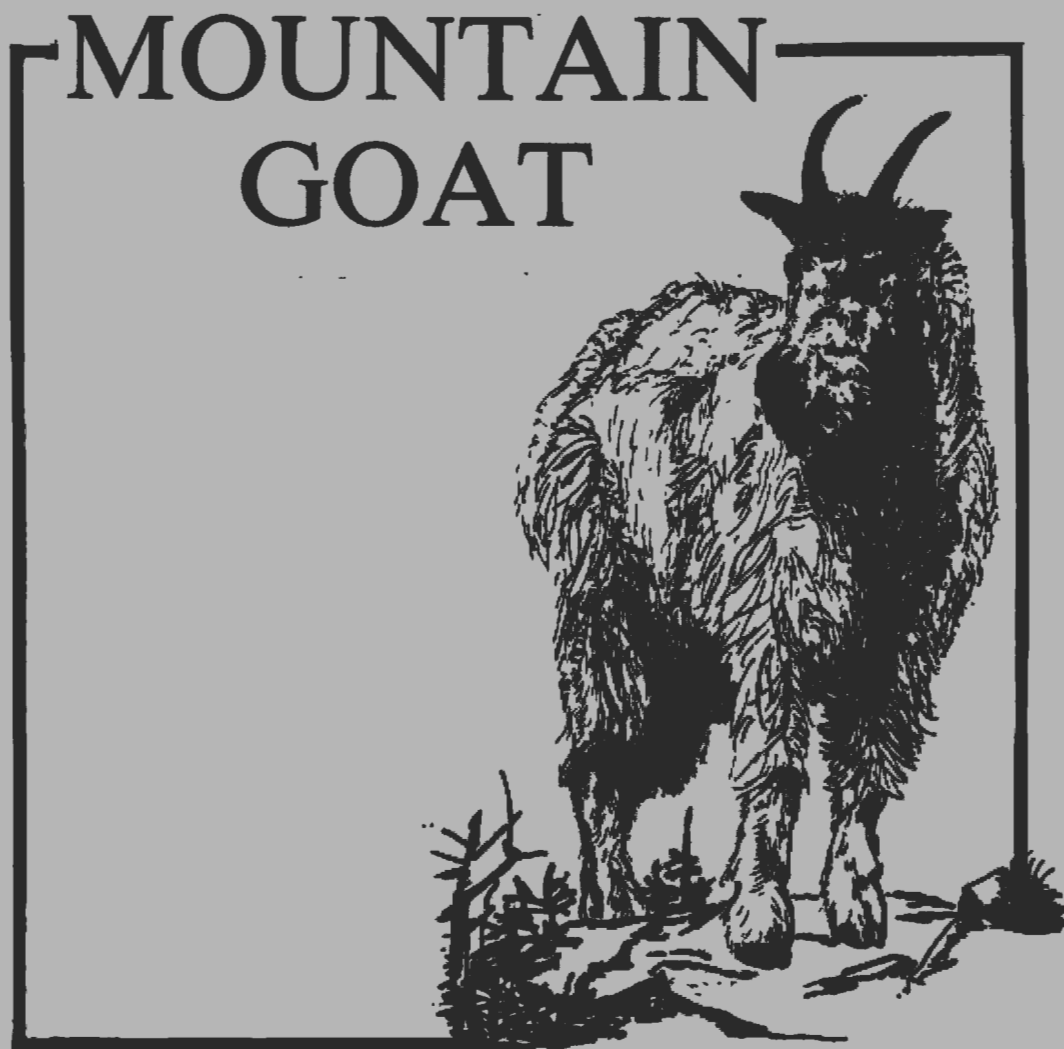
