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Survey-Inventory Activities  
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# **MOUNTAIN GOAT**



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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:** Subunit 1A (5,000 mi<sup>2</sup>)  
Ketchikan area including mainland areas draining into Benm and Portland Canals.

**Project Objectives and Activities:** Maintain goat population densities above 20 goats per hour of survey time during fall surveys. Survey goats annually in established trend count areas throughout Subunit 1A.

**Work Accomplished During the Project Segment Period:** Aerial goat surveys were done in 7 of 10 established trend count areas within Subunit 1A. Additional information about the status of goat populations was obtained from conversations with hunters and pilots.

Registration permits were issued to goat hunters. Harvest data provided through the permit system were tabulated and reviewed.

**Progress Toward Meeting Project Objectives:** Surveys in all 7 trend count areas resulted in more than 20 goats per hour being observed. Only the Swan Lake region of Revillagigedo Island, where goats were transplanted in 1983, came close to the cutoff; 26 goats per hour were observed in that area. Kid production appeared to be good in 6 of the 7 areas surveyed, ranging from 26-42 kids/100 adults. Survey area K-11, an 11-mile stretch of west-facing mountain slopes between Walker Cove and Rudyerd Bay, had a goat count of 15 adults and 2 kids (13 kids/100 adults). Although this level of productivity is considered low, the traditionally small sample size and kid counts in this area preclude any biological concerns.

Fourteen male and 6 female goats were reported harvested from Subunit 1A in the 1990-91 season. This harvest level is considered inconsequential to existing population levels. All goats were taken by resident hunters. Little interest has been shown by nonresident goat hunters in Subunit 1A since the mandatory guide requirement went into effect two years ago.

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

**Project Objectives:** Maintain densities greater than 20 goats per Uniform Coding Area.

**Work Accomplished During the Project Segment Period:** Aerial surveys were done to monitor populations. A total of 247 permits were issued, and a diligent effort was made to get reports from all permittees. Whenever possible, goat hunters were interviewed in the field. Data from the registration permits were used to make management recommendations.

**Progress Toward 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 seen. 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 people 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:** Subunit 1C (7,562 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 and Activities:** Maintain goat population densities resulting in the observation of at least: 1) 30 goats per hour during fall surveys in the Eagle - Antler drainages and in the Chilkat Range north of the Endicott River; 2) 50 goats per hour in the areas south of Taku Inlet. 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.

## Subunit 1C mountain goat management activities:

Conduct population size and composition counts. Monitor results from the registration permit hunt. Monitor goats infected with contagious ecthyma to determine extent of outbreak.

**Work Accomplished During the Project Segment Period:** Surveys were flown to ascertain goat use of potential range, primarily in those areas associated with potential mineral extraction activities. Harvest data collected from registration permits returns were analyzed on an on-going basis to determine whether harvests remained within sustainable limits. Preliminary harvest quotas based on population estimates were established for discrete areas throughout the subunit. These quotas incorporated a point system that favored the harvest of billies.

Some preliminary work was completed toward mountain goat management plans in developing maximum harvest quotas and hunt areas, as discussed above.

**Progress Toward Meeting Project Objectives:** Aerial surveys flown in the vicinity of the proposed A-J Mine near Juneau found goats in greater numbers than expected in the immediate area. A group of 36 animals was found in the Mt. Hawthorne area using a suspected mineral lick.

Five goats in advanced stages of the disease contagious ecthyma were discovered on Mt. Bullard near the Mendenhall Glacier. These goats were marked and monitored over several weeks until they died or contact was lost. Tissue samples were retained for verification of disease.

We issued 140 registration permits to hunters in 1990. Of these, 54 permittees hunted and 30 were successful. Nineteen billies, 10 nannies and 1 goat of unreported sex were taken. Successful hunters expended an average of 2.7 days per goat harvested. The number of non-resident guided hunters increased to 11 this year and 10 of them were successful.

**Project Location:** Subunit 1D (2,670 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 and Activities:

Subunit 1D mountain goat population objectives: in hunt area 804 (Skagway) increase the population to 100 animals, in hunt area 805 (Haines North), increase the estimated population from 600 to 1000 goats; maintain hunter success of 25%; in

hunt area 806 (Haines South), increase estimated population from 300 to 500 goats. Maintain hunter success of 25%.

