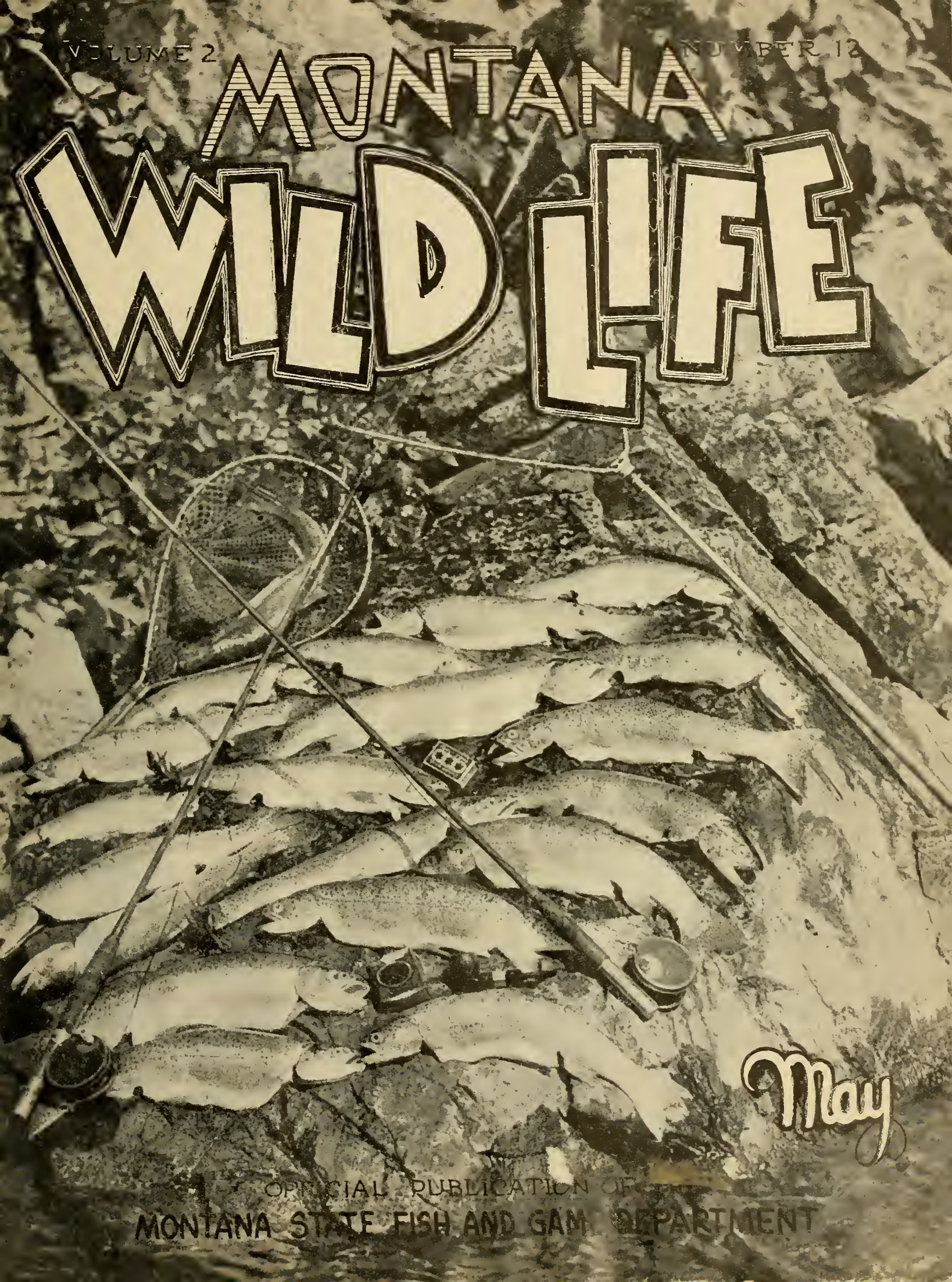


VOLUME 2

NUMBER 12

MONTANA

WILD LIFE



May

OFFICIAL PUBLICATION OF THE
MONTANA STATE FISH AND GAME DEPARTMENT

Montana Fishin'

*I WENT fishing in Montana, with rod and reel and flies.
But I caught more than fish that day—I caught the bluest
skies,
And I caught the golden sunbeams as they were streaming
through
The branches of the willows, to kiss the drops of dew.*

*Of course I caught some beauties that I knew would taste
so fine
When taken from the skillet in that cabin, small, of mine.
Then I caught the winds a'singin', and I caught those wild-
flowers sweet,
As they cast a fragrance on the air while blooming at my
feet.*

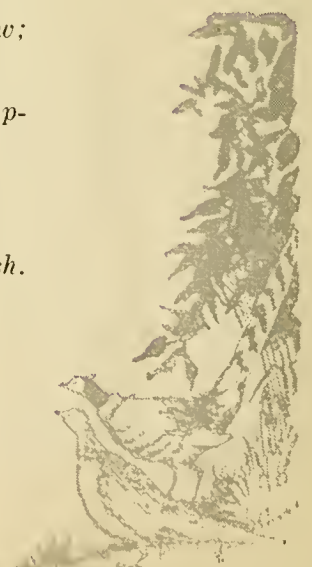
*I caught the wild birds' chorus and the quail's clear whistle,
shrill—
And that little Old Red School House, nestled there among
the hills.
I caught that dear old home of mine where I lived when but
a boy,
And besides that mess of speckled trout I caught a heap of
joy.*

*Fishing is the grandest sport; I love to cast my fly
Out underneath the ulders where the big ones always lie.
And how I love to land them; it keeps one fine and fit;
But when I get a mess of them, I know it's time to quit.*

*And when the sport is over, and I unjoint my pole,
And wind my line upon my reel—it seems my very soul
Has had a real vacation, and I kind o' sit and dream—
And let my mind just wander on like the laughing little
stream.*

*I fish those pools of memory, though the sun is sinking low;
And when I start back home again my steps are very slow.
'Tis then I let my vision just idly float away,
And I wake up from my dreaming, and I want to whoop-
hurray!*

*Yes, fishing is the grandest sport! I love it! So I do,
To be out in the open with nature kind and true;
And how I love to eat them—they make a dandy dish,
But whenever I go' fishing, I catch something more than fish.*



MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

VOL. II.

HELENA, MONTANA, MAY, 1930.

NO. 12.

Official List of Closed Waters

MONTANA'S fishing season opens Wednesday, May 21, and with the approach of fly-time, anglers throughout the Treasure State are preparing opening-day jaunts to favored streams that this year offer additional inducements. Because of the dry season last year and the danger of slaughter of landlocked fish, Montana's Fish and Game Commission closed the season on all streams with the exception of the Missouri and Yellowstone, to protect the trout. Plentiful winter waters have caused these streams to resume their normal flow.

Compilation of orders of the State Commission by MONTANA WILD LIFE, official publication of the Fish and Game Department, has made possible the complete list of closed streams, suspension of closed areas, and extension of closed seasons, for the information of Montana anglers.

Members of the Montana State Sportsmen's Association will meet at Helena in annual session May 23 and 24 and the State Commission meets May 23, hence changes in the list of closed streams may be after that time.

Official orders of the commission regarding fishing waters follow:

STREAMS AND LAKES CLOSED TO FISHING DURING THE ENTIRE YEAR

Beaverhead County—Big Hole and Red Rock Rivers, within 300 feet below the dam.

Big Horn County—Dry Head Creek and tributaries, closed until July 31, 1931. Soap Creek and tributaries closed until May 21, 1932.

Blaine County—Cow Creek.

Carbon County—September Morn, Basin Creek and Third Rock Creek Lakes on the second west fork of Rock Creek, until regular open season in 1931. Blue Water creek, tributary to Clark's Fork River, and all tributaries, closed until regular open season in 1932.

Caseade County—Hardy Creek. Water drainage from Sheep Creek rearing ponds.

Chouteau County—All tributaries of the North Fork and South Fork of Highwood Creek, within the Jefferson forest. All the North Fork above Cow Gulch and South Fork above Big Coulee. Eagle Creek for 12 miles in townships 26 and 27, north, range 15, east.

Custer County—Waters of artificial lake at Miles City pond cultural station.

Deer Lodge County—Flint Creek from its source to where it flows into Georgetown Lake. Big Spring to Georgetown Lake, closed area to be designated by piles or buoys, for distance of 200 feet north and south of shore line from pumping station and 300 feet from shore line out into lake. That part of Stewart Mills Creek beyond where the fence crosses it on Bowman's pasture.

Fergus County—Headwaters of Olson Creek.

Flathead County—Big Fork of the Flathead and Stillwater within 300 feet below the dam. Lake o' the Woods, closed to August 29, 1931. Big Fork River, closed from dam to lake.

Gallatin County—Sour Dough Creek from Story Crossing to Keggy Lane, one and one-half miles south. Watkins Creek from where it flows into the Hebgen Dam to its source; South Fork of the Madison River from where it flows into Hebgen Dam to the source and all its tributaries; Cougar Creek from where it flows into Duck Creek to its source; Duck Creek from where it flows into Hebgen Lake to the Yellowstone National Park line; Grayling Creek from where it flows into Hebgen Dam to where it enters Yellowstone National Park; and Teepee Creek from where it enters the Yellowstone National Park to its source, and all its tributaries. Madison River from foot of bridge that crosses the Madison to the Game Warden's cabin, to base of Hebgen Dam.

Golden Valley County—Swimming Woman Creek, from source to mouth, and all its tributaries, closed from November 1, 1928, to August 1, 1930.

Granite County—Flint Creek from source to where it flows into Georgetown Lake. Big Springs in Georgetown Lake, closed area to be designated by piles and buoys, for distance of 200 feet north and south on shore line from pumping station and 300 feet from the shore line out into lake. Georgetown Lake for a distance of 300 feet on either side of mouth of Flint Creek, and for a distance of 300 feet from shore. That part of Stewart Mills Creek beyond where the fence crosses it on Bowman's pasture. Rock Creek, lying between mouth of Brewster Creek and mouth of Spring Creek, and all of Spring Creek.

Hill County—All the tributaries of Beaver Creek in Hill county.

Judith Basin County—Ackley Lake closed until October 24, 1931.

