

BIGHORN SHEEP SEASONS IN MONTANA, 1872 - 1985

John J. McCarthy. Mont. Department of Fish Wildlife and Parks.
Box 284, Augusta, Mt. 59410

Abstract: Liberal hunting seasons in Montana from the late 1800's into the early 1900's resulted in the closure of bighorn hunting from 1915 until 1953. With the advent of the Pittmann-Robertson program in 1941 Montana began its research and management programs dealing with bighorns. By 1984 an estimated 4600 sheep were found in the State, and a variety of season types were being used to manage these populations. Season types and their impacts on the hunting opportunities and sheep management are discussed.

Bighorn management in Montana provides a diverse choice of opportunity to hunters who pursue this species either for its trophy value, the aesthetics of the hunt or for the meat. When applying for a sheep permit in the state a hunter can choose between limited entry hunts for areas offering any ram seasons, either sex seasons, ewe seasons, or seasons specifying rams 1/2 curl or less or 3/4 curl or better. If a hunter chooses he may forgo applying for a permit in limited areas and simply buy a permit for areas offering unlimited entry hunting.

I would like to examine some of the circumstances that have brought about this variety of seasons, and some of the implications of these seasons in regards to management and hunter opportunity in the State.

HISTORY OF BIGHORN REGULATIONS AND HARVEST IN MONTANA

Montana, during its early settlement days, went through a series of events similar to those of surrounding states and provinces in regards to the management of bighorns. Extremely liberal seasons were gradually honed down until, in the face of extinction, bighorn hunting was outlawed in an attempt to reestablish dwindling herds.

The first laws regulating the hunting of bighorns was enacted in 1872 by the Territorial Legislature closing the bighorn season from February 1, to August 15 each year. No limit was placed on the numbers any one person could harvest. In 1895 the Legislature limited the number of bighorns that could be harvested to eight per individual, and set the season dates to between September 1, and January 1, each year. In 1910 season dates were reduced to the period of October 1, through December 1, and the bag limit was reduced to one animal. In an attempt to salvage what was left of once abundant bighorn populations all hunting of the species was prohibited in 1915. (Couey and Schallenberger, 1971)

Despite the ban on hunting bighorn, numbers continued to decline and by 1930 only small remnant bands existed in the State. By this date bighorns had disappeared from the Missouri Breaks, the Crazy Mountains, The Snowy Mountains, Judith Mountains, Pryors, Little Rockies and the Bear Paws. In 1950 it was estimated 1100 bighorns in 12 different herds, including Glacier Park, were all that remained in the state. (Couey,1950)

With the advent of the Pittmann-Robertson program in 1941 Montana began its research and management programs dealing with bighorns. These programs were aimed at increasing native populations within the State and reestablishing huntable populations in native bighorn habitat. The first bighorn transplant took place in 1942 when 11 sheep were moved from the Sun River Herd to the Gates of the Mountains. By 1974 Montana was occupied by twelve native bighorn herds and 14 transplanted populations. By 1984 ten of the 12 native herds, and 13 of twenty transplanted herds were being hunted. An estimated bighorn population of 4600 head occupied the state.(Janson, 1974; Rogrud, 1983; Thorne et al,1984)

Hunting had begun again in 1953 when a total of 30 permits for 3/4 curl rams was issued in three different areas. Two of these areas, the Spanish Peaks and the Absaroka - Stillwater, were combined and established as unlimited hunting districts in 1956. Permits were first issued for an either-sex hunt in 1967.

Annual bighorn harvests between 1953 and 1958 ranged from 20 to 70 animals. Data derived from questionnaires between 1959 and 1970 indicate harvests varied between 55 and 80 animals for the different years. During this same period hunter success ranged between 59 and 74 percent in the permit areas and 5 to 14 percent in the unlimited areas.

From 1971 through 1980 an average of 116 sheep were taken per year with a range of 79 to 166. A good deal of this increase in numbers was due to the increased numbers of ewe permits issued after 1977. Hunter success in the limited hunting areas averaged over 70 % during this period and hit a high of 92% in 1980. Success in the unlimited areas continued to range between 2 and 5 percent.

