

Alaska Department of Fish and Game  
Division of Wildlife Conservation

Federal Aid in Wildlife Restoration  
Annual Performance Report of  
Survey - Inventory Activities  
1 July 1993 - 30 June 1994

# MOUNTAIN GOAT

Mary U. Hicks. Editor



Grant W-24-2  
Study 12.0  
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**STATE OF ALASKA  
Tony Knowles, Governor**

**DEPARTMENT OF FISH AND GAME  
Carl L. Rosier, Commissioner**

**DIVISION OF WILDLIFE CONSERVATION  
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**Project Title: Southeast Mountain Goat Population Management**

**Overview:** Mountain goats are in mainland Southeast Alaska from Dixon Entrance to Icy Bay and on Baranof and Revillagigedo islands. Harvests throughout the region were mostly below sustainable limits and populations are generally stable. Some Subunit 1D goat populations are at low levels and may be declining. Populations in part of Subunit 1C are receiving increased attention from guided nonresident hunters.

**Project Location:** Subunit 1A (5,000 mi<sup>2</sup>)  
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 conducted aerial goat surveys from fixed-wing aircraft in 4 trend count areas during fall 1993. An informal survey of transplanted goats around Mount Reid on Revilla Island was conducted from a Bell 206 helicopter during July 1993. We issued 202 registration permits for hunting in Subunit 1A or 1B south of the Bradfield Canal. Ninety seven of the permittees picked up additional permits for hunting in the two-goat area.

**Progress Meeting Project Objectives:** An informal helicopter survey in the Mount Reid vicinity resulted in a count of 127 goats (95 goats per hour). This was substantially higher than the 84 goats counted one year earlier. Kids composed 34% of goats observed.

We observed 27 goats (45 goats per hour) in the Wilson Arm/Boca-de-Quarda Trend Count Area (TCA); 86 (34 per hour) in the Yes Bay/Reflection Lake TCA; 68 (30 per hour) in the Chickamin River TCA; and 5 (20 per hour) in the Walker Cove/Rudyerd Bay TCA. Except for the area around Mount Reid, all counts were lower than documented in previous years. We believe this was due primarily to the prolonged period of unusually hot weather, resulting in more goats than usual seeking shade in timbered habitat during surveys. All surveys surpassed our objective of observing at least 20 goats per hour.

Of the 299 registration permits issued to hunters, 197 were returned by hunters who reported they did not hunt, 52 hunted unsuccessfully, and 33 harvested goats. Although the Subunit 1A harvest of 20 males and 13 females is slightly higher compared to recent years, it is inconsequential to existing population levels. Resident hunters accounted for all 33 harvested goats.

**Project Location:** Subunit 1B - (3,000 mi<sup>2</sup>)  
Southeast mainland from Cape Fanshaw to Lemesurier Point.

**Project Objectives:** Maintain densities greater than 20 goats per uniform coding area.

**Work Accomplished During the Project Segment Period:** We issued 165 registration permits, down from 215 the previous year. We used registration permit data for management recommendations.

**Progress Meeting Project Objectives:** Goat populations seem stable or increasing slightly as indicated by aerial surveys and hunters' observations. A small area in Frosty Bay was closed to hunting during logging operations.

Eighty four registration permit holders hunted and 36 killed goats. This is an increase from 1992 when the effort and kill were lower, probably due to inclement weather. The Cleveland Peninsula portion of Unit 1B was open for a second goat, and no hunters reported taking 2 goats. The 231 hunting days were 4 below the total for 1992.

One additional male goat was killed by a hunter under the authority of Federal regulations. The US Forest Service issued 6 permits, and a total of two people hunted.

**Project Location:** Subunit 1C (7,600 mi<sup>2</sup>)  
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 and Activities:**

- . Maintain goat population densities resulting in the observation of at least: a) 30 goats per hour during fall surveys in the Eagle-Antler drainages and in the Chilkat Range north of the Endicott River, and b) 50 goats per hour in the areas south of Taku Inlet. Retain the Chilkat Range closure south of the Endicott River until surveys reveal at least 80 goats in the area between William Henry Mountain and Tear Drop Lake.
- . Conduct population size and composition counts.
- . Monitor results from registration permit hunts.
- . Monitor goats infected with contagious ecthyma to determine the extent of outbreak.