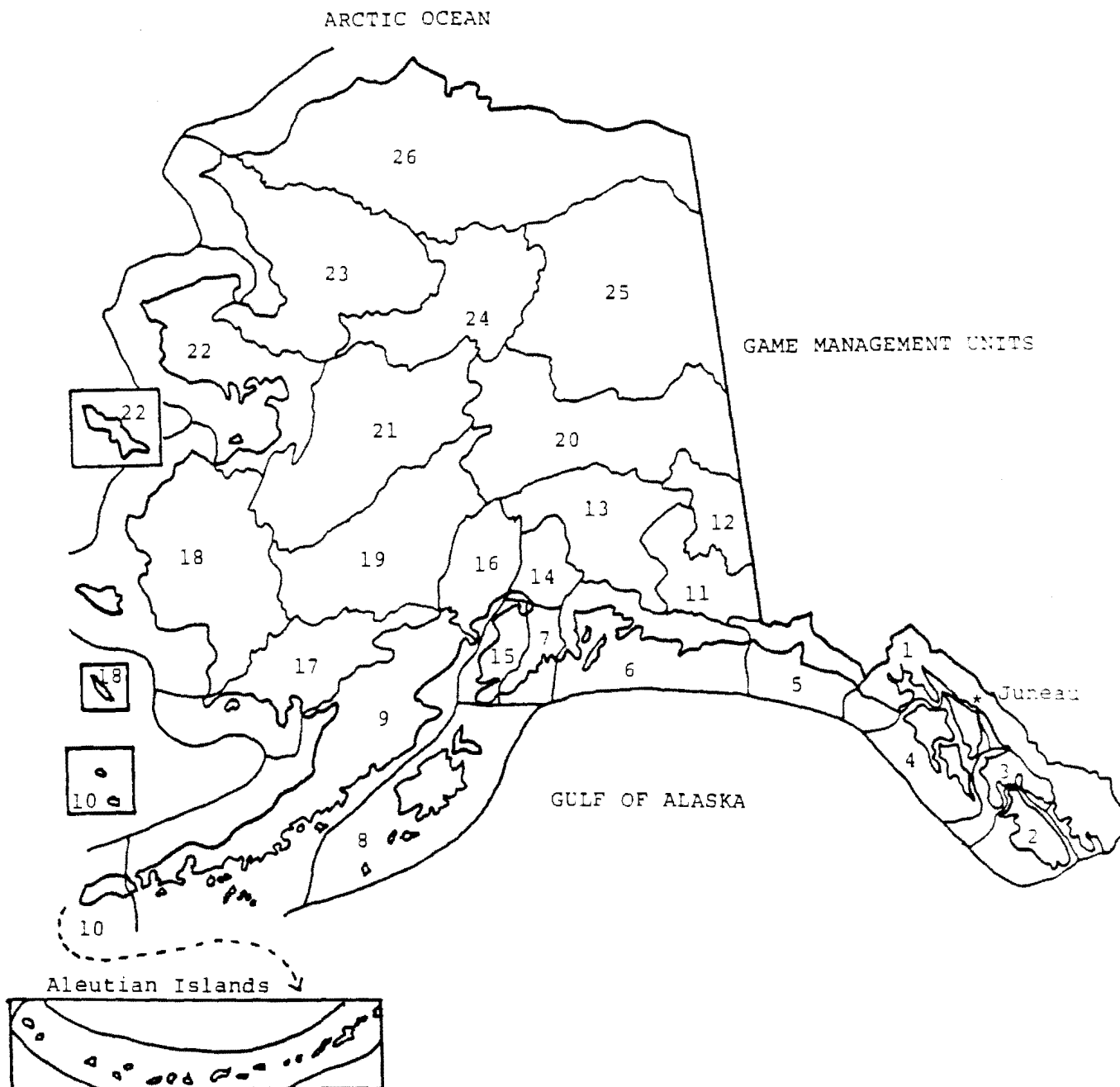