In the period from 1981 to 1984 numbers of sheep harvested averaged 262 and ranged from 195 in 1981 to 349 in 1983. Hunter success in the limited areas averaged 93% during this period and also increased in the unlimited areas to an average of over 5% with a high of 7% being recorded in 1984.

Despite the offering of a variety of permits the demand for hunting rams still far exceeds the supply. In 1973, 2619 applications were received for 85 ram permits in limited hunting areas, which gave an applicant one chance in 31 of receiving a

license. In 1983, 7679 applications were received for 133 ram permits. This was a 293 percent increase in applications and an increase of 156 percent in the numbers of permits issued, however chances of drawing a license have also increased to one in 58.

In 1985 Montana offered bighorn hunting in 26 districts, eight of which supported unlimited hunter entry on a quota of 19, 3/4 curl rams. A total of 57 any ram permits, and 34 either sex permits were issued in ten and nine districts respectively. Fifteen total permits for rams with less than 1/2 curl of horn growth were valid in two districts and only two district required the taking of 3/4 curl rams using limited entry hunting. Seven permits were issued in these districts. Besides the 132 permits for rams issued statewide 112 ewe permits were also issued.

MANAGEMENT STRATEGIES

Unlimited Areas

Since 1956 bighorn populations in the Hilgards, Spanish Peaks, Beartooth Plateau and Absaroka Range have been open to unlimited entry hunting for 3/4 curl rams. Because the rugged terrain and difficult access of these areas severely limit hunters they have been set aside to provide the maximum hunting opportunity, with the least effect on the bighorn population. Since 1974 the harvest has been regulated by quotas for each of the eight hunting districts making up these areas.

Season dates for these areas are set to coincide with migrational patterns, usually opening and closing earlier than other season in the state. Closing dates occur prior to the time of migration to wintering areas. One exception to this is the area around Red Lodge where seasons are held open until migrations have taken place, which is the only time animals are available to the hunter.

Quotas in these areas are based on the numbers of 3/4 curl rams observed on wintering areas the previous year, and while they have been reached within a few days following the opening of the season they are generally not filled until near the seasons end. Successful hunters must report kills to the Department within 48 hours and any animal taken with under 3/4 curl is counted against the quota. Seasons in seven of the eight districts can be closed on 48 hours notice, and the remaining district may close on 12 hours notice.

Any Ram and Either Sex Seasons

Any ram seasons and either sex seasons allow hunters to take their choice of any ram, or any sheep, within a specified district. They accounted for 73 percent of the permits used to

harvest bighorn rams in Montana in 1985. Numbers of permits are based on the number of 3/4 curl rams wintering in the various hunting districts. These type seasons are generally combined with ewe permits in most well established herds in the State.

Some of the management advantages to this type of season are:

1. It's simple, it's easy for the hunter to understand and does away with the pressure of having to meet arbitrary age or curl requirements. In many cases these requirements cannot be justified biologically. They actually serve in the perpetuation of the "Boone and Crockett syndrome" that so many management biologists decry as having done a great disservice to the sport of sheep hunting.

2. It allows for a better distribution of the harvest through the age classes in the ram segment of the population. While most permit holders are still "trophy" hunting, each year a portion of those animals taken fall into the two to three year old category. The literature would indicate that the expected annual natural mortality for bighorn rams between the ages of 2.5 and 7.5 is between 2.5 percent and four percent (Geist, 1971; Cowan and Geist, 1971). Under these circumstances harvest of rams in the two to three year old categories can be considered compensatory, as long as the rates of harvest do not exceed expected rates of natural mortality. Stewart has determined mortality among two-year-olds in some areas may exceed 30 percent adding additional leeway to the harvest of 1/2 curl rams (Stewart, 1980).

