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Vol. 6
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Jun 1977

STATE DOCUMENTS

MONTANA

Wildlife

VOL VI — No. 1 Montana Fish and Game Department Official Publication





Le Carcajou

As stories pass through the generations, man's imagination builds upon them until minor incidents become legendary feats. Such is probably the case with Gulo, the glutinous, squat, shaggy wolverine. French-Canadians call him Carajou.

Though his ferocity and cunning may often be overrated, there is probably no other North American animal which could match, pound for pound, the vicious disposition and tenacity of the wolverine.

So impressed were the Indians with the little, bow-legged bundle of fury that they believed his body housed evil spirits. Even among many northland trappers, it was believed that only a silver bullet could end a wolverine's life. And woe to the trapper who found his trapline scourged by this species for, reportedly, the destruction of trapped ani-

mals, caches and trap sets could mean almost total loss of a season's work.

At present, it appears that wolverines in Montana are increasing in numbers. In the period from 1950 to 1955, 20 or more were shot or trapped in northwestern Montana (Newby, 1955). This apparent rejuvenation of the wolverine population follows a period of quiescence in which it was feared the species was nearing extinction. Very probably, the increase in northwestern Montana is an overflow from animals reared in Glacier Park and other wilderness areas.

This rare shot of a wolverine was taken this winter by Mrs. John Fabian, West Glacier, Mont., while out driving with her husband. Mr. Fabian is the winter caretaker of various hotels and camps in Glacier Park.

MONTANA FISH AND GAME DEPARTMENT

Official



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Our Cover - from an original drawing by Vern Craig

Inquisitive young grizzly cubs are far from being up to their specific name **Ursus horribilis**. These ursine youngsters enjoy a scamper or an enthusiastic wrestling match as much as any black bear cub.

At birth, the cubs are very small, usually weighing from 12 to 14 ounces. Compared to their mother, the offspring are relatively the smallest mammals at birth, or about 1/500 to 1/600 the size of the adult. The cubs remain under the guiding influence of the mother until they are two years old.

Although grizzlies are thought to be primarily carnivorous, like other members of the bear family, they are vegetarians by preference.

These huge, and long unchallenged monarchs of the western ranges can easily be distinguished from their black bear cousins by the size of their foot prints. The track of an average grizzly measures approximately 6 to 7 inches in width and 12 to 14 inches in length.

Montana Wildlife

Vol. VI

No. 1

Mary Moore, Editor

Vernon Craig, Artist

TABLE OF CONTENTS

Le Carcajou.....	Inside Front Cover
Flood Control Begins at Home.....	3
Face-Lifting for Fishing Regulations.....	5
Fur Production in Montana.....	7
Wilderness Monarch.....	14
Montana Sportsmen's Clubs.....	18
The Commission.....	19
The Grayling—An Endangered Species.....	20
Montana's Big Game Transplanting Program.....	22
Black Bear Boudoir.....	Inside Back Cover

Spring Issue — 1956

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GUEST EDITORIAL:

Flood Control Begins at Home

For many years our national government has been spending billions of dollars on flood control dams, dikes and river improvements to protect the unfortunate valley dwellers from destructive floods. These costly improvements, however, are possibly hindering the solution of this national problem.

In the first place, what caused these floods? The original cause was started with the overgrazing and plowing of land that should never have been treated in this manner. Therefore, the land was robbed of its water holding capacity.

The project of building dams on rivers to help control over-flowing water is justified to a certain extent; but, if we would stop and think, we would find the trouble begins at the watersheds, not in someone's flooded home. Then, the question is asked, "If the watersheds are the beginning of the trouble, why are they not considered as a part of the problem?"

Let us consider a typical watershed at the head of a river system. The farmer who owns this land uses it to his own selfish advantage only, seldom thinking of his fellow men, particularly those thousands of miles below him being flooded every spring. What can be done about someone as selfish as he? There is only one apparent solution and that is to try to educate him, so that he will know the wrong he is doing.

The solution to this problem then, lies in educating the general public. To put this thought into use, the purpose of our Terra Verde Project actually is to prevent floods, erosion and damage to our natural resources. We are practicing conservation and attempting to show the public what can be saved if we conserve our resources. If all of us would take into consideration our neighbors and the future of America, we would have to worry little about what happens tomorrow.

To summarize, we feel that more of the billions of dollars spent on flood control should be given to the improvement of our watersheds, and to conservation education.

* Reprinted from Vol. 3, No. 3, of the Green Hornet's Buzz, written and edited by the 8th Grade Class of Corvallis Junior High School, Corvallis, Montana. This group has gained national attention for the past several years for practical application of conservation truths on their own 160-acre forest plot in Ravalli county, Montana. The experimental area is named Terra Verde, or Green Earth.

Face Lifting for Fishing Regulations

by Charles K. Phenicie
Chief Fisheries Biologist

Did you ever take a look at the fishing regulations for Montana and shudder? We in the Department do many times a year, when we write them and each time we explain why this or that regulation is made.

In some respects, fishing regulations have characteristics of a communicable disease which spreads and spreads until it assumes epidemic proportions if allowed to proceed unrestrained. Montana's fishing regulations have grown in just such a manner, until in 1955 they filled a 63-page booklet.

Much of the detail in the fishing regulations is there because some group or groups of sportsmen have requested that a regulation be made or that an exception be provided for some general regulation. It is only fair to note here that we in the Department are equally guilty about inserting pet theories into the regulations or in making special regulations for waters of particular interest to us. But regardless of responsibility, the regulations have grown into a formidable document.

All will agree that fishing in Montana is a sport, a recreational outlet, and because of this we should make every effort to have fishing as enjoyable and relaxing as possible. One aspect of this, of course, is providing

fish to catch. Don't we, however, in our anxiety to do the right thing by the fish populations, lose sight of the fact that by over-regulating our fisheries and by making the regulations unnecessarily complicated we are only detracting from recreational enjoyment of fishing?

Most fishermen find little enjoyment in pondering over verbiage prior to a fishing trip. As a consequence, many go into the field without knowing whether or not they are violating a regulation. They are consoled mainly by the fact that, since they have never yet been checked by a game warden, probably they will not be today.

The Fish and Game Commission is making a concerted effort to simplify the regulations. This year they took a major step in this direction. In the past, regulations have been made by counties. The regulations for the coming year are based on drainage areas instead, eight of them. Thus, in place of 56 management areas, the regulations will have but eight.

The fishing regulations for 1956-57 have not been altered greatly in content. The main change has been to rewrite the previous year's regulations in the new drainage form, resulting in simplification. And the change will result in a monetary

saving. It cost approximately \$15,000 to print the 1955-56 regulations, and the estimated cost for printing this year's regulations is \$5,000, a saving of \$10,000.

