

Alaska Department of Fish and Game
Division of Wildlife Conservation

Federal Aid in Wildlife Restoration
Annual Performance Report of
Survey - Inventory Activities
1 July 1994 - 30 June 1995

MOUNTAIN GOAT

Mary V. Hicks, Editor



Grant W-24-3
Study 12.0
December 1995

**STATE OF ALASKA
Tony Knowles, Governor**

**DEPARTMENT OF FISH AND GAME
Frank Rue, Commissioner**

**DIVISION OF WILDLIFE CONSERVATION
Wayne L. Regelin, Director**

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Project Title: Southeast Mountain Goat Population Management

Project Location: Unit 1A (5,300 mi²)
Ketchikan area including the mainland draining into Behm and
Portland Canals

Project Objectives and Activities: Maintain goat population densities above 20 goats per hour during fall aerial surveys.

Survey goats annually in established trend count areas throughout Subunit 1A.

Work Accomplished During the Project Segment Period: We completed aerial goat surveys from fixed wing aircraft in 5 Trend Count Areas (TCAs) during fall 1994. We surveyed transplanted goats released near Upper Mahoney Lake on Revilla Island. We issued 215 goat registration hunting permits.

Progress Meeting Project Objectives: We observed 59 goats (54 goats per hour) in the Wilson Arm/Boca de Quadra TCA; 229 (92 per hour) in the Marten Arm/Portland Canal TCA; 94 (36 per hour) in the Yes Bay/Reflection Lake TCA; 73 (52 per hour) in the Chickamin River TCA; and 22 (58 per hour) in the Walker Cove/Rudyard Bay TCA. All counts were substantially higher than documented during fall 1993. We believe this does not reflect increases in goat numbers, but rather reflects cooler weather conditions during 1994 surveys. During a 48 minute survey on the ridges between Mahoney Lake and Deer Mountain on Revilla Island, we observed 18 goats (14 adults and four kids; 22 goats per hour). All surveys surpassed our objective of observing at least 20 goats per hour.

Of 215 hunters with registration permits, 135 did not hunt, 54 hunted unsuccessfully, and 18 harvested 20 goats (11 males and nine females). Two hunters took 2 goats each. Resident hunters accounted for 90% of the harvest.

Project Location: Unit 1B (3,000 mi²)
Southeast mainland from Cape Fanshaw to Lemesurier Point

Project Objectives: Maintain population levels to accommodate an annual harvest of 35 goats and a 35% hunter success rate.

Work Accomplished During the Project Segment Period: Aerial surveys were from a fixed wing aircraft in 22 of 27 goat survey areas in Subunit 1B in June 1995.

Progress Meeting Project Objectives: We observed 360 goats in 11.2 hours of flying (32 goats per hour). Five of the uniform coding areas met the project objective of 20 goats per uniform coding area. Kids made up 6% of observed goats. The low number of kids may be due to survey timing. Yearling goats were not classified, but we anticipate good recruitment.

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We issued 144 registration permits. A total of 77 hunters reported killing 28 goats in 215 days afield.

Project Location: Subunit 1C (7,600 mi²)
Southeast Alaska mainland and the islands of Lynn Canal and Stephens Passage between Cape Fanshaw and the latitude of Eldred Rock, including Sullivan Island and the drainages of Berners Bay

Project Objectives and Activities:

1. Maintain goat population densities resulting in the observation of at least
 - 30 goats per hour during fall surveys in the Eagle-Antler drainages and in the Chilkat Range north of the Endicott River;
 - 50 goats per hour south of Taku Inlet; and
 - maintain the closure south of the Endicott River in the Chilkat Range until surveys reveal at least 80 goats between William Henry Mountain and Tear Drop Lake.
2. Conduct population size and composition counts.
3. Monitor results from registration permit hunts.
4. Monitor harvested goats to determine the extent of contagious ecthyma infection.