Lake County—That portion of South Crow Creek flowing through the property of E. R. Swart, of Polson, description of which is $S\frac{1}{2}SE\frac{1}{4}$ of Section 10; $N\frac{1}{2}NE\frac{1}{4}$ of Section 15, Township 20 North, Range 19, Montana Meridian, from November 1, 1928, through December 31, 1930. Nine Pipes Reservoir closed to bass fishing.

Lewis and Clark County—Streams and lakes closed for an indefinite period; Seven Mile Creek from the mouth of Skelley Creek to its source, including all tributaries. Skelley Creek and Greenhorn Creeks; Colorado, Sweeney and Walker Creeks and all tributaries; Canyon Creek north of Wilborn and all its tributaries, including Virginia and Little Trout Creeks; Little Prickly Pear and all its tributaries from Trauffer's Bridge to its source, including the North Fork, South Fork, Lost Horse and Deadman Creeks; Little Sheep Creek, Marsh Creek and Cottonwood Creek; the Big Blackfoot River from a point immediately below where Alice Creek empties into it to its source, including all its tributaries; Alice Creek and Hogum Creek; Two Point Lake; Twin Lakes and the streams connecting them; Krohn Lake. Hope Creek and Dog Creek, from the forks of the two streams to their source.

Liberty County—Great Northern Reservoir at Chester, until October 24, 1931. Half Breed Creek, rising in Liberty county and running in a northerly direction. Bear Gulch Creek.

Lincoln County—Miller Creek and all its tributaries from source to Fisher River. Flower Creek and all its tributaries from Mountain States Power Company dam to its source. Spread, Peat and Seventeen Mile Creeks.

Madison County—Lower Madison within 300 feet below the dam. Meadow Creek below point where electric transmission line of the Montana Power Company crosses the creek.

Meagher County—Battle Creek, tributary to Sixteen Mile Creek. Newian Creek and all tributaries.

Mineral County—Tributaries of the St. Regis River, with the exception of St. Joe Creek, which is opened during the regular open season; with the exception of Twelve Mile Creek from the mouth of said stream where it empties into the St. Regis River to its source, which is opened during the regular open season; and with the exception of

Big Creek from its mouth near Haugan to the forks.

Missoula County—O'Brien Creek and Blanchard Creek. Rattlesnake Creek, closed above the Franklin place. Lo Lo Creek, closed from Howard Creek to mouth. Clearwater lakes, to-wit: Inez, Alva, Salmon, Seeley, Placid and Rainy Lakes, closed to fishing for bass until November 1, 1931.

Pondera County—Waters in the ditch from Lake Francis to Conklin Gates.

Powell County—Little Blackfoot and tributaries from headwaters to confluence of Ontaria Creek. Cottonwood Creek, near Ovando. Jones Lake. Three Mile Creek in its entirety. McCabe Creek, a tributary to Dick Creek.

Sanders County—West Fork of the Thompson River and tributaries. Prospect Creek and tributaries until open season in 1931.

Sheridan County—Park and Brush Lakes closed until October 24, 1931.

Stillwater County—Sioux Charley Lake on the Stillwater, below the riffle above the head of the lake. Fishtail Creek and all its tributaries and Fiddler Creek, including the North, South and Middle Forks thereof. Limestone Creek and Trout Creek, and all their tributaries.

Sweet Grass County—Limestone Creek and Trout Creek, and all their tributaries. Lower Glass Lindsey Lake closed until October 24, 1931.

Wheatland County—The tributaries of Big Elk Creek. Slough in which lochlaven are being planted, from its source in W. J. Tucker's place to junction with the Musselshell River. McVey Creek closed from source to mouth.

Yellowstone County—Brook stream in Pioneer Park at Billings, until open season in 1932.

STREAMS AND LAKES IN WHICH CLOSED SEASON HAS BEEN SUSPENDED

Beaverhead County—Upper and Lower Red Rock Lakes and channel connecting them.

Big Horn County—Little Big Horn River from the mouth to the Wyoming line. Big Horn River from the mouth to the dam at St. Xavier.

Carbon County—Clark's Fork River.

Fergus County—Judith River from mouth of Spring Creek to where river enters the Missouri.

Flathead County—Flathead Lake, with hook and line, with exception of 500 feet of the mouth of any of the streams that flow into the lake, upon which the closed season has not been suspended.

Glacier County—Gold, Hedden, Crescent, Harry Coat, Bull Child, Dandy Jim, Browning, Mad Plume and Black-boy Lakes.

Lake County—Ninepipe, Kicking Horse and Pablo reservoirs.

Lewis and Clark County—Gravelly Range Lake and Hart Lake.

Lincoln County—Leon, Bootjack, Horseshoe, Rainbow and Crystal Lakes.

Musselshell County—Musselshell River within the county of Musselshell.

Madison County—Madison River from the red bridge that crosses Madison River near Red Bluff, north to the Missouri River, and from lower dam south to the Hutchin's bridge, except that portion of the Lower Madison Lake west of a line which is designated by

posts from Brannin's cabin to the bluff on a line in a southerly direction to the east point.

Park County—Dailey's Lake.

Powell County—Cottonwood Creek, which flows through the town of Deer Lodge. Jones Lake.

Sanders County—Clark's Fork of the Columbia River, from the upper dam of the Montana Power company to a point even with the power house.

CLOSED SEASON SUSPENDED IN RIVERS RUNNING THROUGH MORE THAN ONE COUNTY

Milk River, Missouri River, Yellowstone River, Kootenai River.

STREAMS AND LAKES ON WHICH ADDITIONAL CLOSED SEASON HAS BEEN ADDED

Gallatin County—Madison River closed to fishing at all points where it flows into the State of Montana before reaching Hebgen Lake, closed period to begin October 1 and end November 30 of each year.

Lincoln County—Kilbrennan and Cowles Lakes closed from September 1 to December 1 of each year, in addition to the regular closed season.

Madison County—O'Dell Creek and all its tributaries closed from October 1 to May 21 of each year.

Missoula County—Harper's Lake is closed to fishing from July 1 of each year to the following closed season, until further order by the Commission. Open from May 21 to June 34, both dates inclusive.

STREAMS AND LAKES ON WHICH CLOSED SEASON HAS BEEN CHANGED

Flathead County—Samson, Skyles, Spencer, Beaver, Murray and Dollar Lakes closed to fishing, beginning the 1st day of July and ending the 30th day of September. Regular closed season suspended.

Gallatin County—All of Townships 1 and 2 North, Ranges 3, 4 and 5 East; all of Townships 1 and 2 South, Ranges 3, 4 and 5 East, in Gallatin county. The closed season is from October 1 to December 15, inclusive. Regular closed season suspended.

Lincoln County—Tetrault (known as Carpenter Lake or Lake Irene), Morand, O'Brien, Timber and Frank (known as Lost or Island Lake) lakes closed to fishing during June, July and August of each year. Open to fishing remainder of year. Yaak River from its mouth to Yaak River Falls; O'Brien Creek from mouth to Troy city water dam; Star Creek from mouth to Star Creek Falls, open to fishing during that portion of the closed season from April 20 to May 20 of each year, in addition to regular open season.

Mineral County—Crystal Lake, Hidden or Diamond Lake, Clear Lake, Rock Lake, Hub Lake, Square Lake, Gold Lake, Eagle Lake, Cliff Lake and Hazel Lake, closed season is April 15 to June 30, both dates inclusive.

Powell County—Brown's Lake closed season is from July 7 to September 30, inclusive. Regular closed season suspended.

Sanders County—Rainbow Lake (also known as Dog Lake) closed season is from July 6 to November 15, inclusive, of each year.

Sweet Grass County—Rein Lake open to fishing from May 1 to June 15 of each year, both dates inclusive, and closed from June 16 of that year until April 30 of the following year, both dates inclusive.

STREAMS AND LAKES ON WHICH CLOSED SEASON HAS BEEN EXTENDED

Beaverhead County—Birch Creek, above ranger station and Birch Creek Lakes, closed season extended to July 10 of each year. Agnes Lake, closed until July 1 of each year in addition to regular closed season.

Deer Lodge County—All the lakes in Deer Lodge county except Georgetown, Silver and Echo lakes, from March 15 to July 1 of each year.

Granite County—All the lakes in Granite county, with the exception of that portion of Georgetown Lake lying within the county. Echo Lake and Moose Lake closed from March 15 to July 1 of each year.

Jefferson County—North and west ends of Delmo Lake, designated by markers, from March 20 to August 1, of each year.

Lake County—Jocko Lakes from May 21 to June 21 of each year.

Missoula County—Three Cottonwood Lakes from May 21 to July 5 of each year, inclusive.

Powell County—Gold Creek, Dolis, Trask, Dempsey and Thornton Lakes from March 14 to July 1 of each year. Cooper Lake (outlet to) closed to June 30 of each year.

STREAMS AND LAKES OPEN TO ICE FISHING

Deer Lodge County—Such portion of Georgetown Lake as is not designated and posted as spawning waters, and all of Silver Lake during the regular open season.

Flathead County—Rogers Lake open to ice fishing during regular open season. Samson, Skyles, Spencer, Beaver, Murray and Dollar Lakes.

Glacier County—Gold, Hedden, Crescent, Harry Coat, Bull Child, Dandy Jim, Browning, Mad Plume and Black-boy Lakes.

Lake County—Ninepipe, Kicking Horse and Pablo reservoirs throughout the year.

Lewis and Clark County—Gravelly Range Lake.

Lincoln County—Leon, Dickey, Tetrault, Morand, O'Brien, Timber, Frank, Bull, Savage, Schoolhouse and Milner Lakes.

Madison County—Meadow Lake, the open season to begin with the 15th day of December of any one year and closed on the 14th day of January of the following year, except within 1,000 feet in all directions of the mouth of Meadow Creek.

Park County—Dailey's Lake from January 1 to March 14 of each year.

Powell County—Mid Lake from January 1 to March 14 of each year. Brown's Lake.

Sanders County—Rainbow Lake (also known as Dog Lake) from November 16 to March 14, both dates inclusive.

Sweet Grass County—Glass Lindsey Lake from January 1 to March 14 of each year.

Teton County—Split Rock Lake during the regular open season.

