1984-85 good snow cover, combined with good flying weather (especially in late winter) enhanced opportunities for users of aircraft and ground shooting as method of take (Melchior 1986), whereas in 1985-86 weather conditions were not as favorable. In addition, Alaska is experiencing a depressed economic condition which could effect a reduction in the use of aircraft to access wolf populations. These 2 factors would be additive and could explain the reduction in harvest between 1984-85 and 1985-86.

The annual estimate of wolf harvest is based on the number of wolf pelts sealed. Because the Department does not have offices or sealing agents in each community in Alaska and because pelts are in high demand locally, particularly for use as ruffs on parkas, some pelts are "home dressed" and put to use without ever being sealed. The number that are taken and not sealed is not known. To overcome this problem, it will be necessary for us to inform people of the importance of harvest information to our wolf management program. It will also be necessary to make it easy for individuals to comply with the sealing requirement, especially in rural areas of the state.

Herbert R. Melchior
Statewide Furbearer Coordinator

Literature Cited:

Melchior, H. R. 1986. Statewide population status and harvest of wolves. Pages iii-vii in B. Townsend, ed. Ann. Rep. of Survey-Inventory Activities. Part XV. Wolf. Volume XVI. Fed. Aid. Wildl. Restor. Proj. W-22-4. Job 14.0. Alaska Dep. Fish and Game. Juneau. 54pp.

Table 1. Estimated statewide wolf population status (fall/winter 1985).

GMU/Subunit	Wolf population	Number of packs	5-Year trend
Region I			
1A	170	25	Stable
1B	40	6	Stable
1C	100	16-19	Stable
1D	40	5	Stable
2	120-140	16-20	Stable
3	59	10-12	Stable
4	0	0	--
5A	45	5	Stable
5B	15	2	Stable
Subtotal	589-609	85-94	--
Region II			
6	45-60	8	Increasing
7	35-45	4-5	Stable
8	0	0	--
9	135-165	14	Stable or slightly increasing
10	15-25	2	Unknown
11	100-125	12	Stable
13	245-270	28	Stable
14	95-110	18	Stable
15	150-160	14-16	Stable
16	60-75	5	Stable
17	190-240	22	Increasing
Subtotal	1,070-1,275	127-130	--
Region III			
12	170-190	25	Stable
19A	100-130	14-18	Increasing
19B	110-125	21-27	Increasing
19C	100	17	Stable
19D	135-150	21	Increasing
20A	230	26	Stable or slightly increasing
20B	180-220	27-33	Stable or slightly increasing

Table 1. (continued).

GMU/Subunit	Wolf population	Number of packs	5-Year trend
Region III			
20C	120-140	20-25	Stable or slightly increasing
20D	55-78	11-13	Stable or slightly increasing
20E	195	25	Stable
20F	60-100	10-15	Stable or slightly increasing
21A	145-165	25-29	Stable
21B	90	12	Increasing
21C	44-50	5	Stable
21D	140-150	20	Stable
21E	90-100	12-17	Stable
24	180-200	31	Stable
25A	220-270	30-40	Stable
25B	100-120	15-20	Stable
25C	50-60	8-10	Stable or increasing
25D	150-180	20-25	Stable
26B	15-25	3-4	Slightly increasing
26C	25-30	5-6	Stable
Subtotal	2,704-3,098	403-464	--
Region V			
18	25-50	5	Slightly increasing
22	50-150	7-20	Slightly increasing
23	350-720	65-130	Stable to slightly increasing
26A	145-310	14-30	Stable to slightly increasing
Subtotal	570-1,230	91-185	--
TOTAL	4,933-6,212	706-873	--

Table 2. Number of wolves sealed, by game management unit, 1985-86 harvest season.

GMU	Number sealed	GMU	Number sealed
1	47	14	10
2	18	15	53
3	9	16	3
4	-[a]	17	17
5	5	18	7
6	1	19	39
7	13	20	134
8	-[a]	21	44
9	24	22	3
10	6	23	18
11	8	24	28
12	45	25	51
13	70	26	20

[a] None sealed for this unit.

Table 3. Number and percentages of wolves harvested in 1984-85 and 1985-86, by method of take.

Season	Ground shooting		Trapping and snaring	
	Number	Percent	Number	Percent
1984-85	636	61	350	34
1985-86	279	41	352	52

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1A and 2

GEOGRAPHICAL DESCRIPTION: Ketchikan and Prince of Wales

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Population Status and Trend

Surveys conducted during research activities indicated the wolf population on the Revilla Island portion of Subunit 1A increased somewhat following last year's decline. However, the Subunit 1A population has not changed significantly during the past 10 years. The harvest on the mainland portion of Subunit 1A dropped this season, while the Revilla Island harvest remained the same. The Unit 2 harvest, which has typically fluctuated widely, dropped from an abnormally high harvest last year to a relatively low harvest for 1985-86. In general, harvest figures do not reflect wolf population numbers because of differences in trapping pressure and success rates. No information exists that indicates a significant change in the Unit 2 wolf populations during the past 10 years.

Mortality

The wolf harvest in Subunit 1A was 11 this year compared with 15 last year. The harvest in the mainland portion of the Subunit decreased to 4 wolves from 8 in 1984-85, while the Revilla Island harvest remained the same at 7 wolves.

Sex composition of the Subunit 1A harvest was 55% males. Thirty-six percent of the harvest was black in color; 64% of the animals were classed as the gray color phase. Eighty-two percent of the harvest was taken during the January-March period. Only one of the 11 wolves was shot; trapping accounted for the others.

In Unit 2, the 1985-86 harvest was 18 wolves, a decrease of 58% from 1984-85. The sex ratio of the harvest was 39% males; 72% of the wolves were gray color phase. Ground shooting

accounted for 50% of the wolves. The extensive road system contributes to the high percentage of wolves taken by shooting in Unit 2. The harvest occurred from September through March; it was fairly well distributed over the period.

Management Summary and Conclusions

Wolf pelt prices were poor, and interest in trapping wolves was relatively low. It is unlikely that harvest by humans has any appreciable affect on wolf populations in this area. No changes in seasons or bag limits are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1B and 3

GEOGRAPHICAL DESCRIPTION: Unit 1B - Southeast mainland from Cape Fanshaw to Lemesurier Point

Unit 3 - Islands of the Petersburg, Wrangell, and Kake areas

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Population Status and Trend

Individual sightings by hunters and reports by trappers show stable or declining numbers on the mainland. Populations appear to be stable in other areas. Trapping success is not a good indicator of wolf populations sizes, because many factors regulate the harvest. No aerial surveys of wolf habitat were conducted during the report period.

Mortality

The harvest in Subunit 1B was 9 wolves, a 10% decrease compared with the 10 taken in 1984-85. Not all wolves taken incidentally by moose and deer hunters are reported. Wolf hides are not in prime condition in late summer and early fall; some hunters leave the hides and subsequently fail to report wolf kills.

In Subunit 1B, 66% of the wolves taken were males and 44% were females. Six (67%) were trapped, and 3 (33%) were ground shot. January was the most successful month with 6 taken (67%); 3 (33%) were taken in October.

In Unit 3, a total of 9 wolves was taken by trappers and hunters in 1985-86, the same number that was taken in 1984-85. Since 1961 the annual Unit 3 wolf harvest has ranged from 9 to 85 (Table 1). In Unit 3, 5 males (56%) and 4 females (44%) were taken. The most successful harvest method was snaring (67%). Two wolves were shot (22%), and 1 (11%) was trapped. January was the most successful month with 3 (33%) wolves

taken, followed by March (22%). One wolf was taken in February and 1 in May. Month of take was not reported for 2 wolves.