Alaska Department of Fish and Game  
Division of Wildlife Conservation  
Federal Aid in Wildlife Restoration  
Annual Performance Report of  
Survey-Inventory Activities  
1 July 1989-30 June 1990



Compiled and edited by  
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PROJECT TITLE: Southeast Mountain Goat Population Management

OVERVIEW: Mountain goats are found in mainland southeast Alaska from Dixon Entrance to Icy Bay and on Baranof and Revillagigedo islands. Harvests throughout the region were below sustainable limits and populations are generally stable. Some Lynn Canal goat populations are at low levels and may be declining.

PROJECT LOCATION: Unit 1A (5,300 mi<sup>2</sup>)  
Ketchikan area, including mainland areas  
draining into Behm and Portland Canals

PROJECT OBJECTIVES:

To maintain densities above 20 goats per hour during fall surveys.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Five aerial-survey routes were flown in September under good conditions. The annual spring survey to establish adult:kid ratios and assess winter mortality was also completed.

Registration permits for hunt No. 801 were issued throughout the 1989 season. Hunt reports were tabulated, and nonrespondents were either contacted for information or cited for non-compliance.

PROGRESS TOWARD MEETING PROJECT OBJECTIVES:

Aerial surveys of routes K-4, K-5, K-9, K-10, and K-11 were conducted from 10 to 13 September, utilizing the same plane, pilot, observer, and techniques. Survey conditions on all 5 routes were good, and 539 goats were counted (415 adults and 124 kids). Total survey time was 5.6 hours, and 97 goats were observed per hour. The kid:adult ratio was 30:100, comparable to surveys conducted since the late 1970's.

Similar to last year's survey, the spring survey was conducted from a boat, indicating good overwinter survival of kids. Forty-two adults, 13 kids, and 2 unclassified goats were observed. The ratio of kids to adults was 24:100.

Goat hunting in southeast Alaska has been on a registration permit system for the past 10 years. In 1989, 177 registration permits were issued from the Ketchikan office. Within Unit 1A, 79 hunters killed 23 goats (14 males, 9 females) in 218 hunter days. Success was 29%, and 9.5 hunter days were expended per goat taken. Four percent of the harvest were taken by non-

residents. Hunting reports were obtained from all but one of the 177 permittees. Project objectives were met for FY 1990.

PROJECT LOCATION: Unit 1B (3,000 mi<sup>2</sup>)  
Southeast Alaska mainland from Lemesurier  
Point to Cape Fanshaw

PROJECT OBJECTIVES:

To maintain densities above 20 goats per uniform coding area.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Aerial surveys were conducted to monitor populations. A total of 247 permits were issued, and a diligent effort was made to get full compliance of the reporting requirement. Whenever possible, goat hunters were interviewed in the field. Data from the registration permits were used to make management recommendations.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Goat populations have appeared to be stable or increasing slightly during the past few years. Two survey flights were flown, and counts were comparable to previous years for the same areas. The goats were widely dispersed, and only 33 goats/hour were recorded. Overall kid counts showed a ratio of 33 kids:100 adults, or 25% kids in the population.

Only 76 of the people registering for the hunt actually hunted, and 34 killed 46 goats. Successful and unsuccessful hunters averaged 3.5 and 4.1 days afield, respectively. Hunters spent a total of 424 days afield. Hunter success was 45% overall; 12 residents harvested 2 goats each. There were only 6 guided nonresidents, and each killed 1 goat.

PROJECT LOCATION: Unit 1C (7,600 mi<sup>2</sup>)  
The southeast Alaska mainland and the islands  
of Lynn Canal and Stephens Passage lying  
between Cape Fanshaw and the latitude of  
Eldred Rock, including Sullivan Island and the  
drainages of Berners Bay

PROJECT OBJECTIVES:

To maintain population densities of 30 goats/hour during fall surveys in the Eagle and Antler River drainages and in the

Chilkat Range north of the Endicott River and 50 goats/hour in the areas south of Taku Inlet.

To retain the existing closure of the Chilkat Range south of the Endicott River until surveys reveal at least 80 goats in the area between William Henry Mountain and Tear Drop Lake.

To monitor impacts of sight-seeing helicopter flights on selected populations.

#### WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Population composition counts were flown in fixed-wing aircraft over most of the goat range. Harvest data collected from registration permit returns were analyzed on an ongoing basis to determine whether harvests remained within sustainable limits. Preliminary harvest quotas based on population estimates were established for discrete areas throughout the unit. These quotas incorporated a point system that favored the harvest of billies.

No work was accomplished in monitoring the effects of sight-seeing helicopter flights. Some preliminary work was completed toward mountain goat management plans in the development of maximum harvest quotas and hunt areas.

#### PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Extensive aerial surveys flown in the late summer of 1989 found goat populations in the Eagle and Antler River area and in that portion of the unit south of the Taku River to be above management objectives. Unexpectedly high numbers of goats were observed in the area between Cape Fanshaw and Endicott Arm, where 226 animals were counted in 2.7 hours (84 goats/hour). A kid:adult ratio of 33:100 was determined for the entire area. No surveys were flown in the Chilkat or Juneau closed areas, but they are scheduled for FY91.

We issued 212 registration permits in 1989: 32 for hunt No. 802 (i.e., Antler River to Eagle River and Glacier) and 180 for hunt No. 803 (i.e., the remainder of Unit 1C, except areas closed to hunting). Of these, 80 permittees hunted and 42 were successful. Twenty-eight billies, 11 nannies, and three of unreported sex were taken. A new state law requiring nonresident goat hunters to be accompanied by a guide seemed to have little effect on the number of nonresidents obtaining permits; 19% of the harvest was taken by them, a somewhat higher proportion than the 5-year mean of 14%.

Eleven goats (3 males and 8 females) were released on Mount Juneau in late August 1989. Eight goats were fitted with radio collars. At least two of the goats dispersed from the release site and travelled 20 and 35 miles. The remaining 6 collared

animals wintered within 5 miles of the release sight. This project was not funded by Federal Aid, but it should speed the recovery of Juneau area goat populations from their existing low level.

PROJECT LOCATION: Unit 1D (2,700 mi<sup>2</sup>)  
That portion of the southeast Alaska mainland lying north of the latitude of Eldred Rock, excluding Sullivan Island and the drainages of Berners Bay

#### PROJECT OBJECTIVES:

To increase the population to 100 animals in hunt area No. 804 (Skagway).

To increase estimated population from 600 to 1,000 goats and maintain hunter success of 25% in hunt area No. 805 (Haines North).

To increase estimated population from 300 to 500 goats and maintain hunter success of 25% hunt area No. 806 (Haines South).

#### WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Population composition counts were conducted in fixed-wing aircraft over most of the goat range within the unit. Harvest data collected from registration permits were analyzed. Preliminary harvest quotas were established for discrete areas throughout the unit based on population estimates.

#### PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Extensive aerial surveys were conducted in the late summer of 1989. Goat numbers in much of the hunt No. 805 area appeared to be down. However, very warm, dry weather for most of the summer may have caused goats to alter their habitat use patterns, making observation difficult.

Very few goats were observed on the ridges above and west of Taiya Inlet. Although goat numbers in hunt area No. 804, which has been closed to hunting for several years, have been increasing slowly, they were still below management objectives.

The largest concentration of goats observed during the surveys was observed on the Takhin Ridge system in hunt area No. 806. The southern portions of this area were not surveyed in 1989, but reports from pilots and sportsmen suggested that goat numbers were stable or increasing. A kid:adult ratio of 38:100 was above average for the unit, as was the observation rate of 59

goats/hour. Because management objectives of 1,000 and 600 goats, for hunt area Nos. 805 and 806, respectively, may be unrealistic, they should be reevaluated after the 1990 surveys have been completed.

We issued 148 registration permits in 1989, 82 for hunt No. 805 and 66 for hunt No. 806. Of these, 88 hunted and 24 were successful. Fourteen billies and 10 nannies were harvested. A hunter success rate of 26% was consistent with historic levels, exceeding the management goal.