Subunit 1D mountain goat management activities: monitor results from the registration permit hunt.

**Work Accomplished During the Project Segment Period:** Harvest data collected from registration permits were collected and analyzed. As in Subunit 1C, preliminary harvest quotas were monitored for discrete areas throughout the subunit based on population estimates.

**Progress Toward Meeting Project Objectives:** No aerial surveys were conducted this year because of poor weather conditions during late summer and early fall.

We issued 194 registration permits to hunters in 1990. Of these, 103 hunted and 31 were successful yielding hunter success rates well above management objectives. Eighteen billies and 12 nannies were taken. Harvest levels reached the newly established quotas in 2 areas. These areas are scheduled for surveys in 1991. Harvest quotas will be adjusted if population estimates warrant.

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

**Project Objectives and Activities:** Unit 4 mountain goat population objectives are to maintain a population sufficient to provide an annual harvest of at least 35 goats and an annual hunter success rate of at least 25%.

Unit 4 mountain goat management activities are to: conduct population size and composition counts; monitor results from the registration permit hunt; work on developing population objectives.

**Work Accomplished During the Project Segment Period:** Registration permits for Baranof Island were issued throughout the 1990 season. After the permit return deadline, nonrespondents were contacted for information and cited for non-compliance. Hunt report results were tabulated. Goat horns voluntarily submitted by hunters were aged. No planning meetings were held during the period.

**Progress Toward Meeting Project Objectives:** Hunters harvested 43 goats in 1990, the highest number since 1986, exceeding the 35 goat objective. The success rate for 129 hunters was 33%, exceeding the objective of 25%.

**Project Location:** Subunits 5A and 5B (5,770 miles<sup>2</sup>)  
Cape Fairweather to Icy Bay, eastern Gulf Coast.

**Project Objectives and Activities:** Unit 5 mountain goat population objectives are to increase the estimated population from 850 to 1,250 goats and maintain a hunter success rate of 25%.

GMU 5 mountain goat management activities are to: conduct population size and composition counts; monitor results from the registration permit hunt; work on developing population objectives.

**Work Accomplished During the Project Segment Period:** Aerial surveys were conducted in July, 1989, between Harlequin Lake and the Varigated Glacier. Ninety-three goats were counted in 2.0 hours of flying time (47 goats/hour). Thirty-one percent of the goats were kids (45 kids:100 adults). No goats were observed on the north side of Nunatak Fiord. In 5 survey efforts in this area since 1983, the present estimate provided the highest total goat count and the second highest goat per hour count. The 1989 estimate showed the highest percent of kids and kid to adult ratio in the 1983-1989 period. The current survey result supports a population estimate of 200 goats between Harlequin Lake and Russel Fiord.

Harvest was analyzed from the return of hunter reports from the registration permit hunt. Forty-six permits were issued, 16 permittees did not hunt, and 17 hunted unsuccessfully. Eleven male and 2 female goats were killed in Subunit 5A, for a success rate of 43%. Successful hunters averaged 3 days hunting, while unsuccessful hunters were afield for an average of 5 days. Three goats came from west of Harlequin Lake, and the remaining 10 were taken between Harlequin Lake and the Alsek River.

In August of 1989 the Unit 5 goat population was estimated at a minimum of 1,000 animals. This is a crude estimate and should be refined over time. The hunter success rate of 43% was well above the objective of 25%.

**Progress Toward Meeting Project Objectives:** The management objective for mountain goat hunter success rate is being exceeded throughout the subunit, but we do not believe that the desired population has been achieved. However, the desired population size is based on a rough estimate and should be upgraded in the future. Populations appear to be growing, based on high kid:adult ratios and strong percentages of kids observed during aerial surveys in 1989. Also hunter effort has been down since 1983, thus the harvest has been well below the maximum allowable harvest.