Management Summary and Recommendations

Interest in wolf trapping is currently low because of the effort and expense involved in trapping. Trapping is a secondary source of income for all trappers currently operating in Units 1B and 3. Seasonal occupations such as logging or fishing provide the main source of income for may trappers.

"Weekend trappers," as recreational trappers are sometimes called, usually concentrate on smaller furbearers which are easier to trap, skin, and access from road systems near communities. Some conflicts have occurred between trappers and local residents in easily accessible areas.

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Table 1. Historic wolf harvest in Unit 3, 1961-86.

Year	Number of wolves
1961-62	18
1962-63	27
1963-64	34
1964-65	29
1965-66	52
1966-67	43
1967-68	85
1968-69	15
1969-70	75
1970-71	42
1971-72	61
1972-73	27
1973-74	31
1974-75	13
1975-76	28
1976-77	20
1977-78	12
1978-79	20
1979-80	23
1980-81	16
1981-82	19
1982-83	22
1983-84	25
1984-85	9
1985-86	9

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1C

GEOGRAPHICAL DESCRIPTION: Southeast mainland north of Cape Fanshaw to the latitude of Eldred Rock

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Populations Status and Trend

No significant changes in populations were noted during the past year. Limited pack size information indicates moderately high populations with at least 6-8 wolves per pack in the Chilkat Range, Berners Bay, Taku River (1 pack consisted of 9 wolves), and the Port Houghton areas. The total number of packs in these areas is not known.

Mortality

Based on sealing information, 14 wolves were taken in Subunit 1C during 1985-86, consisting of 6 males, 7 females, and 1 of unknown sex. Pelt colors of the 14 harvested wolves included 1 white, 10 grey, 2 black, and 1 of unknown color. Method of take showed that 9 were taken by conventional trapping methods and 5 by shooting. Four of the 5 wolves that were shot were taken by hunters.

Chronology of harvest was as follows: 2 in October; 5 in January; 1 in February; 3 in April; 2 in May; and 1 in June. Distribution of the harvest showed that 3 were taken in the Chilkat Range, 5 in Berners Bay, 1 along the Juneau road system, 2 in the Taku River drainage, and 3 in the area south of Taku Inlet.

Management Summary and Recommendations

The increase in harvest from 10 taken in 1984-85 to 14 was attributed to a slight increase in take per trapper. The harvest of wolves has steadily increased since 1981-82. However, the increased kill is probably due to increased effort rather than population changes. Limited information on

pack sizes for major areas in Subunit 1C indicates moderately high populations in the Chilkat Range, Berners Bay, Taku River and Port Houghton areas. It appears that populations are relatively stable.

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1D

GEOGRAPHICAL DESCRIPTION: Upper Lynn Canal

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Population Status and Trend

Information from hunters and trappers indicates that wolves are present in numbers similar to those of recent years.

Mortality

Sealing records indicated that 6 trappers took a total of 13 wolves in Subunit 1D between December 1985 and February 1986. Ten male and 3 female wolves were taken by: shooting (3), traps (2), and snares (8). One male wolf was grey in color while all the rest were black. Eight animals were taken in areas along the Chilkat River below Wells Bridge; the balance came from various areas throughout the subunit. Local "word-of-mouth" reports indicated that up to 20 wolves may have been taken during the report period.

Management Summary and Recommendations

The harvest of 13 wolves in Subunit 1D was above the 1972-85 average take of 8 wolves and similar to past high harvests (Table 1). Harvest levels this high have not been documented since the winter of 1977. According to local residents, trapping effort in 1985-86 was higher than usual, but reports of sightings of wolves were not more common than during the past several years. The current year's high harvest is felt to be primarily a reflection of increased trapping effort compared with the 1984-85 season.

A moose management plan accepted by the Game Board in spring of 1986 has for 1 objective the determination of causes and extent of calf moose loss due to predation. Estimation of

wolf numbers through trapper interviews could help satisfy this need. No changes in season or bag limit are recommended at this time.

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Table 1. Subunit 1D historical wolf harvest, 1971-86.

Year	Wolf harvest			
	Male	Female	Unk	Total
1971-72	4	4	5	13
1972-73	3	3	3	9
1973-74	8	1	3	12
1974-75	9	5	1	15
1975-76	2	1	0	3
1976-77	7	6	0	13
1977-78	4	0	0	4
1978-79	8	1	0	9
1979-80	5	3	1	9
1980-81	3	2	0	5
1981-82	0	1	0	1
1982-83	3	0	0	3
1983-84	4	2	0	6
1984-85	3	1	0	4
1985-86	10	3	0	13
Mean	4.9	2.2	0.9	7.9

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 5

GEOGRAPHICAL DESCRIPTION: Cape Fairweather to Icy Bay, eastern Gulf Coast

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Population Status and Trend

Informal discussions with local hunters and trappers indicate no change in the abundance of wolves in the unit.

Mortality

Four hunters or trappers killed 5 wolves during the report period. One grey male was snared while 2 males (1 grey, 1 white) and 2 grey females were shot. The animals shot were taken in May and June; the snared wolf was taken in January. Three wolves were taken along the Yakutat road system and 1 wolf was taken in the Dry Bay area.

Management Summary and Recommendations

The 1986 harvest of 5 wolves was less than the 1964-85 mean kill of 6.7 (Table 1). The poor trapping conditions that occurred during 1985-86 may have caused the much lower kill. Record low temperatures were recorded during November, followed by near-record rainfall in December. Thus, weather conditions effectively reduced the "land and shoot" portion of the harvest which in some years makes up a majority of the kill.

No changes in seasons or bag limits are recommended at this time.

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Table 1. Unit 5 historical wolf harvest, 1963-86.

Year	Wolf harvest[a]
1963-64	1
1964-65	4
1965-66	7
1966-67	3
1967-68	6
1968-69	8
1969-70	2
1970-71	10
1971-72	2
1972-73	5
1973-74	2
1974-75	9
1975-76	11
1976-77	7
1977-78	1
1978-79	9
1979-80	11
1980-81	6
1981-82	4
1982-83	11
1983-84	10
1984-85	14
1985-86	4
Mean	6.4

[a] Data between 1963 and 1970-71 is from aerial permits and bounty records; 1971-72 to present data is from sealing records.

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 6

GEOGRAPHICAL DESCRIPTION: Prince William Sound, North Gulf Coast

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolf abundance was estimated in fall 1985 from incidental counts of packs, track observations, and public reports. The estimate ranged from 46-59 wolves in a minimum of 8 packs. This estimate represents an increase from fall 1984 when 20-30 wolves were estimated from at least 4 packs (J. Reynolds, pers. commun.). Although wolf numbers are believed to have increased, the 1984 population was probably underestimated.

Mortality

One male wolf was shot near the town of Cordova (Subunit 6C) during August. Its age was not determined. Since 1983, mean annual harvest in Unit 6 has been 2 wolves.

Management Summary and Recommendations

Harvest records do not reflect wolf population trends in Unit 6. Declining fur prices and poor trapping conditions have reduced the interest of experienced wolf hunters and trappers.