3. Because permits are based on a percentage of rams that will be in the 3/4 curl or better category during the hunting season, rams that are taken that are just 3/4 curl or less essentially leave an older, larger ram in the population. Assuming nature doesn't get him he will still be in the huntable population as well as the gene pool the next year.

4. This type season does away with the inconsistency with which rams enter curl categories, it also allows for the taking of animals that will never reach a prescribed category no matter how long they live. The combined factors of genetics, habitat and age determine whether or not an animals will become 3/4 curl or better and at what stage in its life this will happen. Herds in Montana seldom have rams over ten years of age. We do however, have males entering the 3/4 curl category any where from 3.5 to 5.5 years of age, and reaching the 7/8ths category by the age of 5.5. Others, because of brooming, genetics or natural mortality never reach this 7/8ths category.

Half Curl Seasons

Seasons permitting the harvest of rams having only 1/2 curl or less were initiated in 1984 as a population control measure in two different hunting districts. Both areas are associated with wintering herds on private lands and require close control of population growth. The theory behind this season is again, younger rams may be removed from a population without affecting the future number of larger animals as long as removal rates are compensatory for, and not additive to, natural mortality. As long as this requirement is met these smaller rams may be taken from a population without reducing either the reproductive base, or the numbers of larger rams available to the hunter. Ewe permits are also incorporated into these seasons in order to maintain population stability.

3/4 Curl Permit Seasons

Regulations requiring the harvesting of rams having 3/4 curl or better have been retained in two hunting districts in the State. In one area adjacent to Yellowstone National Park two permits are issued to harvest rams that are unavailable until they reach winter range. Animals in the area receive a good deal of public attention and it is felt there is better public acceptance of this type season than one allowing the harvest of smaller animals. The other area having only 3/4 curl permits is composed of a small group of native animals in the West Bitter root. Rams in the area do not attain the 3/4 curl category until approximately five years of age. The overall population is being limited by competition with elk and livestock and under the current circumstances this is felt to be the most liberal season that can be maintained in the area.

Ewe Permits

As stated previously ewe permits were first issued in Montana in 1974. By 1983, 288 total permits were being issued in 11 hunting districts. Following recent die-offs in the Sun River and Beartooth herds, and some extensive population control measures in the Thompson Falls area, the numbers of permits were reduced to 112 in 1985. These seasons start with the opening of the general big game season and run through the end of November. The majority of animals are taken during the later portion of the season as animals begin to concentrate on winter ranges. These permits are being used to manage the female segment of populations in well established herds across the state. There seems to be a direct correlation between the accessibility of ewes and the popularity of this permit, and hunter success runs between 60% and 95% depending on the location of the hunting district.

Outlook For the Future

Some possible changes that may occur in future seasons in the State may include the additional use of 1/2 curl permits issued in more areas as population control measures and to provide additional man days of recreation. In order to reduce the high rate of hunter success, which has been estimated at over 90 percent since 1980, and again provide additional man days of recreation, managers are looking at increasing the numbers of permits available for rams and setting up earlier seasons to reduce the ram harvest on winter ranges.

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Table 1. Habitat Use by Bighorn Sheep During Autumn, 1982-1984, Ford Creek, Rocky Mtn. Front, Montana

	1982	1983	1984
No. Relocations	14	17	11
Elevation (Ft.)	7154	7264	7336
Slope (%)	59	64	51
Cover Type (%)			
Rock/Bare	53	72	82
Open Timber	47	22	0
Timber	0	6	0
Grass	0	0	18
Habitat Components (%)			
Ridge	27	28	82
Talus Slope	27	56	9
Cliff	6	10	0
Mtn. Grassland	13	0	9
Sidehill Park	27	0	0
Timber	0	6	0

Correlation Coefficients (r) for cover types and habitat components were all $> .90$ for comparisons between 1982-1983, 1983-1984 and 1982-1984.

