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GOAT STUDY SITE SELECTION

By
Lyman Nichols

Final Report
Federal Aid in Wildlife Restoration
Projects W-17-7 and W-17-8, Job 12.1R

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FINAL REPORT (RESEARCH)

State: Alaska

Cooperator: Lyman Nichols Project Title: Big Game Investigations

Project No.: W-17-7 and W-17-8

Job No.: 12.1R Job Title: Mountain Goat Study Area Selection

Period Covered: July 1, 1974 to June 30, 1976

SUMMARY

The area lying between Ptarmigan Lake and Trail Glacier in the Kenai Mountains, and containing a resident herd of over 100 mountain goats, was selected as a study area representative of interior Kenai Peninsula goat habitat. One mechanical weather station was established in the area and data collection begun. A reference collection was made of plants from goat summer and winter habitats.

BACKGROUND

The life history and status of the mountain goat (*Oreamnos americanus*) are relatively unknown in Alaska despite the long-time importance of the species to big game hunters. With the exception of two excellent but limited studies (Klein 1953, Hjeljord 1973), no significant literature specific to goat ecology in Alaska could be found. Periodic reports by the Alaska Department of Fish and Game have covered the results of annual goat harvests and sporadic aerial surveys.

Hunting pressure was relatively light in the past and little emphasis was given to increasing our knowledge of this species in the belief that populations were not being adversely affected. Recently, however, hunting pressure has increased and it has been discovered that goat herds in several parts of the state have declined (Alaska Dept. Fish and Game, 1973, 1974, 1975. Ann. Reports Survey-Inventory Activities). Whether these declines were the result of hunting harvest, severe winters, or other factors was unknown. It was, in fact, suspected that some apparent population changes were due to inconsistencies in survey accuracy.

The decision was made to conduct studies designed to determine the basic techniques needed to assess the status and dynamics of goat populations, to learn the habitat requirements and basic life history of the mountain goat on the Kenai Peninsula and elsewhere in Southcentral Alaska, and to learn what factors limit goat distribution and abundance.

Before such studies can commence, suitable herds for study must be identified and their seasonal ranges roughly defined. Ideally, these herds must be of adequate size to furnish meaningful population data. They should be restricted, if possible, to discrete habitats and be accessible for year-round study. Both coastal and inland habitats should be represented. It would also be beneficial to locate at least one herd near or overlapping Dall's sheep (*Ovis dalli*) range so habitat requirements could be compared between pure goat habitat, habitat shared by both species, and pure sheep habitat (already examined under other studies).

The objective of this job was to locate one or more goat herds suitable for further studies which will then be initiated. Because we planned to examine gross climate in the habitats chosen, establishment of at least one mechanical weather station on a representative site in each habitat type was a further objective of this job.

OBJECTIVES

To select goat populations and habitats suitable for further study, to delineate seasonal ranges within these areas, and to establish automatic weather-recording instruments within the selected areas.

PROCEDURES

Aerial surveys of several inland and coastal Kenai Peninsula goat count areas were conducted during summer 1974. Further aerial counts were conducted in summer 1975, of the area between Ptarmigan Lake and Trail Glacier (Fig. 1). These counts were flown in a Piper PA-18-150 Supercub with the pilot-observer recording all observations on a tape recorder for later transcription. Count results were reported under survey and inventory activities.

Further aerial reconnaissance surveys of goat habitat were flown during winter and spring to search for and plot winter ranges. These were located by the presence of goats and/or tracks and plotted on 1:63,360 topographical maps, as were the locations of all goats observed during the summer 1975 surveys.

One MRI (Meterology Research, Inc., Altadena, California) Model 1071 mechanical weather station was established in goat winter range on the north side of Grant Lake (Fig. 1) in June, 1976.

A collection of plants from goat summer and winter ranges was undertaken. Specimens were preserved for future reference use in diet studies; identification of specimens was begun.

A technique was developed for assessing percent snow cover from aerial photographs. A series of photographs was begun during winter 1975-76 including habitat occupied by sheep only, by both sheep and goats and by goats only. One foot trip was made into the valley east of Ptarmigan Lake to assess access for future work in the area.