Wolf abundance in Unit 6 is related primarily to ungulate abundance. Rapidly increasing moose and abundant mountain goat populations in Subunit 6A have apparently promoted an increase in wolf numbers. Subunits 6B and 6C have stable ungulate and wolf populations. However, wolf populations in these 2 subunits have more active hunters and trappers who help limit wolf numbers. Wolves in Subunit 6D probably rely mostly on mountain goat and Sitka black-tailed deer for winter food, and a slight increase in these ungulate populations has not caused a change in wolf abundance.

No changes in season length on bag limit are recommended.

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 7 and 15

GEOGRAPHICAL DESCRIPTION: Kenai Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Limited survey data during this report period indicate that wolf numbers remained stable on the Kenai Peninsula, except in the eastern portion of Subunit 15A where the population appears to have declined slightly due to harvest and low recruitment of young.

Mortality

Fifty-nine wolves (33 males and 26 females) were sealed by hunters and trappers during the 1985-86 season. Snaring was the most common method of take (61%), followed by ground-shooting (20%), and leg-hold traps (15%); 4% was unknown (Table 1). Over half the harvest (52%) occurred in January, February, and March. This chronology is similar to those of previous years (Table 2).

A summary of 1980-86 wolf harvest on the Kenai Peninsula, by game management unit, is shown in Table 3.

Management Summary and Recommendations

In regulatory years 1980-86, the reported harvest on the Kenai Peninsula was 317 wolves (Table 3). Mean annual harvest during the period was 53 wolves. The Kenai wolf population probably remained stable during this period at 180-200. However, to maintain a stable wolf population, trapping harvest in 1985-86 had to be curtailed in Subunit 15A and a portion of Unit 7, and the season was closed early. Wolf density in this area appeared to decline as a result of annual harvest of approximately 47% ($\bar{x}$ = 33) of the estimated population of 70 wolves, from 1981-82 through 1984-85. Traditionally, trapping

pressure in this area has been high because of: 1) a high level of public interest in wolf trapping; 2) the relative ease of access; and 3) the close proximity of the Peninsula's human population center. The Department of Fish and Game and the U.S. Fish and Wildlife Service (Kenai National Wildlife Refuge) jointly agreed to close the 1985-86 wolf season in Subunit 15A and the Refuge portions of Unit 7 when harvest had reduced the population to 35 wolves. This population level was attained after a harvest of 20 wolves, and the season was closed by Emergency Order in the above-mentioned area on 15 February 1986.

It was jointly agreed that a similar population level should be maintained in Subunit 15A in 1986-87. However, that minimum population level was readjusted to 25 wolves or 40% of the pre-season wolf population estimate. Wolf management objectives in Unit 7 and the remainder of Unit 15 will be developed through a cooperative wolf management plan in 1987. No changes in seasons or bag limits are recommended for the remainder of the Kenai Peninsula.

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Table 1. Wolf harvest methods on the Kenai Peninsula, 1980-86.

	Method												
	Ground shooting		Trapping		Snaring		Aerial shooting		Other		Unknown		
Reg. Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Total
1980-81	16	35.6	9	20.0	18	40.0	0	-	0	-	2	4.4	45
1981-82	14	22.6	23	37.1	24	38.7	0	-	1	1.6	0	-	62
1982-83	10	19.6	16	31.3	18	35.3	1	2.0	1	2.0	5	9.8	51
1983-84	9	17.3	16	30.8	26	50.0	0	-	1	1.9	0	-	52
1984-85	10	20.8	12	25.0	26	54.2	0	-	0	-	0	-	48
1985-86	12	20.3	9	15.3	36	61.0	0	-	2	3.4	0	-	59
Totals	71	22.5	85	27.0	148	47.0	1	0.3	5	1.6	5	1.6	317

Table 2. Chronology of wolf harvest on the Kenai Peninsula, 1980-86.

Month	1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Aug	2	4.4	1	1.6	1	2.0	0	-	0	-	0	-	4	1.3
Sep	3	6.7	3	4.8	0	-	2	3.8	0	-	10	16.9	18	5.7
Oct	2	4.4	0	-	2	3.9	0	-	1	2.1	0	-	5	1.6
Nov	2	4.4	1	1.6	6	11.8	4	7.7	4	8.3	7	11.9	24	7.6
Dec	4	8.9	14	22.6	11	21.5	16	30.8	21	43.8	11	18.6	77	24.5
Jan	14	31.1	21	33.9	15	29.4	18	34.6	5	10.4	21	35.6	94	29.8
Feb	8	17.8	10	16.2	6	11.8	9	17.3	12	25.0	8	13.6	53	16.8
Mar	6	13.0	11	17.7	9	17.6	2	3.9	4	8.3	2	3.2	34	10.8
Apr	2	4.4	1	1.6	1	2.0	1	1.9	1	2.1	0	-	6	1.9
Unknown	2	4.4	0	-	0	-	0	-	0	-	0	-	0	-
Totals	45		62		51		52		48		59		317	

Table 3. Summary of wolf harvests on the Kenai Peninsula, by game management unit, 1980-86.

Regulatory year	GMU	Adults			Pups			Unclassified			Total			Unit total
		M	F	Unk	M	F	Unk	M	F	Unk	M	F	Unk	
1980-81	7	1	3	0	1	1	0	4	4	0	6	8	0	14
	15A	4	5	0	1	4	0	3	1	0	8	10	0	18
	15B	1	0	0	0	0	0	0	1	0	1	1	0	2
	15C	2	1	0	2	1	0	3	2	0	7	4	0	11
Subtotal		8	9	0	4	6	0	10	8	0	22	23	0	45
1981-82	7	0	2	0	4	1	0	3	2	0	7	5	0	12
	15A	3	3	0	9	8	0	4	1	0	16	12	0	28
	15B	2	2	0	2	3	0	4	2	0	8	7	0	15
	15C	0	0	0	1	2	0	1	3	0	2	5	0	7
Subtotal		5	7	0	16	14	0	12	8	0	33	29	0	62
1982-83	7	4	1	0	1	1	0	0	1	0	5	3	0	8
	15A	3	7	0	3	9	0	4	2	1	10	18	1	29
	15B	1	2	0	1	3	0	2	0	0	5	5	0	10
	15C	1	0	0	0	1	0	1	1	0	2	2	0	4
Subtotal		9	10	0	5	14	0	7	4	1	22	28	1	51
1983-84	7	2	2	0	2	3	0	1	1	0	5	6	0	11
	15A	6	4	0	5	8	0	3	2	0	14	14	0	28
	15B	0	0	0	3	2	0	0	0	0	3	2	0	5
	15C	3	0	0	1	3	0	0	1	0	4	4	0	8
Subtotal		11	6	0	11	16	0	4	4	0	26	26	0	52
1984-85	7	0	1	0	0	1	0	2	1	0	2	3	0	5
	15A	5	6	0	3	5	0	7	6	0	15	17	0	32
	15B	0	2	0	1	0	0	0	0	0	1	2	0	3
	15C	1	0	0	0	0	0	4	3	0	5	3	0	8
Subtotal		6	9	0	4	6	0	13	10	0	23	25	0	48

Table 3. Continued.