**Work Accomplished During the Project Segment Period:** We aerial surveyed Eagle River north to Berners Bay, along the Kakuhan Range (Kensington Mine area), Mt. Hawthorne (A-J Mine area), and in the Tracy/Endicott Arm/Port Houghton areas. Telemetry flights were flown in areas of potential mineral development to track radiocollared animals marked as part of a monitoring study, initiated in cooperation with local mining companies.

We analyzed harvest data collected from registration permit reports to determine whether harvests remained within sustainable limits. We used preliminary harvest guidelines based on population estimates for monitoring the hunt. These thresholds incorporate a point system favoring harvest of billies.

**Progress Meeting Project Objectives:** Aerial surveys detected about 45 goats per hour north of Juneau; however, in poor habitat between Antler Lake and the Lace River, the rate decreased to only 11 goats per hour. In the Mt. Hawthorne area, we observed goats at the rate of 34 per hour. At Tracy and Endicott arms and in the Port Houghton areas, hot and sunny weather defeated surveys. Even during late evening hours, we saw few goats, probably because they were sheltering in shady brushy areas below the cliffs. Boat surveys in May 1994 found 59 goats in Tracy Arm (head of the arm was inaccessible due to ice) and 116 goats in Endicott Arm.

We issued 157 registration permits to hunters in 1993. Of these, 97 permittees hunted and 47 were successful. Thirty five billies and 12 nannies were taken. Successful hunters spent an average of 2.9 days per goat harvested. The number of nonresident guided hunters increased to 24 this year and 21 of them were successful. The hunt-harvest guideline for the area from Taku Inlet to the south side of Endicott Arm was exceeded slightly. Nonresident hunters accounted for 79% of the harvest in Tracy and Endicott arms.

**Project Location:** Unit 1D (2,700 mi<sup>2</sup>)  
Southeast Alaska mainland lying north of the latitude of Eldred Rock, excluding Sullivan Island and the drainages of Berners Bay.

**Project Objectives and Activities:**

- . Increase the Skagway area goat population to 100.
- . Increase the Haines north goat population to 1,000; maintain a hunter success rate of 25%.
- . Increase the Haines south goat population to 500 goats; maintain a hunter success rate of 25%.
- . Monitor results from registration permit hunts.

**Work Accomplished During the Project Segment Period:** We aerial surveyed along the Takshanuk Mountains east of the Chilkat River and around Tahkin Ridge.

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

**Progress Meeting Project Objectives:** Aerial surveys detected goats at rates of 59 per hour along the east side of the Chilkat Valley and 112 goats per hour on Tahkin Ridge. Because survey coverage of the hunt areas was incomplete, we did not estimate population.

We issued 182 registration permits to hunters in 1993. Of these, 92 hunted and 25 were successful, maintaining a hunter success rate just above the management objective. Fifteen billies, eight nannies, and two goats of undetermined sex were taken. Harvest levels reached the hunt harvest guideline in the area along the north side of the Haines Highway; a portion of Hunt 805 was closed by emergency order mid November.

**Project Location:** Unit 4 (5,800 mi<sup>2</sup>)  
Admiralty, Baranof, Chichagof and adjacent islands.

**Project Objectives and Activities:**

- Maintain a population sufficient to provide an annual harvest of at least 35 goats and an annual hunter success rate of at least 25%.
- 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 313 registration permits for the August 1-December 31 hunt on Baranof Island. After the permit return deadline, we contacted nonrespondents for information and cited them for noncompliance. We tabulated results of hunt reports. Goat horns voluntarily submitted by hunters were aged. We held no planning meetings during the period.

**Progress Meeting Project Objectives:** Hunters harvested 57 goats in 1993. The success rate for 162 hunters was 35%. Forty-two male and fifteen female goats were killed. Successful hunters were afield for an average of 2.0 days. Eighty-four percent of the harvest occurred between August and the end of October with sixteen goats taken each month. Eight goats were taken in December.

