Herd of Elk in Lewis and Clark Forest Is One of Largest in United States; 30-Day Hunting Season Recommended

THE game census of Lewis and Clark national forest recently completed by Supervisor W. M. Rush, shows there are 3,500 elk in that forest, the largest herd of its kind in the United States outside of Yellowstone national park. This number, of course, is an estimate, an exact count being impossible. Mr. Rush says the herd has increased 10 per cent in the last four years, after allowing for losses from all sources. It is his belief it has reached a size "sufficient for the forest to maintain," and he recommnds that the hunting season for elk, which is now limited to 10 days in certain parts of the forest, be extended to 30 days. If this is done, he thinks the herd will be kept at 3,500, the forest's capacity, and that it will increase considerably the interest of hunters in that forest.

In Mr. Rush's game report it is shown that there are 405 whitetail deer and 219 mule deer in the forest, both species having decreased rapidly in the last 10 years. He believes that a closed season of at least two years is the only hope for maintaining deer there.

He devotes several paragraphs of the report to a discussion of the "buck law" in which he states his belief as concurring with that of the game wardens and game commissioners in all of the states in which "buck laws" are now operative. If there is to be an open season for deer, he believes only those bucks should be shot whose points can be seen. Investigation has proven that herds of deer are not diminished appreciably when only bucks are killed and fewer hunters' lives are lost when hunters are forced to make sure they see the buck's points before firing.

30 More In Forest

According to Mr. Rush's report there are 30 moose in the forest, this being a slight increase over last year. Moose are protected.

Mountain goats and mountain sheep are increasing, due to a closed season on both. There are 460 goats and 470 sheep in the forest, the latter showing a more rapid rate of increase than the former. Mr. Rush believes that the closed season should be continued for at least five years. He calls attention to the heavy toll of the young in both classes that is being taken by predatory animals and recommends that more drastic provisions be made for extermination of birds and beasts of prey.

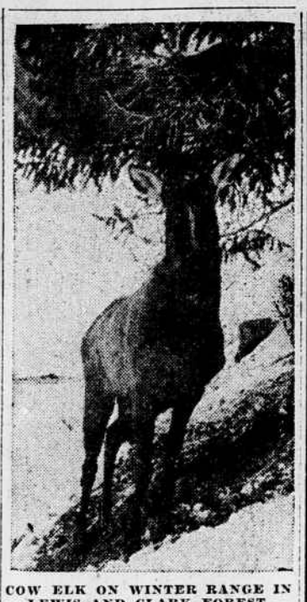
The silver tip bear is said to be nearly extinct in the Lewis and Clark forest, there being only 25, and the black bear, of which there are 225, is holding his own. Mr. Rush recommends that there be a closed season on both varieties of bear, excepting, of course, that stockmen may be permitted to kill bears that endanger their stock. It is his belief that the bear will increase rapidly if protected within the forest.

During the last year, Mr. Rush estimates there has been 300 hunters in the Lewis and Clark forest. There have been about 100 elk killed, 15 deer, 25 black bear and 2 silver tip bear.

During the last year 4,500 fingerlings were planted by the forest service in the streams of the forest, and 75,000 fry were planted in co-operation with the reclamation service. Mr. Rush recommends that this planting be continued and that restrictions be removed on fishing within the forest and the season be open the year around. He says that the streams are inaccessible to the general public during the winter anyway, and the number of fish caught by guides and hunters during that season will be so small as not to damage the reserve.

"The elk are increasing quite rapidly on this forest," says the report, "due to the game preserves and the closed seasons on hunting. The best available place the total number of elk on this forest at about 3,500 head.

"In 1917, the estimate for the forest was about 2,500 head. If there is now 3,500 head, it shows an increase of about 10 per cent, after allowing for losses from all sources. With this same ratio of increase for the next five years, the herd will total more than 5,600 head, which number is probably too large for the winter range available to them. An open season in all of Lewis and Clark county inside the Lewis and Clark forest, and that part of the Missoula forest administered by the Lewis and Clark, with the exception of the preserves, will take care of the surplus.



COW ELK ON WINTER RANGE IN LEWIS AND CLARK FOREST.

YOUNG COYOTE IN LEWIS AND CLARK FOREST.