PROJECT LOCATION: Unit 5 (5,770 mi<sup>2</sup>)  
Cape Fairweather to Icy Bay, eastern gulf coast

#### PROJECT OBJECTIVES:

To increase the estimated population from 850 to 1,250 goats and maintain a hunter success rate of 25%.

#### WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Aerial surveys were conducted from Harlequin Lake to the Variegated Glacier in Nunatak Fiord. Ninety-three goats (64 adults and 29 kids) were observed at the rate of 47 goats/hour. The observed ratio of 45 kids:100 adults (31% kids) was the highest value in the recent 5-year period.

The harvest analysis was based on the return of hunter reports. Forty permits were issued, 21 permittees did not hunt, and 11 hunted unsuccessfully. Seven males and 1 female goat were killed (42% success). Preliminary maximum harvest levels were established for specific areas within Unit 5.

#### PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

The hunter success rate exceeded the management objective, populations appear to be growing, based on high kid:adult ratios and strong percentages of kids observed during aerial surveys. Furthermore, hunter effort has been down since 1983, and the harvests have been well below the maximum allowable.

The changing nature of moose hunts on the Yakutat Forelands may be one explanation for reduced effort and harvest since 1985. Between 1985 and 1990, a subsistence preference regulation caused a shorter moose hunting season for nonlocal residents and nonresidents. This may have caused hunters who might otherwise have pursued a mixed-bag hunt to not travel to Yakutat. A high proportion of goat hunters are not Alaska residents.

SEGMENT PERIOD PROJECT COSTS:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	30.1	37.3	67.4
Actual	40.0	8.7	54.7
Difference	-9.9	28.6	18.7

Actual personnel costs are estimated. Personnel costs were higher than planned. This occurred, in part, because the illness of a Wildlife Biologist III required us to fill in for him by temporarily upgrading a WB I and extending his normal working season. Additional work was done by Juneau area staff reviewing the impact of mine development on goats.

SUBMITTED BY:

David M. Johnson  
Regional Management Coordinator



PROJECT TITLE: Southcentral Alaska Mountain Goat Management

PROJECT LOCATION: Unit 6 (10,100 mi<sup>2</sup>)  
Prince William Sound and north Gulf Coast

Units 7 and 15 (8,400 mi<sup>2</sup>)  
Kenai Peninsula

Unit 8 (5,100 mi<sup>2</sup>)  
Kodiak and adjacent islands

Unit 11 (12,800 mi<sup>2</sup>)  
Wrangell Mountains

Unit 13 (23,400 mi<sup>2</sup>)  
Nelchina Basin

Unit 14 (6,600 mi<sup>2</sup>)  
Upper Cook Inlet

PROJECT OBJECTIVES:

Unit 6

To increase the goat population in Unit 6 to a minimum of 4,500 goats by the year 2000.

Units 7 and 15

To maintain a pre hunting population of at least 3,000 goats on the Kenai Peninsula.

Unit 8

To maintain a pre hunting population of at least 200 goats.

Unit 11

To maintain a pre hunting population of at least 500 goats.

Unit 13

To maintain a pre hunting population of at least 100 goats.

Units 14A and 14B

To maintain a pre hunting population of at least 60 goats.

Unit 14C

To maintain a pre hunting population of at least 400 goats.

## WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

### Unit 6

Mountain goat surveys conducted between August and October were used to estimate 4 subpopulations. There were an estimated 196-232, 437-539, 667-791 and 401-481 goats in eastern Unit 6A, central Unit 6A, eastern Unit 6D, and northern Unit 6D, respectively. The maximum allowable harvest for Unit 6 was 107 goats for the 1989 hunting season.

Hunters were issued 236 permits, and 81 hunters reported actually hunting. Hunters averaged 3.4 days afield, experienced 51% success, and reported killing a total of 41 goats, the lowest annual harvest on record. Harvest composition was 32 (78%) males, 7 (17%) females, and 2 (5%) not recovered. Sixteen goats were killed in Unit 6A, four in Unit 6B, and 21 in Unit 6D. The reported harvest reached maximum allowable levels in 2 of 19 subareas. Emergency closures to prevent overharvesting were not necessary this year.