Have you ever considered why we have regulations? Considering the regulations and laws we have, it appears that they were adopted for five main reasons: 1. To prevent over-fishing a population of fish and to provide the most equitable distribution of available fishes among the fishermen; 2. to cause fishermen to use sporting means of taking fish and to prevent these fishermen from being a nuisance to other anglers; 3. to protect a fishery from being ruined by introduction of undesirable fish; 4. for purpose of public health and safety; and 5. for purposes of psychological response.

Most often when a regulation is proposed, we envision that it will make fishing better or prolong good fishing. (No. 1 above: To prevent over-fishing a population of fish and to provide the most equitable distribution of available fish among the fishermen.)

Almost without exception, such regulations are, whether recommended by Department personnel or by sportsmen, made purely on a hunch or on an opinion that they will do some good. Exceptions to this statement are seasonal closures of some streams tributary to a lake which are used for spawning. Look through the regulations and see how many of the entries are made for reason No.

1. We would be hard-pressed to justify most of these.

The object is to simplify the regulations as much as possible and to keep them as simple as possible. But on the other hand, we want to take adequate steps to insure that fishing will remain good. Too often, however, when fishing success either declines or appears to decline, we blame overfishing and propose either a new regulation or a plant of hatchery fish. More often than not, there is another cause—the true cause. This goes undisclosed and uncorrected, and fishing either gets poorer or stays poor.

What we are proposing is this, that we all start looking at the fishing regulations intelligently for what they can accomplish and not as one of the two great cure-alls to fishing ills. Since the monies we have available for research and investigations to determine what really is needed are very limited, it will still be necessary to use the regulations somewhat to test an informed guess. But if each of us will be alert to the needs which regulations can fill, we will have simpler and more adequate regulations.

In addition to this, and even more important, if each of us will be alert to the natural requirements of fish, the true cause of fishing ills can be determined; and well-guided efforts will see our streams and lakes remaining in such a state of naturalness that excellent and sustained fisheries will be guaranteed.

Fur Production in Montana

by Fletcher Newby, Fur Biologist

Wildlife Restoration Division

While most Montanans know something of the part played by trappers and fur traders in the exploration and settlement of the wilderness that became Montana, probably few have realized that the fur trade still is a small but important part of the state's economy.

Fur animals constitute a renewable resource worth millions of dollars to the people of Montana. Results of the economic survey conducted each year by the Montana Fish and Game Department show that 312,000 pelts, worth nearly one and one-half million dollars, were taken during the last four trapping periods.

An investment of more than eight million dollars, capitalized at four percent would have been required to produce a comparable average annual income of \$335,250.00. This direct cash return to the trapper places fur animals in a unique position among our wildlife resources.

Four species—beaver, mink, muskrats and marten—produced over 90 percent of the pelts and nearly all the income, reflecting current market trends.

Last trapping period, November, 1954 through April, 1955, was the most successful of the four year period. Improved management plans and relaxed regulations in many

areas permitted a better harvest of fur animals. During the winter of 1955, interest in trapping was further stimulated by unusually active fur markets. After several years of declining prices, pelt values for some fur animals rose considerably.

A glance at the three regions of Montana (Fig. 1) and the table shows that these areas differ considerably in several important characteristics. Management plans for the various parts of the state must necessarily take into account these essential differences.

Western Montana

This area of Montana had always produced the most fur. As a basis for comparison, western Montana, during the 1954-55 trapping period, produced 28 pelts per township while the central and eastern areas produced 21 and 16 pelts per township, respectively.

Until the 1953-54 trapping period, trappers in western Montana were most interested in taking muskrats. That year, because of a sharp drop in muskrat prices, many trappers lost interest in muskrats and spent more effort in taking mink. This resulted in very high trapping pressure on mink in some areas. In view of this situation, measures were taken in the 1954-55 period to reduce this

FIG. 1 1954-1955 Fur Harvest

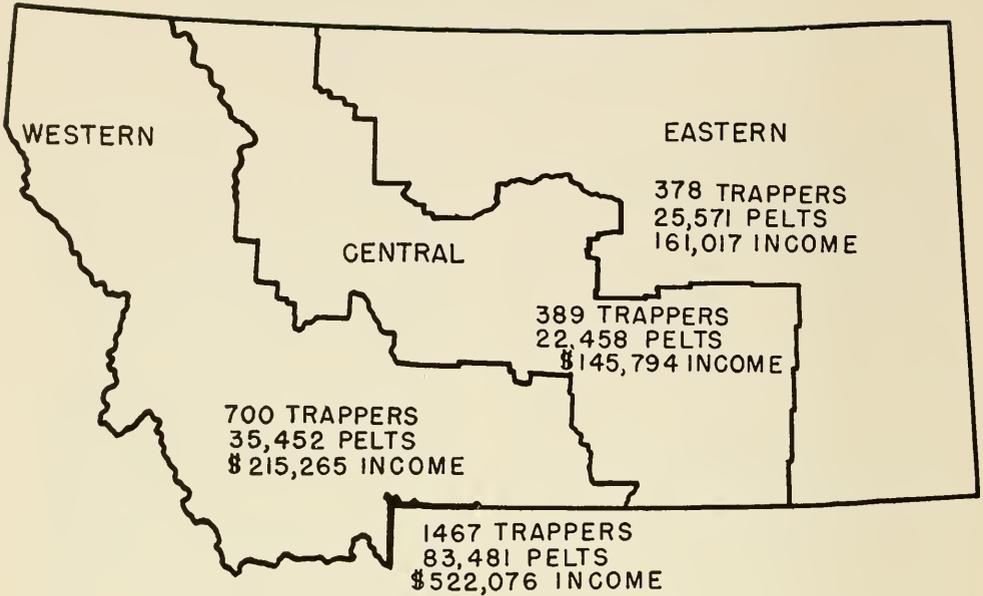


Table 1
GEOGRAPHIC COMPARISON OF
SOME IMPORTANT CHARACTERISTICS

	Western	Central	Eastern
Total Area	33%*	27%	40%
Total Forest Area.....	79%	18%	3%
Origins of Stream Flow.....	65%	25%	10%
Human Population (1950 Census).....	44%	34%	22%
Winter Unemployment.....	48%	33%	19%
Total No. of Trappers.....	48%	26%	26%
Total No. of Pelts.....	42%	27%	31%

*(All percentages on basis of 100% for entire state.)

pressure by diverting it to other species and other areas. Where fall trapping previously had consisted largely of mink trapping, trappers were given muskrats and beaver to trap as well. In addition, more lenient muskrat and beaver seasons elsewhere attracted some trappers to other areas. Results of these measures were generally satisfactory, with the exception that the muskrat take remained too low, due to continuing poor prices. A spring muskrat season would have increased the catch considerably since the market improved during the winter. Unfortunately, experience has shown that active spring muskrat trapping in the western portion of the state usually results in the accidental and illegal trapping of too many mink. This can be damaging when the fall harvest of mink has been all that the population will stand without reducing the breeding stock.