"The state game warden has made a ruling that hunting parties may cross the Sun river preserve to the west side. Heretofore this country has been hunted but very little, due to the roundabout trip necessary to avoid crossing the preserve. A few parties crossed over this year and secured their game without having to hunt very long, and it is thought that this will be a popular ground as soon as the game warden's ruling is generally known.

30 Day Season Recommended.

"After carefully considering the elk proposition on this forest, it is thought that a herd of 3,500 head is sufficient to maintain, and it is recommended that the hunting season be opened for 30 days on all the forest outside the present game preserves, including the Missoula forest area handled by Lewis and Clark. If it is found that this policy decreases the herd too fast, a 'buck law' can be inaugurated, the losses from predatory animals reduced, and the season changed or shortened.

"Grazing will have to be restricted on the Sun river C. and H. division and the Wood creek C. and H. division within the next two or three years to provide additional winter range for elk, unless the present rate of increase is stopped in some manner."

Concerning deer, the report says: "Both species of deer have decreased very rapidly in the last 10 years. Old residents state that there were 10 times as many deer in 1908 to 1910 as at the present time. The decrease is due to the former large bag limit, non-enforcement of laws and predatory animals. A closed season for several years seems to be the only hope for maintaining deer in this forest."

"There seems to be a small increase in the moose on Sun river," the report continues, "although there is no good data on the number of moose in this vicinity. Moose are protected by a closed season."

Goats Increase Slowly

Of goats, the report says: "Goats are evidently increasing slowly according to the guides and trappers. There is a large number of these animals on the continental divide from Scapegoat mountain to the heads of Birch creek, and a few bunches scattered along on the subdivides east of the north and south forks of Sun river. Golden eagles take a very large toll of the kids, as do also the lions, wolves and coyotes. Eagles, however, kill more goats than is killed from all other sources. Goats are protected by a closed season."

"Sheep are increasing," according to the report, "quite rapidly due to a closed season. Predatory animals take a rather heavy toll of the young, however, golden eagles kill a large number of the lambs.

"While there are a comparatively large number of sheep and goats on this forest, and they are increasing, no open season is recommended for the reasons that these species are becoming nearly extinct in most parts of the United States; they consume but little forage and that mostly in places inaccessible to domestic stock, and their esthetic value to the landscape is considerable."

Silver Tip Bear Nearly Extinct.

Concerning bear, the report continues: "Apparently the silver tip bear is nearly extinct on this forest, though the black bear is probably holding his own. This condition is due wholly to wholesale trapping and the killing of she bears and young in the summer time. Bear are neither game animals nor are they predatory animals, but have habits and traits common to both. Anyone who has eaten a steak or roast of young bear will not deny it palatability, and anyone who has ever hunted and killed a bear will not deny that it was sport, and sport of the sort that taxed the hunter's ingenuity, skill, endurance and nerves to the utmost. On the other hand, bears kill game to a limited extent and stock to a considerable extent. They feed on a greater variety of plant and animal life than any other wild animal, sleep for six months of the year, never lack for forage, bear their young under shelter from predatory animals, and would increase very fast if protected from hunting.

"Bear should be protected during the summer months from hunting and from trapping the entire year except herders and stockmen, and government trappers should take all necessary means in stock raising communities to exterminate them. On a game preserve or in a remote mountainous region a bear is as much of a game animal as an elk or deer, and the very few elk or deer that bear kill are probably the old weak ones that are dying anyway."

Antelope Killed Off.

Of antelope, the report says: "Two herd of antelope of 10 or 15 head each were evident in the country between Gilman and Choteau in 1919, but from the information at hand these were all killed off in 1919-1920."

Taking up the game laws, the report continues: "In general the game laws are adequate and enforced as well as possible with the wardens available. Some changes may be desirable in the season on elk and a closed season for deer is recommended for the forest. Elk calve during the first part of June. As the period of gestation of elk is nine months, it follows that the breeding season is the first part of September. The elk bugle, however, from the twentieth of August until the first part of October. The hunting season should be some time after the breeding season ends in order not to disturb the animals during breeding.

"The 'buck law' has proven itself in actual practice, in virtually all of the big game states, not only as a factor in increasing the deer, but in safeguarding human lives as well.

