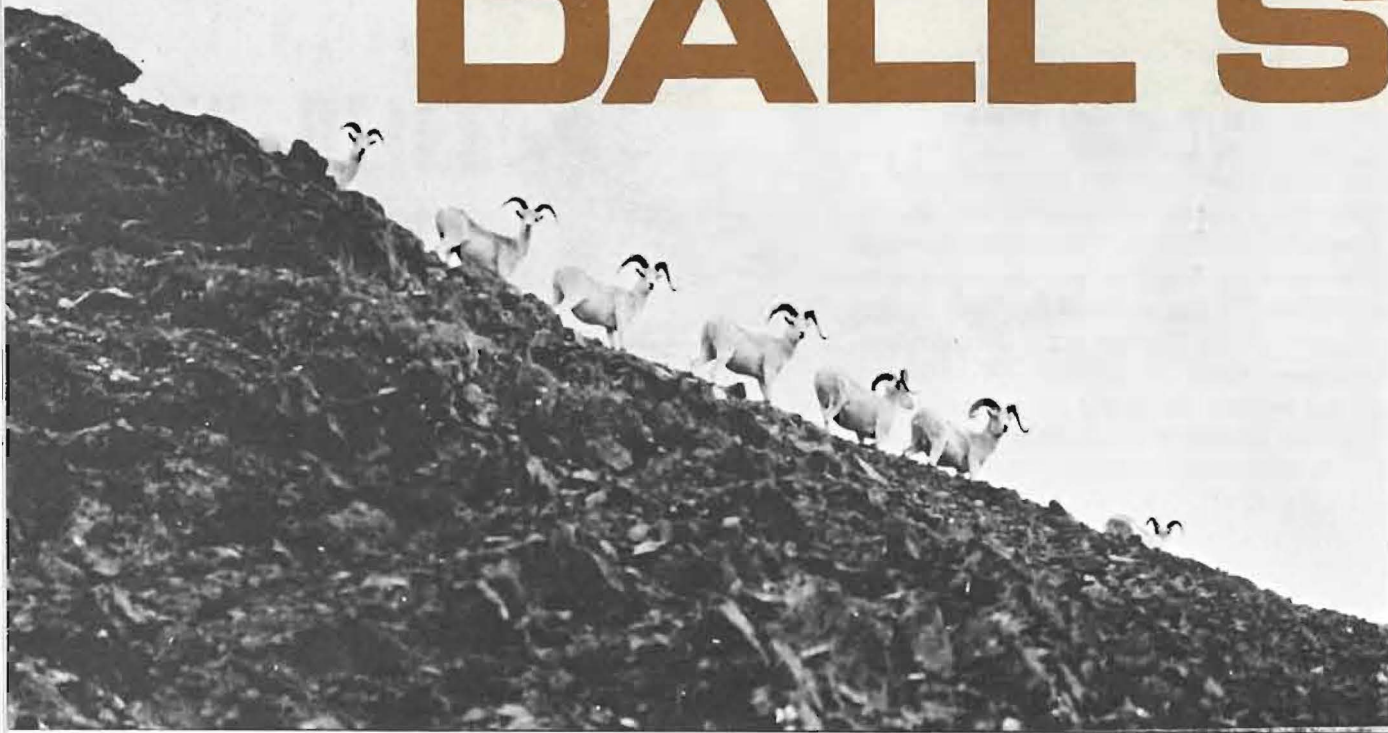


DALL SHEEP



By Lyman Nichols
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A. M. Crocker photos

PART II

This is the second of a two-part series on the Dall sheep, one of Alaska's most important game animals.

The breeding season, or rut, commences in mid-November and ends about the second week in December. Rams do not commonly gather harems but rather wander from group to group of ewes seeking those in estrus. When a ewe comes into estrus or "heat," nearby rams may scuffle, shove and clash for her possession, but she usually goes off alone with the largest ram in the group for a day or so during which time breeding occurs. Afterwards, the ewe rejoins her band and the ram moves off to seek another receptive female.

After a gestation period of some 180 days, a single lamb is born; twins occur but very rarely. Lambing commences in mid-May and continues into early June, with most lambs being born during the third week in May.