Hatching Time at State Game Farm

SPORTSMEN throughout Montana are demonstrating keen interest in activities at the new game farm, recently established at Warm Springs. These are busy days at the farm. The pheasants are hatching. The eggs are being gathered for incubation by Brown Biddies of the domestic variety. The Montana Standard of Butte pays this tribute to work progressing under direction of the State Fish and Game Commission:

"A tiny bill pushed a hole through a mud-brown shell and nipped at the edges until the hole was big enough to emit a small, damp yellow and black streaked head. Apparently satisfied with the appearance of the outside world, a chick, the owner of the bill and the head, mustered all the strength nature had bestowed on it at such an early age and burst its embryological bondage.

"Tumbling awkwardly out of the mud-est downy creatures that was ever brown egg, the chick, one of the strang-hatched under a Montana setting hen, peeped. That peep meant much to Montana sportsmen. It was the first real assurance of better hunting seasons.

"A big Rhode Island Red hen clucked over its maternal success, the first hatch of Chinese Pheasants appeared at the State Game Farm at Warm Springs. The timely arrival of the chicks, 22 days after the eggs were placed under the domestic hen, brought a smile from J. F. Hendricks, superintendent of the newly established farm.

"All seems to be running smoothly with the Montana Fish and Game Commission's latest venture toward keeping Montana a paradise for sportsmen.

"What was only five acres of alfalfa growing farm land last fall is now one of the most novel 'poultry' farms the state of Montana has ever seen. Two hundred and eighty-eight pens, most of them 24 feet by 24 feet, screened in at the sides and top to prevent the escape of flighty game-birds, were constructed during the fall and winter of last year and are now holding approximately 250 birds of six different varieties.

"Mr. Hendricks, who for six years was superintendent of the game farm at Pendleton, Ore., and who came here last July to establish the Montana farm, is, with the able assistance of Mrs. Hendricks, caring for and rearing the feathered beauties.

"The raising of pheasants, Reeves, Golden, Amberst, Silver and Mongolian is destined to become quite an extensive industry with the Montana State Fish and Game Commission. According to Mr. Hendricks, approximately 3,100 eggs are under incubation and every two days 320 more are set. Nearly 160 eggs are gathered daily from the various pens at the farm.

"Being new to Montana and not altogether familiar with the climate, Mr. Hendricks has been forced to do con-

siderable experimenting and at present cannot tell exactly when the first birds from the farm will be released in the various sections of the state.

"'We cannot liberate the birds for at least ten weeks,' he said. 'We are going to take no chances on losses after they are freed. It is my ambition, however, to liberate in the neighborhood of 3,000 birds during the late summer months.'

"From all appearances the raising of pheasants is not an easy proposition. The birds at the Montana farm are being handled with the greatest of care. Most of them, regardless of how long they are kept in captivity, Mr. Hendricks says, will not become domesticated and are disturbed by the slightest commotion.

"Visitors are welcome at the farm, but care is taken that nobody but Mr. and Mrs. Hendricks enter the pens, especially those in which the eggs are being incubated. On egg-gathering expeditions, Mr. and Mrs. Hendricks make a practice of wearing clothing to which the birds have become accustomed. This does much, they declare, toward keeping the birds quiet.

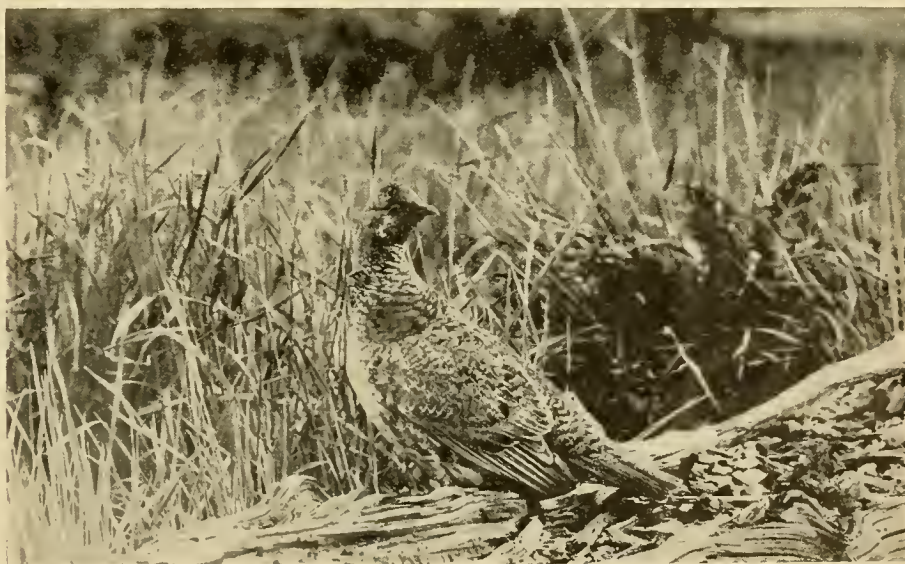
"Mothers for the pheasant chicks are carefully selected. In all cases it is a Montana-bred hen that brings the young into the world and care for them until they—probably much to her surprise—begin to fly. Setting hens are shipped in from various ranches and farms of the state but only a small percentage of the hens available are

suitable to hatch and rear the chicks. Hens of the larger types, such as the Rhode Island Red; hens with a motherly complex and mid-victorian ideas, are always welcome at the game farm. The smaller, wilder and flightier kind, such as Leghorns, are tobooped as prospective pheasant mothers.

"The problem of furnishing the correct food for the birds is taken care of with a patented product similar to ground dog-biscuit. The older birds are given the food after it has been carefully mixed with other ingredients, and the young birds get practically the same thing, ground much finer. Powdered milk is used in the preparation of food for the chicks. Much care and time is taken in the preparation of food.

"While the raising of pheasants is moving along nicely at the farm, it will be some time before the work with Hungarian Pheasants shows results, Mr. Hendricks believes. The Hungarian has not been raised in captivity to a very great extent, due to their non-poleamious nature and the care they take in selecting a mate. Where a pheasant cock can be put in a pen with several hens for mating, the Hungarian partridge must be placed in one large pen together to allow them to choose what mate they will. Following the mating period the pairs are placed in separate pens and no intruder is allowed. The mother and father partridge will kill even their own kind to protect the sanctity of their home.

When It's Springtime in the Rockies



MONTANA blue grouse are clucking for their little biddies high on the mountain fastnesses. Despite the fact that the blue grouse have been hard hit by mysterious diseases, they are coming back to their old nesting

grounds. The splendid picture of the female, whose chicks have ducked their heads and hidden in the brush, is contributed by Deputy Game Warden William J. Dorrington.

White Wolf, Foe of Cattlemen, Is Dead

By ELVA WINEMAN, Stanford, Montana, with Photos by the Author

NEVER again will be heard from the hill-rim of the Little Rockies the soul-thrilling voice of the white wolf, monarch of the wilds. No more will the flying gray wraith strike terror and death into the heart of the frightened herd and feed like an epicure on the choicest animal of the lot. All that he ever wanted from life, he took, won by his own master strategy. But his agile spirit is quelled, his reprehensible career brought to a close, stubborn muscles refuse to respond. Deaf to the call of the wilderness over which he reigned supreme for many years, the shadowy trails will know him no more, for the lone white wolf is dead. As he lived, bold, courageous, arrogant, flaunting his contempt for man and beast alike—so he died, head up, facing the rifle, unflinching and fearless.

Ten, 15, perhaps 18 years, quite a span of life for a wolf under ordinary conditions it is said, and considering the manner in which he had been sought, the fact that every man's hand had been turned against him and he had been hunted from ridge to plain and back to mountain top with poisons, guns, traps, dogs and airplanes—that he lived as long as he did is nothing short of remarkable.

He was killed by A. E. Close, who was accompanied by Earl Neill and their two dogs, following a chase of several hours which began near the Close cabin. The dogs had caught up with the killer and attacked him, the outlaw turning ferociously upon the dogs and driving them back to the hunters whom he failed to see until within forty yards of them. Close fired from his position behind a tree, the shot taking effect in the front left cheek below the eye, "and that's all there was to it," he said modestly.

The men took the carcass to Stanford in the afternoon, accompanied by Gerald Hughes, secretary of the stockmen's association. While they were on the streets several hours the car was able to travel only by inches because of crowds which gathered rapidly as soon as the news of the killing went out.

Every one was trembling, including the hunters, but whether with cold or because of the excitement it is difficult to say. Cameras clicked madly. Every one wanted to see the man who did the shooting and personally ask him how it was done. Old stories of close calls and lucky escapes were brought out and refurbished, and the few persons who had been skeptical of the existence of such an animal were either silent or unusually garrulous in an effort to cover up their confusion and discomfiture.

By nature a cunning strategist, cruel and brutish, following the death of his mate in a trap a few years ago, the big white wolf became still more devilishly

The Joy of Pretense

Let's dream like the child in its playing;

Let's make us a sky and a sea,
Let's change the things round us by saying

They're things as we wish them to be,
And if there is sadness or sorrow,

Let's dream until we charm it away.
Let's learn from the children and borrow

A saying from childhood: "Let's play."

Let's play that the world's full of beauty,

Let's play there are roses in bloom;
Let's play there's pleasure in duty,
And light where we thought there was gloom.

Let's play that this heart with its sorrow

Is bidden be joyous and glad;
Let's play that we'll find on the morrow

The joys that we never had.

Let's play we have done with repining,
Let's play that our longings are still;

Let's play that the sunlight is shining
To gild the green slope of the hill.

Let's play there are birds blithely flinging

Their songs of delight to the air;
Let's play that the world's full of singing,

Let's play there is love everywhere.

murderous, a killer and an outlaw, until his reputation had gone out far beyond the confines of the Jefferson Forest where he ranged.

Letters and wires have come in to Stanford, to stockmen, bankers, the postmaster, the sheriff and others, from hunters in all parts of the United States; from men who had been reading the accounts of the activities of the wolf and who were unable to resist the glamorous call of the wild, the subtle fascination of the mysterious gray-white essence of Satan, each man eager to join in the hunt. Men as far east as New Jersey were interested. Minnesota, Colorado, California and Wyoming sent queries, while fond grandmothers in Wisconsin and Iowa sent word to "keep those children near the house until somebody kills that terrible wolf."

Many sportsmen came to join the chase and after one first-hand view of the lone wolf's hunting ground, one good look at the million acres of lofty ridges and deep canyons, gave up the attempt. Some of them were clever hunters, too, western men, versed in the habits of the carnivore.

Some have almost doubted the evidence of their own eyes, so fleeting

were the glimpses of the killer, but none could doubt the maimed and dead cattle left behind, ham-strung, tails bitten off, and often still living, though a meal had been taken from a hind quarter.