A different mink-muskrat situation arose in the present 1955-56 trapping period where unfavorable weather conditions during the fall months held the catch of mink and muskrat below the desired harvest. In this case it was felt that spring trapping of muskrats would not endanger the welfare of mink populations.

Beaver were not the problem in western Montana that they were in some other portions of the state. As a result, the 1954-55 beaver catch was held at about the same level as the previous year in order to produce the maximum allowable harvest. At the same time, an adequate breeding stock was retained to produce another crop for the next season.

Central Montana

Interest in trapping in central Montana was not as great as in the western areas. Although numbers of trappers had increased during the past four years, trapping pressure was not too heavy. As a result, management plans for 1954-55 did not aim at reductions in trapping. To the contrary, setting a number of "No Limit" beaver trapping areas in central Montana stimulated most types of trapping.

Although central Montana is almost as large as western Montana and has nearly as many people, there are only three-fifths as many mink trappers. Interest in mink trapping has increased steadily, as it has elsewhere in the state, with approximately 50 percent more trappers in the field during the 1954-55 season than in 1951-52.

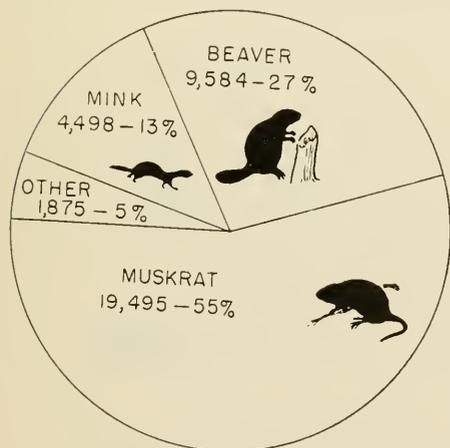


Fig. 2. Composition of Fur Catch in Western Montana, 1954-55.

Muskrat trapping in this portion of the state also increased slightly. More trappers took muskrats as a sideline to beaver trapping but the average catch per trapper fell slightly from the level of the previous year, indicating poor interest. The net result, however, was to increase the total catch by about one-tenth. A larger catch of muskrats would have

proper management required only removal of a crop of beaver pelts, limits and more restrictive regulations served to prevent overtrapping. The total 1954-55 beaver catch in central Montana was 50 per cent more than the 1953-54 take.

Eastern Montana

Eastern Montana is the largest of the three divisions but has the smallest population. Density of the human population averages slightly more than two persons per square mile while western Montana averages well over five people per square mile.

Interest in trapping in eastern Montana increased greatly in the last four years as the result of more lenient regulations and longer seasons. In the 1951-52 period, one person in 650 held a trapper's license; by 1954-55 this rose to one in 340, an increase of almost 90 percent. Management plans for this area thus have encouraged greater use of the fur resource.

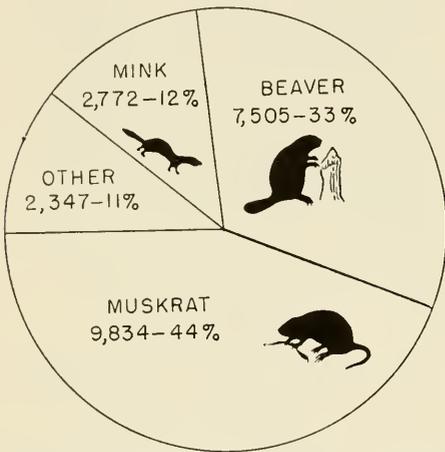


Fig. 3. Composition of Fur Catch in Central Montana, 1954-55.

been desirable, but as in western Montana, a spring muskrat season after a large fall catch of mink would have resulted in the undesirable capture of too many mink. Because of the bad weather and small catch of both mink and muskrats in the fall of 1955, a spring muskrat season has been set for 1956.

Increased beaver trapping in central Montana was encouraged in several areas by setting long "No Limit" seasons. Previous harvests in these areas had been inadequate and serious conflicts with farming and ranching activities had developed. In other parts of central Montana where

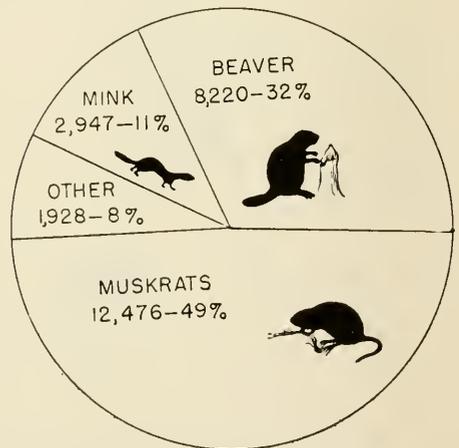


Fig. 4. Composition of Fur Catch in Eastern Montana, 1954-55.

Regulations affecting the take of mink have remained practically the same through the years; however, increase in trapping interest through changes in beaver and muskrat seasons also caused a rise in the take of mink. Mink trappers in the 1954-55 period were more than double the number in 1951-52, and the average catch per trapper also was more than doubled. The end result of these increases was a total catch in 1954-55 nearly four times that of 1951-52. This same upward trend also was present in the muskrat take.

Interest in muskrat trapping fell in central and western Montana when prices for muskrat pelts declined. While eastern Montana trappers did not trap as hard individually after the price drop, the increasing number of trappers kept the total take rising. In the 1954-55 season the average catch per trapper regained the level of the 1951-52 season, indicating a recovery of interest in muskrat trapping.

Management practices applied to eastern Montana have resulted in increased use of the fur resource. While the present harvest appears to be satisfactory, it will be necessary to keep careful watch on the situation to prevent over-trapping, especially mink. It is of primary importance to maintain an adequate breeding stock in all areas suitable for fur production.

Irrigation districts in eastern Montana were the worst beaver problem areas in the entire state. Beaver

trapping under Landowner Permits was completely inadequate to harvest even the annual increase of populations in this area, much less to reduce the breeding stock. New legislation in 1953 gave the Montana Fish and Game Department the means to correct this situation.