Fifteen goats fitted with radio collars in June 1989 were relocated to document winter habitat use near Port Graham in eastern Unit 6D. Five died between September 1989 and April 1990, a 33% natural mortality. Elevation and slope aspect data were recorded for all relocations throughout the year. Legislative hearing testimony and 2 professional papers were presented on the relationship between goat population status and timber harvest practices in Unit 6A (near Icy Bay).

### Units 7 and 15

Aerial surveys were conducted in 3 count areas; 369 mountain goats were counted. Kids composed 20% of the population. Hunters reported taking a total of 103 mountain goats on the Kenai Peninsula in 1989. Sixty-eight goats (46 males and 22 females) were harvested from 26 hunt areas during the 10 August-30 September drawing-permit hunt. Thirty-two goats (18 males, 13 females, and 1 unspecified) were taken from 12 hunt areas during the 15 October-30 November registration permit hunt. Additionally, Seldovia subsistence hunters took 3 goats in hunt area No. 864. Port Graham and English Bay subsistence hunters reported no harvests.

### Unit 8

Northern Kodiak Island was surveyed for mountain goats in July; 292 goats with 24% kids were counted. The harvest was monitored from mandatory permit reports and by examining horns of goats killed. Hunters harvested 27 goats (14 males, 13 females). From horn annuli, mean ages of 14 males and 11 females were 3.3 and 3.8 years, respectively. One hundred permits were issued, 50 hunters reported going afield, and hunter success was 52%.

#### Unit 11

Aerial surveys were conducted in 3 trend count areas. A total of 157 mountain goats were observed. Kids composed 25% of the observed population. Trend count data from 1989-90 were similar to results observed during past surveys. The most recent population estimates for mountain goats includes 400 animals north of the Chitina River and 300 to the south in the Chugach Range.

Registration permits were issued to 66 hunters in 1989, and 17 mountain goats were killed. Hunter success rate for the 40 permittees that hunted was 43%. Harvest composition included 12 billies (71%) and 5 nannies (29%). Nonresidents took 10 goats (59%), local residents 1 (6%) goat, and nonlocal residents six (35%).

#### Unit 13

Aerial surveys were conducted in 6 trend count areas in Unit 13D on 28 August 1989. A total of 111 mountain goats were observed. Kids composed 23% of the observed population. In Unit 13D, 4 goats (2 males, 2 females) were harvested by 10 hunters who reported hunting. Drawing permits were issued to 16 hunters. Three goats were taken in hunt No. 827 west of the Klutina River, and one was taken in hunt No. 828 east of the Klutina River. Successful hunters all used aircraft for access, averaging 4.5 days afield.

#### Unit 14

No surveys were conducted in Unit 14B, where little hunting occurs. In Unit 14A, 95 goats (28% kids) were observed during aerial surveys. In Unit 14C, 530 goats (26% kids) were counted. The number of goats observed in Unit 14C was substantially higher than those for the previous 2 years (413 in 1987, 370 in 1988) but comparable to 1986 when 515 goats were observed. Movement in and out of the count areas probably accounted for some of these fluctuations; however, timing of survey flights may cause the biggest differences. Goats are more active and visible during the evening. Surveys conducted during the last 2 hours of daylight produce higher total counts.

In Unit 14A no goats were killed by the 9 hunters who reported hunting. In Unit 14B, 3 males were taken by 4 hunters. In Unit 14C, 2 registration permit hunt areas were available for hunting (Twentymile River and Lake George areas). In the Twentymile River area 6 goats (5 males, 1 unknown) were killed by 27 hunters. In the Lake George Area 17 goats (12 males, 5 females) were killed by 57 hunters.

## PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

### Unit 6

Current population estimates suggested an overall declining trend and little hope of meeting the population objective (4,500 goats) by the year 2000. An estimate of population ranged between 2,800 and 3,300 goats, following aerial trend and age composition surveys. Maximum allowable harvest in Unit 6 was 107. Evidence of increasing predation by canids, expanding timber harvest activities, and recent hard winters are suspected to be primarily responsible for the trend. Predator management activities, introductions of mountain goats to Knight and Montague Islands, and further reduction of harvests are 3 ways to reach population objectives. The population objective will be reconsidered for the FY92 annual work plan.

Fifty-one winter goat locations provided preliminary winter range characteristics for eastern Unit 6D. The winter range utilized by 15 goats provided data for a winter easily classified as a "deep snow, hard winter." Original plans were for 20-25 radio-tagged goats to be followed for a minimum of 2 winters. An additional 10-15 goats should be radio-tagged. Preliminary range characteristics are based on aerially observed locations that lack detailed site descriptions. An increased effort to ground-truth the winter range identified in 1990 and 1991 should be made in May 1991.

### Units 7 and 15

There were an estimated 3,000-4,000 mountain goats on the Kenai Peninsula. The current management objective was met. In 1989 primary emphasis was directed at surveying goats in hunt areas, but not in the large population trend areas. The Blying Sound, West Slope, and Upper Kachemak Bay trend areas, each consisting of 3 contiguous hunting areas, were last surveyed for goats in 1987. Completion of trend area surveys will provide an index to population trends and size.

### Unit 8

The 292 goats represented a minimum population well above the preseason population objective of 200. The 32 kids:100 adults was the highest ratio recorded within the previous 5 years. The 1989 survey area encompassed about 280 mi<sup>2</sup> in the most densely populated habitat and included much of the area that is closed to hunting. Minimum density in the survey area was about 1 goat/mi<sup>2</sup>.

A comparably sized area, which was closed to hunting, contained scattered small herds estimated at 100 goats. The total Kodiak Island population probably exceeded 450 goats. The 27 goats harvested was the highest since 1987, when 40 goats were killed. The current population objective will be revised to reflect

recent changes in goat distribution and increases in the estimated population.

#### Unit 11

Mountain goat numbers in Unit 11 are considered stable. Overall, densities in the unit are much lower than found in areas with more favorable habitat, such as the Kenai Peninsula or Unit 6, and goats are numerous only in limited areas of good habitat. The unitwide population estimate of 700 goats exceeded the population objective.

The 1989 harvest was similar to that observed in past years. The harvest was dispersed, and localized overharvesting of specific areas was not a problem. The overall harvest rate in 1989 was approximately 4%. The mountain goat population in Unit 11 will be capable of handling recent harvest levels without a decline in goat numbers, as long as hunters do not concentrate all their effort in a few locations.

#### Unit 13

The number of mountain goats counted during late August surveys exceeded the stated population objective in Unit 13, even though all known available goat habitat has not been surveyed. Because trend count areas are situated in the better goat habitat and where hunting pressure is the heaviest, count trends in these areas are more likely to reflect actual population changes.

Harvest rates were low, having little adverse impacts on the goat population. However, additional permits have not been authorized, because harvests tend to be concentrated around a few airstrips and additional harvests would cause localized depletion of the population.

#### Unit 14

Survey and harvest results indicated objectives were met. The observed number of goats was 530, probably representing a population of about 630 goats, well above the minimum objective of 400. The harvest in Unit 14C was 4% of the goats counted, and with the high proportion of males in the harvest (74%), it should have little effect on the population.

#### SEGMENT PERIOD PROJECT COSTS:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	30.1	27.1	57.2
Actual	30.1	20.9	51.0
Difference	0.0	-6.2	-6.2

Weather, oil spill, boat, and timing problems accounted for the underspending for operations in Region II.

SUBMITTED BY:

Kenneth W. Pitcher and John Trent  
Regional Management Coordinators



**Federal Aid Project**  
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