Four years ago Earl Neill shot the outlaw in the left hind leg, the wolf making all speed for a snowdrift where his protective coloring made him practically invisible against the snow. Neill has cherished the memory of that encounter, never quite sure that his story was believed. If there was any doubt about it it was settled here this week with the killing of the big wolf, when the left hind leg was found to bear a scar caused by a bullet wound.

R. C. Hardenbrooke tracked him all one day, giving up only when night fell. Many others had the same experience.

One of the most dramatic incidents in the career of the wolf occurred in February, when A. V. Cheney and his five Russian wolfhounds battled fiercely with him near the Cheney ranch for several hours. One of the dogs would do the tackling, grabbing the wolf by the tail and attempting to throw him around to the other dogs. The hound was bitten so many times as a result that he finally refused to fight longer.

Cheney, who had no rifle, then attempted to rope the wolf, but he escaped up a steep mountainside after tiring man, horse and dogs until they were unable to follow.

Alex Salminen and his brother almost succeeded in running him down with a car near Merino.

A train crew coming into Stanford late one afternoon saw him cross the tracks in front of the engine. Upon their arrival in town with the news, there was a general exodus of men and boys with rifles going to the scene, but they failed to get a glimpse of the clever animal. All they saw was an uneasy eagle soaring high above the entrails of a rabbit.

Another time he was seen to cross a field on the Oja ranch near Geyser. One of the Oja boys, who was ploughing near by, unhitched, mounted a horse and trailed the wolf until he was lost in the foothills of the Little Belts.

Skelton brothers of Geyser packed into the hills for a week's intensive hunting. They worked hard with saddle horses and hounds without getting a glimpse of the wolf, or seeing a track. Becoming disgusted, as there was no snow for tracking, they broke camp, loaded their stuff, and with the rifles lying in the wagon box they were about to start down out of the hills when they stopped, startled, while a flip of animated white fur tore across the trail ahead of them, vanishing into the brush beyond. They stared at each other in

dismay as it dawned upon them that they had just seen the white wolf.

Early in March, M. G. Daniel, trapper in the employ of the Biological Survey, established a camp in the Little Belts, near Stanford, and for two months has worked on the trail of the wolf. He put out a line of 65 traps and in one isolated section spread poisoned meat. Another trapper joined him recently, bringing a pet wolf, which followed the men like a dog and it was hoped might be the means of attracting the attention of the outlaw, causing him to venture near enough for them to get a shot. But for the last several weeks no sign had been seen of the lone hunter and it was believed that he might have fallen a victim to the poisoned meat and crept off in some covee to die.

Those who have seen the carcass of the killer say that he is as big as he has always been described: "As big as a full-grown calf," it was said. "He is almost snow-white," the stories went, and they were true. The carcass is six feet in length, including the beautiful brush, nearly 20 inches long. The head is massive, with a full set of teeth, the four sharp, long fangs not badly broken. Gaunt and lank of body, one would be prompted to believe that his hunting expeditions were not so successful of late. Too many interruptions, perhaps, with so many hunters hot on his trail. The pads of his feet are all intact, evi-

dence that he has never been caught in a trap.

The value of cattle he has killed over a period of 10 or 12 years, to say nothing of deer and elk upon which he has fed, runs into thousands of dollars, the heaviest losers being Charles R. Taylor of Dry Wolf Canyon and W. I. Hughes, whose ranch is seven miles south of Stanford.

During a six weeks' period in January and February of this year, 10 kills were made, all registered stock. Stockmen now are relieved to know that they can put away the lanterns which burned in their corrals at night.

"Have you some of that gasoline that stops knocking?"

"Yes."

"Then give my wife a glass."

not always attainable in the open forest. Moreover, contrary to the popular belief, he is strongly gregarious in disposition and likes to camp in the neighborhood of others of his kind."

These tendencies have made it possible to reduce the hazards to public health and property which otherwise would result from the presence of millions of people in the National Forests each summer, Mr. Kneipp says. By making available suitable camp grounds with adequate sources of pure water supply, equipment for garbage disposal fire-prevention facilities, sanitary utilities, and attractive surroundings, a concentration of visitors is achieved voluntarily and danger to public health and property is held within safe limits. At the same time the comfort and pleasure of the visitors is measurably enhanced and the social value of the National Forests is increased proportionately.

To help meet the needs of the millions of National Forest visitors, the Forest Service has designated approximately 1,500 public camp grounds in the forests, and has installed in 1,187 of these camp grounds some or all of the simple facilities which contribute to public health, comfort and pleasure, and minimize fire risk. Each annual appropriation by Congress allows for an extension of the work and eventually a complete system of well equipped camp grounds will be available to forest visitors.

Camps In Forests

THE average pleasure-seeking visitor to the National Forests likes to be reasonably wild and wooly, according to Assistant Forester L. F. Kneipp of the Forest Service, U. S. Department of Agriculture. "But, although he wants to get back to nature, he has developed certain standards of comfort, neatness, sanitation, and care in the use of fire,



GHOST WOLF OF THE LITTLE BELTS LOOSES LAST FIGHT

WHERE WOLF WAS SEEN



WHITE GHOST WOLF OF LITTLE BELTS ■ ■ COLOR AROUND NECK FROM BLOOD ■ A. E. CLOSE, WHO SHOT WOLF



LITTLE BELTS NEAR SANFORD



WHERE THE WHITE WOLF RANGED

MONTANA STATE FISH AND GAME COMMISSION

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MORE MONEY, NOT MORE LAWS

MILITARY commanders find it necessary to pause occasionally in their campaigns to consolidate their forces, orient themselves and make their gains effective and permanent. Piling up more laws and restrictions on hunting is the favorite occupation of the impractical game conservationist. More laws don't create more game, never have and never will, unless enforced.

Montana sportsmen and conservationists would do well to take a leaf from the book of war and learn practical methods. Enforcement of the laws we have should be the immediate objective, rather than more laws.

Failure of congress adequately to finance enforcement of the Migratory Bird Treaty Act is a case in point. The Bureau of Biological Survey is charged with the enforcement of this act, but is not given funds with which to employ a sufficient number of men. Twenty-four men are responsible for the enforcement of this act in the United States and Alaska. Unless cooperation is furnished by state game authorities the law in some places is a dead letter.

Sportsmen and conservationists who want the bag limit, non-sale and other regulations enforced must urge congress to provide adequate funds. Otherwise the law will become a byword and a joke.

You can buy your friends, but they never last as long as those you make.

FIRST YOU CUT THE HOLE

ALTHOUGH session laws of Montana hold that it is unlawful, a misdemeanor and punishable to catch any game fish through the ice, except in such waters as are designated by the State Fish and Game Commission, a western Montana woman justice of the peace holds that it is impossible "to catch any game fish through the ice."

The question is not one that has come before her in court, but Mrs. Julia Poirer of Alberton, a justice of the peace in Mineral county, recently was asked by an Alberton man what the penalty would be for catching fish through the ice.

The woman justice of the peace told the man that if he could catch any game fish or any other kind of fish through the ice he is a wizard. She holds that it is a physical impossibility to catch fish through the ice.

Mrs. Poirer holds that it might be possible to catch fish through a hole in the ice, but points out that the Montana session laws of 1927, Section 3694, carries the information that it is unlawful, a misdemeanor and punishable to catch any game fish through the ice.

FISHERMEN PLANT SWEET CLOVER

THOUSANDS of fishermen who patrol Pennsylvania streams throughout the spring and summer months enjoy not only this sport of the season, but at the same time provide food for game by scattering clover seed in likely places. Open places where the soil is sufficiently sweet to warrant its growth is given first consideration. Montana anglers may well follow this example. Some of the seed can be sown in the woodlands, especially in the cleared areas, with some degree of success. Swampy lands are not suitable for clover as the soil is acid, and the heavier wooded areas are poor places for growing clover since the fallen leaves render the soil acid. A clover-planting program may not seem practical to many persons, and it is true that it will be a failure in certain sections. Nevertheless, if the program is worked out on a basis of each fisherman who may be interested in hunting taking a half-pint of seed, at a cost of only a few cents, and scattering it in suitable places, it can readily be seen that a lot of seed can be distributed in a single season and a vast amount of territory covered. Granting that only 50 per cent of the seed grows the venture will have proven worthwhile. Boy Scouts are also being asked to aid in clover planting this season.

Too much sympathy is apt to spoil the under dog.

A BIG TROUT HATCHERY

WHAT is claimed to be the largest brook trout hatching house in the United States has recently been completed at Manistique, Michigan, by the division of fisheries of the State Conservation Department. The building contains 350 standard fish hatchery troughs with a capacity of 3½ million eggs. The trout hatched there will be distributed to rearing stations each spring. The output this spring was 3,225,000 brook trout and 521,000 brown trout fry.

A bigamist is a man who has more wives than brains.

PHEASANTS IN CONNECTICUT

PHEASANTS furnish most of the upland bird shooting in Connecticut. Grouse and quail shooting has been suspended in recent years owing to scarcity, the former to be given an open season in 1930 and the latter in 1931. No state game farm is operated, the department having concluded that the birds needed for stocking can nearly all be obtained from the 175 commercial breeders of the state at less cost than the state can rear them.

The sum of \$50,000 has been allotted for purchase and distribution of pheasants in 1930. Fifteen hundred cock pheasants one year old or over were purchased and released in March to insure a sufficient number of male birds in the wild covers for the breeding season for natural reproduction.

In August 15,000 pheasants of this year's hatch will be purchased and liberated in the proportion of one male bird to five hens. Planting is done only on lands well suited to the species and to which the public has access for shooting.

Natural reproduction is known to be successful as the annual kill of pheasants by sportsmen, who are limited to two cock birds a day and fifteen for the season of six weeks, greatly exceeds the number released. In 1927 only 8,000 birds of both sexes were released but reports of sportsmen showed a kill of over 20,000 cock birds.

The stock of native quail depleted by close shooting and disease has been supplemented this year by importation from Mississippi and redistribution in the state, birds being trapped where abundant and released where less numerous.

THREE R'S OF CONSERVATION

THE three R's of wild life conservation, says Paul G. Redington, chief of the Bureau of Biological Survey of the United States Department of Agriculture, are Research, Regulation and Refuges. "Research is of primary importance in determining policies for the preservation and increase of birds, animals and fishes, and the necessary facts can be developed only through constant scientific study, and now, as never before, earnest and efficient scientists are supplying the administrative branches of game conservation with the needed information," asserts Mr. Redington.