**Project Location:** Unit 5 - (5,800 mi<sup>2</sup>)  
Cape Fairweather to Icy Bay, eastern gulf coast

**Project Objectives and Activities:**

- Increase the estimated population from 850 to 1,250 goats and maintain a hunter success rate of 25%.
- Conduct population size and composition counts.
- Monitor results from the registration permit hunt.
- Develop population objectives.

**Work Accomplished During the Project Segment Period:** No surveys were conducted during the reporting period. We analyzed hunter reports from the registration permit hunt. We issued 39 permits in 1993. Twelve permittees hunted and six were successful. Four male and two female goats were killed in Subunit 5A, a success rate of 50%. Successful hunters averaged 2 days hunting, while unsuccessful hunters were afield for an average of 1.1 days.

In August of 1989 we estimated the Unit 5 goat population at a minimum of 1,000 animals. This is a crude estimate and should be refined over time as we receive survey information. The hunter success rate in 1993 was well above the objective of 25%.

**Progress Meeting Project Objectives:** The hunter success rate management objective was exceeded throughout the unit, but we do not believe the desired population has been achieved. Low hunter effort since 1983 has held harvest to well below what is allowable. This may contribute to a growing population.

**Segment Period Project Costs:**

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	27.2	32.4	59.6
Actual	16.4	30.0	46.4
Difference	10.8	2.4	13.2

**Explanation:** Planned aerial surveys were not done because of weather constraints and duties for other species.

Submitted by:

Bruce Dinneford  
Management Coordinator

**Project Title:** Southcentral Alaska Mountain Goat Management

**Project Location:** Unit 6 (10,150 mi<sup>2</sup>)  
Prince William Sound and north Gulf Coast

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

**Work Accomplished During the Project Segment Period:** Biologists surveyed 14 mountain goat count areas in a cooperative effort with the U.S. Forest Service. A total of 974 goats was tallied and 169 (17%) were kids. Maximum allowable harvest was 90 goats for the 1993-94 season.

We issued 231 registration permits to hunters for 8 different hunt areas. One hundred twenty-one hunters harvested 52 goats. Harvest composition was 35 males (67%) and 17 females (33%). When the maximum allowable harvest was reached, 5 hunt areas were closed by emergency order.

**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 the 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 below our objective. Ongoing educational efforts designed to encourage hunters to select males will likely correct this problem. All goat hunters received an information leaflet that presented methods of differentiating sexes of goats at a distance and explained the benefits of selectively harvesting males.

**Project Location:** Unit 7 and 15 (8,400 mi<sup>2</sup>)  
Kenai Peninsula

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

- Surveying goats in established trend count areas
- Identifying important goat habitat
- Monitoring the results of permit hunts

**Work Accomplished During the Project Segment Period:** We aerial surveyed 7 count areas during 1993 and tallied 653 mountain goats. Kids composed 18.8% of the population or 23 kids:100 adults.

Hunters harvested 176 mountain goats on the Kenai Peninsula in 1993. One hundred goats (58 males, 42 females) were harvested from 27 open areas during the 10 August to 30 September



drawing permit hunt. Seventy goats (44 males, 25 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 harvested 6 goats (5 males, 1 female). The Department issued 420 drawing permits, 474 registration permits, and 50 Tier II permits.

**Progress Meeting Project Objectives:** Population size was estimated by summing the most recent surveys from individual count areas. Latest counts totaled 3265 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 4500 (assuming 90% observability) and 5800 goats (assuming 70% observability) on the Kenai. We believe the mountain goat population is stable.

We surveyed the West Slope trend area during 1993. The number of counted animals decreased with a slight decline in the percentage of 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 range condition can be assessed.

Current guidelines allow for a harvest rate of up to 7% of the most recent mountain goat surveys. The overall harvest rate in 1993 was approximately 5.4% of observable goats. The current permit system on the Kenai allows for an even distribution of goat harvests. We recommend no changes in mountain goat management.