When ready to give birth, ewes leave their home band, drive away their previous lamb, if any, and isolate themselves in the most rugged cliffs available. The breaking up of ewe groups along with the appearance of lone ewes scattered throughout the lambing cliffs is a good sign of the onset of lambing.

At the same time, small groups of apparently lonesome and bewildered yearlings may be seen feeding alone. Later on, female yearlings may rejoin their mothers, but male yearlings seem to prefer the company of other rams. A few days after the lamb is born it is able to travel, and its mother may join groups of other ewes and lambs. Ewes with lambs generally segregate themselves from groups of ewes without lambs until later in the summer. Groups of lambs may often be seen accompanied by less than the required number of mothers. This appears to be a form of "babysitting" where ewes temporarily leave their young with others so that they may feed at will for short periods.

A few days after birth, lambs begin to pick at green vegetation; most are weaned by September or early October, although they remain with their mothers until the following spring. Lambs are probably self-sufficient enough by early August to survive should they be orphaned. Females reach sexual maturity by the age of 18 months and may be successfully bred at this age.

Rut Age

Males may also reach sexual maturity at this age, although some may not do so until the following

breeding season. Generally, these young rams are not allowed to participate in the rut for several years as long as older rams are present in adequate numbers. When large rams (full-curl plus or minus) are present, they carry out most of the breeding activities and prevent younger rams from competing. If there are not enough large rams present to prevent them from doing so, 3/4-curl rams successfully participate. With few older rams present, 1/2-curl rams become active breeders, but appear comparatively wasteful of energy and inefficient and may unnecessarily harass nonestrus ewes to the point of causing them (as well as the young rams themselves) to waste energy reserves which will be needed to face the rigors of the coming winter.

During the rut, rams mix freely with the groups of ewes and young. They usually remain on the same winter ranges, sometimes right with the ewes but usually somewhat segregated by sex. When spring arrives in late April or early May, the sheep move downslope to the brush line where snow first melts and green vegetation begins to appear. It is in the rugged cliffs of this spring range that lambing takes place.

As the snow line moves upward, rams leave the spring range and move upwards and possibly across country to their summer ranges, remaining aloof from the females until the rut again begins, at which time they rejoin the ewes on winter range. Females usually leave their spring-winter range within a few weeks after their lambs are born and also move to high, alpine summer ranges. However, they return earlier than the rams to wintering grounds.

The crashing, head-butting fights between rams are not, as many believe, over the possession of ewes during the rut. These combats among Dall rams are usually formalized jousts between rams with nearly equal-sized horns and are used to establish which is the dominant. They may occur during the summer as well as during the fall and do not appear actually related to the rut itself, though they may occur then if two equal rams who are strangers approach each other. Dominance between rams with unequal-sized horns is usually established by posing and horn display. Although there may be considerable excited jostling for possession of a ewe in estrus, dominance between rams has usually been decided beforehand and the larger takes over without a serious fight.

Food Habits

Dall sheep, like moose, deer or cattle, are ruminants; that is, they graze rapidly, then retire to a sheltered or safer place, regurgitate their hurriedly swallowed forage and rechew it carefully for proper digestion. They are primarily grazers and feed mostly on alpine bunchgrasses and sedges, but they vary their diet with alpine willows, other small shrubs and forbs, and even lichens and moss in late winter.

During summer, forage is lush and sheep are able to obtain adequate feed for their daily needs and for the storage of fat reserves. By fall, they are in excellent condition with much internal fat. Winter

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photo by Leonard Lee Rue III



snows cover much of the summer's forage and restrict the sheep to small portions of their habitat. As long as the snow is relatively shallow and soft, they do much of their feeding by pawing craters in the snow to reach feed below. Times are still relatively easy. But once the snow hardens through thawing and refreezing or wind packing, the sheep can no longer dig through. From that time until spring, they are forced to depend upon whatever feed is exposed on the many small, windblown ridgetops, or that which may be exposed by melting action of the weak winter sun on some southern exposures. Not only is much less feed available, but the quality and food value of exposed vegetation is greatly reduced.

Dall sheep may not be able to obtain even their minimum daily needs from feeding during late winter, and are forced to subsist largely upon fat reserves stored during the previous summer. Body condition deteriorates and considerable weight is lost. If the food-short period is severe enough or long enough, the animals become weak and many may die before spring forage becomes again available. Even though most of the herd may survive a tough winter, some of the weaker or older animals may not be able to withstand the change in diet to new green forage, and often die just after vegetation has greened up in the spring.