Regulatory year	GMU	Adults			Pups			Unclassified			Total			Unit total
		M	F	Unk	M	F	Unk	M	F	Unk	M	F	Unk	
1985-86	7	2	2	0	1	1	0	1	5	0	4	8	0	12
	15A	7	3	0	5	2	0	1	2	0	13	7	0	20
	15B	3	6	0	2	1	0	2	1	0	7	8	0	15
	15C	2	0	0	1	0	0	6	3	0	9	3	0	12
Subtotal		14	11	0	9	4	0	10	11	0	33	26	0	59
Totals		53	52	0	49	60	0	56	45	2	158	157	2	317

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 9 and 10

GEOGRAPHICAL DESCRIPTION: Alaska Peninsula and Unimak Island

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolves occur throughout Unit 9 and on Unimak Island in Unit 10. Following the 1985-86 trapping season, trappers were sent a questionnaire asking them to rate the abundance and trend of several furbearer species. Ratings of "scarce" and "fewer than last year" each scored 1 point; ratings of "moderately abundant" and "same as last year" each scored 5 points; and those with "high population" and "more abundant than last year" scored 9 points each. Thirteen trappers who operated in Unit 9 rated wolf numbers as moderate (index = 4.5) and at about the same level (index = 4.7) as the previous year.

Although no specific data have been collected in Unit 9 on wolf population densities, general observations and comments from the trapper questionnaire suggest that a slight increase in wolf numbers has occurred, but that the population has recently stabilized at a moderate level.

Mortality

The 1985-86 reported wolf harvest was 23 (11 males, 10 females, and 2 unspecified) in Unit 9, and 4 (2 males and 2 females) from Unimak Island. All but 6 wolves were shot. Chronology of harvest was: September, 2; October, 1; December, 2; January, 11; February, 9; and March, 1. Both chronology and total harvest in Unit 9 were strikingly different than in the previous season. This year, the harvest was distributed more evenly throughout the season. In contrast, good snow and weather conditions in March 1985 were ideal for hunting and trapping and resulted in a harvest of 17 wolves in 1 month.

Management Summary and Recommendations

Wolf harvests on the Alaska Peninsula vary widely, primarily due to weather conditions. The large harvest of 51 wolves in 1984-85 did not appear to significantly reduce the population. The 1985-86 harvest of 23 was the same as the mean harvest during the past 15 years. No changes in seasons or bag limits are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 11

GEOGRAPHICAL DESCRIPTION: Wrangell Mountains

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolf-track surveys are not currently being conducted in this unit; therefore, population estimates are derived from field observations made by Department biologists and from trappers' and hunters' reported sightings. The current population estimate in GMU 11 is approximately 80-100 wolves.

Mortality

Eight wolves (4 males and 4 females) were sealed in Unit 11 during 1985-86. This is a 78% decline from the previous year's harvest of 36 wolves. Six (75%) wolves were taken by trapping methods and 2 (25%) were shot (1 by the land-and-shoot method). Harvest chronology was: October, November, and December, 1 each; January, 2; and March, 3.

Management Summary and Recommendations

The current wolf population estimate in GMU 11 is lower than previous estimates because fewer tracks and fewer wolves were observed between the Kotsina and Nizina Rivers, suggesting that wolves have declined in this portion of Unit 11 along the McCarthy Road. Wolf numbers have remained high from the Dadina River north to the Unit 12 boundary as well as in the lower Chitina Valley.

The recent decline in the Unit 11 wolf harvest is attributed to poor snow conditions that reduced snowmachine and airplane access and to a recent National Park Service (NPS) ruling that does not allow for land-and-shoot trapping on park lands. Based on the NPS position of prohibiting land-and-shoot

trapping, the Board of Game, in 1986, also made it illegal to use this method in the remaining portion of Unit 11. This new Board regulation is expected to further reduce wolf harvests.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River drainages

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Based upon aerial observations in the Northway-Tetlin Flats, incidental observations during moose surveys, reports from the public, and past wolf surveys, the wolf population in Unit 12 is estimated to number approximately 170-190 animals. The population is composed of 25 packs plus 17-19 single wolves. Wolf density is approximately 1 wolf/47 mi^2, and the population is thought to be stable.

Mortality

A total of 45 wolves was reported taken during the 1985-86 season, 23 (51%) of which were males. Twenty (44%) were snared, 13 (29%) were shot from the ground, and 12 (26%) were trapped.

Four wolves were taken by hunters in September. The harvest during this reporting period was one of the highest on record and was partly attributed to a greater interest in trapping, possibly resulting from the Department's trapper education program. Trappers using aircraft to land and shoot took 9 wolves. The harvest of 45 wolves represents a 22-24% harvest of the estimated population. Observations of heavily harvested packs containing radio-collared wolves indicated that pup production in spring 1986 compensated for all losses.

Management Summary and Recommendations

The relatively high harvest of 45 wolves by the public during the 1985-86 season, and the replacement of those losses after whelping, are strong evidence to refute the contention that trapping and hunting can reduce wolf numbers in Unit 12. Wolf

numbers in northwestern Unit 12 have reached pre-control levels since control ended in November 1983. A reduction in the rate of yearling moose recruitment correlates with the increase in wolf numbers in that portion of the unit.

Wolf distribution in Unit 12 is positively correlated with abundance of prey, primarily moose. An investigation of calf moose mortality factors in the Northway-Tetlin Flats showed wolf predation to be the primary cause of death for calf moose. A combination of wolf and bear predation is believed to be responsible for the moose population decline in the Little Tok River drainage, and for the continuation of low moose population densities (as low as 0.1 moose/mi^2) throughout much of the unit. Wolf numbers were higher in Unit 12 in the 1960's and early 1970's when numbers of moose were much higher. If moose numbers decline further in Unit 12, wolf numbers are also expected to decline. Conversely, increased abundance of ungulate prey would allow the existence of a larger wolf population in the future.

For purposes of moose, caribou, Dall sheep, and wolf management, it is strongly recommended that wolf numbers be reduced temporarily to provide for increased numbers of ungulates. Following restoration of prey abundance, wolf numbers could be allowed to increase in response to greater food availability.

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WOLF

GAME MANAGEMENT UNIT: 13

GEOGRAPHICAL DESCRIPTION: Nelchina and Upper Susitna Rivers

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

The spring 1986 population estimate in Unit 13 was 200 wolves (range = 178-223). This figure is higher than the 1985 estimate of 125 wolves (range = 114-171).

Mortality

Hunters and trappers sealed 69 wolves in Unit 13 during the season. This is a decline of 57 (45%) wolves from the previous year's harvest of 126. Males composed 55% (38) of the harvest, females 38% (26), and gender unspecified 7% (5). The land-and-shoot trapping method accounted for 28 (40%) wolves, trapping 22 (32%), snaring 11 (16%), and ground-shooting 8 (12%). The harvest chronology was: September, 4 (6%); October, 1 (1%); November, 7 (10%); December, 4 (6%); January, 8 (12%); February, 12 (17%); March, 31 (45%); unknown, 2 (3%).

Management Summary and Recommendations

The wolf harvest in Unit 13 declined in 1985-86 for the 1st time since 1980. This decline was attributed, in part, to poor snow conditions that limited the number of areas where small aircraft could be landed safely. As a result of the poor landing conditions, substantially fewer wolves were reported taken by the land-and-shoot trapping method in 1986, compared with 1985. Although the proportion of wolves taken by trapping and snaring methods increased from 30% in 1984-85 to 48% in 1985-86, the actual number of wolves taken by these methods decreased from 38 to 33.

Surveys indicated that the Unit 13 wolf population increased in 1986. Wolf packs in the unit are highly productive, producing large litters. Because the primary source of wolf

mortality in Unit 13 is harvest by humans, an annual kill of 100-125 wolves is needed to offset annual reproduction and maintain a stable wolf population.