Work Accomplished During the Project Segment Period: Surveys were flown in the Mt. Hawthorne area (A-J Mine) and from Sweetheart Lake to Endicott Arm. Telemetry flights were made in areas of potential mineral development to track radiocollared study animals.

We analyzed harvest data from registration hunt reports to determine if harvests remained within sustainable limits. Preliminary harvest guidelines based on population estimates were used to monitor the hunt.

Progress Meeting Project Objectives: We made 3 survey attempts near Sweetheart Lake. The first (8/2/94) detected zero goats, presumably due to hot weather, while 9 were observed in 1 hour during an 8/8/94 effort. A third survey documented 412 goats in 3.2 hours. A survey at Endicott Arm detected 28 goats in 81 minutes. Sixteen goats were seen in a Mt. Hawthorne survey. Hot weather complicated many surveys.

We issued 167 registration permits to hunters in 1994. Of these, 73 permittees hunted and 41 were successful. Hunters took 36 billies and 5 nannies. The number of nonresident guided hunters increased to 27; 23 were successful. The hunt harvest guideline for Taku Inlet to the south side of Endicott Arm was exceeded slightly. In Tracy and Endicott arms, nonresident hunters accounted for 69% of the kill. Successful hunters averaged 2.7 days hunting, while

unsuccessful hunters averaged 3.0 days. Contagious ecthyma was not reported within the Subunit.

Project Location: Unit 1D (2,700 mi²)
Southeast Alaska mainland north of the latitude of Eldred Rock,
excluding Sullivan Island and the drainages of Berners Bay

Project Objectives and Activities:

1. Increase the Skagway area goat population to 100.
2. Increase the Haines North goat population from 600 to 1000 and maintain a hunter success rate of 25%.
3. Increase the Haines South goat population from 300 to 500 and maintain a hunter success rate of 25%.
4. Monitor results from registration permit hunts.

Work Accomplished During the Project Segment Period: Two aerial surveys were flown on June 20, 1995. The first included Katzehin River east to the Meade Glacier and north to Mount Bagot and the Denver Glacier. The second was flown from Skagway Pass north to the White Pass Fork and east to the Canadian border.

Harvest data collected from registration permits were analyzed. We monitored preliminary harvest quotas for discrete areas throughout the subunit based on population estimates.

Progress Meeting Project Objectives: The Katzehin aerial survey detected 97.5 goats per hour. The Skagway Pass effort detected only 19.5 goats per hour. We believe the population in the Skagway hunt area remains below 100 animals. The low number of goats observed in the East Fork and Warm Pass area indicates low populations there. However, the overall status of Unit 1D goats is poorly understood because survey coverage has not included most of the unit.

We issued 171 registration permits to hunters in 1994. Of these, 64 hunted and 20 were successful, maintaining a hunter success rate (31%) above the management objective. The hunter success rate objective was not met in the Haines south hunt area. Hunters took 12 billies, 7 nannies, and 1 goat of undetermined sex. Despite indications of lower goat populations in the Skagway Pass area, hunter effort has remained moderate to high, with 12 hunters in the area in 1994. In contrast, hunter effort remains low in the Katzehin area where goats are plentiful. For the fourth year in a row, the area north of and adjacent to the Haines Highway was closed early by Emergency Order. Successful hunters in Subunit 1D averaged 2.6 days hunting and unsuccessful hunters were afield for an average of 2.4 days.

Project Location: Unit 4 (5,800 mi²)
Admiralty, Baranof, Chichagof and adjacent islands

Project Objectives and Activities:

1. Maintain a population sufficient to provide an annual harvest of at least 35 goats and an annual hunter success rate of at least 25%.
2. Conduct population size and composition counts, monitor results from the registration permit hunt, and develop population objectives.

Work Accomplished During the Project Segment Period: We issued 331 registration permits for the August 1-December 31 Baranof Island hunt. After the permit return deadline, we contacted nonrespondents for information and cited them for noncompliance. Hunt report results were tabulated. Aerial surveys were flown on northern Baranof Island. No planning meetings were held during the period.