Mineral Licks

Natural mineral licks, generally in the form of muddy seeps, are much utilized by sheep in the late spring and summer. Ewes and young animals, in particular, spend considerable time in these licks eating the exposed soil. Well-known licks are found in Dry Creek south of Fairbanks, Ewe Creek in McKinley National Park and Peters Creek east of Anchorage, but many others are scattered throughout most sheep ranges. On the Kenai Peninsula, where mineral licks do not appear common, the sheep often dig for and nibble the roots of the false hellebore plant and behave like sheep in actual mineral licks. Although much study of mineral lick use has been undertaken, it is still not known exactly what minerals the sheep seek, nor what function the licks serve.

Habitat

Dall sheep reside almost entirely in alpine habitat above timberline. In some areas, they may drop into forested valleys when traveling between winter and summer ranges, or they may spend part of the winter or early spring below timberline on selected south-facing slopes where conditions are particularly suitable. They prefer to summer in the high, grassy alpine pastures, usually not far from rocky cliffs or outcrops which they can quickly reach to escape from danger.

Unlike many of their southern cousins, the bighorns, they remain in the high alpine during the winter as well. They are unwilling or unable to face the deeper snows of the valleys and forests or to leave the protection of escape cliffs and unrestricted visibility. They have become adapted to yearlong life

above timberline and so have become dependent upon both cold and strong winds. During winter, warm weather will cause snow to melt, then form a hard crust when it refreezes. As long as it remains cold and powdery, sheep can dig through it to feed. Regardless of the amount of snowfall, as long as it is light and fluffy (possible only through continued cold weather) the strong mountain winds can remove it from the ridgetops and exposed slopes, providing the sheep with forage available for grazing.

Decimating Factors

Dall sheep are subject to a number of parasites and diseases such as lungworms, pneumonia and lump-jaw, but as long as the animals are well fed, they usually are able to resist their effects. Weak, underfed sheep in late winter may be seriously affected or finally killed by disease or parasitism, but no generalized die-offs or serious disease outbreaks have yet been documented in Alaska as they have among the bighorns of Canada and the western United States.

Predators, including lynx, wolverine, coyotes and black and grizzly bears, have been known to kill Dall sheep and undoubtedly take a few each year. Golden eagles probably take a few newborn lambs. Wolves, the most important predator of sheep, take them whenever they can, but in general, predation appears to have little effect on sheep populations in Alaska. When occasional abnormal winters or overpopulations and consequent crowding force sheep to move further from the sheltering escape-cliffs to seek winter food, they may become quite susceptible to wolf attack. Under these conditions, wolves may actually kill enough sheep to reduce a herd to some extent. Under these circumstances, heavy predation might be beneficial to the sheep herd as a whole.

A few sheep are killed each winter by falling from icy ledges, and avalanches may take occasional animals. However, the main factor serving to control sheep numbers in Alaska is winter climate. Dall sheep are adapted to survive the normally cold and dry winters, but once in a while a wet midwinter snow that freezes into a crust and doesn't blow off the ridgetops, or a freezing rain, or thaw and freeze will cover alpine forage with an impenetrable sheath of ice and prevent sheep from reaching the feed beneath. Should such conditions persist long enough, many animals will starve and die. Such die-offs may affect local herds only, or may affect most of the sheep in Alaska if the causative weather conditions are sufficiently widespread.

Early-day market hunting was responsible for the reduction of some local sheep herds, but the current type of legal hunting of only adult rams has not been shown to reduce Dall sheep herds or to even control their natural increase, although where hunting is heavy, it may certainly reduce the number of legal rams in a herd. Between 1,000 and 1,200 legal rams are taken by hunters each year in Alaska.

Sheep populations in Alaska appear to be almost entirely regulated by climatic conditions. About

1940, there were estimated to be some 40,000 sheep in the state. In the mid-1940s, a series of severe winters so decimated the sheep herds that by 1951 the statewide population was estimated at only 9,000. Since then, the herds have again increased to where it is believed there are between 40,000 and 50,000 now in Alaska. It now appears that herds in some areas at least, have more or less stabilized and may be at about the maximum level their winter range will carry. Future population "crashes" may be expected should the necessary winter conditions again occur.