The changing nature of moose hunts on the Yakutat Forelands may be one explanation for reduced effort and take since 1985. Between 1985 and 1990, a

subsistence preference regulation caused a shorter moose hunting season for nonlocal Alaskans 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	\$30.2	\$37.3	\$67.5
Actual	\$30.0	\$35.0	\$65.0
Difference	-\$0.2	\$2.3	\$2.5

Explanation for difference: Actual personnel costs are estimated. Personnel costs were lower than planned. Because of inclement weather some surveys were not conducted in the northern part of the region.

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

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

Unit 8 (8,750 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: Increase the goat population in Unit 6 to a minimum of 4,500 goats by the year 2000.

Units 7 and 15: Maintain a pre hunting population of at least 3,000 goats on the Kenai Peninsula.

Unit 8: Maintain a pre hunting population of at least 200 goats.

Unit 11: Maintain a pre hunting population of at least 100 goats.

Unit 13: Maintain a pre hunting population of at least 100 goats.

Subunits 14A and 14B: Maintain a pre hunting population of at least 60 goats.

Subunit 14C: Maintain a pre hunting population of at least 400 goats.

### **Work Accomplished During the Project Segment Period:**

Unit 6: Ten mountain goat count areas within Subunits 6A, 6B, and 6D were surveyed and 979 goats (20% kids) were tallied. The maximum allowable harvest for Unit 6 was 89 goats for the 1990 hunting season.

Hunters were issued 264 permits, and 111 hunters reported hunting. Hunters reported killing a total of 66 goats. Harvest composition was 46 (71%) males, 19 (29%) females, and 1 animal was not recovered. Eight of the 18 count areas were closed by Emergency Order to prevent the harvest from exceeding allowable levels.

Twenty-nine radio locations were recorded between 1 November and 18 February for 10 radio-collared goats near Port Gravina. These locations provided aerial characterization of 19 wintering sites.

Units 7 & 15: Aerial surveys were conducted in 11 count areas and 2 areas closed to hunting; 946 mountain goats were counted. Kids comprised 23% of the population.

Hunters reported taking a total of 98 goats on the Kenai Peninsula in 1990. Fifty-five goats (36 males, 18 females, and 1 unidentified) were harvested from 3 hunt areas during the 10 August to 30 September drawing-permit hunt. Thirty-six goats (23 males, 12 females, and 1 unidentified) were taken from 8 hunt areas during the 15 October to 30 November registration permit hunt. Drawing permittees had a 47% success rate while registration permit hunters had a 25% success rate. Seldovia subsistence hunters took 3 goats (2 females and 1 male) in hunt area 864. Port Graham and English Bay subsistence hunters reported 2 female goats harvested. Two goats were illegally harvested in hunt area 845.

Unit 8: Approximately 70% of the mountain goat habitat on Kodiak Island was surveyed in August; 494 goats (388 adults, 106 kids) were counted. This was a kid:adult ratio of 27:100. The harvest was monitored from mandatory hunter reports and by examining horns of goats killed. Hunters harvested 29 goats (18 males, 10 females, and 1 unknown sex). From horn annuli, mean ages of 17 males and 9 females were 4.0 and 5.4 years, respectively. One hundred permits were issued, 59 hunters reported going afield, and hunter success was 49 %.

Unit 11: Fifty-five mountain goats were counted on an aerial survey of the MacColl Ridge trend count area. Kids comprised 22% of the observed population. This was the highest count from the MacColl area since 1985, when 63 goats were tallied. Population estimates for goats includes 400 animals north of the Chitina River and 300 to the south in the Chugach Mountains.

Registration permits were issued to 50 hunters in 1990 and 16 goats were killed. Hunter success rate for the 27 permittees that hunted was 59%. Harvest composition included 12 billies (75%) and 4 nannies (25%). Nonresidents took 11 goats (69%) and nonlocal residents took 5 animals (31%). Fourteen successful hunters (88%) used aircraft and 2 (12%) used highway vehicles to access areas hunted. Successful hunters averaged 2.1 days hunting and the majority of the harvest occurred in early September, presumably by hunters on a combination sheep/goat hunt.

and nonlocal residents took 5 animals (31%). Fourteen successful hunters (88%) used aircraft and 2 (12%) used highway vehicles to access areas hunted. Successful hunters averaged 2.1 days hunting and the majority of the harvest occurred in early September, presumably by hunters on a combination sheep/goat hunt.