Although large limits doubled the take in the 1953-54 period, continuing damage complaints and field observations indicated that much heavier trapping would be needed to reduce beaver populations in areas of intensive agriculture. As a result, during the 1954-55 beaver season, all areas where serious agricultural conflicts were known to exist were declared "No Limit" areas. Catch figures and counts of beaver colonies showed that these measures were much more effective in obtaining the desired take. The catch in the Milk River area, for example, was more than three times that of the previous year and seven times that of 1952-53 (see Table 2). Beaver trappers in eastern Montana were very active under the lenient regulations of the 1954-55 season, taking an average catch of 47 beaver per trapper as compared with averages of 38 and 20 beaver per trapper for central and western Montana.

State Summary

Although the number of active trappers in the 1954-55 period did not change much from the previous year, the regional distribution shifted considerably (see Table 3).

TABLE 2. Beaver Take in Milk River Area.

	1952-53	1953-54	1954-55
Landowner Permits	592	427	295
General Season Permits.....	820	3998
Total Take	592	1247	4293
Ratio of Take	1	2	7

In western Montana, however, where pressure on mink had possibly become excessive, a slight decrease was obtained. In eastern Montana, on the other hand, where undertrapping had been the case before, a sizeable increase in the number of mink trappers was noted. The mink catch in these areas followed a similar pattern.

A small rise in the statewide muskrat take over the 1953-54 low showed slightly greater interest in this animal. Actually, the increase occurred entirely in central and eastern Montana. Management measures which might have similarly increased the take in western Montana had to be avoided in order to safeguard mink populations against the accidental and illegal spring trapping of mink. Although trappers may legally trap muskrats in the spring in eastern

Montana, more emphasis is placed on fall trapping. As a result, the problem of spring mink trapping is not as serious.

Beaver are Montana's most important and controversial fur animals. The 1954-55 catch of more than 25,000 beaver was worth over \$300,000. **This size of this take can be better appreciated when it is pointed out that this catch was larger than that of any other state or Alaska.** In addition, water storage by beaver often improves an area for other forms of wildlife and contributes to water and soil conservation. On the other hand, this ability of the beaver to change his surroundings often results in damage to water control structures, culverts and bridges, trees and other streamside cover. This is particularly true when beaver are not properly harvested.

TABLE 3. Number of Active Trappers.*

	West	Central	East	State
1943-54	696	325	222	1243
1954-55	568	349	320	1237

*Trappers who caught at least one fur animal.

Beaver management requirements differ greatly in various parts of the state. In most of the western area, where interest in trapping has always been good, serious over-population was less prevalent than in some sections of the central and eastern areas. As a result, beaver trapping in western Montana has been carefully regulated by restrictive limits. This also has been the case in certain parts of central Montana. In other central areas, and in nearly all of eastern Montana, beaver trapping has been actively encouraged by fewer restrictions in an effort to reduce breeding populations to more reasonable levels. Build-up of beaver populations in these areas had progressed for several years due to declining prices and legislative restrictions on trapping. When these populations have been reduced to satisfactory levels, future management plans will only call for removal of an annual sustained crop.

Montana trappers are among the more fortunate in the United States. Because of the small human population, the large land area and the presence of good numbers of fur animals, the income per trapper is one of the highest in the country, averaging about \$350.00 for the 1954-55 season. Obviously, many professional trappers make much more than this and trappers who spend less time afield may make considerably less.

The Fur Resources section of the Montana Fish and Game Department has as its management objective the wise use of the fur resource through seasons and regulations based on factual information gathered by careful study. Reliance upon facts, without reference to sentiment or prejudice will insure that the people of the state will continue to reap the benefits to be derived from the fur resource of Montana.

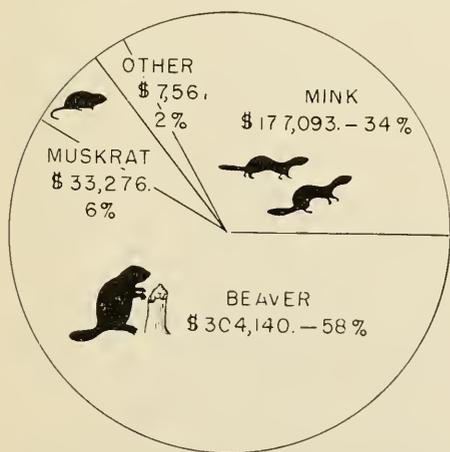


Fig. 5. Total Value of Fur Catch for Montana, 1954-55.

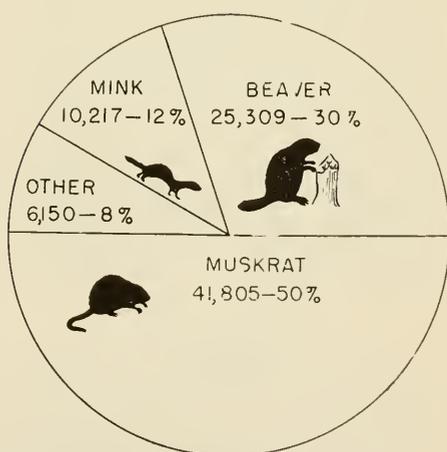
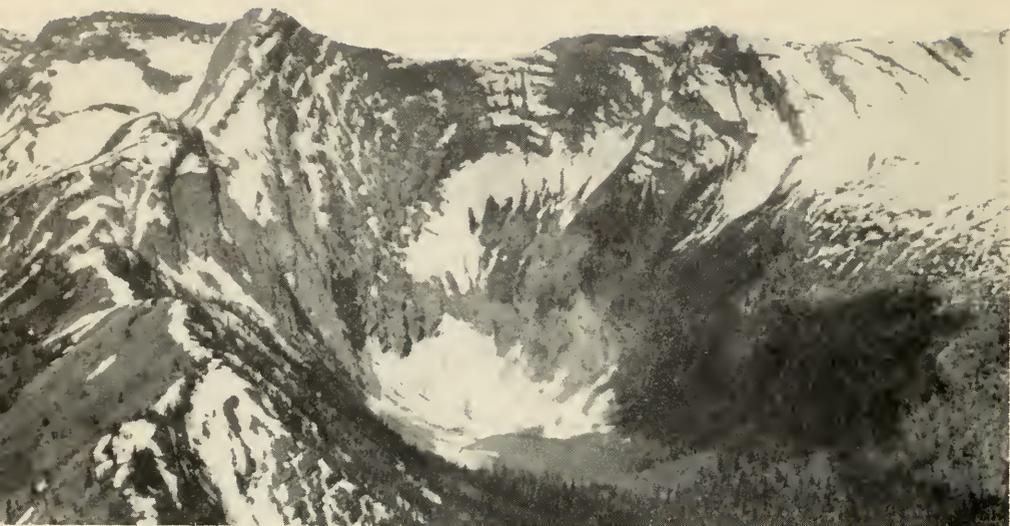


Fig. 6. Total Fur Catch for Montana, 1954-55.