No change in season dates or bag limits are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 14

GEOGRAPHICAL DESCRIPTION: Upper Cook Inlet

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolves occur throughout Unit 14. Observations by biologists, trappers, hunters, and air taxi operators are the only sources of trend information. The estimated population for the unit is 50-55 wolves distributed among approximately 10 packs. An additional 45-55 wolves periodically inhabit portions of Subunits 14A and 14B which border on Units 13 and 16, but these wolves are not considered permanent residents of Unit 14 and have been included in the trend information for other units.

Mortality

Ten wolves were sealed from the unit during this reporting period. The 1981-86 mean harvest was 10 wolves with a high of 17 taken in 1982-83 and a low of 6 taken in 1984-85. Snaring and trapping are the primary means by which wolves are harvested; however, some ground-shooting occurs in the Lake George area, along the Talkeetna River, and in alpine zones of Subunits 14A and 14B. Overall, hunting and trapping pressure was moderate to high. Vast timbered areas, difficult access, and a large percentage of inexperienced trappers have kept the harvest at a low to moderate level.

Management Summary and Recommendations

The 1985-86 harvest was slightly less than 20% of the estimated population. At this level, the population should be increasing; however, high natural mortality and emigration to adjacent areas are factors which could have prevented a substantial increase in wolf numbers. Because wolves are moderately abundant and the population appears relatively stable, no season or bag limit changes are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 16

GEOGRAPHICAL DESCRIPTION: West side of Cook Inlet

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26

Mortality

Three wolves were taken from Subunit 16B (1 male, 1 female, and 1 unidentified). Shooting accounted for 2, and 1 was trapped.

Management Summary and Recommendations

Wolves are not abundant in Unit 16. No changes in seasons or bag limits are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Historically, wolf densities in Subunit 17A have been low, and they remain so. In contrast, reports from trappers and general observations by Department staff during moose and caribou surveys indicate that wolf populations in Subunits 17B and 17C are increasing. Populations reached peak levels in 1974-77, but declined sharply by 1980. Rabies probably contributed to this decline, as the incidence of reported cases in the red fox population was very high in summer and fall of 1980. One rabid wolf was killed near Koliganek (Subunit 17B) in February 1981.

Winters have been abnormally mild in the northern Bristol Bay area since 1979, with the exception of 1984-85 when deep snow conditions persisted through most of April. Ungulate populations have increased significantly during these mild winters and, coupled with generally poor hunting and trapping conditions, are largely responsible for the expanding wolf population in Unit 17.

Mortality

Unit 17 wolf harvests have fluctuated widely during the past 15 years, from a high in 1974-75 of 111 wolves, to a low of 7 wolves in 1983-84. The harvest declined from 47 wolves in 1984-85 to 13 in 1985-86. Harvest composition was 10 males and 3 females. Most wolves were taken by shooting (62%); the remainder were trapped (38%). The chronology of the harvest was: December, 7; January, 5; and February, 1. Snow conditions during February and March, when most harvest normally occurs, were very poor.

Management Summary and Recommendations

Quantitative data for use in interpreting the status of wolves in Unit 17 are lacking. No comprehensive surveys to provide a population estimate have ever been conducted because snow conditions for tracking are usually poor. The highest number of wolves probably occurs in Subunit 17B. This area has almost constant winds which scour the tundra-covered slopes and cause deep drifts in the forested riparian areas; good tracking conditions seldom last more than 1 day.

Hunter success is usually low during years with poor snow conditions because hunters are forced to visually spot wolves rather than hunt them by following their tracks. Therefore, annual harvests generally reflect the quality of hunting conditions more than the size of the wolf population. The low harvest this year had minimal impact on wolf numbers in Unit 17.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulation No. 26.

Population Status and Trend

Wolf populations remain extremely low in density throughout Game Management Unit (GMU) 18. Wolves were consistently reported only in the Kilbuck Mountains southeast of Bethel during the reporting period and we received no reports of wolves north of the Yukon River.

The reports of wolves in the Kilbuck Mountains consisted of the observations of tracks of 1 to several individuals and an additional sighting of 2 animals. An ADF&G biologist reported observing the tracks of several wolves near Spein Mountain in the Kisaralik River drainage during November 1985. A U.S. Fish and Wildlife Service (USFWS) pilot reported 4 separate observations of the tracks of single wolves during April and May 1986 in the Kilbuck Mountains. The wolf tracks were observed in the Kisaralik drainage near a kill site where 10 caribou were harvested in March, in the upper Kisaralik drainage near Gold Lake, in the Eek Mountains, and in the Quicksilver drainage. A moose hunter also reported seeing several wolves in the Tuluksak River drainage near Nyac. All these sightings are believed to be of a pack which ranges in the Kisaralik, Tuluksak, and Fog River drainages in Unit 18, and in the upper Salmon and Kipchuk drainages in Subunit 19B. Other packs occasionally seen in Unit 18 include a pack which ranges between the Kilbuck Mountains and Taylor Mountain in Subunit 19B, and 1 or more packs in the vicinity of Paimiut Slough and the lower Innoko drainage in Subunit 21E. In past years, a few wolves were also occasionally reported in the northern Andreafsky and Chuilnak Mountains along the border of Subunits 21E and 22A.

"Wolves" (3-5 individuals) reported as raiding fish caches near Bethel during October and November 1985 are suspected to be feral dogs. A "wolf" trapped at the Bethel dump in

December 1985 had the skeletal and pelage characteristics of a very large dog. Trappers complain that aggressive feral dogs are commonly taken in fox sets in the vicinity of Bethel.

Mortality

Sealing certificate data indicate only 1 wolf was reported harvested in Unit 18 during the 1985-86 season. A Bethel trapper shot a solitary grey male wolf along the Kisaralik River during December 1985. Other wolves may have been harvested but were not sealed. Snowmachine travel conditions were poor during the 1985-86 winter, and the harvest of wolves was probably lower than normal. Since budget and personnel cutbacks did not allow circulation of our annual Trapper Questionnaire, we have no further information regarding wolf harvests in Unit 18.

Management Summary and Recommendations

Current management strategies in Unit 18 are designed to increase ungulate populations. Both ungulate and wolf densities are currently very low throughout the unit. The estimated size of the wolf population in Unit 18, including transitory animals, is 25-50 wolves in approximately 5 packs. Only 1 pack, however, inhabiting the Kilbuck Mountains, is resident to the unit. The other 4 packs reside in Units 17, 19A, 21E, and 22A, and only occasionally range into Unit 18. Wolves are virtually absent from the lowland of the Yukon-Kuskokwim Delta because of a scarcity of large ungulate prey. Wolves were reportedly present on the lowlands of the Delta until the demise of the reindeer industry approximately 50 years ago and were seen as far west as Nunivak Island. Reindeer herders blame wolf predation for the collapse of their industry, and warn of the impact increasing wolf numbers would have on herds of mainland muskoxen, caribou, and moose.

Wolf densities may be increasing slightly in Unit 18, as ungulate numbers increase, but absolute numbers of wolves remain extremely low. I foresee no need for changes in seasons or bag limits at this time.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 19

GEOGRAPHICAL DESCRIPTION: Upper and middle Kuskokwim River drainages

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Aerial wolf surveys were not attempted during this reporting period due to lack of suitable snow conditions during February and March.