Progress Meeting Project Objectives: Aerial surveys for goats were conducted from a Bell 206 helicopter during September 1994. The area surveyed was the same as in the last survey (1988). The count increased from 523 to 717 goats. The kid:adult ratio remained high (25 kids per 100 adults); 149 goats were observed per hour.

Management objectives for the number of goats harvested and the hunter success rate were met. Hunters harvested 52 goats in 1994. The success rate for 159 hunters was 33%. Thirty two male and 20 female goats were killed. Successful hunters were afield for an average of 2.5 days. Sixty three percent of the harvest occurred between August and the end of October. Sixteen goats (31%) were harvested in December.

Project Location: Unit 5 (5,800 mi²)
Cape Fairweather to Icy Bay, eastern gulf coast

Project Objectives and Activities:

1. Increase the estimated population from 850 to 1250 goats and maintain a hunter success rate of 25%.
2. Conduct population size and composition counts.
3. Monitor results from the registration permit hunt.
4. Develop population objectives.

Work Accomplished During the Project Segment Period: No surveys were conducted. Harvest was analyzed from registration hunt reports. Forty permits were issued in 1994. Fourteen permittees hunted and 11 were successful. Six males, 4 females, and 1 goat of unknown sex were killed in Subunit 5A for a success rate of 79%. Successful hunters averaged 2.5 days hunting, while unsuccessful hunters averaged 1.7 days afield.

In August 1989 the Unit 5 goat population was estimated at a minimum of 1000 animals. This is a crude estimate and should be refined over time as we gather survey information. The hunter success rate in 1994 was well above the objective of 25%.

Progress Meeting Project Objectives: The hunter success rate management objective was met throughout the unit. Low hunter effort since 1983 has held harvest well below that allowable. The low harvest may contribute to a growing population and high hunter success rate. Typically a high proportion of Yakutat goat hunters are nonresidents; only one hunted in the area in 1994.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	33.5	13.6	47.1
Actual	33.5	13.6	47.1
Difference	0	0	0

Submitted by:

Bruce Dinneford
Management Coordinator

Project Title: Southcentral Alaska Mountain Goat Management

Project Location: Unit 6 (10,150 mi²)
Prince William Sound and north Gulf Coast

Project Objectives and Activities: Maintain a minimum population of 2400 goats and no less than 70% males in the harvest.

Work Accomplished During the Project Segment Period: Biologists surveyed 12 mountain goat count areas in a cooperative effort with the U.S. Forest Service. A total of 706 goats was tallied and 113 (16%) were kids. Maximum allowable harvest was 74 goats for the 1994-95 season. Billies were counted as 1 goat unit, and nannies were counted as 2 goat units.

We issued 204 registration permits to hunters for 9 different hunt areas. One hundred sixteen hunters harvested 51 goats, totaling 65 goat units. Harvest composition was 37 males (73%) and 14 females (27%). Six hunt areas were closed by emergency order when the maximum allowable harvest was reached.

Progress Meeting Project Objectives: The population was estimated at 2400 to 2700 goats in fall 1992 and was stable or declining slightly. Wolf predation, timber harvests, and hard winters may be important factors depressing the population. In responding to these factors, we have managed harvests on the basis of small subpopulations to minimize potential for overharvests. We have also discouraged habitat degradation by logging or development and recommended wolf ecology studies.

Male proportion of the harvest was slightly above our objective. Ongoing educational efforts designed to encourage hunters to select males are needed for continued success. All goat hunters received an information leaflet that presented methods of differentiating sexes of goats at a distance and explained benefits of selectively harvesting males.

Project Location: Unit 7 and 15 (8,400 mi²)
Kenai Peninsula

Project Objectives and Activities: Maintain a pre-hunting population of at least 4000 to 4500 goats on the Kenai Peninsula.

Activities include surveying goats in established trend count areas, identifying important goat habitat, and monitoring the results of permit hunts.

