Proc. Fifth Bienn. Symp. North.
Wild Sheep and Goat Council 1986

MOUNTAIN GOAT HUNTING STRATEGIES IN IDAHO

Lonn Kuck, Idaho Department of Fish and Game, Lewiston, ID 83501

Abstract: Historically when mountain goats were exploited under traditional game management principals many goat populations declined. Research findings in Idaho suggest that hunter mortality may be an additive rather than a compensatory mortality form for some mountain goat populations. A brief history of goat management in Idaho is presented. A management goal to increase goat numbers has been established in Idaho. Procedures to achieve this goal have been established through two five-year species management plans that cover the period from 1981 to 1990.

The statement, "If we don't learn from history, we're doomed to repeat it" probably best describes the historical perspective of mountain goat harvest strategies in Idaho. Throughout the range for this species there are now optimistic signs indicting that, as a profession, we have learned from history. However, the learning process has been slow, even painful, and at times difficult. Unfortunately, as we have struggled through this process some goat populations were extirpated and others were substantially reduced. This loss has not gone for naught, there are now signs that we have gained a better understanding of mountain goat response to exploitation by man.

Graeme Caughley (1976) once stated that "there has been little qualitative advancement in wildlife management theory and practice since the 1930's." Caughley himself admitted this was somewhat overstated, but it does mirror our profession's approach to mountain goat management. Although management and harvest principles that evolved from the study of muskrats and small game may have some application to some large ungulates such as deer, these principals now appear totally inadequate for goats. Unfortunately it took us nearly 50 years to learn.

Our approaches to mountain goat management had fallen into the same trap that effected the science of game management (Romesburg, 1981). If the profession of wildlife management is to become a science, we must establish a tradition of critically evaluating a wildlife management principles, theories and practices. Lacking this tradition, or in the absence of an effective forum for critical review, many untested theories and principles have gained respectability through repetition and practice, and eventually were unquestioningly accepted as institutions not to be challenged. Once institutionalized, they were applied to all species and situations, i.e., managing mountain goats as if they were muskrats.

In 1969, the Idaho Department of Fish and Game initiated a research program to determine why the Pahsimerol mountain goat herd located in east central Idaho was declining. Mule deer competition during winter was originally hypothesized as the cause for this decline. However, despite a major reduction of mule deer, the mountain goat population continued to decline. Consistent with the philosophy of the day, our concerns shifted to the goat herd and its relationship with its winter range. It was generally assumed that goats, like other big game, were primarily limited by winter food supplies. Although untested for goats the size of the population was assumed to be a function of winter forage availability (Cole 1971).

As a result, a "sustained annual harvest program" was initiated for the Pahsimerol mountain goat herd to maintain a "productive goat population within the carrying capacity of the available range" (Kindel 1961). Under this management scheme, the herd declined proportionally to exploitation and, contrary to Errington's "inverse density law" (Errington 1945), there was a strong positive correlation between population size and percentage of kids within the population. We were finally forced to admit that this herd did not respond to traditional game management practices and concluded that hunter mortality was an additive rather than a compensatory form of mortality (Kuck 1977).

When I presented these results at the First International Mountain Goat Symposium, my findings were received with interest but for the most part with skepticism. At the time, most accepted the Pahsimerol results as an abnormality not applicable to other situations. However, during the ensuing years as one exploited population declined after another, even my strongest critics have had to concede that if hunter mortality in goats is not additive, then goats at least are extremely sensitive to exploitation. Even in Idaho my results were not initially received with enthusiasm. One administrator concluded that the direct relationship between hunting mortality and herd declines in Idaho was "too simple". One manager wondered aloud whether it would hurt to go another year or two with five permits for a unit with a known population of seven. Another manager's reaction was "I've made a mistake. I've let my supervisor read your study results. What do I do now?" For me the answer was simple, If in doubt, be conservative, back off on harvest. Although the answer seemed simple, translating research results into a management program was another matter.

Two major occurrences in the early 1980's triggered the transition to a more conservative approach to goat harvest in Idaho. The first was a special authorization by the Fish & Game Commission to helicopter inventory all mountain goat populations in Idaho. The second was the development and commitment to five year species management plans. Unfortunately, prior to this special inventory effort, our mountain goat management program for the most part could best be described as "benign neglect". As a result, the only direct management information we had was obtained secondarily during elk and deer helicopter counts. Goat management simply could not economically compete with the so-called "bread and butter species." Consequently, harvest success rates were primarily

used to monitor the status of goat herds. As we now know, success rates almost always held up until a goat population was nearly lost. Then it was too late to initiate an alternative management strategy except to close the unit to all goat hunting.

Following completion of our statewide mountain goat helicopter surveys, our worst fears were realized. Some of our goat populations were gone and many others were severely reduced. Although some managers were reluctant to identify the cause for these declines, we had no alternative but to reduce mountain goat exploitation in Idaho.