Unit 14: No surveys were conducted in Subunit 14B, where no hunting occurred during the 1990-91 season. In Subunit 14A, 42 goats (12% kids) were observed on aerial surveys compared to 85 animals the previous year. Movement in and out of the count areas probably accounted for some of these fluctuations. Given the size of the unit, and relatively low density of goats, some animals could have been missed. The previous winter was moderately severe which may have resulted in increased winter mortality and lower reproduction. The adjacent subunit, 14C, showed no such decline however. In Subunit 14C, 524 goats (22% kids) were counted. The number of goats observed in Subunit 14C was comparable to 1989, when 530 animals were observed.

In Subunit 14A, 4 goats (3 males, 1 female) were killed by the 19 hunters who reported hunting. In Subunit 14B, goat hunting was not allowed. In Subunit 14C, 2 registration permit hunt areas are available for hunting goats, the Twentymile River area and Lake George area. Thirty-two permits were issued for the Twentymile River area and 1 male goat was taken (3% hunter success). In the Lake George area, 58 permits were issued and 27 goats (15 males, 12 females) were killed (47% hunter success).

#### **Progress Toward Meeting Project Objectives:**

Unit 6: Current population estimates suggested an overall declining trend in 1990 and decreasing likelihood of meeting the population objective of 4,500 goats by the year 2000. A population estimate ranged between 2,740 and 3,300, following aerial trend and age composition surveys. Evidence of increasing predation by canids, expanding timber harvest activities, and recent hard winters are suspected as primarily responsible for the trend. Predator management activities, introduction of mountain goats to Knight and Montague Islands, preventing winter habitat destruction, and further reduction of harvests are 4 ways to reach population objectives. At this time the Department's primary response has been to intensively manage goats on a subpopulation basis to prevent overharvest, investigate and document winter habitat use, prevent habitat modification by forestry practices, and document the activities and effects of wolves where possible. The population objective will be reconsidered for the FY92 annual work plan.

Twenty-nine winter goat locations provided preliminary winter range characteristics for eastern Subunit 6D. The winter was classified as a "moderate snow depth 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 fitted with radio collars. On-site

verification of aerial classification of winter range is scheduled for completion in FY91.

Units 7 and 15: Population estimates suggested stable to slightly increasing goat numbers. There were an estimated 3,000-4,000 goats on the Kenai Peninsula including Kenai Fjords National Park. The current management objective was met.

In 1990, primary emphasis was directed at surveying goats in the population trend areas with the exception of Blying Sound. A total of 112 goats (27% kids) was counted in the West Slope trend area and 463 goats (25% kids) in the Upper Kachemak Bay trend area. Comparing this data to the 1987 trend counts showed a 24% increase in the West Slope population with a 5% decline in kids. The Kachemak Bay area population increased by 54% with a 3% increase in kids.

Unit 8: The 494 goats counted represented a minimum population more than double the preseason objective of 200 animals. Males comprised 64% of the known-sex harvest in 1990. In 1990, 160 goats were counted in areas closed to hunting. That compared to 83 goats observed in roughly the same area in 1985. Goats have colonized most of the suitable habitat on Kodiak Island and continue to increase. The goat population within the legal hunting areas appears stable to increasing, with 303 goats (234 adults, 69 kids) observed in 1990, compared with 275 goats seen in 1989.

I recommend that an additional area in southern Kodiak Island be opened to hunting by drawing permit. Limited hunting in that area will provide new hunting opportunities without curtailing potential population growth and colonization of potential goat habitat. The population objective should 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 in areas with more favorable habitat, such as the Kenai Peninsula or Unit 6. The unitwide population estimate of 700 goats exceeded the population objective.

The 1990 harvest was similar to that observed in past years. The harvest was dispersed, and localized overharvesting of specific areas was not a problem. 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 their efforts in a few areas.

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

Project objectives for Subunits 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. Minimum pre hunting season objectives should be established for each unit and a maximum allowable harvest adopted, based upon the number of goats observed.