Mortality

In Unit 19, 39 wolves were reported taken by 17 hunters and trappers during the 1985-86 season. This is a marked decline from the 1984-85 take of 110 wolves. Since 1971, when the wolf sealing requirement was initiated, the annual harvest of wolves has averaged 61. Very poor snow conditions were primarily responsible for the low harvest during the 1985-86 season. Most of the harvest (95%) occurred in Subunits 19D, where 31 wolves were taken, and in 19C, where the take was 6 wolves. Subunit 19A and 19B harvests were 1 wolf each. The Takotna drainage and the Kuskokwim River valley, near McGrath, were the most productive areas for wolf trappers in Subunit 19D. In Subunit 19C most wolves taken were from the South Fork and Windy Fork drainages. Unitwide, most of the take (77%) occurred during the period December-February.

Fifty-one percent of the wolves taken were females. Black and gray wolves composed 54% and 46% of the harvest, respectively. Most trappers (62%) used mechanized transportation. Snow machines and aircraft were used by 33% and 29%, respectively, of the successful trappers. Shooting from the ground was reported as the most common method of take; 62% of the harvest was taken by this method. Use of traps accounted for 23% of the take and 15% of the wolves were snared.

Management Summary and Recommendations

Following the near-record harvest in 1984-85, the take returned to levels typical of the early 1980's. Surveys near the close of trapping season in 1985 in Subunit 19D and in the Stony River drainage indicated wolves were abundant. The marked difference in harvest levels during the past 2 years was the result of extremes in hunting conditions. Near-ideal tracking and weather conditions existed during February and March 1985, while in 1986, there was little or no snow on the Stony River and no fresh snow in any of Unit 19 during those months.

Workshops on wolf trapping techniques were held in Takotna, McGrath, and Nikolai in response to the Board of Game's plan for reducing predation levels in Subunit 19D. Although several trappers and potential trappers attended, only 2 wolves could be directly attributed to the trapper education effort. Most trappers in Unit 19 concentrate on marten or beaver trapping and do not have the desire, ability, or materials to take wolves. To reduce predation to the desired level in Unit 19, wolves must be removed by shooting rather than trapping.

Based on historical records, the public's taking of wolves from the air could be an effective method of reaching the Board of Game's desired wolf:moose ratios.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Rodney Boertje compiled a fall 1985 estimate of 195 wolves in Subunit 20A using aerial surveys, telemetry, sealing certificates, and telephone interviews with trappers. With the low harvest by the public, and the increased number of prey species, the wolf population is expected to increase.

The wolf population in the portion of Subunit 20B west of Fairbanks was estimated at 69-75 wolves for fall 1985. This estimate was based upon observations made during wolf predation control efforts. The remainder of Subunit 20B appears to have wolf numbers similar to pre-control levels, based upon information provided by the public and from our observations while doing moose surveys.

Subunits 20C and 20F probably have a relatively low population of wolves based on the low prey populations observed there. However, reports have been received of wolf packs in all the major drainages.

Wolf numbers in Subunit 20D for fall 1985 were estimated at 39-65 wolves, which is similar to the fall 1984 estimate.

Wolf numbers in southwestern Subunit 20E have returned to pre-control levels. An estimated 200 wolves inhabit Subunit 20E, for a density of approximately 1 wolf/55 mi^2. The population is believed to be stable and is harvested only lightly.

Mortality

A total of 133 wolves was taken in Unit 20 (Table 1) during the 1985-86 season. This is a 29% increase in take compared

with the previous year. It is unclear why the public harvest increased. The Department took 32 wolves in Subunit 20B (Table 2), which is 6 more than in 1984-85.

The public harvested 27% of the wolves by ground shooting, 27% by trapping, and 47% by snaring. In Subunit 20E only 1 wolf was taken in April. This wolf was shot after the season for taking wolves with traps had closed.

Many people may not yet be aware that wolves can be legally taken by ground shooting or snaring in October and April when traps may not be used.

Management Summary and Recommendations

Wolf numbers are low to moderate in Unit 20 compared with population levels of the 1960's and early 1970's. Relative to the low ungulate populations, wolf numbers are high in all of Unit 20, except the western end of Subunit 20B, where successful predation-control efforts have resulted in a ratio of 1 wolf:50 moose. To rebuild Unit 20 moose populations within the time frame of our management goals, wolf numbers need to be reduced and maintained at a 1 wolf:50 moose ratio throughout most of Unit 20. After moose numbers are restored, wolves will be allowed to increase in response to the greater prey availability. Trappers in Unit 20 do not harvest enough wolves to reduce wolf populations, despite assistance and education from the Department. Therefore, Department control methods will be necessary in most of the unit. Aerial shooting of wolves by the public could be effective in some portions of Unit 20 and would be a valuable complement to Department efforts; however, the practice is currently prohibited by the Board of Game.

Wolf and ungulate numbers should be monitored closely in western Subunit 20B to document the effect of wolf control. Surveys and radio-collaring of wolves should occur throughout Unit 20 to determine wolf pack distribution, territory sizes, kill rates, and pack sizes.

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Table 1. Unit 20 wolf harvest, 1985-86.

Subunit	Males	Females	Sex unknown	Total
20A	17	7	0	24
20B	29	20	8	57
20C	1	2	5	8
20D	17	10	1	28
20E	9	5	0	14
20F	0	2	0	2
Total	73	46	14	133

Table 2. Method of take for wolves in Unit 20, 1985-86.

Subunit	Ground shooting	Trapped	Snared	Department take	Total
20A	7	8	9	0	24
20B	5	7	13	32	57
20C	0	4	4	0	8
20D	9	3	16	0	28
20E	6	3	5	0	14
20F	0	2	0	0	2
Total	27	27	47	32	133

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

No Department surveys were conducted during the report period. However, personal observations and discussions with trappers suggested that wolf packs occupied traditional areas and that pack sizes were stable. Very poor aerial tracking conditions contributed to a lower than average harvest in much of Unit 21. It snowed on only 2 days during the months of February and March. In the northern part of Unit 21, however, the harvest was similar to those of previous years and the population there is stable.

Mortality

Hunters and trappers reported harvesting 40 wolves during the 1985-86 season. Twenty-one wolves were reported taken with traps or snares. Poor snow conditions for landing, shooting, and tracking of wolves by snow machine reduced the normally high take by these means. The harvest breakdown for Subunits 21A, 21B, 21C, 21D, and 21E was 9, 3, 6, 15, and 7 wolves, respectively. The harvest was composed of 18 males, 21 females, and 1 of unknown sex. Pelage coloration was 19 grays, 19 blacks, and 2 unknown.

Movements

Three wolves were radio-collared during April 1986 in a cooperative study designed to delineate home ranges and pack sizes.

In the Three Day Slough area, a lone female wolf was darted for collaring using 3 cc of M99. The wolf went into convulsions after 5 seconds and stopped breathing. We administered CPR and mouth-to-nose breathing and were able to

revive the wolf. Because of our concern for her condition, we did not take any body-size data but estimated her weight at 50 lbs. Between April 1986 and late January 1987, this female was relocated 10 times, and she has remained within a 40 mi^2 area. Movements between sightings have ranged from 2.5 to 9 miles. In July 1986 she was with 3 black pups, but we were unable to determine if she was the mother.