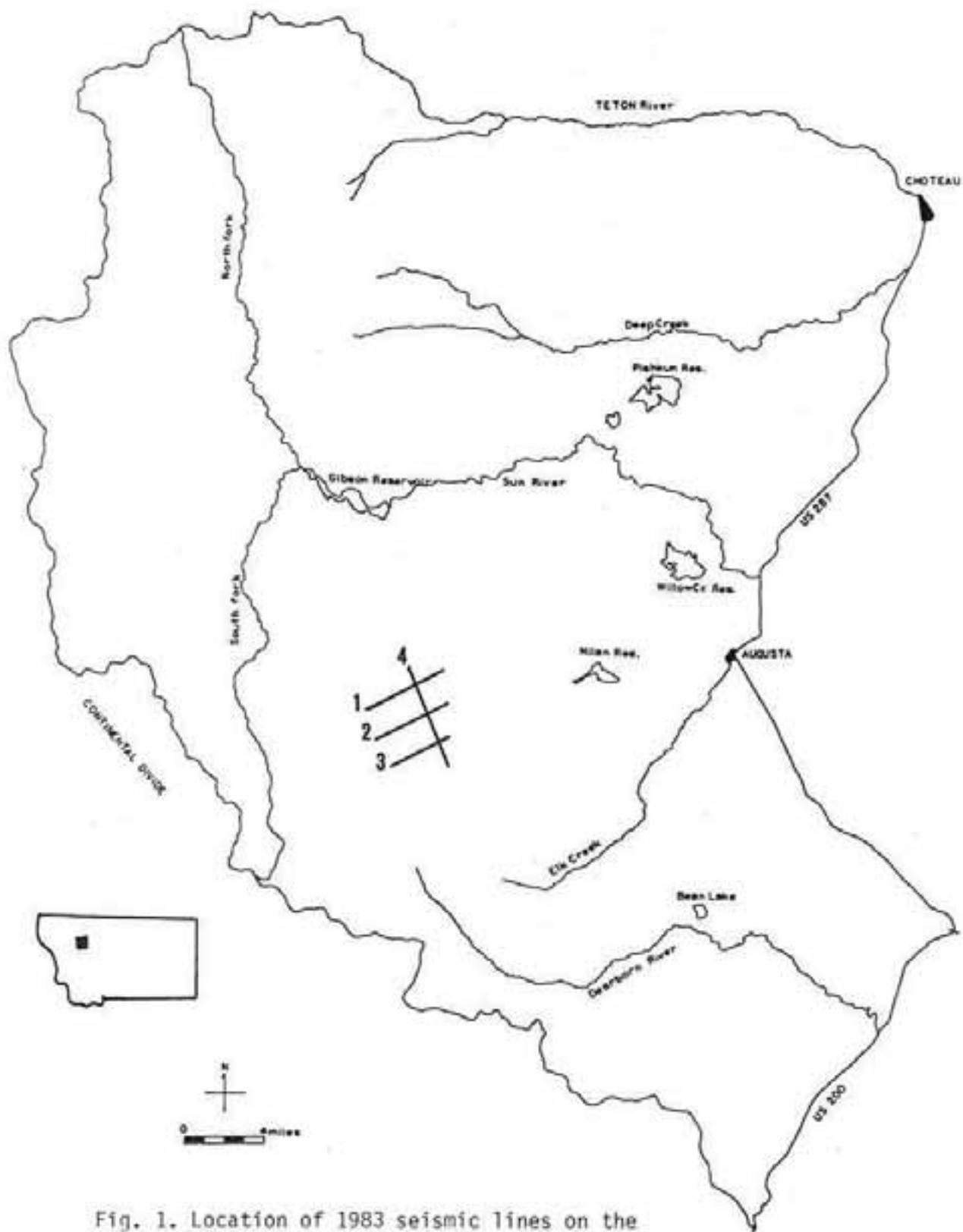


Fig. 1. Location of 1983 seismic lines on the Ford Creek study area, Rocky Mtn. Front, Montana