**Project Location:** Unit 8 (8,750 mi<sup>2</sup>)  
Kodiak and adjacent islands

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

- Surveying goats in established trend count areas
- Identifying important goat habitat
- Monitoring the results of permit hunts

**Work Accomplished During the Project Segment Period:** We surveyed approximately 35% of the mountain goat habitat on Kodiak Island in August 1993 and counted 292 goats (238 adults, 54 kids). This was a kid:adult ratio of 23:100. We counted 68 goats in that part of northeastern Kodiak Island currently closed to hunting.

The harvest was monitored from mandatory hunter reports and by examining horns of goats killed. Hunters harvested 48 goats (31 males, 17 females). From horn annuli, mean ages of males and females were 3.8 and 3.7 years, respectively. We issued 143 permits; 80 hunters (56%) reported going afield, and hunter success was 60%. Seventy-two resident hunters and 8 nonresident hunters went afield. Residents harvested 41 (85%) goats and nonresidents harvested 7 goats (15%). Hunters averaged 3.6 days afield.

**Progress Meeting Project Objectives:** Composition surveys indicated a moderate decline in the goat population in 1993, but unusually high residual snow cover may have reduced sightability. Only 3 of 7 permit hunt areas were surveyed in 1993. The harvest in those 3 hunts represented 8% of the goats counted there in 1993. Males composed 67% of the harvest, well above the 50% annual objective. In 1990 a comprehensive survey of all goat habitat estimated the population at more than 500 goats. The 1993 harvest of 48 goats was less than 10% of that estimate.

**Project Location:** Unit 11 (12,800 mi<sup>2</sup>)  
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.

- . Surveying goats in established trend count areas
- . Identifying important goat habitat
- . Monitoring the results of permit hunts

**Work Accomplished During the Project Segment Period:** On June 6, 1993, we conducted the last mountain goat survey of the MacColl Ridge trend count area and observed 48 mountain goats. Kids composed 17% of the observed population. This year's count was 8% below the 1992 count of 52 goats. The highest count from the MacColl trend count area was 63 goats in 1985. 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.

Registration permits were issued to 74 hunters in 1993 and hunters killed 16 goats. Hunter success rate for the 42 permittees who actually hunted was 38%. Harvest composition included 13 billies (81%) and 3 nannies (19%). Nonresidents took 11 goats (69%), nonlocal Alaskan residents 3 (19%), and local residents 2 (12%). Fifteen (94%) successful hunters used aircraft, and 1 (6%) used a highway vehicle. Successful permittees averaged 2.1 days hunting, compared to 4.6 days for unsuccessful hunters. Most of the harvest was in 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 limited areas with favorable habitat. The current unitwide population estimate is 700 mountain goats. Goat densities in Unit 11 are much lower than in areas with more favorable habitat, such as Unit 6 or the Kenai Peninsula.

The 1993 harvest was only 1 goat lower than the previous year's take of 17. The hunter success rate declined in 1993 from 65% to 38%. The percentage of males in the harvest rose from 47% in 1992 to 81% in 1993. Reasons for the increased harvest of billies are unknown. Harvests were a little more dispersed this year than in the previous two years. However, MacColl Ridge and Hawkins Glacier continue to be heavily hunted. If this trend continues, overharvesting of these areas could become a problem. The overall harvest rate in 1993 was approximately 4% of those mountain

goats north of the Chitina River where all of the harvest occurs, well within the current harvest objective. The mountain goat population in Unit 11 seems capable of sustaining recent harvest levels without a decline in goat numbers, as long as hunters do not concentrate all their effort in one or two locations every year. Therefore, we recommend no immediate changes in season dates, bag limits, or registration hunt requirements. We will monitor harvest rates from MacColl Ridge and the Hawkins and Bernard Glaciers to prevent overharvesting.

**Project Location:** Unit 13 (23,400 mi<sup>2</sup>)  
Nelchina Basin

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

- Surveying goats in established trend count areas
- Identifying important goat habitat
- Monitoring results of permit hunts

**Work Accomplished During the Project Segment Period:** We aerial surveyed goats in the Tonsina Controlled Use Area in Unit 13D during 1993. We observed 79 mountain goats; the population comprised 22% kids. This is the highest mountain goat count in these count areas.