"W. E. Harber, commissioner of the Wisconsin state conservation commission, states that 'during the four years of the buck law, we have had only two men actually killed by having been mistaken for deer . . . while with the one deer law, we had as high as eight men killed during one hunting season.'

"In New York, where there are 37,000 men hunting deer each year, there were 14 men killed in four years in mistake for deer, prior to the passing of the buck law, whereas in the four years immediately following, the number was seven.

"The United States biological survey has compiled figures which show that for a period of 10 years in the five states where both sexes of deer were allowed to be shot, the number of persons killed in mistake for deer was 138, and for the same 10 years, the number killed by mistake for deer in the five states that had a buck law was only 27.

"This office has obtained the opinion of game wardens and game commissioners of 25 states where there are large numbers of deer, and virtually all are of the opinion that the buck law is all that saves the deer from extermination. This office is heartily in favor of this law and recommends its continuance in the game laws of this state.

Game Preserves.

"The Sun river game preserve comprises 195,877 acres and was established primarily for the protection and propagation of elk. That is has filled its purpose well is evidenced by the large herd of elk that ranges there at the present time. The reguations governing it are satisfactory.

"The Twin Buttes preserve comprises 23,575 acres and was established for the protection and propagation of deer. There seems to be a considerable number of deer on and in the vicinity of this preserve, but as it is not posted, but little attention is given it by the public, the character of the country not particularly suited to deer and the forage fully utilized by cattle, it is not filling its purpose as well as a similar acreage more suitably located. The regulations governing this preserve are satisfactory.

"The Blackleaf preserve is essentially a bird preserve and as it has been in existence but a short time it is not known yet what value it will have as a preserve.

"The Big river area of 67,548 acres, Route creek area of 5,120 acres, Arsenic creek area of 5,120 acres, Hannan Gulch area of 6,400 acres, and Patrick's basin area of 14,452 acres are closed to grazing for additional feeding grounds for game and as hunting grounds for sportsmen. It has been found necessary to allow guides and hunter's pack and saddle animals to use some of the forage on these areas.

More Game Wardens Needed

"Two or three game wardens on this forest are needed very much. There is really nothing to prevent a person going on to the game preserves and killing such game as he desires, or otherwise violating the game laws and getting away with it, as far as prevention by deputy game wardens is concerned. This is on account of the large territory involved, the amount of big game and the number of hunters to be watched. Deputies stationed at Round park, Medicine springs and Benchmark for two months, before and during the hunting season each year, is recommended.

"Very gratifying results were obtained this year in planting fish on this forest. That the instructions given by the district office to the district rangers at the beginning of the season, for caring for fish while planting brought results is evidenced by the fact that virtually all of the fish received by the rangers for planting were handled with but little loss.

"Some improvement in the cans for horse packing were made. The bureau of fisheries' cans and ordinary milk cans were used for the major part of the fish planted. These cans are very difficult to pack on a horse, cause the pack animal considerable distress on account of the shape of the can and the constant wetting which the animal received, and cause the loss of a considerable number of fish.

New Can Suggested

"The ordinary five gallon gasoline can with a tomato can soldered in the top has been used with good success in a number of cases. However, these cans are hard to empty, rust easily and snag easily. They also are hard to pack and wet the pack animal almost as badly as the milk cans. Some fish also are lost with these cans. A fish can has been designed by a member of this organization to overcome these difficulties and although it has not been tried out yet, it is thought that it will work out very satisfactorily.

"A pair of these cans were made up in Great Falls at a cost of $17.70 out of No. 27 guage galvanized iron. The workmanship is excellent, but it is thought that the same grade of workmanship and material could probably be secured in quantity lots at a price much below this. The use of a special can for packing fish is strongly recommended for use on this forest where it is necessary to pack the fish from one to three days before planting.

"The following example of stocking a stream is cited as typical of what is needed on this forest, for about 40 other streams and lakes.