WILDERNESS MONARCH

by Robert F. Cooney, Coordinator
Wildlife Restoration Division

It is difficult to believe that the grizzly bear in the United States is moving dangerously close to extinction. Until the appearance of white men upon this continent, this huge, self-reliant animal had met no serious challenge to his supremacy. Since that time, however, a continuous battle with guns, traps and dogs has been waged against this silver-tipped monarch over much of our western country.

Early Records

Legend and fact are inseparably intermingled in the history of this

great bear. Vague references about bear were made as far back as the period when the Spanish were carrying out explorations into the southwest in the early sixteenth century. Later, the employees of the Hudson's Bay Company and others of the early fur trade undoubtedly saw grizzlies in the Canadian West. Their journals mention a "gray bear" much larger and more ferocious than the black. Indian legend spoke often of this bear. To them to kill one was a feat of valor comparable to that of vanquishing a human adversary.

This paper was used in "Our Endangered Wildlife" published by the National Wildlife Federation for National Wildlife Week.

It was left, however, for Lewis and Clark during their famous exploration into the headwaters of the Missouri and Columbia Rivers in 1805-06 to bring to the world the first scientific description of the grizzly.

Description

Many estimates of weight and size are found in the early discussions of the grizzly. Some were fanciful, others undoubtedly authentic. Between four and six hundred pounds has been given as a fair average for a mature animal. Records of considerably larger bear are, however, available.

Even the earliest descriptions pointed out marked differences in temperament between the grizzly and black bear. Physical differences were also described. A somewhat concave facial profile, long slightly-curved claws on the front feet, a decided hump over the shoulders, coupled with a frosted appearance of the hair on the back and sides left little doubt in the mind of the early explorer that he was in the presence of a grizzly. A species which has since been recognized as one of the most famous and respected of big game throughout the world.

Historic Range

In order to better judge the present status of the grizzly it would be of interest to view for a moment his historic range. During centuries of adjustment this bear had become adapted to a vast variety of habitat. He was found throughout western North America from Mexico to the Brooks Range of Northern Alaska.

This original homeland extended eastward through what is now Texas, Nebraska, Kansas and the Dakotas and the Canadian province of Saskatchewan and the Territories of MacKenzie and the Yukon.

Alaska

The present range of the grizzly in Alaska, although somewhat lessened from that described by the earlier explorers, is still comparatively extensive. A recent well-authenticated report indicates that exclusive of brown bear, there are somewhat more than 10,000 grizzlies in Alaska today. The estimated harvest by hunters last year was 200. Looking toward the future, the Alaska Game Commission this year (1955-56) reduced the limit from two to one brown or grizzly bear per hunter in all the Territory except the panhandle. The spotting of grizzly from the air and then alighting nearby to obtain a trophy is illegal. As this type of operation is most common in the Anchorage area during the spring, some thought is being given to closing the season at that time until this problem has been overcome. It is encouraging to note that the Game Commission has taken definite steps to prevent over-hunting and that public attitudes toward the grizzly are more favorable now than they were in the past.

Canada

The grizzly range in Canada has retreated westward. An abundance of rugged wilderness-type territory still remaining in that area, however,

presents a natural protection for a substantial number of grizzlies.

United States

A far different condition is evident in the United States. Complete extinction of the grizzly has taken place throughout the majority of its historic range. This bear has long been gone from Texas, Arizona, New Mexico, Oregon, Utah and the Dakotas. California, with the grizzly bear on its state flag, and an early history of perhaps the heaviest concentration of grizzlies anywhere in the United States, has had no record of a living bear of that species since 1922. The State of Washington indicates that one or more grizzlies may still remain within their boundaries. Colorado, with perhaps ten grizzlies left, in the San Juan Mountains, in the southwestern section of the state, has declared that area as a Grizzly Bear Management Unit in which this rapidly vanishing species is given complete protection.

Idaho indicates that 60 grizzlies may remain within the borders of the state. They have had no open season on this bear for several years.

The State of Wyoming, with a vivid history of grizzlies, now lists not more than 50. Although of great interest to many as a game animal, the grizzly is still carried with the black bear as a predator under an old law. Spring hunting is in effect along with the legalized use of bait. The grizzly bear in Wyoming is still suffering from an early-day reputation as a menace to livestock.



Downed log is reduced to kindling by grizzly searching for grubs and ants to eat.

Montana lists 439 grizzlies exclusive of the national parks. Spring hunting was discontinued a number of years ago. A large grizzly bear closed area was in effect in Montana between 1942 and 1955. The hunting regulations distinguish between the grizzly and the black bear, the former being given special consideration and legally hunted during the season open to elk. Estimates for Glacier National Park indicate 100 grizzlies and for Yellowstone National Park, 125.

Thus, there appears to be somewhat less than 800 grizzly bear still remaining within the United States. Approximately one-fourth of these are found within the boundaries of two of our national parks. The remainder are scattered thinly throughout four states. Except for Montana and the national parks, the present status of the grizzly bear south of the Canadian boundary appears precarious. Even in Montana further reductions in wilderness habitat could cause a serious decline in the grizzly population.

What, then, has caused the extermination of this big bear throughout much of its former range, and what chance is there for its survival?

The Problem

Since the very beginning of the livestock industry in the West, the grizzly has been under suspicion as a killer of cattle and sheep. Its exact standing in regard to this accusation could be endlessly debated. Although omnivorous in feeding habits, there is no doubt that meat often makes up an important part of its diet. Before the coming of the white men, wild game amply filled this need. The domestic animals which took the place of the buffalo, deer and other game on much of the grizzly range presented a tempting target for its food-gathering activities. Serious predation was probably confined, however, to a small segment of the bear population. But all received the blame. Livestock interests throughout much of the West marked the grizzly as a distinct hazard to their business and carried out an active campaign of eradication. Kill for sport may well have influenced this decline in some areas.

An additional factor which is felt to be of particular importance today is the rapid change of the environment in which the grizzly lives. In this regard, wilderness-type range represents the most important requirement of present-day grizzly habitat. The rapid shrinking and virtual disappearance of this type of country throughout much of the West has

brought about the most serious condition the grizzly bear has yet encountered in its struggle for survival.

The Future

In facing the problem squarely, we must admit that valuable as the grizzly bear is, it cannot be perpetuated in substantial numbers in close proximity with important agricultural activities. Its future, therefore, will depend upon our success in retaining a reasonable amount of wilderness range. In this regard Yellowstone and Glacier National Parks are playing a vital role.