We collared an adult male at the confluence of the Honhosa and Kateel Rivers. This wolf was with another at the time of capture; between April 1986 and mid-January 1987 he was relocated 8 times and has apparently remained alone. This wolf has ranged over 65 mi^2, from the area above the mouth of the Kateel to the mouth of the Gisasa River; movements between sightings have ranged from 0.25 to 15.25 miles.

A 3rd wolf was collared at the base of the Kaiyuh Mountains at North Creek. This adult male was relocated 5 times between April 1986 and 7 January 1987; he ranged from 3 to 17.5 miles between relocations over a 50-mile area. In December 1986 wolf was seen with 4 others. The home ranges of the 3 collared wolves are smaller than the average pack range (256 mi^2) found for wolves on the Tanana Flats (Gasaway et al. 1983). At least 2 of the collared wolves live in areas which have moose population densities of approximately 3-4 moose/ mile. The higher moose densities may explain the smaller home ranges of wolves in this area.

Management Summary

Present population levels are apparently stable; the harvest was below the 8-year average. Cooperation by trappers in reporting pack size and locations has aided the Department.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolf densities are extremely low in most of Unit 22. Wolves are, however, moderately abundant in Subunits 22A and 22B during winter and spring when Western Arctic Herd caribou are seasonally present. Specific surveys to determine the population status and distribution of wolves have never been conducted in Unit 22. Limited information concerning wolf distribution was obtained from biologists' observations, results of our annual Trapper Questionnaire, and from observations reported by reindeer herders and other local residents.

Mortality

Sealing data indicate that 3 wolves were taken in Subunit 22B in the Koyuk River drainage by a hunter using a snowmachine. Harvest information gathered from the Trapper Questionnaire and from general conversation with trappers indicates that an additional 2 wolves were harvested from Unit 22. The 1985-86 reported harvest is substantially lower than the 1984-85 reported harvest of 12 wolves, presumably due to poor snowmachine travel conditions.

Results of the Trapper Questionnaire suggest some harvested pelts were used domestically but were not sealed. Village residents unitwide continue to seal only those furbearer pelts that are commercially tanned or sold to furbuyers, making compliance with sealing requirements very low. I estimate the actual 1985-86 harvest of wolves, including domestically utilized pelts, is 10-15 animals.

Management Summary and Recommendations

Although Unit 22 supports relatively high numbers of moose and reindeer, and Western Arctic Herd caribou are observed seasonally in increasing numbers in Subunits 22A and 22B, the number of wolves, unitwide, nevertheless appears to be low. Reasons for low numbers of wolves are not known with certainty. The accuracy of our harvest data needs to be improved. This may be accomplished by: 1) initiating a more active information and education program concerning our sealing requirements; and, 2) encouraging more active enforcement of our current sealing regulations. A research program to improve our understanding of wolf population dynamics, and the impacts of wolf predation on local ungulate populations, is recommended.

No changes in seasons and bag limits are recommended at this time.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Information concerning the population status and trend of wolves in Unit 23 came primarily from observations reported on our annual Trapper Questionnaire. Because wolf surveys were not conducted during 1985-86, we have no quantitative data with which to evaluate the population status of wolves in Unit 23. Results of our 1985-86 Questionnaire indicate that wolf numbers were reportedly low throughout the unit, a conclusion corroborated by the low harvest reported for 1985-86. Additional observations from agency staff and the public suggest that wolf numbers, although low in 1985-86, may be increasing.

Mortality

Fifteen wolves (9 males and 6 females) were sealed by Unit 23 trappers and hunters during the 1985-86 season. This is the lowest harvest reported during the past 6 seasons (Table 1). Only the 1981-82 harvest of 18 wolves is comparable to this low figure.

Management Summary and Recommendations

The most recent wolf survey conducted in 1981 estimated that wolf density in Unit 23 ranged from 1 wolf/79 mi^2 to 1 wolf/104 mi^2. While this information provides a good starting point, additional surveys are needed to properly evaluate the current status and size of the wolf population in GMU 23. We plan to initiate a research project next year to develop an accurate, low-cost technique for censusing wolf numbers.

Noncompliance with sealing requirements remains a problem in Unit 23. As a result, the reported harvest is substantially lower than the actual harvest. The Unit 23 information and

education program should include an effort informing local hunters and trappers about the need for wolf and furbearer sealing requirements. Increased enforcement may also be necessary to improve compliance.

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Table 1. Reported wolf harvest for Unit 23, 1980-85.

Year	Male	Female	Unknown	Total
1980-81	--	--	--	70
1981-82	10 (56%)	8 (44%)	0	18
1982-83	25 (57%)	19 (43%)	1	45[a]
1983-84	30 (68%)	14 (32%)	3	47
1984-85	42 (67%)	21 (33%)	0	63
1985-86	9 (60%)	6 (40%)	0	15

[a] Erroneously reported as 19 in the 1982-83 S&I Report.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 24

GEOGRAPHICAL DESCRIPTION: Koyukuk River drainage above Dulbi River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

No Department surveys were conducted during the report period. However, discussions with trappers and aerial hunters suggested that wolf abundance and distribution were similar to those of previous years. Wolf populations are apparently stable or increasing.

Mortality

Hunters and trappers reported harvesting 28 wolves during the period. Over half (16 wolves) were reported taken with traps or snares. Conditions were poor for landing, shooting, and tracking wolves by snow machine. The harvest was composed of 17 males, 10 females, and 1 of unknown sex. Pelage coloration was 18 gray and 10 black wolves.

Management Summary and Recommendations

Present population levels are apparently stable or increasing. The harvest was lower than the 8-year average. The lack of funds for surveys has hampered efforts to manage wolves in Unit 24. Cooperation by trappers in reporting pack sizes and locations has aided the Department.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 25

GEOGRAPHICAL DESCRIPTION: Yukon Flats; Chandalar, Porcupine, and Black River drainages; Birch and Beaver Creeks

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

No systematic wolf surveys were conducted in Unit 25 during the reporting period. However, surveys during past years and recent observations indicate a population of 520-630 wolves, with the lowest density likely occurring in Subunit 25D (West). Numbers are probably stable in all subunits except 25C, which may have an increasing population.

Mortality

Sealing records of the wolf harvest provided the only reliable mortality information. They indicated 51 wolves were taken, with most harvested in Subunits 25B (20) and 25D (15) (Table 1). Slightly more males (27) than females (22) were reported taken, and the most common pelt color was gray (31). Most animals were taken by ground shooting (29), with airplanes (27) being the most common method of transportation (Table 2). The bulk of the harvest occurred during December through March (40) (Table 3).

Total harvest during this reporting period was 18 less than in 1984-85. The take in most subunits declined, with 25A showing the largest drop (11). The exception was Subunit 25B, where harvest increased by 5 wolves.

A trapper assistance program was launched in Subunit 25D (West) to encourage trappers to harvest more wolves. The program was initiated because wolf predation appeared to be a major factor limiting recovery of the low-density moose population in that area. The objective was to reduce average wolf numbers during fall from the current 50 animals to no

less than 20. Trapper efficiency was to be increased by providing education on trapping techniques and by communicating information on pack activities obtained during wolf surveys.

The program did not produce an increase in the take of wolves. The harvest was 8 animals, compared with 9, 0, and 9 for the previous 3 seasons. This poor response was probably due to a lack of timely information on activities of wolf packs. This information cannot be collected using normal survey techniques in Subunit 25D (West) because wolf density is extremely low (1 wolf/140-160 mi^2). Without this kind of information, it is impossible for trappers to efficiently take wolves in this subunit. The only solution is to radio-collar wolves and communicate information on pack activities to trappers immediately after relocations are obtained.