Work Accomplished During the Project Segment Period: Surveys were flown in 10 count areas; 1056 mountain goats were counted. Kids composed 18.8% of the population or 23 kids:100 adults.

Hunters reported taking 148 mountain goats on the Kenai Peninsula in 1994. Sixty-eight goats (44 males, 24 females) were harvested from 25 open areas during the 10 August to 30 September drawing permit hunt. Fifty-three goats (41 males, 11 females, and 1 of unspecified sex) were taken from 14 hunt areas during the 15 October to 30 November registration permit hunt. Additionally, Tier II subsistence hunters took 27 goats (21 males, 6 females). The department issued 395 drawing permits, 438 registration permits, and 105 Tier II permits.

Progress Meeting Project Objectives: Population size was estimated by summing the most recent surveys from individual count areas. Latest counts totaled 3102 observed goats on the Kenai Peninsula excluding Kenai Fjords National Park (KFNP). There are an estimated 800 to 1000 goats within the Kenai Fjords National Park boundaries. Including KFNP, we estimated between 4200 (assuming 90% observability) and 5400 goats (assuming 70% observability) on the Kenai. The Kenai Peninsula mountain goat population experienced a slight decline in 1994.

The Blying Sound trend area was surveyed during 1994. There was a small increase in the number of counted animals and a decline in percent kids and kids:100 adults. The decline in production may indicate deteriorating range conditions. Populations in these regions should not be allowed to increase beyond current levels until we can assess range condition.

Current guidelines allow a harvest rate of up to 7% of the most recent mountain goat surveys. The overall harvest rate in 1994 was approximately 4.8% of observable goats. The current permit system on the Kenai allows for an even distribution of goat harvests. No changes in mountain goat management are recommended.

Project Location: Unit 8 (8,750 mi²)
Kodiak and adjacent islands

Project Objectives and Activities: Maintain a pre-hunting population of at least 400-500 goats with a harvest composed of at least 50% males.

Activities include surveying goats in established trend count areas, identifying important goat habitat, and monitoring the results of permit hunts.

Work Accomplished During the Project Segment Period: Approximately 90% of the mountain goat habitat on Kodiak Island was surveyed in August 1994; 719 goats (579 adults, 140 kids) were counted. This was a kid:adult ratio of 24:100.

The harvest was monitored from mandatory hunter reports and by examining horns of goats killed. Hunters harvested 42 goats (22 males, 20 females). From horn annuli, mean ages of males and females were 4.7 and 5.7 years, respectively. We issued 130 permits, 72 hunters reported going afield, and hunter success was 58%. Kodiak residents harvested 85% of the goats; other Alaska residents harvested 36% and nonresidents 12%.

Progress Meeting Project Objectives: We estimated the goat population at 800 animals in 1994, above the 500 goats estimated in 1990, when about 70% of the habitat was surveyed. Goats were well-distributed throughout the central mountain range of Kodiak Island. An increasing population trend was indicated with most of the growth occurring in southern Kodiak and isolated small mountain ranges east and west of the central range.

The harvest of 42 goats was equivalent to 7% of the 606 goats counted in areas open to hunting. Annual adjustments in the number of permits in the 6 permit hunts facilitate maintaining the harvest within sustainable limits.

We counted 108 goats in part of northern Kodiak Island which has been closed to hunting since 1974. The objectives of that closure were to allow goats to occupy vacant habitat and to enhance roadside viewing opportunity. Those objectives were achieved and the goat population can sustain limited harvest. The Board of Game adopted our recommendation for a drawing permit hunt in this area in 1995.

Project Location: Unit 11 (12,800 mi²)
Wrangell Mountains

Project Objectives and Activities: To allow the population to fluctuate as dictated by available habitat, climatic conditions, and predation. Allow limited human harvests, with annual harvests averaging no more than 10% of the estimated population in harvest areas.

Activities include surveying goats in established trend count areas, identifying important goat habitat, and monitoring the results of permit hunts.