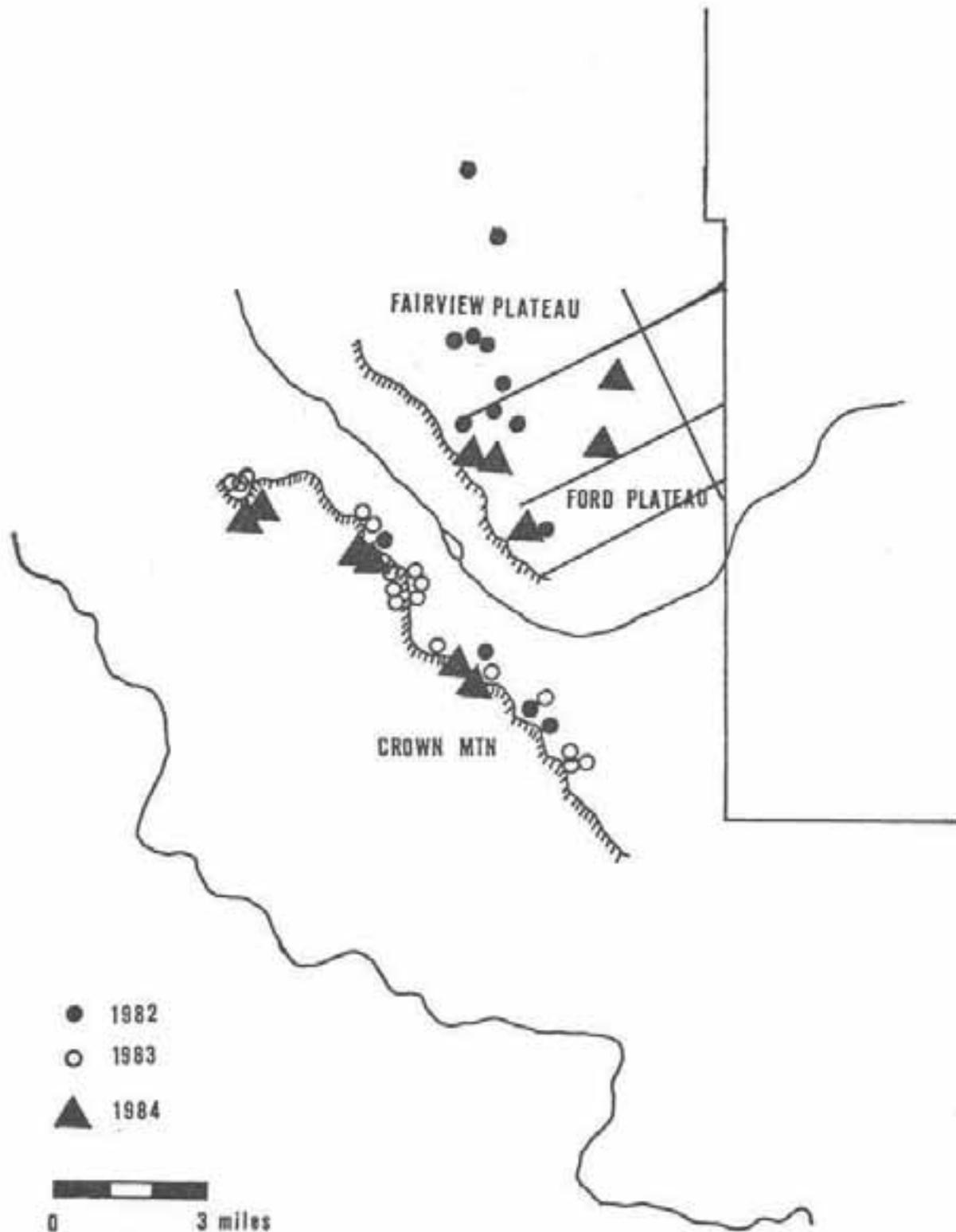


Fig. 2. Relocations of bighorn sheep, autumn 1982-84, Ford Creek study area, Rocky Mtn. Front, Montana