**Segment Period Project Costs:**

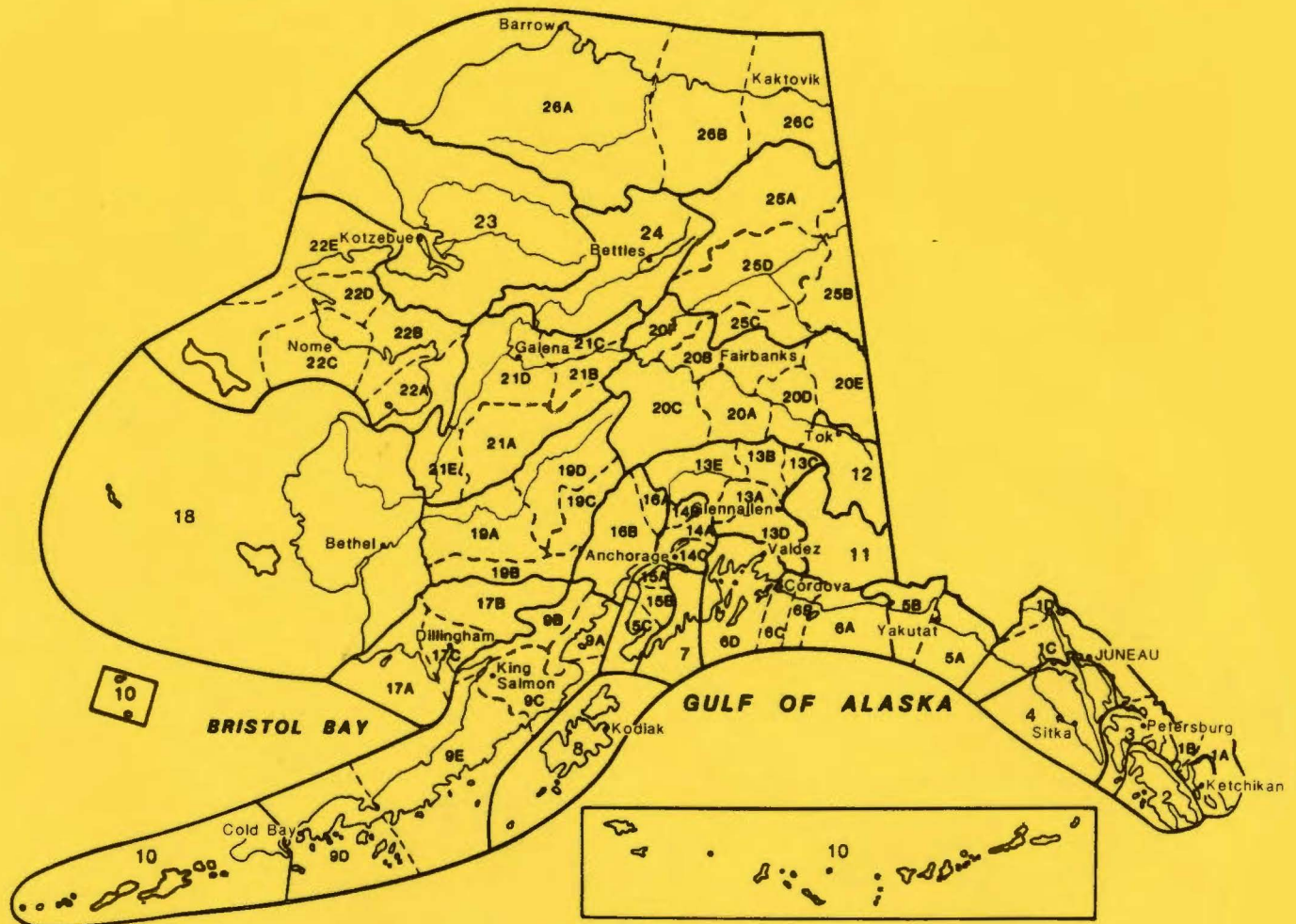
	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	35.0	25.7	60.7
Actual	35.0	20.1	55.1
Difference	0	5.6	5.6

Weather, timing, and personnel problems accounted for underspending for operations in Region II.

Submitted by:

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Regional Management Coordinators

# Alaska Game Management Units



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