"Regulation has to do with the game and fish laws, designed to prevent the wastage and abuse that follow greed, ignorance, and commercial exploitation. It will be readily recognized that there must be regulations prescribing open seasons on game and fish, bag limits, and similar matters, and that the gunners, trappers and fishermen themselves will find it each to his individual advantage to abide by these laws. Unless we can be assured of a general observance of and respect for such laws, we who are now living are very likely to destroy the objects of pursuit or to bring them dangerously close to the point of extermination.

"Refuges for wild animals and birds must be established on the breeding grounds of migratory birds, along the flight lanes, in concentration areas and on the wintering grounds. The Biological Survey has under its jurisdiction at the present time 84 bird refuges in the United States, Alaska, the Hawaiian Islands and Porto Rico, five of which are reservations to protect big game, and the rest are to give sanctuary to many species of interesting birds."

"Wild life conservation programs," concluded Mr. Redington, "must be supported by a sound public sentiment, inspired and developed by continuous educational measures. We must know the full significance of our three R's. New generations must be educated. From their numbers will come those individuals equipped and competent to direct and administer our resources in wild animals and birds."

To be an optimist, you have to think you have arrived before you start.

LAKE IS ELK DEATH TRAP

HARRISON Lake in Glacier Park is living up to its reputation of being a veritable death trap for elk and deer. Magnificent bull elk, during the cold weather, have perished by breaking through the airholes in the ice of the lake. The losses were discovered by Park Ranger Pauley.

Many large springs in the bed of the lake cause airholes where the ice is not strong enough to support the weight of an animal. These tragedies of the wilderness were easily reconstructed. The elk was walking over the firm ice and stepped into an airhole. In the mighty animal's terror-stricken but futile efforts to escape from the death trap the ice was broken for a radius of 20 feet. The great head dropped lower and lower until death came and when discovered only the tip of one huge antler and the top of the hind quarters protruded above the ice.

If in deep water animals can not climb back onto the ice, although a vigorous man frequently escapes with nothing worse than a cold bath.

Even the man who rises in the world may want to be let down easy.

BIRDS IMPORTANT TO FARMERS

IT HAS been estimated by the Biological Survey that each bird destroys insects to the value of 10 cents annually. With a population of four billion birds breeding in the United States, their annual worth to the country in cash is \$400,000,000. The annual insect damage to crops amounts to more than one billion dollars.

For every two farmers there should be at least one beneficial bird of prey, a hawk or owl whose value alone is \$70 or \$35 to each farm in destroying rodents such as mice, etc.

Everyone has seen great flocks of blackbirds descend upon wheat fields. Such a visitation would be alarming were it not for the fact that for every bushel of wheat they consume they destroy five bushels of insects. The five bushels of insects if left alone to feed and propagate would in one year destroy 10 bushels of grain.

WISCONSIN GAME SURVEY

A COMPLETE survey of all game species to determine their present status and their fluctuation in recent years, also to ascertain facts as to food and disease conditions, which can be used as the basis for permanent stocking and management operations in the future, has been started by the Wisconsin Conservation Commission.

As it is intended to continue this survey for a period of years, a carefully prepared plan of research has been prepared. Besides the regular conservation wardens, 250 game observers, selected from a carefully compiled list of experienced sportsmen and conservationists throughout the state, have been selected to make the observations and reports. The reports will be based upon actual personal experience.

Under the plan of selection there will be two or three observers in every county, in addition to the regular wardens. W. B. Grange, superintendent of game for the Conservation Commission, who is in charge of the survey, is encouraging anyone else to become an observer who is competent and who is interested enough to continue his part of the research work for several years.

If the traveler does not meet one who is as good, or better, than himself, let him keep to his solitary journey; for there is no companionship with a fool.—Proverbs of Spain.

EIGHT MILLION DOLLAR INDUSTRY THREATENED

OWING to increased pollution of the upper waters of the Mississippi River the production of fresh water mussels in the region affected is seriously threatened. The button-manufacturing industry, with factories located at La Crosse, Wisconsin; Muscatine, Iowa, and elsewhere, is faced with a serious depletion of its supply of raw material. The pearl buttons used in commerce are made from the shells of fresh water mussels, a large percentage of which are secured in the upper Mississippi River and its tributaries. For a number of years all the states bordering on the Mississippi River and containing other streams yielding merchantable shells have carefully conserved this resource by a system of protection whereby certain areas were closed to shell fishing for a period of years.

The United States Bureau of Fisheries has carried on artificial propagation of mussels which it is found increases the production materially. Artificial propagation is accomplished by inoculation of fishes with mussel spawn, the young mussels remaining attached to the gills and fins of fishes until developing to a certain stage called glochidia when they drop off. Each species of mussels requires its certain kind of fish as host.

Pollution of the upper Mississippi, due to sewage and industrial wastes from Minneapolis and St. Paul, has caused the Bureau of Fisheries to abandon its propagation work in Lake Pepin, about sixty miles below the Twin Cities, as mussel culture could no longer be profitably conducted in those waters. The Bureau states that former productive mussel-bearing areas of the upper Mississippi Valley are faced with economic exhaustion and increased pollution has made it impossible to restore these areas to a state of productivity. Production of mussels in Lake Pepin, which is a widening of the Mississippi River about twenty miles in length, dropped from 4,000 tons in 1914 to approximately 150 tons in 1919.

Then a mighty weight I feel,
Sings the line and whirs the reel.
—Maurice Thompson.

ATLANTIC SALMON IN CALIFORNIA

TWENTY-FIVE thousand Atlantic salmon were hatched and distributed in California during 1929 as a result of an effort to establish that species of fish throughout streams in the northwestern part of the state. Twenty thousand eggs of the eastern species have been allotted by the U. S. Bureau of Fisheries. An exchange agreement has also been reached between the California State Department of Natural Resources and the Department of Marines and Fisheries of the Dominion of Canada for an additional 25,000 Atlantic salmon eggs, which will be delivered in the spring and hatched and reared at the Cold Creek hatchery in Mendocino county. The water supply of the hatchery has been found to be particularly adapted to the rearing of this variety of salmon.

Montana Hunters War on Beasts

DEFINITE results obtained by experienced hunters employed by the State Fish and Game Department, the Biological Survey and the Livestock Commission, are shown in the last report made by R. E. Bateman of Billings, leader of predatory animal control in Montana.

During the past three months the hunters employed by the three departments have succeeded in taking 476 coyotes, 34 bobcats, 13 mountain lions, 11 skunks, 1 wolf, 2 weasels, 102 porcupines, 6 badgers, 24 eagles, 8 hawks, 3 owls, 25 ravens, 1,150 magpies, and put out 12,263 poison baits.

During the quarter from January 1 to March 31 there have been reported by hunters as follows: 45 sheep, valued at \$450, killed by coyotes; 16 deer killed by coyotes, and 18 deer killed by lions.

C. E. Beebe, whose headquarters are Columbia Falls, has made the best record for the three months in number of points, taking nine mountain lions in the last three months. Ben P. Vogler was second to Mr. Beebe in number of points, taking three mountain lions, six coyotes and one bobcat.

The total number of men on the payrolls ending March 31 was 38. Twenty-seven agreements with stockmen and sportsmen were signed during January and February.

In April the hunters continued to finish picking up all of their poison baits.

Trapping and den hunting will be the principal line of work. Den hunting will also be the principal work carried on by the hunters through May and June.

SUMMARY OF RESULTS OBTAINED

Dept.	Days	Animals Taken				
		Sal-aries	Bob-cats	Coy-otes	Wolf	Porc-u-pines
Federal	727	\$ 3,263	16	117	1	
Fish & Game	1,323	5,666	3	185		
Livestock	1,135	4,793	15	174		
Totals	4,185	\$13,722	34	476	1	

Dept.	Days	Lion			Badger		Skunk		Poison	
		Badger	Skunk	Pines	Baits	Baits	Baits	Baits		
Federal	4	1	1	21	2,269					
Fish & Game	9	5	1	31	3,729					
Livestock			9	50	6,265					
Totals	13	6	11	102	\$12,263					

Miscellaneous—24 eagles, 8 hawks, 3 owls, 1,150 magpies, 2 weasels, 25 ravens.

FINANCIAL STATEMENT

Federal			
Hunters' Payrolls	Other Expenses	Total Expenses	Balance
\$3,263	\$263.79	\$3,526.79	\$4,162.34
Fish and Game Commission			
\$5,666	\$42.15	\$5,708.15	\$14,733.76
Livestock Commission			
\$4,793	\$15	\$4,808	

During April the salaried hunters reported taking 261 predatory animals, consisting of 248 coyotes and 13 bobcats. Figuring a thirty-day basis, an average of 29 hunters worked full time, averaging a fraction over nine animals each. The cooperative hunters succeeded in taking 121 coyotes, making a total of

382 animals. Some of the hunters employed on mountain lion work failed to make any record this month, as their entire time was devoted to hunting lion, and no time was spent on coyotes, as this is about the last month that lion hunting can be carried on for the season.

Major Vermandel heads the list for April with a catch of 24 coyotes and 1 bobcat. Walter Chestnutt and Roy Vance tie for second place, Walter Chestnutt with a catch of 21 coyotes, and Roy Vance with a catch of 20 coyotes and 1 bobcat.

The hunters who have succeeded in making the honor roll for April are listed alphabetically below:

	Days	Bob-cats	Coy-otes	Pts.
Chestnutt, Walter	30		21	21
Groom, Chauncey	30	2	14	16
Groom, Dock	30	2	10	12
Johnston, Ted	30		13	13
Standish, Melvin	30		14	14
Standish, Miles	30		12	12
Standish, Walter	21		14	14
Vance, Roy	30	1	20	21
Vermandel, Lee	30	2	8	10
Vermandel, Major	30	1	24	25

The average point per animal is as follows: Each coyote gives the hunter a credit of 1 point; each bobcat or Canadian lynx, 1 point; adult wolves, 20 points; wolf pups, 10 points; adult stock-killing bears (grizzlies), 20 points; black or brown bears, 10 points; mountain lions, 20 points.

Montana Fish and Game Commission Holds Annual Meeting at Helena, May 23rd



Left to right—Robert H. Hill, State Game Warden; William K. Moore, Billings; G. T. Boyd, Great Falls; Thomas N. Marlowe, Chairman, Missoula; E. A. Wilson, Livingston; J. L. Kelly, Anaconda.

