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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Yellowstone NATIONAL PARK

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MONTHLY REPORT
JANUARY, 1934

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HORACE M. ALBRIGHT,
Director.

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DEPARTMENT OF THE INTERIOR

OFFICE OF NATIONAL PARKS, BUILDINGS & RESERVATIONS

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OFFICE OF THE SUPERINTENDENT

February 5, 1934

The Director
Office of National Parks,
Buildings & Reservations,
Washington, DC

Dear Mr. Director:

Following is the monthly report of activities for Yellowstone National Park for the month of January, 1934.

000 - General

The weather continued to be very unusual in that last month was the warmest January on record following a record breaking December; two months in succession, for record breaking warm weather.

The weather has been more like spring at Mammoth most of the month with only a day or two of stormy weather. In fact not a day has been lost by the Civil Works employees on account of bad weather. On the 23rd of January a mixture of snow and rain fell but the men were not working that day due to the order cutting the hours on CW to 15.

The road was open to the Buffalo Ranch practically all month, except for about one week and at the close of the month was still open.

The snow has been rapidly disappearing at Mammoth until by the end of the month several spots were bare and the average amount was only two to three inches. The snow has also settled considerably out in the park and compared with last year this year's snow depths are much less. However, the percentage of moisture is much higher which makes the total water content approach very nearly last year's total. Indirect reports from the Geological Survey are to the effect that the moisture content in the Snake River watershed west of the Continental Divide is as much as last year even though the snow depths are less

Due to the ideal weather at Mammoth quite a number of visitors, es-

pecially Sunday visitors, have driven up to Mammoth to see the terraces and also the wild life. The elk have not been so much in evidence this winter, but the visitors see a large number of deer, antelope and quite often mountain sheep in Gardiner Canyon.

At times during the month it was possible to count as many as 50 mountain sheep in the canyon.

Quite a number of the visitors were much interested in photographing the wild life. Mr. Ned Frost and his son were over from Cody, Wyoming and obtained several feet of film of wild life pictures.

The Civil Works program again occupied our attention during January. The work progressed fine until January 19 when we received orders to cut the work to 15 hours. However, this order was changed on January 23, amending the hours to 30 per week. So on January 24 practically all of the men were back on the job again and all at work by January 25.

020 - General Weather Conditions

A general summary of weather conditions will be found at the back of this report.

021 - In the Park

The weather during January has been generally fair and unusually mild. January this year breaks another record in the history of Yellowstone as one of the warmest months since the records have been taken by the Weather Bureau. As October and December were also record warm months for Yellowstone, this winter will, no doubt, have a record that will be hard to equal for many years to come.

The road from Mammoth to Tower Falls and the Buffalo Ranch remained open the entire month. However, the snow plow was used in opening the road from Mammoth to Blacktail the latter part of the month in order to take supplies to the Blacktail CWA project. All other roads within the park are closed to travel.

The following table gives the snow depths in inches at the end of the month according to drainage and in comparison with the previous month for the past three years. This table shows snow depth for December 1933 and January 1934 as no figures were available for inclusion in last month's report.

(Table on next page)