Historically, conservative philosophies have dominated mountain goat management in Idaho. Idaho's legislature first established restrictions on goat hunting in 1903, when a 78-day season and one goat per year bag limit were implemented. By 1931, Idaho goat seasons were reduced to 10 days. In 1943, a specific 10-dollar goat tag was required in addition to the regular license. Concerns about overharvest led the Idaho Fish and Game Commission to order statewide mountain goat hunting closures in 1948, 1949, and again in 1951. By 1954, the Department created its first permit goat hunt. Idaho held its last general firearms season for goats in 1966.

Prior to the 1960s, when other big game were plentiful and hunter numbers were low, most hunters displayed little interest in mountain goats and few goats were taken annually. Idaho's annual goat harvest exceeded 100 animals in only two years (1933 and 1946) prior to 1960. Subsequently, hunting demand and access grew simultaneously. Information on goat numbers and distribution acquired through other big game helicopter surveys was followed by increases in permit allocations and units.

Idaho goat harvest increased substantially, reaching a peak of 161 goats in 1966 (the last year portions of Idaho were still open to general goat hunting), and again in 1968 (under a controlled hunt permit system). In 1967, Idaho established its first general archery seasons for goats in specific areas of the state to accommodate a growing interest in archery hunting. Permit allocations continued to increase through 1974, when 303 permits were authorized.

In 1976 when the results of the Pahsimeroi mountain goat study were available (Kuck 1977) and prior to our statewide mountain goat helicopter inventories, there were 276 gun permits authorized for Idaho and general archery seasons were still permitted. However, by 1982 authorized goat permits were reduced from 276 to only 48 permits for gun harvest. All general archery seasons were closed, and six controlled archery permits were authorized.

Development of our five-year species management plans provided the vehicle for incorporating our research findings into a statewide mountain goat management program. During the first planning period, 1981-1985, a conservative approach to goat management was adopted. The primary management goal was to increase goat numbers throughout the state. Regulations were modified to meet this goal. Many hunts were closed;

permit numbers were reduced in many units; general archery hunts were switched to controlled hunts; hunters were encouraged to take males; females with kids at side were legally protected; hunters were restricted to the harvest of only one mountain goat in a lifetime; and goats were transplanted into vacant habitats or into areas with suppressed populations.

This program of harvest regulations and management has been partially successful. Mountain goat distribution within Idaho has been expanded through the transplant program, and all of Idaho's transplants have been successful. Goats were first transplanted within Idaho during the summer of 1960. From 1960 - 1968, 22 goats were trapped on Snow Peak and Black Mountain in northern Idaho and released onto cliffs overlooking the eastern and southern shores of Lake Pend Oreille. This herd has provided a high level of nonconsumptive viewing by recreationists since its introduction, and has grown sufficiently to permit a limited hunt. Introductions into the Seven Devils mountain range in 1962 and 1964, and adjacent to the South Fork of the Snake River near Palisades Reservoir in 1969 and 1970, have proven to be extremely successful. Both herds have grown substantially, and now offer increased recreational opportunity for both nonconsumptive and consumptive users.

In 1982 goats were transplanted from Olympic National Park into the Selkirk and Lemhi mountain ranges. Although it is premature to assess the success of these programs, goat transplants into previously occupied habitats may be the most expedient venue to herd recovery in Idaho.

Our second planning effort to cover the period from 1986 to 1990 was further expanded to emphasize sensitivity of mountain goats to exploitation and management strategies required for herd recovery. For the first time, the nonconsumptive use of goats was officially recognized. Because of mountain goat sensitivity to exploitation, (1) a statewide inventory program will be implemented, (2) we will allow harvest only from populations with adequate up-to-date management information (1+ years) observed, (3) permits will be set at or below 5% of the adults for populations which appear to fully use their available habitat, (4) we will authorize hunts only if 40 adults are available for a population, and (5) encourage the harvest of males. Also new in this plan is a stipulation to allow expanded harvest on introduced populations up to 10-15% of the adults observed during the expansion phase for these types of populations (Swenson 1985)

I'm now convinced through the application of management strategies designed for goats, not muskrats, that the downward trends in our Idaho goat herds will be reversed.

LITERATURE CITED

Caughley, G. 1976. Wildlife management and the dynamics of ungulate populations. Pages 183-245 In T.H. Coaker, ed. Applied Biology 1:183-246. Academic Press. New York.

LITERATURE CITED

Caughley, G. 1976. Wildlife management and the dynamics of ungulate populations. Pages 183-245 In T.H. Coaker, ed. Applied Biology 1:183-246. Academic Press. New York.

Cole, G.F. 1971. An ecological rationale for the natural or artificial regulation of native ungulates in parks. Trans. N. Am. Wildl. nat. Resour. Conf. 36:417-425.

Errington, P.L. 1945. Some contributions of a fifteen year local study of the northern bobwhite to a knowledge of population phenomenan. Ecol. Monogr.15:3-34.

Kindel, F. 1961. Idaho game population census and range study - mountain goat investigations. Idaho Fed. Aid in Wildl. Rest., Job Compl. Rep. Proj. W-85-R-12. 42pp.

Kuck, L. 1977. The impacts of hunting on Idaho's Pahsimerol mountain goat herd. Pages 114-125 In W. Samuel and W.G. MacGregor, eds. Proc. First Intl. Mountain Goat Symp., British Columbia Fish & Wildl. Branch.