Big Game Increases In Montana Forests

DESPITE a huge increase in the number of hunters who took to the woods of Montana's national forests in 1929 over the number who hunted in 1928, Montana's big game has shown a most satisfactory gain in numbers during 1928-1929, according to figures released by the United States Forest Service district headquarters at Missoula. The game estimate is prepared each year by the different forests of the district, and their figures are compiled at the district office.

"A good deal of the increase comes as the result of the efficient work of Montana's Fish and Game Department," said Evan W. Kelley, district forester. "Proper laws for protection and preservation, enforced to the letter, have aided the game in Montana. The work of the State Game Warden, Robert H. Hill, particularly is to be commended."

In all the national forest areas of Montana in 1928 there were 50,220 deer, the estimate shows. In 1929 the estimated kill of these animals was 4,093 by man and 2,608 by predatory animals, yet the estimate for 1929 shows 51,890 deer ranging on the forest lands. This means a gross increase of 8,371 deer, or a net gain of 1,670.

The Cabinet Forest, near Thompson Falls, shows an estimate of 9,400 deer; the Kootenai, near Libby, of 7,560. The Custer, near Miles City, had but 750 deer reported in its estimate.

Elk showed a correspondingly gratifying gain. In 1928 the estimate shows 11,639 elk on Montana's National Forests; in 1929 it shows 12,958. The kill by man was 1,453; by predatory animals, 57. The gross increase was 2,829; the net gain, 1,319.

Forests having the greatest number of elk were the Lewis & Clark, near Choteau, with 5,170; and the Flathead, near Kalispell, with 1,547. The herd of 86 reported from the Beartooth was due in large part to a plant made by the State Fish and Game Department.

Moose estimates show an increase of slightly more than 100. In 1928 there were 1,257 moose in the National Forests of the State; in 1929 the estimate shows 1,363. One moose was reported killed on the Gallatin forest. Beaverhead forest, which takes in territory near Dillon, has 382 moose ranging on its area; the Missoula has 200; the Gallatin, 185; the Deer Lodge, near Butte, 100.

Mountain goats showed an increase of 201, but Rocky Mountain sheep show a decrease of 72. There were 2,212 sheep in 1928, and 2,140 in 1929; 4,082 goats in 1928 and 4,283 in 1929. The Lewis & Clark has 600 sheep; the Bitlter Root has 900 goats.

Hunters killed 677 black bear in 1929; bringing the total from 5,713 in 1928 to 5,646, a net loss of 67 animals. The heavy fire season and the shortage of

the herry crop, which forced the bears from their usual haunts to the proximity of man, were responsible for the large kill. In 1928 the kill was estimated at 428. Grizzly bear, on the other hand, increased from 490 in 1928 to 523 last year, a gain of 33. The kill was estimated at 29 animals.

It is estimated that there are 646 antelope on National Forest areas in Montana, as compared with 649 in 1928. Most of these animals range on the Custer forest.

Coyotes show a decided falling off. The 1928 estimate showed 22,278 of these animals; the 1929 estimate shows 19,140, a decrease of 3,133. Cats and lynx decreased from 3,559 to 3,362.

Mountain lions increased from 253 to 267 during the year, the estimate shows. The wolf estimate shows a decided decrease, from 56 in 1928 to 25 in 1929.

Beaver decreased from 18,150 to 17,051; fox from 2,009 to 1,974; mink from 8,721 to 8,461; otter from 225 to 213. Martin increased from 8,212 to 8,580.

The report shows that 15,263,000 fry were planted in National Forest waters during 1929, and that 305,000 eyed eggs were placed in the streams, the latter

going to the Flathead and the Missoula forests.

There were 22,542 hunters in Montana forests in 1929, an increase of 7,025 over the 1928 figure of 15,517. The forest officers cared for 26 cases of law enforcement, working with deputies from the State Department, and secured 25 convictions, the report shows.

Killer In Court

G. B. WHITNEY of Dutton found the illegal killing of a buck antelope was a costly matter. Tried and convicted, he was fined \$150 and \$20 in costs, according to a report made to the State Game Warden's office by Deputy Game Warden Thomas Danaher. He was accompanied by a boy named William Selstead, and the latter also was arrested on the charge, but Whitney took all responsibility.

John Ellis of Canton was arrested by Deputy Danaher on the charge of illegal possession of deer meat. Ellis was prosecuted at Townsend and fined \$50.

Expert Studies Montana Elk Problems

A COMPREHENSIVE study of the seasonal range, feed habits and wintering conditions of what is known throughout the country as the Northern elk herd, has been provided for by an agreement recently entered into between the Montana State Fish and Game Commission, National Park Service, Biological Survey and Forest Service. William M. Rush is now making the study.

The Northern elk herd, numbering about 17,000 head, comprises that portion of the Yellowstone Park elk which range in the northern part of the park and in the Absaroka and Gallatin National Forests. This herd migrates northward in winter to the valleys of the Yellowstone and Gallatin Rivers, and is distinguished from the larger herd, which migrates southward to winter in Jackson Hole, Wyo. During severe winters the condition of this northern herd becomes critical, and heavy losses from starvation occur. The elk drift down into the valleys, and in the Yellowstone in particular they often break through fences in search of food, doing much damage to stockmen and ranchers.

On account of the large numbers of elk involved and the difficulties to be solved in bringing about proper management of this herd, it is essential to have accurate scientific knowledge as

a basis for determining the measures warranted for its maintenance and health, and to meet the requirements for winter range and feeding.

Mr. Rush is well qualified for this work, as a result of many years' experience in dealing with game problems. For the last year he has been engaged on this study, his salary having been delayed by an eastern sportsman who has become interested in the plight of these elk.

Beginning May 1, according to the agreement recently signed by the four agencies concerned, Rush's salary will be paid by the State Game Commission and the Forest Service, while his expenses and assistance in the field will be provided for by the National Park Service and the Biological Survey.

Under an appropriation of Congress, and by the use of private co-operative funds on a 50-50 basis, lands are now being acquired from ranchmen along the Yellowstone Valley for the amelioration of wintering conditions which now threaten serious losses in this herd. Mr. Rush's study will determine the further winter requirements of the elk, as well as the existence of disease and parasitic enemies, and will recommend remedial measures for their relief. Mr. Rush's headquarters will be at Yellowstone Park.

Game Birds Not Injured by Poisoned Grain

By O. E. STEPHL, Leader of Rodent Control, Bureau of Biological Survey, Bozeman, Montana

THERE are many areas in Montana and in other western states in which it would be quite impossible to raise crops successfully if field rodents such as ground squirrels and prairie dogs were not kept under control. For this purpose large quantities of poisoned grain, mainly whole oats poisoned with strychnine, are being used. Preparations containing arsenic, phosphorus, and some other poisons are sometimes used, but such use is discouraged by the Biological Survey. Practically all the rodent poisons now used in Montana are made with strychnine, which is deadly to rodents, but fortunately can be consumed in large quantities by certain of our most important game birds without harm.

Complaints are frequently made to those in charge of rodent control operations that the wide distribution of rodent poisons is responsible for the scarcity of certain game birds. This has been disproved both by extensive field observations and by laboratory and field experiments in feeding strychnine-poisoned grain to the birds. It is now a known fact supported by feeding experiments with strychnine-poisoned grain to gallinaceous birds that most birds of this group can consume large quantities of strychnine without harm. Sportsmen, therefore, need not fear the loss of these game birds from that source, as such cases of poisoning are extremely rare, if they occur at all. One of the important functions of the Biological Survey is to promote the conservation and increase of our useful birds. If it were true that the distribution of rodent poisons is responsible for diminishing bird life, the bureau would not recommend the general use of those poisons and would seek other means of control.

Requests have repeatedly been made of those who complain that rodent poisons are killing game birds that they show proof of such destruction, but efforts made to obtain actual evidence of this kind have always resulted in failure. For example, in Pondera county, Montana, it was reported that poisoned grain distributed through the county agent's office was killing off game birds. Believing that this was not true, the county agent, for several years, offered through his local paper a reward of \$10 for each game bird thus killed. Although this announcement attracted considerable attention, not a single claim for the reward was ever presented.

In Montana the Biological Survey each summer employs trained men who spend their entire time poisoning ground squirrels and prairie dogs on national forests, Indian reservations, and other Federal controlled areas. Many tons of strychnine-poisoned oats are used and thousands of acres treated. These men have instructions to report all instances of unavoidable poisoning of desirable forms of wild life, including grouse and

other game birds. Grouse are common on many of the areas poisoned, yet not a single instance of finding dead birds has been reported. When strychnine kills it does so swiftly, and any susceptible bird eating the poison would not get far from the spot where it found the grain. Experiences such as these indicate that complaints regarding the destruction of game birds by strychnine-poisoned grain are founded upon suspicion or hearsay rather than upon fact.

Representatives of the Biological Survey have conducted experiments in feeding poisoned grain to game birds. In all these tests, unless otherwise stated, strychnine is used as the toxic agent in the proportions recommended by the Biological Survey and commonly used in the United States for the destruction of ground squirrels, prairie dogs, and other rodent pests.

In California captured quail were fed poisoned barley prepared for ground squirrels in the proportion of 1 ounce of strychnine to 16 quarts of grain. One adult quail ate 125 kernels in 24 hours with no sign of ill effect. This quantity of poisoned grain would have killed several ground squirrels, each heavier than the bird. Another bird in three days ate 200 kernels of poisoned wheat that contained one-half grain of strychnine. Although the strychnine taken was sufficient to kill a number of ground squirrels, the quail showed absolutely no ill effects from the poison.

In Washington tests were made of feeding poisoned grain to Chinese pheasants. The bait was prepared with strychnine in the proportion of 1 ounce of strychnine to 12 quarts of grain. One of the birds ate 40 poisoned oats the first day and 60 the next morning, but refused to eat any on the third day. Another ate 100 of the poisoned oats in one day. Neither bird showed any ill effect from eating the poison. A third pheasant was given no food for 24 hours, after which it ate 100 poisoned oats quickly. Another ate 150 poisoned oats readily. The men conducting the tests reported that none of the pheasants appeared to suffer in the least from eating the strychnine.