Planting of Fish in Rock Creek

"Eight cans of fingerlings were received at Gilman from the bureau of fisheries, taken to near the Hannan gulch station with a forest service truck, and kept in Home gulch creek over night. The next day they were hauled to Allen's ranch, loaded on two pack horses and taken to Gates park where they were kept another night. The next day they were taken up Rock creek about six miles and planted in beaver dams where they could get into the main creek. Some loss occurred on account of the doubling up of the fish as the eight 10-gallon cans received at the fish car were handled by eight 5-gallon cans on the pack animals. These two pack loads of fish were handled exclusively by one man, were well taken care of and placed in a stream 27 miles from the end of the truck haul, and 50 miles from the fish car, with good success. It is thought that such a plant is sufficient for a nucleus in a remote mountain stream.

"With the fish packing equipment on four ranger districts for two pack animals it is thought that all of the 40 or more streams can be stocked in a very satisfactory manner in from three to five years.

"It has been found that the fingerlings are much more satisfactory for packing than fry as they will endure much rougher handling."

Game Birds

Concerning game birds, the report says: "The blue or Richardson grouse, the fool hen or Franklin grouse, and the ruffled or willow grouse (known locally, also, as the pheasant and partridge) are the three principal game birds on this forest. Ducks in large numbers inhabit the chain of lakes and reservoirs on the east side of the forest during the summer and fall. A considerable number of them nest in this locality.

"There are also a few ptarmigan on the continental divide west of Sun riven and the Teton-Sun river divide, but they seem to be decreasing rapidly—probably due to the abundance of eagles in these localities.

"Blue grouse, fool hens and willow grouse are numerous and increasing in spite of the fact that all kinds of predatory animals, varmines, and birds of prey take a heavy toll of them. The increase is due to their protection from hunting. An open season for the same period as the season on elk is recommended on this forest, the bag limit to be five a day. No bird sanctuaries are necessary. The introduction of other species of game birds would be very desirable.'

Concerning warfare on predatory animals and birds, the report says: "Predatory animals and birds kill more game than all the other destructive agencies combined, including hunters. This is the belief of all the guides, sportsmen and others who have occasion to study and observe wild life, and there is plenty of evidence to bear out this belief. Such a waste should by all means be stopped—much money is spent in hiring game wardens to enforce the game laws and considerable importance is attached to the enforcement of game laws as a means of propagating our game, yet the loss by predatory animals in much greater than the loss by game violators and lawful hunters combined, and this loss is wholly wasted—that is, no one derives any benefit from animals killed by coyotes, wolves, etc., while in many cases of law violations there is no waste.

"Not enough importance has been given this big drain on our game. For instance, eagles are not even considered as a predatory animal and it is a generally acknowledged fact that they are keeping the goats and sheep killed off almost as fast as they increase.

"No steps toward the extermination of predatory animals and birds have been taken on the Sun river game preserve since its establishment in 1913.

"Co-operation with all existing agencies concerned in wild life toward reducing this loss is recommended."

Supervisor Rush's Recommendations

In his annual game report on Lewis and Clark national forest, Supervisor W. M. Rush makes the following recommendations:

An open season of elk of 30 days on the entire Lewis and Clark forest including the Missoula area, excepting on the game preserves.

A closed season on both species of deer for two years.

No open season on goats, sheep or moose for at least five years.

A closed season on both varieties of bear (with the exception of stockmen in protecting their herds) and a law against trapping.

Three deputy game wardens for a two months' period, before and during the hunting season, on the east boundary of the Sun River reserve.

On open season on grouse, to be the same period as the open season for elk.

No further restrictions on fishing.

The removal of the closed season on fishing inside the Lewis and Clark national forest.

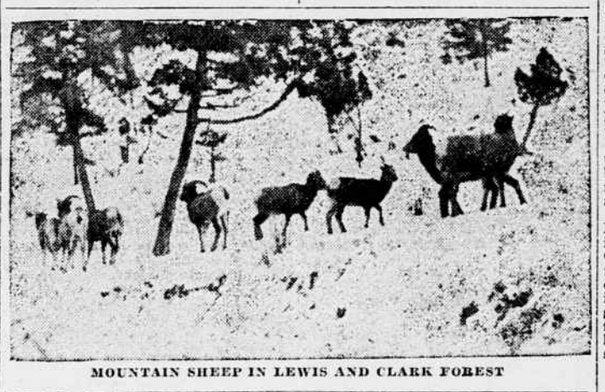
Continuation of fish planting activities.

An extra ranger for game study work.

The introduction of additional species of game birds.