The Wilderness Area program throughout the West represents an additional important factor. A good example of this is the Bob Marshall Wilderness Area in Montana. This mountainous region covers approximately a million acres, plus a substantial fringe of roadless country beyond its borders. This wilderness area, accessible only by trails, represents the most important single factor in the maintenance of the largest grizzly bear population left in the United States.

It is obvious that we cannot restore the grizzly to anything like its former numbers or range. We must, in fairness to the animals and to the economy of the West, consider the grizzly as a wilderness species. It is upon the preservation of these wilderness areas that the future of the grizzly in the United States will depend.

Montana Wildlife Association, Inc.

30

This is to certify that _____ is a member of this Association for the year ending _____ and has paid dues of \$1.00 for the year 1952.

Secretary

BE A D A C T I V E M E M B E R



Tri-County Sportsmen's Association
 Golden Valley Petroleum Musselshell

MEMBERSHIP CARD

This is to certify that Reinhold Thompson is a member of the Tri-County Sportsmen's Association and has paid dues of \$1.00 for the year 1953.

171 Arthur O. Gustafson
 Secretary, Roundup

Montana Sportsmen's Clubs

Wolf Point Rod and Gun Club

MEMBERSHIP
 Fee \$2.00

Signed Reinhold Thompson Member
 is a paid-up member of the Wolf Point Rod and Gun Club for the year 1954.

Reinhold Thompson President Arthur O. Gustafson Secretary

The voices of Montana sportsmen have been heard in the past and will always be an important factor in the future management of the state's wildlife resources. Organized as the Montana Wildlife Federation, approximately 66 clubs, representing more than 25,000 members, are joined together with the objective of promoting hunting and fishing.

MEMBERSHIP 1954

Chinook Rod and Gun Club

THIS CERTIFIES

Reinhold Thompson
 IS A MEMBER IN GOOD STANDING
 BY SECRETARY Arthur O. Gustafson

At one time, most sportsmen's clubs devoted their time to "getting their share" of hatchery fish and game farm pheasants, or pushing for game seasons of advantage to their own hunting region. But not any more—Montana's progressive clubs are now thinking in terms of state and national problems. They have become concerned with preservation of clear, running water, wilderness areas and game habitat.

YOUR CLUB IS A MEMBER OF MONTANA WILDLIFE FEDERATION

No 2590

Reinhold Thompson
 MEMBER OF THE
 Wildlife Association

FOR THE YEAR 1954
 MEMBERSHIP \$1.00

REGULAR MEETINGS SECOND WEDNESDAY OF EACH MONTH

The more advanced groups are requesting more research as a solution to game problems rather than the personal guess of a hunter or fisherman. Many of the clubs are promoting solid educational projects so that they and fellow members will understand the basis for modern game management practices.

Ravalli County Fish and Wildlife Association 1951

Simon M. J. President R. O. KRAMER Secretary

YOUR CLUB IS A MEMBER OF MONTANA WILDLIFE FEDERATION AND DUES UNLIMITED

Others are attempting to solve their No. 1 problem—a place to hunt and fish—by working to improve farmer-sportsmen relationships.

While Montana still has a few of the "eat-burp-cuss out the Department and go home" clubs, they are becoming fewer every year. The thinking members in many clubs are asking questions and getting answers and results, not only on a local level but on a state and national basis.

This Certifies That **2550**

Reinhold Thompson
 IS A MEMBER OF THE
Western Montana Fish and Game Association
 FOR THE YEAR 1952
 MEMBERSHIP \$1.00

Wm. Steinhilber, Jr. President Robert Noel Secretary

Unfortunately there are not enough people carrying the load in the sportsmen's groups. Progress that has been made is the result of the efforts of a few who have gained benefits for all. With more than 200,000 hunters and fishermen in Montana, the organized sportsmen could be the strongest single group in the state.

Sportsmen are considered the "voice of the people" in matters of wildlife conservation. If you are not part of that voice, let us urge you to join your sportsmen's club and work to make it strong and effective.

The Commission

Policy makers behind Montana's multi-million dollar fish and game business are five commissioners, appointed by the Governor for four-year terms. Appointees are selected from each of the five Commission Districts, and since terms are staggered, the Commission always has a majority of men familiar with the complex operations of the Montana Fish and Game Department.

The Commission meets in Helena for two days each month to decide policy matters, rule on fishing and hunting regulations and carry out other department business.

Fish and Game Commission membership is an honorary position without salary. Commissioners draw only a per diem of \$15.00 on the days they meet. It is a job fraught with the problems of mediating between all groups interested in wildlife.

The Commission is charged by law with "supervision over all the wild-life, fish, game and non-game birds, and waterfowl and the game and fur-bearing animals of the state." Theirs is the responsibility of maintaining adequate populations of wild game while being ever mindful of the effect of the animals upon other economic interests in the state.

The man responsible for carrying out the Commission's program is the Department Director who is also Secretary to the Commission. He supervises all activities of the organization with the aid of the Assistant Director. These men direct the field activities of approximately 200 employees, are responsible for three and one-half million dollars in capital assets and are accountable for nearly two million dollars of Department funds each year.

Taking time out from consideration of big game regulations, Montana's 1956-57 Fish and Game Commission sits for the cameraman: William T. Sweet (front) Butte, was recently re-appointed to a second term as Commissioner from District 2; (around table clockwise) John T. Hanson, Sr., Malta, the newest member of the Commission, will serve as Commissioner from District 4; Commission Chairman Ralph D. Shipley, Miles City, District 5; H. W. Black, vice-chairman. Polson, represents District 1; Deputy Department Director W. J. Everin; Department Director A. A. O'Claire; Mrs. Effie Cutler, recording secretary; and E. J. Skibby, Lewistown, Commissioner from District 3.



The Grayling--An Endangered Species

by Perry Nelson
Fisheries Biologist

When Lewis and Clark journeyed through Montana they made reference to the abundance of a particular fish in the Missouri River drainage. From a description by Captain Lewis, this was later recognized as the Montana grayling.

Since then the distinctive characteristics of this fish have become known to many. The adult averages from 12 to 14 inches, with the most outstanding feature being a large sail-like dorsal fin which has alternate black and orange-colored horizontal lines with green and orange spots. The body has large scales and is brilliant purplish-gray with bronze reflections and a concentration of black spots near the head.

Originally, the grayling was abundant in Montana and Michigan, the only states where this species was native in the United States. It has become extinct in Michigan and declined in numbers in Montana until it now occurs over only a small fraction of the original range, which was all of the Missouri River drainage above Great Falls, Montana.