In experiments conducted by the chief game guardian of Saskatchewan, Canada, it was demonstrated that a prairie chicken could eat a quantity of poisoned grain sufficient to kill a hundred ground squirrels without experiencing any ill effects.

In these experiments three sharp-tailed grouse (*Pediocetes phasianellus columbianus*), locally, but erroneously, known as "prairie chickens," were used. The birds were placed in a small coop divided into three compartments. One of the birds was used as a check to be fed clean grain only. To determine their preference, each bird was given a mixture of corn, wheat, and oats. The corn and wheat were eaten at once, the

birds showing a decided preference for these over whole oats. Later in the day, however, two of the grouse had eaten all the oats also. The following day the birds were given no food until 4 p. m., when the poison-feeding tests began.

Bird No. 2 was given 150 grains of oats (one teaspoonful) treated with strychnine alkaloid as recommended by the Biological Survey and generally used for the destruction of Richardson's ground squirrels in Montana. The bird ate the 150 grains of poisoned oats readily and was at once given 150 more. At 4:10 p. m. only a few grains of this second feed of poisoned oats remained uneaten, and 150 more were placed in the coop. By 4:30 p. m. this grouse had consumed the three feeds of 150 grains each (450 grains) of poisoned oats with no trace of ill effects. Thus within half an hour and without injury to itself this bird had eaten a quantity of poisoned grain sufficient to kill about 20 ground squirrels.

Bird No. 3 was given 300 grains (one tablespoonful) of poisoned oats prepared in the proportion of 1 ounce of strychnine to 12 quarts of oats. The bird within half an hour ate 235 of the 300 grains of poisoned oats and it did not appear to suffer in the least from the effects of the strychnine.

The feeding tests with poisoned oats were continued for several days, but it was noted that after the first feed the birds, although they were undoubtedly hungry, no longer relished the oats. The poison was then all removed and the three birds were given all they wanted to eat of clean wheat.

As it was evident that the grouse preferred wheat to oats, in order to encourage them to take more of the strychnine, feeding tests were made using wheat in place of oats. The wheat was poisoned in the ratio of 1 ounce of strychnine to 12 quarts of wheat.

One of the grouse ate 400 kernels of the poisoned wheat without stopping. This quantity seemed to satisfy its appetite and it rested contentedly. It had consumed within a few minutes a quantity of poisoned grain sufficient to kill several prairie dogs and did not show the slightest sign of poisoning.

Although hungry, the two grouse were finding the poisoned wheat distasteful, or for some other reason objectionable, and were not relishing this sort of feed, while at the same time the check bird was consuming large quantities of clean wheat. Whether this refusal of strychnine grain is due to taste or to some internal disturbance, the writer does not know. The birds, however, displayed no signs of distress at any time as a result of taking strychnine. It was apparent that the two grouse were not being injured by eating the poisoned grain.

The check bird, which had been receiving only clean grain, was now offered a quantity of the poisoned wheat. It ate one-half tablespoonful before finding it objectionable and then commenced "playing" with the remainder, picking up the kernels and immediately dropping them or flipping them aside. The poisoned wheat had no noticeably injurious effects. The poisoned wheat was now removed and replaced with a tablespoonful of clean wheat. The bird was quick to note the difference and ate it all (550 kernels) greedily, a fact that indicated a marked discrimination against the poisoned grain. The other two birds were refusing to eat any more of the poisoned wheat, so it was removed and replaced with clean wheat. They also were quick to detect the difference and ate the wheat greedily. One of the birds ate three tablespoonfuls (approximately 1,650 kernels) of wheat between 9 a. m. and 5 p. m.

All three birds reacted about the same way toward the poisoned grain. At first they ate it readily, then, although there was no outward indication of any harm done, something caused them to "lay off." All three birds consumed large quantities of clean wheat immediately after refusing poisoned wheat. The tests being completed, the birds, apparently in the best of physical condition, were removed to an outdoor enclosure to be looked after by the poultry department of the college.

These tests indicate that sharp-tailed grouse can consume large quantities of strychnine-poisoned grain without apparent harm, and that poisoned oats such as recommended and used by the Biological Survey and its many cooperators in rodent-control operations is not responsible for the scarcity of grouse in Montana.

The gallinaceous game birds showing such a marked immunity to strychnine

poisoning belong to the families that include the prairie chickens, sage hens, quail, Chinese pheasants, the several species of grouse, and domestic chickens. In these birds the crop is unusually large.

Although it is known that gallinaceous birds have certain characteristics that make them highly resistant to the action of strychnine taken through the stomach, the exact reason for this is not thoroughly known. Strychnine is very slowly absorbed from the crop of fowls. The physiological processes of birds are exceedingly rapid, and in gallinaceous birds the absorption of strychnine through the walls of the digestive tract is probably slow and the elimination by the excretory organs unusually rapid. Little or none of the strychnine enters the circulatory system, and convulsive spasms are not produced.

Geese and ducks, both wild and domestic, do not belong to this group. Strychnine-poisoned grain will kill them. Magpies, sparrows, and crows also are susceptible to strychnine poisoning.

Rodent poisons are not all necessarily made with strychnine. Phosphorus, arsenic, and some other materials are sometimes used, but fortunately to a very limited extent in Montana. Game birds are not immune to these poisons and their use against rodent pests is not recommended. In a California experiment four quail were killed by feeding them grain poisoned with phosphorus. The birds showed a marked dislike for the poison, but by withholding other food, hunger eventually forced them to eat it. Tests with arsenic and thallium were conducted in a similar manner, and both proved fatal to quail.

Not all our birds are immune to strychnine poisoning. In poisoning operations some useful birds are killed by eating poisoned grain intended for

crop-destroying rodents. The number thus killed is small, however, and the effect on the bird population as a whole unimportant. Thousands of rodents are destroyed to each useful bird killed. In Montana horned larks are accidentally poisoned more often than other species because they are ground-living birds.

Ground squirrels themselves are destructive to ground-frequenting birds. At the Experiment Station at Bozeman they were observed carrying off newly hatched chickens. Other instances of ground squirrels raiding poultry have been reported. Ground-nesting birds, such as horned larks, suffer similar depredations by these animals. Careful investigation would probably show that the accidental poisoning of a few ground-nesting birds is more than offset by the good accomplished in the destruction of many of the birds' enemies.

Examinations of dead birds on areas treated with poisoned grain show that practically all of them were killed by picking up wheat, hulled oats, broken kernels, or other small seed. The danger of accidental poisoning of useful birds is minimized by using for bait only large plump whole oats thoroughly cleaned so as to be as free as possible from material small enough for the birds to pick up.

The relative economic value of the few birds killed must be compared with the good accomplished by the extermination of millions of crop-destroying field rodents. Most farmers appreciate the value of birds as destroyers of insect pests and regret to see even a few of them killed, but they can not be expected to sacrifice a goodly portion of their crops for purely sentimental reasons.

Then there was the Scotchman who kissed the neighbor's baby every time it finished eating an ice cream cone.

POISON KILLS RODENTS BUT SAVES THE BIRDS



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POISONED PRAIRIE DOGS 1,641 WERE COLLECTED AFTER ONE NIGHT'S OPERATION ON 320 ACRES



PRAIRIE DOG AT HOME

Lead In Feeding Area Fatal to Ducks

LEAD poisoning, a deadly affliction besetting wild waterfowl, has again showed itself in the coastal region of Louisiana. E. R. Kalmbach, a biologist of the Bureau of Biological Survey of the United States Department of Agriculture, recently visited the region and studied the causes of the mortality reported among wild fowl there. His report shows that though less disastrous than the duck sickness of western states, which has made heavy inroads on ducks and other waterfowl during recent years, lead poisoning is in some respects even more unfortunate.

The story is simple, he says, yet particularly deplorable. For many years lead in the form of scattered pellets of shot from hunters' guns has been sprayed about favorite shooting stands. These stands naturally are in attractive feeding areas, where the birds, puddling in the mud bottoms for seeds and tubers of aquatic plants, come in contact with the shot. To assist digestion they swallow the leaden pellets along with the sand and bits of gravel. The lead is slowly ground down by stomach action and they assimilate it.

The slow toxic action may not reveal itself immediately, but when once a bird takes a lethal dose of lead there is no chance that it may escape the effects. The affliction usually lingers and the bird gradually becomes weaker, first losing the power of flight and then the ability to walk. In this helpless condition, even should it be able to survive the ravages of the poison, the bird often becomes the victim of the elements or of our predatory creatures.

With regard to the recent lead-poisoning outbreak, the Biological Survey report says there is little doubt that water levels have a distinct significance in the prevalence of lead poisoning in this coastal area. Practically all the ducks succumbing there were shallow-water feeders (pintails and mallards) and in their feeding are able to reach the bottom only when the water is of moderate depth.

Commenting on the condition in which the lead is found in the stomach, the report says "the pellets of lead at times were worn down to mere disks of small size that easily might be overlooked in a superficial examination. By syphoning with an excess of water in a shallow dish these small particles can be separated from other

material of lower specific gravity. This condition, in which the lead shot are almost, if not entirely, digested, has raised doubts in the minds of some field observers as to the cause of the mortality.

"If the bird has eaten only a few shot (3 to 6) it would be necessary that these be ground down almost to the vanishing point before the bird could assimilate a lethal dose.

"On the other hand, cases may arise in which as many as 20 or more shot may be found in a single stomach. In such instances it often will be noted that none of the shot has been worn down to a disk. Death is caused by the assimilation of the comparatively thin outer surface worn from all the shot. Since the toxic action of lead is slow and a bird may retain its power of flight for two or three days after having consumed a lethal dose of shot, cases in which an apparently healthy bird is found carrying a considerable number of shot in its stomach are explained."

Continuing, the report discusses field conditions: "To visualize the conditions under which ducks may obtain a lethal dose of lead even though the shot be widely scattered, one needs only to recall how thoroughly these birds work over an attractive food area. A flock of 200 to 300 ducks may find sufficient food in the stubble of one rice field to hold their attention for successive nights over a period of several weeks. They go over practically every square foot of this area, and any shot overlooked by one bird is likely to be picked up by another. Furthermore, although a duck may find a single shot only once every third or fourth day, the process of assimilation of the lead is so slow that in the course of a week or two sufficient lead may be accumulated to produce fatal results.

"Any doubts that may exist concerning the prevalence of shot in quantities sufficient to be a menace to wild fowl in this coastal area vanish when it is

realized that lead was found in the stomach of every one of 18 birds on which post-mortem examinations were made. The pellets of shot varied from 1 to 24 in number, and in each instance characteristic symptoms or post-mortem aspects of lead poisoning were found."