Work Accomplished During the Project Segment Period: The last mountain goat survey of the MacColl Ridge trend count area was conducted on 31 May 1994 and a total of 50 mountain goats was observed. Kids composed 22% of the observed population. This year's count was similar to the 1993 count of 48 goats. The highest count from the MacColl trend count area was in 1985 when 63 goats were observed. The most recent population estimates for mountain goats in Unit 11 include approximately 400 animals north of the Chitina River and 300 to the south in the Chugach Range.

The National Park Service (NPS) surveyed mountain goats by helicopter in 1994. The NPS counted 36 goats (29 adults and 7 kids) for MacColl Ridge; lower than our count conducted in a Super Cub. NPS tallied 63 goats (58 adults and 5 kids) on Hawkins Glacier (Count Area

22) and 58 animals (52 adults, 6 kids) on Bernard Glacier (Count Area 23). The helicopter counts for Hawkins and Bernard glaciers were similar to previous goat counts by the department with fixed-wing aircraft.

We issued registration permits to 52 hunters in 1994, and 14 mountain goats were killed. Hunter success rate for the 29 permittees who hunted was 48%. Harvest composition included 12 billies (86%) and 2 nannies (14%). Nonresidents took 10 goats (72%), nonlocal Alaska residents 2 (14%), and local residents 2 (14%). Twelve (86%) successful hunters used aircraft, 1 (7%) used a boat, and another (7%) a highway vehicle. Successful permittees averaged 2.0 days hunting, compared to 2.8 days for unsuccessful hunters. Harvest chronology data indicate most of the harvest occurred early September, probably by hunters on a combination sheep/mountain goat hunt.

Progress Meeting Project Objectives: Mountain goat numbers in Unit 11 seem relatively stable. Mountain goats are considered numerous only in the limited areas where habitat conditions are favorable. The unitwide population estimate is 700 mountain goats. Goat densities in Unit 11 are much lower than found in areas with more favorable habitat, such as the Kenai Peninsula or Unit 6.

The 1994 harvest was only 2 goats lower than the previous year's take of 16. The hunter success rate increased in 1994 from 38% to 48%. The percent males in the harvest has been high for the past 2 years, with 81% in 1993 and 86% in 1994. Reasons for the increased take of billies are unknown. Harvests were a little more dispersed the last 2 years than in previous years. Harvests on MacColl Ridge and Hawkins Glacier declined this year after a couple of years with high harvests. If this trend continues, overharvesting of these areas could become a problem. The harvest rate in 1994 was approximately 4% of those mountain goats north of the Chitina River where all harvest occurs, well within the current harvest objective. The mountain goat population in Unit 11 is capable of handling recent harvest levels without a decline in goat numbers as long as hunters do not concentrate all their effort in 1 or 2 locations every year. Therefore, no immediate changes in season dates, bag limits, or registration hunt requirements are recommended. We will continue to monitor harvest rates from MacColl Ridge and the Hawkins and Bernard glaciers to assure overharvesting does not occur.

Project Location: Unit 13 (23,400 mi²)
Nelchina Basin

Project Objectives and Activities: To maintain viable populations controlled largely by available habitat, climatic conditions, and predation. Harvest up to 5% of the 13D population when survey data indicate a minimum of 100 goats are present in the subunit and when local, accessible populations are not overharvested.

Activities include surveying goats in established trend count areas, identifying important goat habitat, and monitoring the results of permit hunts.

Work Accomplished During the Project Segment Period: Mountain goat surveys were flown in 2 survey areas in 13D during 1994. In 1 count area near the headwaters of Klutina Lake, we observed 19 goats (58% kids). This is the highest mountain goat count in this area since 1987, when 19 goats were observed. Twenty-nine goats (17% kids) were tallied in count area 16, Nelchina Glacier. This is the highest count from this area, surpassing the 1986 figure by 2 goats.