Hunting and Management

A large Dall ram is considered by many to be one of the world's outstanding trophies. Over most of the state, only those rams with horns of $\frac{3}{4}$ -curl or larger may be legally taken. Hunting of females and young rams is permitted only in several closely regulated herds in an effort to determine whether herds can thus be controlled and properly balanced with their food supply.

The sheep hunting season usually opens in early August and extends to mid-September. Hunting Dall sheep in the spectacular beauty of their alpine habitat is an unforgettable experience and generally requires careful stalking and considerable physical stamina. Proper lightweight equipment is a necessity. The weather may change from warm and sunny to near blizzard conditions at any time, so adequate clothing and shelter are needed, as well as food to weather out a storm.

The sheep hunter does well to carry a good pair of binoculars and a spotting scope to locate and identify legal rams. An accurate, scope-sighted rifle is a great help in selecting the right ram from a group and in placing an accurate shot for a humane kill. The successful hunter receives an additional bonus to his impressive trophy: sheep meat is one of the best of all wild game meats, and is considered a gourmet item on almost any table.

Of course, photographers are not limited to any season of the year, and photographs of these exceptional animals are often as valuable a possession as a trophy head. □

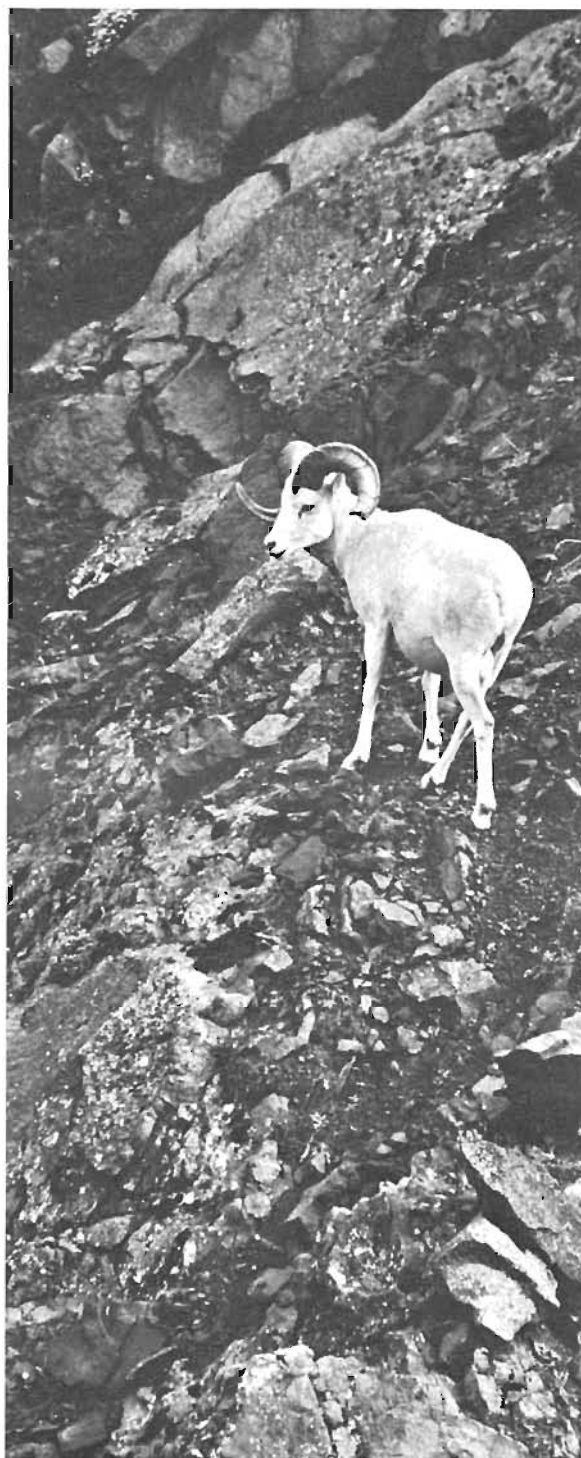


photo by Leonard Lee Rue III

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