The mortality in Louisiana this year was not so great as last, according to Mr. Kalmbach, and by no means equal to that of 1921, when many thousands of waterfowl died, presumably from lead poisoning. Deplorable as these recurring losses are, the most unfortunate feature of the situation, it is pointed out, lies in the fact that there is still deposited not only in the marshes and shallow waters of Louisiana, but in those of many other states as well, lead shot that will continue to kill waterfowl for many years to come. The Biological Survey called attention to this menace in 1919 and pointed out the hopelessness of any remedial measures. As stated at that time "all that can be done is to call attention to the prevalence of lead poisoning and to describe the cause and symptoms, so that persons finding birds affected may understand."

SO THAT'S THAT

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Crane Nearly Extinct

ACCORDING to a recent statement coming from the office of the National Association of Audubon Societies, 1974 Broadway, New York City, the rare and vanishing Whooping Crane has been reported as having wintered on the coastal prairies of Texas.

A state deputy game warden, who knows the birds well, has reported to the Audubon Association that five Whooping Cranes were observed on two different occasions during the month of December.

Dr. T. Gilbert Pearson stated:

"This recent record is of special interest, in view of the fact that for many years the fate of this significant bird has hung by a slender thread. During the interval between 1900 and 1921 few, if any, accounts of its occurrence within the United States were recorded. Since the latter date, however, when it was my good fortune to discover four of these cranes wintering on the Laureles' ranch, they have continued to be reported from time to time, although never in numbers exceeding four or five. They were last known to breed in Saskatchewan, and the Canadian game protective authorities will endeavor to guard any nesting birds that may be found.

"Among all the wild birds native to North America, none is so stately and picturesque as the Whooping Crane, and the probability of its ultimate ex-gret to all lovers of wild life. The bird tinction brings a feeling of deep re-was never common on the Atlantic coast, but less than a century ago, dwellers in the Mississippi Valley region might have seen it in considerable numbers during the autumn months as before the congealing frosts of winter, along with countless millions of wild waterfowl, it migrated to its favorite haunts along the coastal savannas of the southern states, or to the plains of Central Mexico.

"Like many another unique and conspicuous bird," concluded Dr. Pearson, "this magnificent creature has steadily disappeared before the advance of civilization, and it is altogether likely that in the not-far-distant future it will have gone the way of the Great Auk, the Laborador Duck, the Carolina Par-aquet, the Passenger Pigeon and the Heath Hen."

Lions In Swan Valley

Swan Lake, Mont.

Editor, MONTANA WILD LIFE:

In the last issue of "WILD LIFE" you asked to know of any one having knowledge of a mountain lion being killed by any one except a government or state hunter. A large one was killed in the Swan Valley in January by Lars Anderson, a settler. The lion was trailed a short distance and treed by a young untrained collie dog. A short time later the tracks of five were found but due to hard snowshoeing they were not caught up with. From all indications lions have been on the increase in this region for several years. Little hunting has been done by state hunters on the Swan drainage, and none for a number of years on the Upper Swan, where large numbers of deer winter, and where lion tracks are not uncommon. During the last three years not less than ten lions have been killed in this region by hunters and settlers. I am of the opinion that if a bounty was paid these animals would soon be thinned out and considerable game saved.

T. M. WILES,
Swan Lake, Montana.
Care Condon R. S.

Fat Fee in Foxes

RAISING silver black foxes has proved profitable for Frank Liess, a Trail Creek rancher living 35 miles from Forsyth. Mr. Liess has 21 pairs of the foxes, from which he will raise approximately three and one-half foxes a pair this season if he does as well as he has during the last two years.

Although Mr. Liess has received as high as \$500 a pelt, due to the market slump the 31 pelts he sold last December brought him only \$200 each, or \$6,200.

It costs about \$40 a year a pair to feed foxes, according to Mr. Liess, and during the business season of the year only about three hours a day are required to care for the animals on the Liess ranch, while at other seasons an hour's time usually is sufficient.

Hear about the two taxicabs colliding and 30 Scotchmen being injured?

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To the Editor, MONTANA WILD LIFE,
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Montana Sportsmen's Association

SPORTSMEN MEET IN MAY

LETTERS from sportsmen's organizations, telling of the problems that are peculiar to each community, have been coming to the State Secretary from several of the clubs. These problems will be considered carefully at the annual meeting of the Montana Sportsmen's Association, which will be held in the Placer hotel at Helena May 23 and 24.

"Too often sportsmen are prone to think of fish and game problems of their own locality to the exclusion of everything else in the state," said Glen A. Smith, chairman of the state organization. "At these annual meetings we gather with representatives from all parts of Montana, and often we find that the other clubs have had and solved problems similar to our own.

"That we may arrive at a better mutual understanding of the fish and game resources of the state; that we may more intelligently conserve, propagate and use this resource; that we may assist in obtaining better legislation for the solution of the game problems, it is in order that sportsmen from all over Montana gather and put their cards on the table. This meeting will be a clearing house of the problems that confront all hunters, anglers, conservationists and lovers of the outdoors."

Among the problems that will come up are those concerning the future of the state organization; an increase in revenue for the State Fish and Game Department; additions to the list of predatory animals and birds; the annual predatory animal contest for clubs; the question of aiding establishment of a wild life research station in Montana.

Game bird refuges, coming under the Federal provisions, will be discussed by some of the Biological Survey men. Problems of the two great national parks may be taken up by representatives of the Park Service. The research work regarding the northern Yellowstone elk herd will be reviewed by William Rush, who is working on this job. Mr. Rush is employed under a cooperative agreement between the Fish and Game Department, the U. S. Forest Service, the Bureau of Biological Survey and the National Park Service.

Every effort is being made to have a large and representative gathering of sportsmen from all sections of Montana. Each affiliated club is allowed two votes in the association, this vote being held by either one or two delegates. Be sure to give proper credentials to each delegate, signed by the president and secretary of the club.

Members of the Fish and Game Commission and Department will attend the meeting.

FOREST AREAS IN DANGER

UNLESS rains are frequent and heavy, the forest lands of Montana are threatened this year by as serious a fire menace as has ever

For U. S. Hatchery

A BILL for construction of a \$50,000 fish hatchery at Meadow Creek in the Madison county has passed the senate and will undoubtedly be signed by President Hoover.

The Butte and Ennis Anglers' Clubs have been active in sponsoring the bill for a new hatchery at Meadow Creek.

The bill provides for the building of a new hatchery and a rearing pond that will turn out thousands of fish annually.

Rainbow, Loch Laven and other native trout will be reared at the hatchery, it is stated.

been seen, according to Evan W. Kelley, district forester for Idaho and Montana. Last year the blazes whipped over huge areas in the national forests and in state and privately-owned land, destroying a countless number of game birds and animals and rendering useless, in many cases, the land as a breeding and rearing place for game. Thousands of fish were killed by the action of the fires.

So this year the Forest Service is making a determined effort to enroll all sportsmen of Montana in an anti-fire campaign. Blanks for the sportsmen of western Montana to sign, blanks that set forth the proper use of and care with fire in the woods, are prepared and ready for distribution to Missoulians, where an active campaign is to be waged.

Conservation men say that the greatest asset to game is a green timber land. If any sportsmen's organization wishes to get advice on a campaign for forest protection, a letter to the State Secretary at Missoula or to the Forest Service headquarters at Missoula will bring results.

AT JUDITH GAP

AT a meeting held at Judith Gap April 18 the Upper Musselshell Valley Sportsmen's Association affiliated with the state organization. They will have a representation at the state meeting May 23 and 24, a letter from L. R. Daems, secretary, indicates. Officers of the club include H. H. Hendrickson, president; Frank Brunner, vice-president; E. W. Moen, treasurer, as well as Mr. Daems. The trustees are J. R. Matthews, Sig Jordet, J. H. Kirk. The club has held meetings in most of the smaller towns near Harlowton, where most of the officers are located.

BANQUET AT MISSOULA

THE annual banquet of the Western Montana Sportsmen's Association was held in Missoula April 26, attracting sportsmen from all parts of western Montana. Speakers included J. F. Hendricks, Superintendent of the

State Game Bird Farm at Warm Springs; Dr. T. C. Witherspoon of Butte; W. N. Smith of Great Falls; John B. Ritch, Lewistown; Tom Walker, Butte; Sylvan J. Pauly, Deer Lodge. Chairman Thomas N. Marlowe had charge of the program and the menu. James M. Brown of Missoula was toastmaster. Clyde Headley is president of the organization; Tom Cummings, vice-president; H. G. Johnson, secretary. Five hundred men were present at the banquet.

DUDE RANCHERS HELP

A. H. CROONQUIST of Red Lodge, member of the governing board of the Montana Sportsmen's Association and also vice-president of the Dude Ranchers' Association, has played an important part in the work of the Red Lodge club. He writes:

"Dude ranchers are proving to be a helpful force in the conservation of all the things which are making Montana and Wyoming the great vacation playground of the American people. Fishing and hunting are encouraged but strictly within the legal limits laid down by the state in which the ranch is located.

"Montana and Wyoming offer some of the best trout fishing and big game hunting in the United States. In cooperation with the state and federal hatcheries, many of the dude ranches have put in their own rearing ponds. In these ponds millions of trout fry are planted every year, to find their way into the streams and lakes where everybody may fish. Rainbow, native cutthroat and eastern brook trout are planted in this way for the benefit of all fishermen, whether they are guests of a dude ranch or not.

"Fishing licenses are sold by most dude ranchers, who are generally deputy game wardens, and take time to explain all the details of the law before the guests start fishing. The same applies to hunting. You will find the dude rancher is not only a well-posted guide, but also a real sportsman and a good companion.

"The fish and game departments of Montana and Wyoming, and the Forest Service have always gotten full cooperation from the dude ranchers, in their conservation of our wild life. The dude ranchers in cooperation with the Forest Service have performed a real public service in the building and maintaining trails through scenic regions, which in no other way would be opened up to the public. Many pack trips from dude ranches are taken over these trails to trout-filled lakes, glaciers, canyons, and meadows of wild flowers. Many of the trails now traveled by dudes every summer were old game and Indian trails, and to travel along them as did the Indians and old white trappers is a thrill, and a change from the paved roads and swift traffic of this motor age."