Two drawing permit hunts were conducted for mountain goats in Unit 13. The boundary between hunt areas is the Klutina River with Hunt 718 west of the river and Hunt 719 east. We issued drawing permits to 35 hunters; 2 mountain goats (1 male and 1 female) were taken in 1994. Nineteen permittees hunted and the hunter success rate was 11%. The 2 goats were taken in Hunt 719. One successful hunter used aircraft and the other used a highway vehicle as transportation. Successful hunters averaged 4.0 days to take a goat, while unsuccessful permittees hunted 4.1 days. Both goats were taken mid August. A resident Alaskan took 1 goat; a nonresident killed the other goat.

Progress Meeting Project Objectives: The number of mountain goats observed on the 2 count areas surveyed in 1994 were among the highest counts made in these areas. Yearly counts that continue to meet or exceed previous survey results indicate mountain goat numbers in Unit 13 are stable and meet the stated population objective of at least 100 mountain goats. Kid production and/or survival was good in 1993, and recruitment was considered adequate enough for limited human harvests. Some fluctuations in goat numbers reflect movements of mountain goats among areas. Current count areas are not large enough to eliminate movement problems. Fairly large numbers of mountain goats move between Units 6 and 13 along the Klutina Glacier.

Current harvest rates are low and well-dispersed, having little adverse effect on mountain goat numbers in Unit 13. The number of permits issued for both hunts has been limited to prevent overharvesting near popular airstrips. Such overharvests have not occurred. Also, airstrips are not located near mountain goat hunting areas east of the Klutina River; harvests from this area have been low. Permittees hunting mountain goats in the Tonsina Controlled Use Area must walk into the area, additionally limiting the hunting effort. Because of the difficult access and low harvest from this area, in 1991 we increased the number of permits issued for this area from 16 to 25.

Project Location: Unit 14 (6,600 mi²)
Upper Cook Inlet

Project Objectives and Activities: *Units 14A and 14B:* maintain a pre hunting population of at least 60 goats. *Unit 14C:* maintain a pre hunting population of at least 400 goats.

Activities include surveying goats in established trend count areas, identifying important goat habitat, and monitoring the results of permit hunts.

Work Accomplished During the Project Segment Period: Surveys were not conducted in Subunits 14A and 14B during 1994. In 1992 biologists tallied 99 goats (24% kids) during aerial surveys in Subunit 14A, compared with 42 (12% kids) in 1990. Given the size of the subunit and low density of goats, some animals were probably missed in 1992.

In Subunit 14C biologists counted 619 goats (20% kids) during aerial surveys in July-October 1994. Late July counts were in conjunction with Dall sheep surveys west of Glacier Creek and Lake George. The early October count was in Penguin Creek drainage, an area seldom surveyed.

For Subunit 14A, 32 registration permits were issued, 22 hunters went afield, and 4 males and 2 females were harvested (27% hunter success; 1 permit report was not returned). Goat hunting was not allowed in Subunit 14B. In Subunit 14C, 2 registration permit hunt areas were available for hunting goats, the Twentymile River area and Lake George area. In the Twentymile River area, 93 permits were issued, 47 hunters participated and harvested 8 males and 2 females (21% hunter success). During the late season (16-31 October) archery-only hunt in the same area, 1 permit was issued, but the hunter did not go afield. In the Lake George area, department personnel issued 116 permits and 66 hunters went afield; hunters killed 16 goats (7 males, 9 females; 24% hunter success; 1 permit not returned). During the late season (16-31 October) archery-only hunt in the same area, we issued 4 permits; however, the hunters did not go afield.

Progress Meeting Project Objectives: Survey and harvest results indicated management objectives were met. In 1994 biologists observed 619 goats in Subunit 14C and estimated 100 goats in Subunit 14A, well above the minimum objective. The 1994 harvest of 32 goats represents about 4% mortality of observed goats and should have little effect on the population.