The grayling began to decline with the introduction of exotic fish and the advent of siltation and pollution. Originally, it occurred in the company of whitefish and cutthroat trout in the upper Missouri drainage. These three game fishes are still com-

patible where they occur together. But where other species have been introduced, both the grayling and cutthroat trout have suffered. Present successful grayling waters include those which are free of introduced trout such as the eastern brook, rainbow and brown trout, and undesirable fish such as carp and Utah chub. Since grayling require cold, clear water and are less tolerant of pollution and siltation than trout, the coming of civilization with its human sewage, industrial wastes and poor land-use practices, has also contributed measurably to their decline.

Today grayling are rarely taken within their original range except in a few lakes and in two places where small remnants of the once large population remain in the upper tributaries of the Beaverhead and Big Hole Rivers of Montana. In the latter area they have been maintained largely through artificial propagation. The upper Beaverhead River drainage in the Red Rock Lakes area still remains in as much like its original condition as when Lewis and Clark found it, and grayling, while reduced in number, are still maintaining themselves naturally. This area was selected by the Montana Fish and Game Department as a grayling sanctuary where management studies might be carried out.

This paper was used in "Our Endangered Wildlife" published by the National Wildlife Federation for National Wildlife Week.

A large portion of this lies within the Red Rock Lakes National Waterfowl Refuge which is famous as a last stronghold of the once-nearly-extinct trumpeter swan. The objective of the study was to develop a plan to preserve grayling in at least this one portion of its original range in Montana, and to determine practices which could be applied in restoring this fish in the remainder of the state.

As a result of these studies, a number of management and protective measures have been taken. Further introduction and propagation of exotic species have been curtailed. In some instances beaver and beaver dams have been removed from tributaries to lakes containing grayling so they could have ready access to suitable spawning grounds in the streams. To date a number of ponds supporting undesirable fish have been artificially poisoned so that grayling could be restocked. A stocking program for both grayling and cutthroat trout is being carried out in one lake. As a measure for protecting spawning grayling, irrigation on the Red Rock Lakes Refuge has been curtailed or delayed until after July 1. This allows ample time for the spawners to return to the lake and for many of the fry to hatch and make their way into suitable habitat. Since sport fishing is one of the greatest pleasures afforded by these fish, limited harvests are allowed in this sanctuary under a creel limit of five fish. Those who are responsible for the management of the grayling believe that a limited sport fishery will not endanger the population where habitat is suitable.

Within two years following the application of these management measures a marked increase in the number of young grayling has been observed in some of the creeks

within the sanctuary. During 1955, adult spawners were seen in three creeks where they had not been recorded for many years.

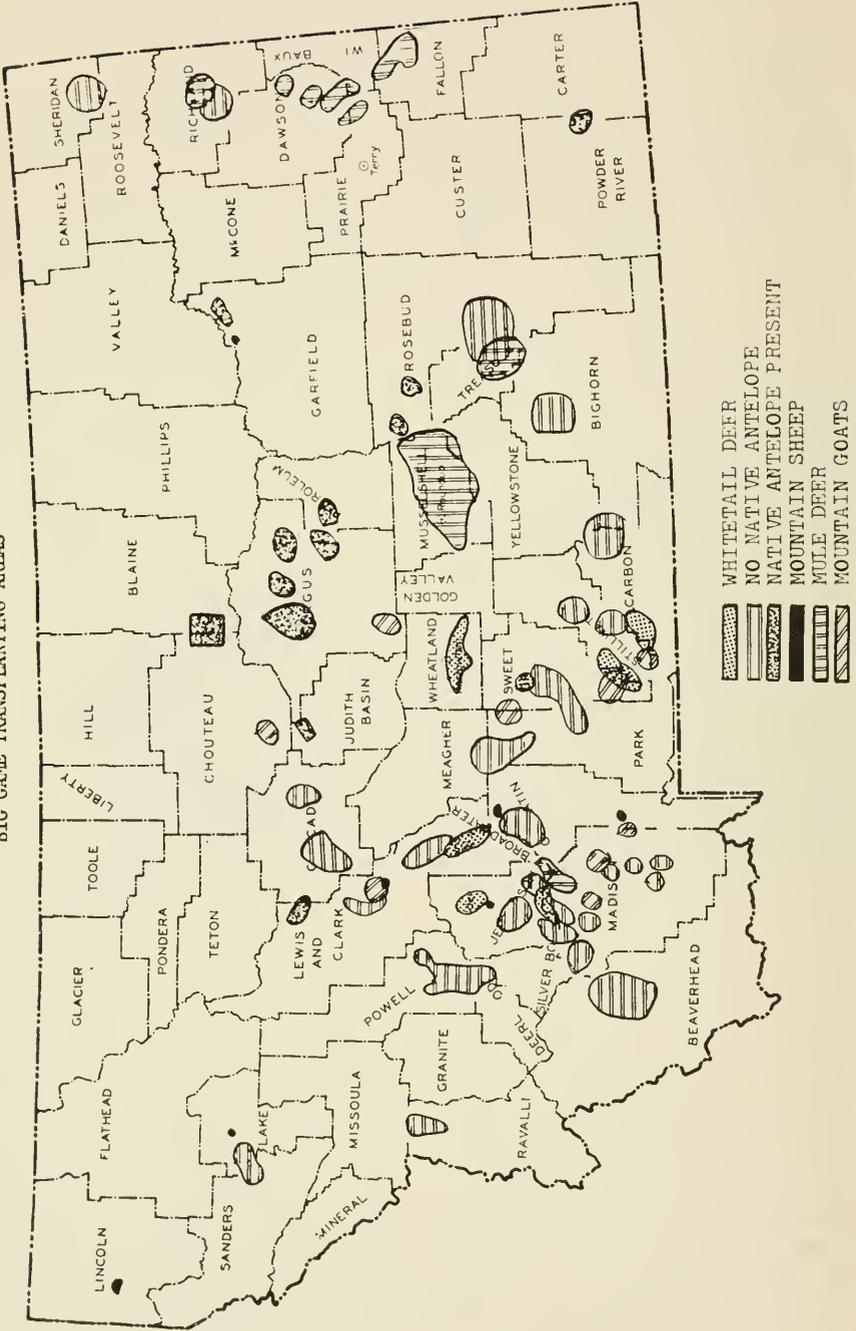
Sportsmen from all over the United States have become interested in the grayling. Because of their rarity many people make special trips to the area to catch one of these fish, which, along with the trumpeter swan, has made the rather remote Red Rock Lakes Refuge very popular.