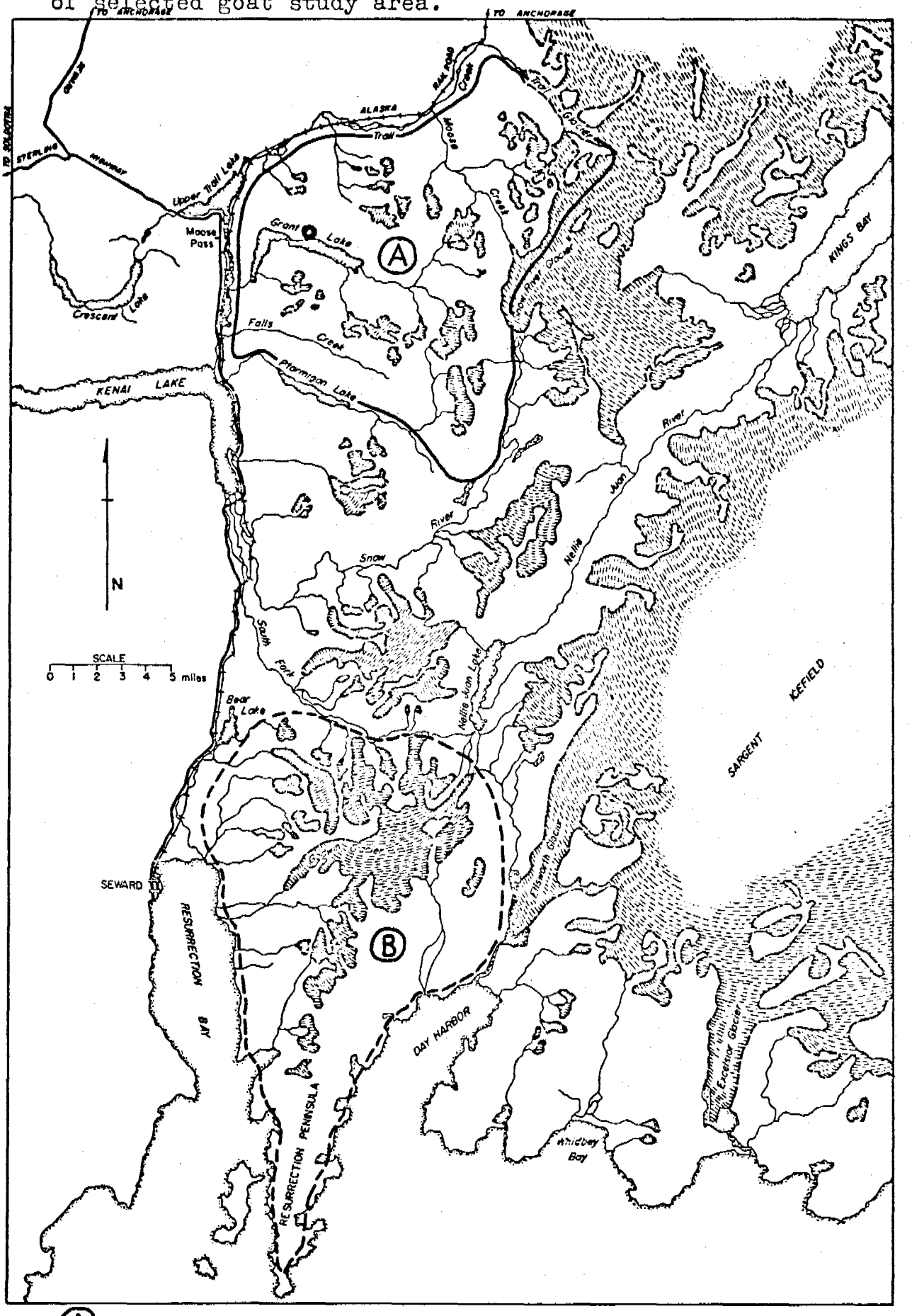
FINDINGS

Data on weather and snow cover will be presented in future progress reports of more detailed studies.