That the most active means possible be taken toward extermination of predatory animals and birds.

ELK ON WEST FORK OF SUN RIVER



MOUNTAIN SHEEP IN LEWIS AND CLARK FOREST

MULE OR BLACK TAIL DEER IN FOREST

New Hotel Being Built at Lake McDonald May Attract Attention to Winter Sports

By H. B. BOUTON.

"LINGER LONGER LODGE," the newest bid for the popularity of the Glacier Park tourist, and which promises to be one of the leading attractions at the west entrance, is the name given to the new hotel the construction of which is now well advanced.

Located at the south end of Lake McDonald with the original forest of cedar and fir surrounding it closely on three sides and facing northward so as to command a view of the lake and mountains, it makes an almost irresistible appeal to the traveler entering the west gate, as it is the first real "stopping place" really within the park, for, although Belton has good hotels and chalets they are located close to the Great Northern railroad and are little different from any other good hotels and the park tourist has been educated to believe that he isn't actually in the park until he is at least out of sight and sound of the din and smoke of railroad traffic and within sight of some real mountains.

FLATHEAD LAKE NEAR SITE OF NEW HOTEL

Construction Is Advancing.

Construction of the main building is now well advanced. The plans provide for a three story building of log and shingle construction which will consist of three parts; each part will be 38 by 54 feet, giving a total frontage on the lake of 162 feet.

There also will be a rear wing 36 by 38 feet. The lobby will be 38 by 90 feet, extreme measurement, and the dining room will be 38 by 54. Both the lobby and dining room are arranged so as to command a view of the lake and the mountains. In the upper floor there will be 84 bedrooms with 40 bathrooms, and in addition to the customary barber shop, refreshment room and sun porch, a decided innovation has been planned in the shape of an outdoor plunge in which the temperature of the water can be regulated from the main heating plant. This feature will be appreciated, as one of the drawbacks to the park is the fact that the waters in all of the lakes and streams are so icy cold that any attempt at bathing is likely to prove uncomfortable and even dangerous.

Construction Started August 1.

Construction of the main building was begun August 1 and at present the clearing for the grounds has been completed; the excavations and concrete foundations for the full basement under the central unit are finished and the logs for the first story are in place. In addition there are 200 logs on the ground, hand hewn and fitted and ready to raise, for which purpose a derrick with a 50-foot boom has been erected. As soon as the roof logs are in place the roof will be covered with 24-inch shingles in imitation of the old time hand split shakes.

A 20-foot road has been built from the main road through the five acres tract which comprises the hotel park and a wall sunk which will afford an inexhaustible supply of pure water.

Within arrangements have been made for a spacious lobby with a large fireplace of native stone, and for massive leather cushioned furniture and Indian decorations.

Winter Sports Planned.

Because of the splendid location and accessibility, being only a few minutes' drive from Belton, the railroad entrance, the season will be extended far beyond the ordinary park season, and will possibly cover eight or nine months, from about May 15 to well into January, and winter sports such as ski running, snowshoeing toboganing and skating, and eventually, it is hoped, such sports as dog racing and winter carnivals after the fashion of the winter resorts in Canada.

Theodore E. Herlihy, president of the Transmountain Hotel Co., which is the corporate name of the owning company, was originally connected with the "sight seeing" business in New York and Washington, D. C., and was later manager of the national auto shows for the Maxwell-Chalmers Co. of Detroit.

The company expects to extend their field if this venture proves successful, but for the present Mr. Herlihy will give his personal attention to the management of the "Lodge."

FOUNDATION OF "LINGER LONGER LODGE"

May Extract Oil From Shale in Montana in Near Future

The observing public knows pretty well that an enormous quantity of oil and distillates is consumed, for what purposes, and that the demand is growing rapidly. From the stove in a house to driving a battleship is a comparative use of crude oil; moving parts in machinery must be lubricated, hence the use of refined oil; and from the airplane to a large motor truck is another comparison for the distillate gasoline.