Yellowstone River Drainage	December 1931	December 1932	December 1933	January 1932	January 1933	January 1934
Buffalo Ranch	16	14	8	22	16	4
Canyon	22	28	20	36	56	32
Cooke	20	23	24	32	23	29
Cold Creek	27	18		24	34	16
Mammoth	11	7	3.6	21	10	3.6
Upper Slough Creek	10	10		24	24	15
Lower Slough Creek	10	10		24	24	18
Tower Falls	12	10	5	24	20	5
Hellroaring	12	10	3	23	26	3
Soda Butte	11	14	4	22	14	7
Thorofare	23	18		30	33	16
Miller Creek		22		20	36	10
Upper Miller Creek		26		28	40	20
Lake	20	16	15	29	31	20
Cabin Creek		8		26	17	8
Park Point		9		24	16	12
Cache Creek		22	15		46	27
Crystal Springs	27	32	24	30	50	
Madison River Drainage						
Old Faithful	36	16	21	41	48	31
Fountain		8	10	18	26	27
Madison Junction	22	8	16	20	24	19
West Yellowstone	36	18	20	36	38	26
Norris	28	24	18	30	40	
Grayling Creek		18	20	36	24	18
Snake River Drainage						
Two Ocean Plateau	40	36		54	58	48
Snake River		38	28	51	51	36
" " (7 mile post)	67	60		72	95	55
Mink Creek	36	22		38	52	
Fox Creek	34	48		38	52	30
Aster Creek	55	50		68	74	55
Bechler River	54	59	34	63	86	40
Cascade Creek	68	55	37	71	85	50
Boundary Creek		59	34	59	85	40
South Riverside		36		60	78	50
Gallatin River Drainage						
Gallatin Station	38	22	13	24	37	17
Fawn Pass		33	28			43
Bacon Rind						25
Daly Creek						16
Shoshone River Drainage						
Sylvan Pass Station	20	20	10	29	30	24
Sylvan Pass			5-10 ft drifts			5-10 drifts

Tallyman [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bottle Brush	14	14	6		22	16	4
Chaser	24	30	30		30	24	24
Chase	30	24	24		24	24	24
Jill Lynch	25	24			24	24	24
Jessie	17	7	14		17	20	7
Upper Stone Lane	24	24			24	24	
Lower Stone Lane	20	20			20	20	
Miss Kite	14	12	2		24	24	4
Patterson	12	7	2		7	7	2
Jack Kite	7	14	4		14	14	7
Thunder	[illegible]	20			20	20	12
Mill Lane		24			24	24	24
Open Cities Club		20			20	20	20
Zoe	20	17	3		17	17	20
Hills Open		4			24	17	4
Park Water		4			17	17	17
Stone Circle		20	12			24	20
Lowell Corner	17	24	24		24	20	
Sailing Time Trials							
Old Salient	24	21	21		21	24	24
Jessie	7		24		24	24	24
Sailing Station	24	7	14		24	24	14
Lake Tallyho	21	24	20		7	7	24
Sports	24	24	14		24	24	
Cheslin Lane	7		24		24	24	24
Long Step Sailing							
Jim Jones Tavern	24	24			24	24	24
Cable Lane		24	24		7	24	24
[illegible] (Pole vault)	17	24			17	24	17
Oak Lane	24	24			24	24	
The Crest	24	24			24	24	24
Lane Lane	7	24			24	7	7
Jackie Lane	24	24	24		24	7	7
Jessie Lane	24	24	24		24	24	24
Bobbie Lane		24	24		24	24	24
Joe's Tavern		24			7	24	24
Sailing Star Sailing							
Sailing Sailing	24	24	24		24	7	7
Star Lane		24	24				24
Sunny Hill							24
Tale Canal							24
Sunny Star Training							
Sunny Star Sailing	24	24	24		24	24	24
Sunny Star							

Yellowstone Lake froze over on January 7, in 1932 it froze over on December 11; in 1931 on December 17 and on December 20, 1930.

022 - Approaches to the Park

The Livingston-Gardiner road remained in excellent condition the entire month with no snow. The road from Bozeman to the Gallatin ranger station is open to within one-half mile of the latter place. All other approach roads to Yellowstone are closed by snow.

025 - In Nearby States

The excellent and mild weather prevailing over Yellowstone is also evident in the adjoining states. In fact, the entire Rocky Mountain region has been covered by this extremely mild winter weather.

100 - Administration

110 - Status of Work

All work was current. Authority was received to recall William H. Katus from furlough to take Clerk Edwin C. Stevens' place, who started on a three-months' furlough January 1 in order to finish school. Mr. Katus entered on duty on January 5.

120 - Park Inspections By:

121 - Acting Superintendent

A considerable part of my time was taken up during the month of January on the Civil Works program, and with planning for new projects on both the Civil and Public Works.