Aerial goat distribution surveys flown in 1974 and 1975 indicated a population of at least 100 goats in the area bounded by Ptarmigan Lake and Ptarmigan Creek on the south, Trail Lake and Trail River on the west and northwest, Trail Glacier on the north, and Snow River Glacier and Snow River on the east. Both the Ptarmigan Creek and Trail River drainages presented physiographic barriers to any significant goat movements and it did not appear likely that goats crossed the Snow River. Movements across Snow River Glacier and Trail Glacier appeared possible, but no indications of such movements were observed during these initial surveys.

Access into this area is possible from several points although, as in all goat habitat in the Kenai Mountains, foot travel will be difficult. Because of the number of goats inhabiting the area, its apparent

Fig. 1. Kenai Mountains northeast of Seward, Alaska, location of selected goat study area.



(A) - Area selected for interior habitat studies

(B) - Area tentatively selected for coastal habitat studies

o - Site of weather station

natural boundaries and relatively good access (compared to other areas examined), I selected it as a primary study area for an inland goat population (Fig. 1).

In addition, that portion of the area between Ptarmigan Lake and the northern fringes of Grant Lake drainage contain a herd of at least 50 Dall's sheep. No sheep were seen regularly north of the Grant Lake drainage. Thus, in the southern half (approximately) of the study area, goat and sheep ranges overlap, while the northern half could be considered goat range only.

Winter concentrations of goats were found along the southfacing, broken cliffs just north of both Ptarmigan and Grant Lakes. Another concentration occurred along the south side of Trail Glacier on a northfacing slope. A few goats wintered in the Moose Creek drainage.

The Trail Glacier herd offers good potential for winter observations. Both the Grant and Ptarmigan Lakes herds can be observed from the lakes after freeze-up. Access is possible to these areas in winter by ski-plane and snowmachine.

Summer concentrations were found at the head of Ptarmigan Creek Valley, accessible by helicopter or foot travel from Ptarmigan Lake, and above Trail Glacier, accessible by helicopter. Smaller groups of goats summered in Moose Creek drainage and elsewhere in the area.

Only one site could be found for the establishment of a weather station which was suitable from the standpoints of access and representing goat winter habitat. This was on a shoulder above Grant Lake at about 3,000 ft. (914 m) elevation. The site can be reached in winter by ski-plane, but requires helicopter transportation in other seasons. It is within goat winter habitat and is exposed to prevailing winds. A mechanical weather station was established there in June, 1976, which records temperature, wind velocity and wind direction.

An attempt was made to collect specimens of most species of plants occurring in goat summer and winter habitats. Collections were made in Ptarmigan Valley, west of Nellie Juan Lake, and above Johnstone Bay on the coast east of Day Harbor. All specimens were mounted for preservation and many were identified. Identification of the remaining plants continues. The plant collection is intended for use as reference material in future range and diet studies.

Another area in the vicinity of Port Dick, southeast of Seldovia, was tentatively decided upon as a study area representing coastal habitat. However, its use was abandoned due to last minute loss of anticipated personnel and financing. The Resurrection Peninsula east of Seward (Fig. 1) may prove suitable for future work in coastal population

and habitat studies, being closer to the primary study area. It contains a herd of over 150 goats which winter along the coastal cliffs. They spend the summer in the higher mountains surrounding coastal valleys. It appears that access will require helicopter transportation for the most part. In view of the presently limited staffing and funding for this study, it does not seem likely that both interior and coastal study areas can be utilized in the near future. Consequently, final selection of a representative coastal area can be delayed until the need arises.

RECOMMENDATIONS

I recommend that mountain goat population and habitat studies be commenced in the selected study area representing interior habitat conditions and that final selection of a representative coastal area/population be postponed until adequate staffing and funding are made available for study expansion.

LITERATURE CITED

Hjeljord, O. 1973. Mountain goat forage and habitat preference in Alaska. J. Wildl. Manage. 37(3):353-362.

Klein, D.R. 1953. A reconnaissance study of the mountain goat in Alaska. M.S. Thesis. Univ. of Alaska, Fairbanks. 121 pp.

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