The world has great resources of petroleum and every country is searching for more deposits; yet, consumption is so large that it overtakes production and stocks are decreasing. Although the output is increasing, it will soon reach the limit possible. From 1857 to 1920 the world produced seven billion barrels of oil, of which the United States yielded 70 per cent. Nearly an equal quantity remains, but consumption nowadays is many times that of the earlier years of production. The United States is supplying 70 per cent of all the oil at present. The public generally does not know that the oil reserves of this country are counted by years, and that our geological survey estimates not much over twenty years of oil remaining.

That is the position — the end in sight and ever-increasing demand. How is it to be met? The remedy is at hand—namely, oil-shale—and the problem is under consideration.

Oil Shale in Montana.

That Colorado, Nevada, Utah and Wyoming contain vast deposits of oil-shale has long been known, but the necessity of their utilization has not been warranted until recent years, when the petroleum situation became acute. Besides, the shales are in more or less arid and inaccessible regions of high elevation, rendering their exploration rather difficult. In those four states it is conservatively estimated that there is a reserve of 50 billion barrels of oil.

Other states have shale, such as California, Kentucky, Montana, Pennsylvania and West Virginia, but they are too low in oil to be worth development at present. Eastern Canada has shale, also Brazil, England, Scotland, France, New South Wales, South Africa and other countries, so the world has a great potential supply of oil.

The making—for such it is termed—of shale-oil from oil-shale is by no means new. The Scotch shales have been worked for 50 years and three and a half million tons are mined annually, while those in New South Wales, Australia, have been mined for 15 years.

Oil shales are sedimentary in origin. They consist of dense, dark-brown, tough, but friable clays, originally laid down as muddy deposits in shallow seas. The strata or layers are separated by sandstone. The resultant beds were subjected to upheaval, erosion and uncovering. Rivers cut through and exposed them. The generally accepted theory—the organis of the origin of the oil-forming elements is that countless small plants, fish and animals were imbedded in the muddy deposits. Another theory, highly respected, is that shales represent an old oil field.

Kerogen and Petrogen.

Unlike the sands of petroleum areas in California, Oklahoma, Pennsylvania, Texas, Wyoming and other states, shale contains no oil as such. But it contains the hydro-carbons, or essential ingredients for making oil, in their primary condition. This matter has been termed "kerogen" and "petrogen." When sands are drilled oil commences to flow; but when shales are drilled nothing happens; yet when heated, vapor comes off, which when condensed becomes oil. Hence, the oil shale industry will be a mining and metallurgical problem. Deposits of shale are easily sampled and estimated as to quantity. Mining in many cases will be similar to that of coal, minus the attendant danger. Education, that is, making the oil, will be by means of retorts, condensers and refineries.

The yield of oil per ton of shale is estimated in Colorado to be 20 gallons, or say half a barrel. In some of the states mentioned it is more, and in the various strata of the same deposit it will vary. In Scotland the yield is more than thirty gallons. In New South Wales it is up to one hundred gallons, which is two and one-half barrels. The oil is of high grade, having a paraffin base, just as do the oils of the midcontinent field of the United States. Many by-products are obtained during retorting, such as illuminating oils, gasoline (termed "shalene"), lubricating oils, grease, wax and ammaniou sulphate.

The oil shale, or "petro shale," deposits of the Rocky Mountain states are now receiving considerable attention, and investigation is under way by government and private individuals. There will not be much risk in working oil shale as an oil field, though the capital required may be greater. In Scotland they have paid good dividends. Shale oil production will gradually increase until, in 1950, shale fields will have replaced real oil fields, and they will insure a regular supply of oil for many generations to come.

Veteran Is Adopted

Harry W. Haley, veteran of the world war, recently released from the federal military prison at Fort Leavenworth, where he was serving a sentence for a "buddy," who had saved his life in France, when both were members of the British army, has been "adopted" by Colonel R. P. Dickerson, commander of the national loyalty league. He is now a guest of Colonel Dickerson on the latter's ranch in southwest Missouri. He and his benefactor [illegible] of honor in the American [illegible] Armistice day parade at [illegible]

MUCH MARRIED

Harold Lloyd removed his famous goggles and leaned far out of his big car to catch the discussion that was going on between two colored mammies. It was early morning on the lot and the camera squad was waiting for light.

"Ah jus' know she ain't gonna be happy marryin' again."

"Has 'at woman been married befo'?"

"Has she? 'At dame been married so often she's tongue-tied from sayin' 'Ah do.'"