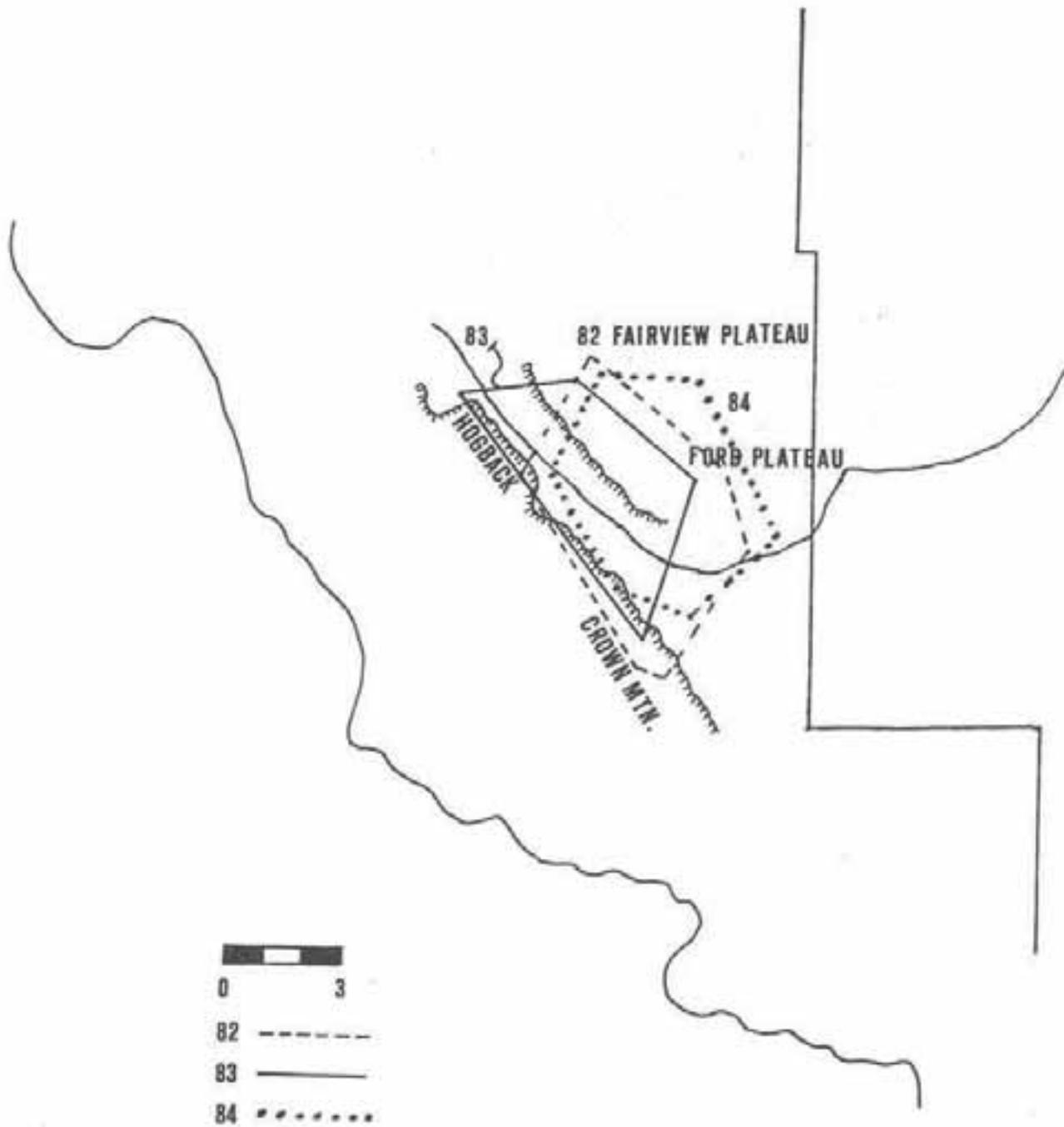


Fig. 3. Sheen 3204 (adult ewe) annual home ranges during 1982-84, Ford Creek study area, Rocky Mtn. Front, Montana