Possibilities for enlarging the present grayling range through introductions should be investigated. Some of the virgin mountain lakes in Montana can still be reserved for grayling. Certain isolated headwater streams provide opportunity for developing grayling waters by restocking after poisoning of undesirable or competing species.

Grayling research in the Red Rock Lakes area has resulted in definite progress toward preserving the species in a small part of its original range. However, all may not be well with the grayling. Occasionally the conservation agencies have been criticized for expending time and money on the grayling program. Usually the opposition to these efforts stems from selfish interest and a failure to appreciate that the grayling is a native species and deserves as much attention as our trumpeter swan, whooping crane or other endangered wildlife. The majority of conservationists recognize the need for preserving the native grayling in numbers that will provide a limited sport fishery. This is not a job for conservation agencies only, but a task that will require the steadfast support of the conservation-minded public. Without continued management based on sound research, the grayling may go down in the history books along with the passenger pigeon, the Labrador duck and other extinct species.

MONTANA

BIG GAME TRANSPLANTING AREAS



Montana's Big Game Transplanting Program

by Jim McLucas

Wildlife Restoration Division

Generally, the big game trapping and transplanting program in Montana has been successful in bringing scarce species to a huntable level in their historic habitats and also in areas where they were few or had been exterminated.

Although the program included movement of deer and antelope ten years ago, it is now confined, for the most part, to the rarer species, mountain sheep and goats.

Mule deer are now hunted in an area of eastern Montana where they were not found before 1947. Antelope are being hunted in 30 areas where native antelope were not present at the time of transplant releases, and are also found in nine other areas where small numbers were augmented by transplanting. Whitetail deer were successfully released in seven areas of the state.

Mountain goats were released in seven areas considered to be good habitat, and hunting permits were issued for the first goat plant in the Crazy Mountains north of Livingston in 1953. Several more goat release sites will probably support hunting within a few years.

Mountain sheep trapping and transplanting was carried out on a small scale until the last few years. The first release of 14 sheep in the Gates of the Mountains proved unsuccessful while two later plants in other areas were a success.

Mule and Whitetail Deer

Montana's mule and whitetail deer transplanting program started in the winter of 1942-43, when animals were taken from heavy concentrations in several areas of western Montana. Over a 10-year period, 1,309 mule deer and 491 whitetail deer were released in 13 areas of central and eastern Montana. At the time of the releases, deer were rarely seen and there were no open hunting seasons.

With the aid of good management and intensified predator control, deer populations in release areas increased rapidly. Hunting progressed to a three-day buck season in 1947 to the present 30-day either sex season, including unlimited non-resident hunting by special \$20.00 permit in the southeastern portion of the state.

Antelope

Antelope were first transplanted in Montana in 1945. By 1952, 3,600 antelope were released in 33 areas where no native antelope existed, and in nine areas to supplement native herds. Since then, 3,140 hunting permits have been issued for the areas previously without antelope. Three transplants conflicted with other land uses and the antelope were removed after a trial period.

An annual harvest is operated on a permit basis in the 30 release sites, and 7,000 permits have been issued in the areas where native herds were

supplemented. In 1945, 1,375 antelope hunting permits were issued. After 10 years of management, more than 30,000 special antelope permits have been issued in Montana.

Mountain Goats

Mountain goats were first transplanted in 1941 when 10 goats were released in the Crazy Mountains. Since then, approximately 274 goats have been issued since then. Sev. this number, 170 were released in eight suitable areas, 84 were released at trap sites for migration studies, and 24 were traded to other states in exchange for silver salmon eggs and Merriams wild turkeys.

In 1943, eleven more goats were released in the Crazy Mountains to supplement the first plant. These animals developed into a huntable herd by 1952, and 180 goat permits have been issued since then. Several more goat release areas should sustain hunting within a few years.

Mountain goat releases, in general, have been slower to increase because of the comparatively small number of animals involved, and because the goat birthrate appears to be somewhat lower than that of deer or antelope.

Mountain Sheep

The trapping and transplanting program for Rocky Mountain bighorns has been limited, with the release of 74 animals since 1942. In the first attempt to relocate sheep during 1942-43, 14 animals were planted in the Gates of the Mountains in Lewis and Clark county, but their location after release was never de-

termined. During 1947, six sheep were released on Wildhorse Island in Flathead Lake to supplement six sheep already there. The Wildhorse Island herd increased to 100 head by 1955, when 29 sheep were taken from the Island for transplanting stock in several state areas. More sheep from Wildhorse will be available for future releases.

In 1947, the Montana Fish and Game Department acquired 16 mountain sheep from Colorado's Tarryall herd for release at Billy Creek in the Fort Peck Game Range of northern Garfield county. The sheep were loosed in a 320-acre pasture where they were held for two years before release. These sheep were the nucleus of the first huntable, transplanted herd in Montana; five permits were issued in 1955.

Several other areas have been stocked with sheep in the last two years, including the Kootenai River area of Lincoln county, Sixteen Mile Canyon in northern Gallatin county and Bull Mountain in Jefferson county. These releases are too recent for evaluation, but the Sixteen Mile and Kootenai River releases already show promise of good increases.

At various times, bighorn rams were interchanged from the Sun River, Kootenai River and Gallatin sheep herds to vary the breeding stock.

Montana's mountain sheep population has remained static for a number of years, but an intensified transplanting program is expected to increase the sheep numbers to a huntable level in many areas.

BLACK BEAR BOUDOIR



Seldom does a human find a bear's winter boudoir, but Turner Atkins of the Flying D ranch near Gallatin Gateway, Mont., discovered such a den early last winter. A few days later, William Shunk, also of the Flying D, managed to get a photo flash picture of sleeping bruin.

The bear was asleep near the cave entrance which extends back eight to ten feet. After several flashes had interrupted the bear's nap, he (or she) decided to change residence. The bear followed the men for a few feet after they hurriedly left the cave, but showed no sign of animosity other than objecting to the publicity. Changing direction, the bear went over the hill, apparently seeking a more secluded suite to resume the winter snooze.

One of nature's countless mysteries is the "winter sleep" or hibernation of certain animals. A number of

species, including ground squirrels, marmots and bats store up fat during the summer and fall. When winter sets in, they seek a cave, burrow, windfall or hollow log and assume a condition of reduced body metabolism called hibernation. This condition varies in length from a few days to several months, depending on the species and geographical location. With the retarded bodily functions, the animal apparently lives on stored-up fats.

Bears are one of the lucky species which avoid the unpleasantness of a Montana winter by sleeping soundly through snow storms and sub-zero temperatures. It probably even beats going south with the ducks. Bears maintain nearly a normal body temperature and their breathing, timed at four to five complete respirations per minute, is about the same as that of a person in very deep slumber.

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