The poor results from the program were not due to a lack of effort by the Department to provide trapper education, or to lack of interest by local trappers. Workshops on trapping techniques were held in Stevens Village, Beaver, and Fort Yukon during October 1985. Most of the local trappers attended these sessions and interest was high. Also, a video tape on techniques is being produced and will be distributed to individual villages.

Management Summary and Recommendations

Wolves appear to be abundant throughout most of Unit 25. Numbers are probably stable in all subunits except 25C, which may have an increasing wolf population. Harvest was very low (8-10% of the population) and was slightly less than last year's.

The trapper assistance program to increase wolf harvest in Subunit 25D (West) was unsuccessful. The primary problem was lack of timely pack-activity information that could be communicated to trappers.

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Table 1. Sex and pelt color of wolves taken in Unit 25, 1985-86.

Subunit	Sex			Color			Subunit total
	Male	Female	Unk	Gray	Black	Unk	
25A	6	8	0	10	2	2	14
25B	11	9	0	13	6	1	20
25C	2	0	0	2	0	0	2
25D (West)	4	4	0	1	7	0	8
25D (East)	4	1	2	5	2	0	7
Total	27	22	2	31	17	3	51

Table 2. Method of take and transportation used by wolf trappers in Unit 25, 1985-86.

Subunit	Method of take				Method of transportation			
	Ground shooting	Trapping	Snaring	Unk	Air-plane	Dog sled	Snow machine	Unk
25A	8	3	1	2	6	1	4	3
25B	10	4	6	0	9	6	5	0
25C	0	2	0	0	0	1	0	1
25D (West)	7	0	1	0	8	0	0	0
25D (East)	4	2	1	0	4	0	3	0
Total	29	11	9	2	27	8	12	4

Table 3. Month of take for wolves harvested in Unit 25, 1985-86.

Subunit	Month							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Unk
25A	3	0	0	2	1	1	7	0
25B	0	0	1	6	7	0	0	6
25C	0	0	1	0	0	1	0	0
25D (West)	0	0	0	0	0	5	3	0
25D (East)	0	0	0	1	0	4	2	0
Total	3	0	2	9	8	11	12	6

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26A

GEOGRAPHICAL DESCRIPTION: Western Arctic Slope

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Population Status and Trend

Wolf population status and trend for most of the western North Slope is not known at this time. The most recent population-size estimate was based on a survey flown by R. Stephenson in 1982 (James 1982). Stephenson and James estimated the Subunit 26A population at 144-310 wolves during the winter of 1981-82. They surveyed 10,044 mi^2 in the southeastern corner of the 53,643 mi^2 subunit. Using the survey data, they assumed a density of 1 wolf/54-114 mi^2 for 25% of the subunit and 1 wolf/653-1,524 mi^2 for the remaining 75%.

During April 1986, 6,480 mi^2 were surveyed in roughly the same locale flown by Stephenson in 1982. No flying was done in most of Gates of the Arctic National Park and Preserve (GANP). Two packs totaling 9 wolves were observed. Combining visual sightings of wolves with track observations, 9 packs estimated to include 44 individuals were tentatively identified, and a density of 1 wolf/147 mi^2 was estimated for the survey area.

Adjacent to this survey area, Adams and Stephenson (1986) surveyed GANP in April 1986 using similar techniques. Their survey results and the reported observations of Nunamiut residents of Anaktuvuk Pass indicated that the 10,800 mi^2 study area contained a minimum of 206 wolves, or 1 wolf/52 mi^2.

Although the survey data are not conclusive, indirect evidence suggests that wolf numbers may be increasing in at least part of Subunit 26A. Evidence supporting this view include: a record high reported harvest of wolves by residents of Anaktuvuk Pass during 1986, increased reports of sightings or sign by other residents, and an increase in the sightings of wolves incidental to moose surveys flown in 1986.

Population Composition

Adams and Stephenson (1986) reported sex-age data for 12 wolves killed by Anaktuvuk Pass hunters in Subunit 26A. Eight of the carcasses were females and 9 were pups. Of the wolves older than pups, 2 were adult females and 1 was a yearling male. This sample is too small to derive meaningful conclusions.

Mortality

The 1985-86 hunter harvest reported on sealing certificates for Subunit 26A is 13 wolves. All 13 were taken by 1 hunter from Anaktuvuk Pass. The minimum known harvest is 51 wolves. Adams and Stephenson (1986) found that 57 wolves were killed by residents of Anaktuvuk Pass during the winter of 1985-86. Of these, at least 37 were probably killed in Subunit 26A. An additional 7 wolves were known to be harvested by Wainwright hunters. The Alaska Department of Public Safety (D. Wilson, pers. commun.) documented that 7-8 wolves were killed illegally on the Colville River and Cobblestone Creek during March-April 1986 by aircraft hunters. The actual number of wolves killed by Unit 26A hunters is probably much larger than 51 and is estimated to range from 72-90 wolves. Estimated undocumented harvest for communities other than Anaktuvuk Pass that may have taken wolves in Subunit 26A are: Atqasuk, 5; Barrow, 5; Nuiqsut, 5; Point Lay, 3; and Wainwright, 10.

The harvest of wolves appears to have increased sharply. In 1984-85 the reported kill was 8 and the estimated harvest 16-24. Adams and Stephenson (1986) estimated that residents of Anaktuvuk Pass caught 24 wolves during the 1984-85 winter compared with 57 for 1985-86.

The 1985-86 minimum documented harvest of 51 in Subunit 26A is 16-35% of the estimated 1982 wolf population in the subunit; the 1982 estimate was developed from an aerial survey of less than 20% of the area. Although overharvest may have occurred during the 1985-86 report period, an alternative explanation is that the size of the wolf population in Subunit 26A is presently underestimated.

No information on natural mortality is available. All of the wolves necropsied by Adams and Stephenson (1986) at Anaktuvuk Pass were in good nutritional condition and had large fat reserves.

Management Summary and Recommendations

Past reports have emphasized problems encountered with harvest reporting through use of fur sealing certificates (Trent 1984, 1985). These problems still exist and must be remedied.

However, at this time the highest priority is to calculate density and population estimates for Subunit 26A. This information will aid in interpreting the relatively high wolf kill for this report period. It will also help us to better evaluate the relationship between wolves and the Western Arctic Caribou Herd.

Aerial wolf surveys are difficult to conduct and probably only roughly estimate the actual population density. Problems with this technique are well known and are recognized here. However, aerial surveys are one of few practical means for obtaining any understanding of population trends and should be continued. Interviews with knowledgeable wolf hunters and close coordination with the wolf research team working in GANP will also be pursued. Abundance of prey, particularly caribou, will be more carefully observed in order to try to identify "pockets" of high wolf density.

No changes in seasons and bag limits are recommended at this time.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26B and 26C

GEOGRAPHICAL DESCRIPTION: Arctic Slope east of and including the Itkillik drainage and east of the Colville River

PERIOD COVERED: 1 July 1985-30 June 1986

No wolves were sealed from either GMU 26B or 26C during regulatory year 1985-86. No furbearer surveys of any kind were conducted by ADF&G. There are no data available from the public or from other agencies to indicate that any changes in wolf numbers or in harvest have occurred relative to past years. In summary, no data are available for completing S&I reports for these subunits.