We conducted 2 drawing permit hunts 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; hunters harvested 6 mountain goats (4 males and 2 females) in 1993. Twenty permittees hunted and their success rate was 30%. Three goats were taken in each hunt area. Four (67%) successful hunters used aircraft, and 2 (33%) used highway vehicles as transportation. Successful hunters averaged 2.2 days to harvest a goat, while unsuccessful permittees hunted 3.8 days. Four goats were harvested during the first week of the season. All successful hunters were Alaskan residents.

**Progress Meeting Project Objectives:** The high mountain goat count in the Tonsina Controlled Use Area, a small portion of the Unit 13D mountain goat habitat, suggests goat numbers in Unit 13 exceed the stated population objective of at least 100 goats. Kid production and/or survival was good in 1993, and recruitment was adequate enough for limited human harvests.

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

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

**Project Objectives and Activities:** Units 14A and 14B: maintain a prehunting population of at least 60 goats.

Unit 14C: maintain a prehunting population of at least 500 goats that will sustain a harvest of 25 goats comprised of at least 60% males.

- . Surveying goats in established trend count areas
- . Identifying important goat habitat
- . Monitoring the results of permit hunts

**Work Accomplished During the Project Segment Period:** Surveys were not conducted in Unit 14 during 1993. In 1992, biologists tallied 99 goats (24% kids) during aerial surveys in Subunit 14A, compared to 42 (12% kids) in 1990. Given the size of the subunit and low density of goats, some animals were probably missed. In 1992, biologists counted 593 goats (16% kids) during aerial surveys in Subunit 14C, a number comparable to 1991. The 1991 survey, however, was only a partial survey, indicating there may have been a 10% decline between 1991 and 1992.

For Subunit 14A, we issued 41 registration permits, 19 hunters went afield, and 1 female goat and 3 males were harvested (21% hunter success; 4 permit reports were not returned). Goat hunting was not allowed in Subunit 14B. In Subunit 14C, 2 registration permit hunt areas, the Twentymile River area and Lake George area, were available for hunting goats. In the Twentymile River area, we issued 118 permits, 57 hunters participated and harvested 7 males and 3 female goats (18% hunter success). During the late season (16-31 October) archery-only hunt in the same area, we issued 13 permits; 6 archers participated but harvested no goats. In the Lake George area, department personnel issued 94 permits, 54 hunters went afield, harvesting 13 goats (9 males, 4 females; 33% hunter success). During the late season (16-31 October) archery-only hunt in the Lake George area, 6 permits were issued, 5 archers participated, harvesting 2 male goats (33% hunter success).

**Progress Meeting Project Objectives:** Harvest results indicated management objectives were met. In Subunit 14A, the number of goats observed in 1992 was 99, substantially higher than the management objective. In Subunit 14C, in 1992 we observed 593 goats, probably representing a population of about 675 goats, well above the minimum objective of 500. Hunters harvested 25 goats in Subunit 14C (72% males). The harvest in Subunits 14A and 14C was 4% of the goats counted in 1992 and should have little effect on the population.

Project objectives for Units 14A and 14B should be changed to reflect management actions. Registration permits were not issued for Subunit 14B because of the low number of goats observed in the subunit in past years. Minimum prehunting season objectives should be established for each subunit and a maximum allowable harvest adopted, based upon the number of goats observed.