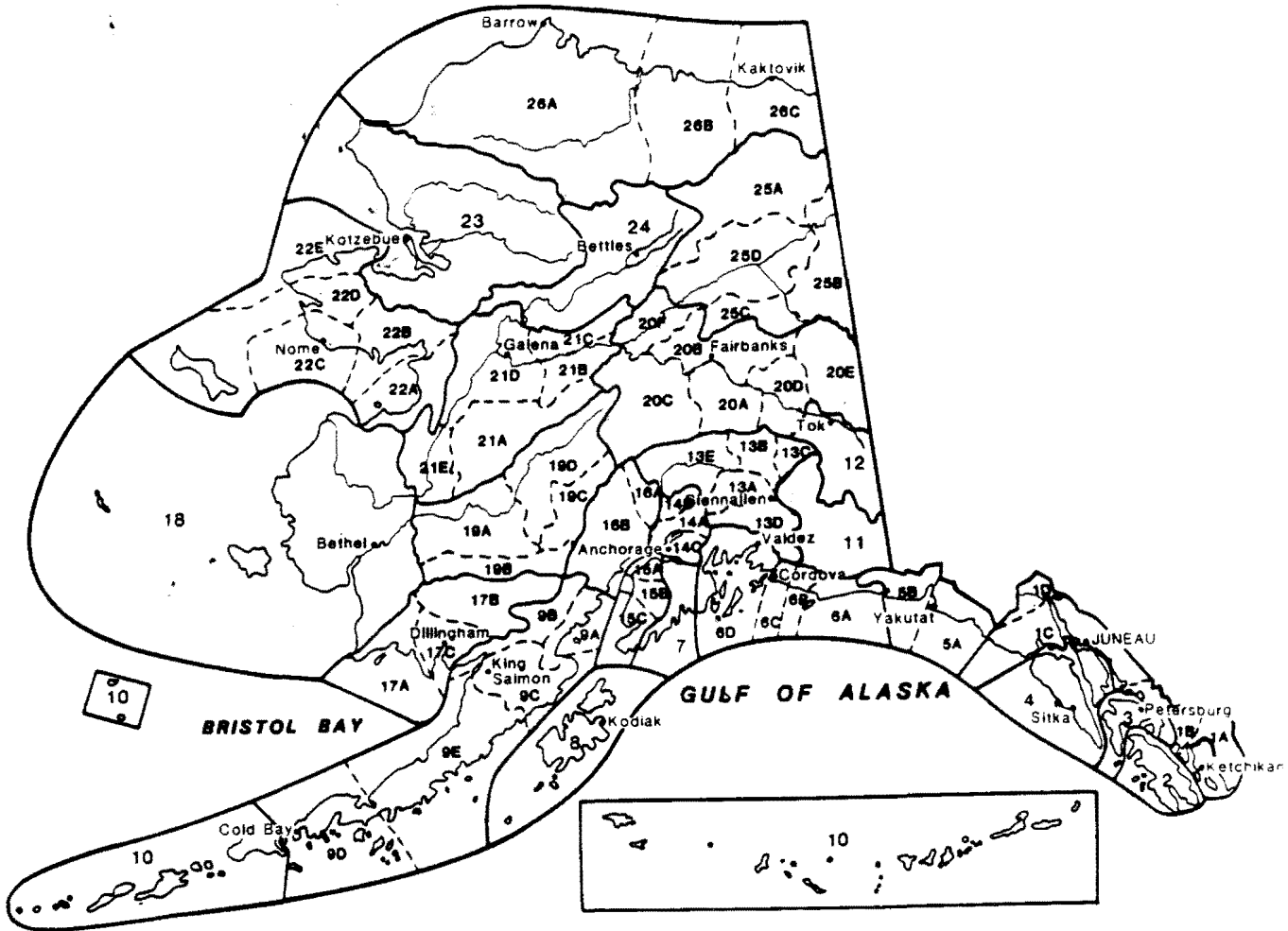
Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	44.1	15.0	58.6
Actual	44.1	15.3	55.1
Difference	0	-0.3	3.5