Romesburg, H.C. 1981. Wildlife science: gaining reliable knowledge. J. Wildl. Manage. 45:293-313.

Swenson, J.E. 1985. Compensatory reproduction in an introduced mountain goat population in the Absaraka Mountains, Montana. J. Wildl. Manage. 49:837-843.

QUESTIONS AND ANSWERS

Gayle Joslin, Montana: Daryll, it looked like in region five you had 1.5% harvest of the population. If you could get a more random sample in the harvest...would you like to see that increase?

Daryll Hebert, British Columbia: Yes, we definitely would. I think we have room to increase the harvest by a reasonable amount. The distribution of the harvest is what produces problems most of the time, because when we survey and identify a population of 300 or 400 animals, we probably only have an accessible harvestable population of maybe 100. It gets very difficult to identify what the boundaries are for the population that is available for harvest, because quite often we don't have enough radio collar information in terms of movement, and we don't know what area some of those goats are in during the hunting season. We opened three new areas this year that had been closed for the last 7, 10 and 15 years respectively. In areas where we have overharvested,
goat populations, recovery has taken seven to ten years.

Jack Welch, Wyoming: Daryll, in your harvest strategies, do you have seasons that are designed to influence goat populations in relation to stone sheep populations? Do you have an identified competition between those species?

Hebert: Not as far as I'm concerned. We have goats and sheep overlapping in many parts of the province. Goats overlap with California bighorns, they overlap with Rocky Mountain bighorns, they overlap with stone sheep. We haven't looked at it specifically or very intensively, but most of the areas I am familiar with, I would say that we don't really have a problem with the overlap in terms of either niche selection for escape terrain or in terms of forage selection. Most of our animals overlap in the alpine, and we're not really short of that in British Columbia.

Jim Bailey, Colorado: I would like to respond to the other part of your question, Gayle, about hunter education classes. We have hunter education classes in Colorado. They are not mandatory. Hunters are encouraged to participate, particularly goat and sheep hunters. Classes are presented by the Division of Wildlife and by some private interest groups that are interested in sheep and goats. Goat hunters are appraised of the problem of harvesting more females than males, and of their obligation to try to harvest a male and then how to try to find a male. We feel that in some areas this approach gives us a harvest sex ratio approaching 50/50, when otherwise the harvest would probably be more females than males. The program is not totally successful in some situations. Last year in our study area there were five animals harvested, actually one male off the study area in the unit and four nannies on the study area. On Mt. Evans there were 12 animals harvested, 9 of those were nannies. Last

year was a problem because of weather. Conditions were extremely difficult for the hunters. There was a greater chance that they would take the first goat available, because they were already snowed out by the time they got up into goat country. That might have been exascerbated by a change in access problems on Mt. Evans: the snow closed the roads and the weather they played out before they got to the first spot where they were apt to see goats, and that place, of course, is where they're apt to see females, not males. So those are all aspects of hunting mountain goats under adverse conditions.

Ted Benzon, South Dakota: I guess I would like to direct this question to Lonn. Several years ago I was talking with Lyman Nichols from Alaska, and he had the feeling when he was out in the field that if you harvest a nanny in the fall, you can possibly look at losing that kid to the winter. Did you get the same feeling?

Lonn Kuck, Idaho: It's just my guess that kids suffer high mortality when the nanny is shot. Bryan Foster marked some kids which became orphaned and they could not detect a real clear relationship there. I've theorized that the bond between nanny and kid evolved for a purpose, and that is to get the kid through the winter. A kid is not very large, and they must deal with high snow depths. I feel the mother/kid bond is very important.

Benzon: Lonn, when you set your harvest at 5%, and since you have about a 50:50 harvest ratio on the sexes, do you consider the loss of one kid for every female shot in the 5% that you recommend for harvest?

Kuck: yes

Joslin: I have a question for Rolf. You discussed a fairly extensive mountain goat education program for the public, could you elaborate a little on that? You also talked about a species of the year concept. Would you please discuss that briefly?

Rolf Johnson, Washington: Let's talk about the year of the goat. When we came to our director in a commission preview and said we're going to recommend X number of permits and its only 2/3 of what we recommended last year, he asked "Why?" We said, "Well, we don't have as many goats as we thought we did and we don't do the necessary surveys to find out how many we have got." Director Wayland asked why we didn't do the surveys. I explained that it was an issue of funding. After a long pause, Director Wayland said, "Well, I can't give you money, but why don't you drum up public interest and get the public to go out there and get that information. It would be good for us to get the public involved in what we're doing." We responded with The Year of the

Goat. We had about 121 surveys and those people saw about 1,100 goats. We had asked for volunteers, and then we became concerned that in the urban areas like Seattle, we'd have hoards of people descend upon us and say they wanted to help do the surveys. So we didn't advertise very much, and we were somewhat selective in who we asked to help. We had orientation sessions to help volunteers identify, age and sex mountain goats, and it worked out really pretty well. We haven't finished. We completed about half of the state last year, and we're going to continue this year. I'm not sure how many people were involved, but the Seattle region alone over 400 man days were put into the surveys.