**Segment Period Project Costs:**

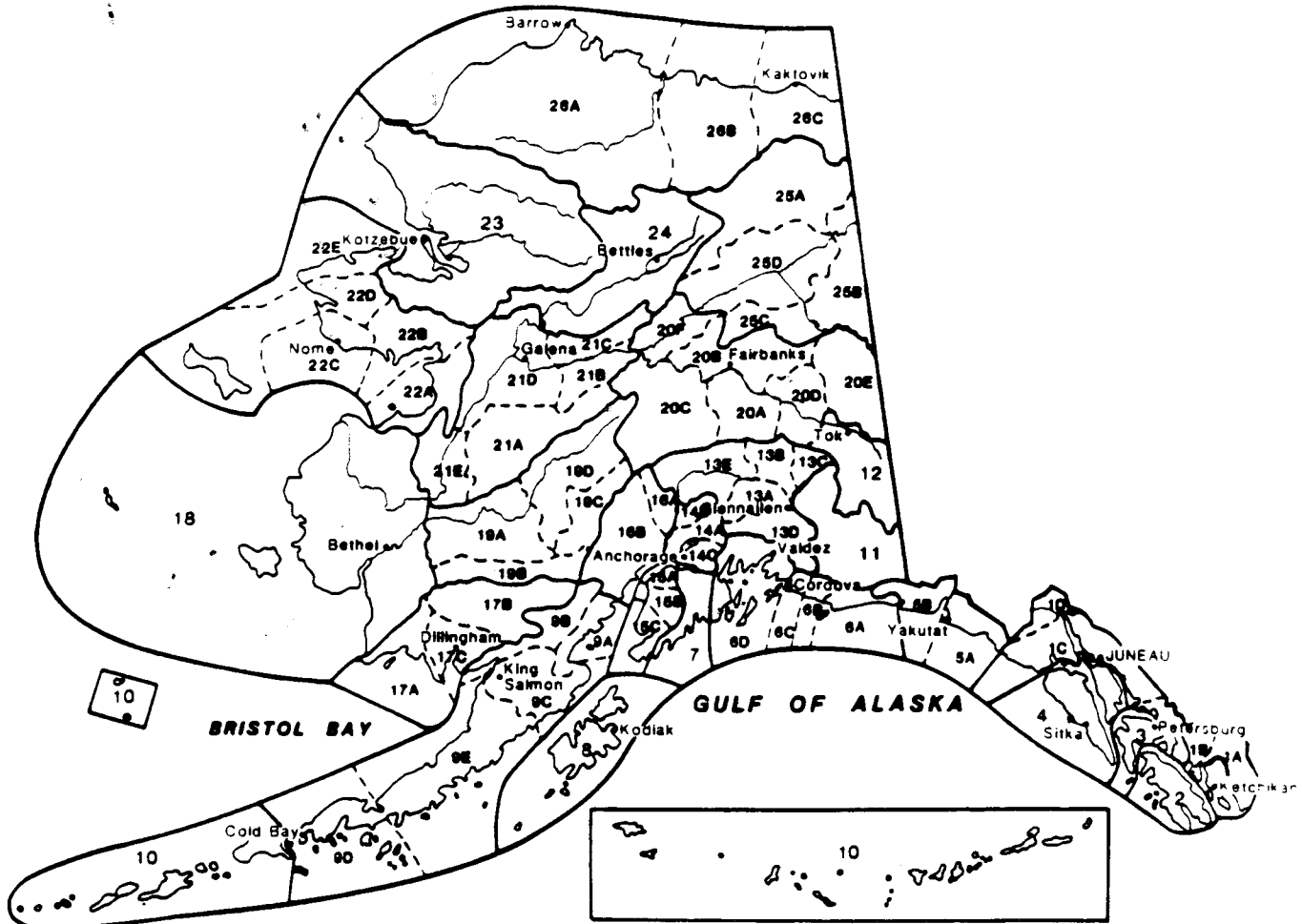
	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	44.1	14.5	58.6
Actual	44.1	11.0	55.1
Difference	0	3.5	3.5

Explanation: Weather, timing, personnel changes, and reallocations accounted for underspending the operational budget in Region II.

Submitted by:

Jeff Hughes  
Wildlife Biologist

# 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 distributes funds to states using a formula based on each state's geographic area and number of paid hunting license holders. Alaska receives a maximum of 5% of revenues collected each year. The Alaska Department of Fish and Game uses its funds to help restore, conserve, and manage wild birds and mammals. These funds are also used to educate hunters to develop skills and attitudes for responsible hunting. Federal Aid funds paid for 75% of this study.