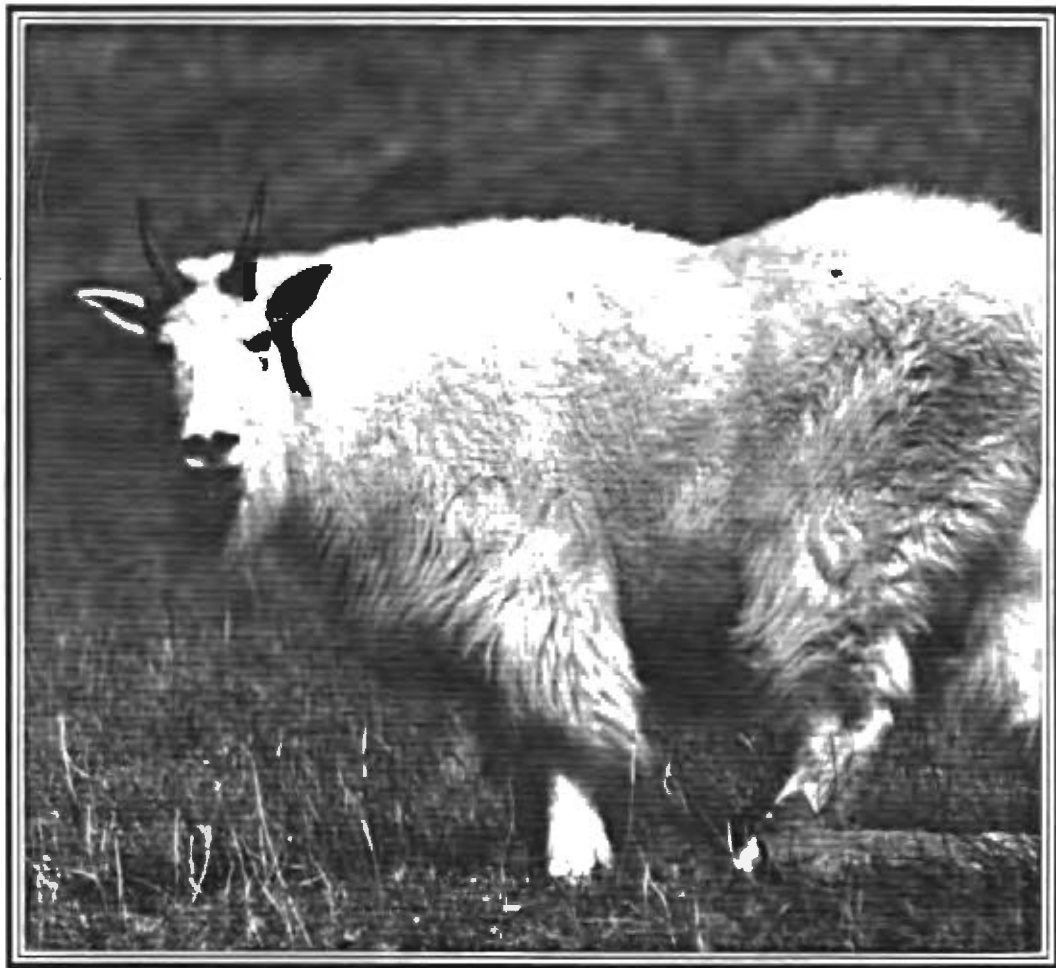
Submitted by:

Jeff Hughes
Survey-Inventory Coordinator

Alaska's Game Management Units



The Federal Aid in Wildlife Restoration Program consists of funds from a 10% to 11% manufacturer's excise tax collected from the sales of handguns, sporting rifles, shotguns, ammunition, and archery equipment. The Federal Aid program allots funds back to states through a formula based on each state's geographic area and number of paid hunting license holders. Alaska receives a maximum 5% of revenues collected each year. The Alaska Department of Fish and Game uses federal aid funds to help restore, conserve, and manage wild birds and mammals to benefit the public. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes for responsible hunting. Seventy-five percent of the funds for this report are from Federal Aid.



PAT COSTELLO