On January 2 I drove to Livingston to confer with the local county CW administrator on Civil Works matters and especially to the question of medical aid deductions. Returned home that evening.

On January 9 I drove to Bozeman and spoke before the Bozeman Rotary Club, using as my subject "International Fellowship in Yellowstone Park." After tracing the history of Yellowstone Park from the first report on it, made after an exploration by the Washburn, Langford Doane expedition, through its creation as the first national park in the world, I endeavored to show the effect it has had on the recreational developments of other nations. I also pointed out that the friendship between people of different nations who have met within its borders has made it similar to Rotary International in promoting understanding and friendship and peace. Dr. C. Max Bauer, Park Naturalist, accompanied me. We returned to Mammoth that evening.

On January 12 I again drove to Livingston with Assistant Park Naturalist Crowe, who was starting on a lecture tour in Wyoming under

the auspices of the Boy Scouts of that state.

On the evening of January 17 I attended the regular monthly meeting of the American Legion. Several of the other park employees also attended

On the evening of January 20 several of the Legionnaires, including myself, attended the annual elk dinner given by the Gardiner-Mammoth Legionnaires as hosts to the Livingston Post. Chief Clerk B.A. Hundley and I were on the general committee for this affair, Mr. Hundley being chairman.

On the 29th I drove to Livingston, where I spoke before the Livingston Rotary Club at their noon luncheon, my subject being "Historic Parks, Monuments and Reservations under the Administration of the Office of National Parks, Buildings and Reservations," and explained what the office of National Parks is doing to preserve and rejuvenate many such places as at Morristown, Yorktown, Jamestown and others, many of these places being the cradle of our nation.

Not only I, but Dr. Bauer and others of us who have made these talks at nearby towns, enjoy making them and from what we can hear, they seem to be appreciated and we hope to keep up the good feeling in this way.

124 - Other Interior Department Officers

Max Caplan, Special Investigator, Bureau of Investigations, Department of the Interior, arrived from Billings on January 19 and left the same evening. His visit has been made the subject of a special report.

140 - Labor Situation

Although the employment of a considerable number of men on the Civil Works projects in Yellowstone Park and nearby counties and towns has relieved the situation somewhat there still remains quite a bit of unemployment. The local CW administrators for both Park County, Wyoming and Park County, Montana, report large numbers of unemployment - eight or nine hundred in each county. Most of these are able bodied, but the administrators report that unfortunately a large percentage of the unemployed are unable to work, being sick, aged or crippled. They are very hopeful at this writing that Congress will take definite action in providing more funds to relieve the distressed who are unable to work and to continue Civil Works projects, to keep employed those who are able to work. The mild weather in this part of the country has allowed practically all Civil Works projects to continue without loss of time which has enabled the men to get ahead and provide for their families. The taking of even a portion of the men off relief rolls and putting funds into circulation in this territory has created a much more hopeful feeling and generally higher morale which is naturally

hig er than it was.

150 - Equipment and Supplies

Three carloads of coal, and one car each of gasoline, fuel oil and tractors were received during the month. In addition shipments were received of lubricating oil, creosote, groceries, sheet iron, hydrated lime, bricks, radiators, kerosene, plumbing supplies and linseed oil.

170 - Plans Maps and Surveys

Work in this division followed the same general routine as last month, consisting entirely of field and office engineering in connection with Civil and Public Works projects. Personnel was increased by the addition of one draftsman employed on Public Works payroll.

200 - Maintenance, Improvements and New Construction

210 - Road Maintenance

Practically no road maintenance was carried on during the month. It was necessary to operate the snow plow several times during the month at headquarters area because of drifting snow caused by high winds and the eight mile section of the Tower Falls road as far as Blacktail Deer Creek was opened twice to allow traffic to one of the Civil Works projects in that area.

220 - Improvements

Carpenter Shop. Master Carpenter T.A. Bowman and Foreman Deate White have handled the work in this department during the month. The regular work has consisted principally of emergency repair jobs on government buildings. No extensive improvements from regular funds have been done at all but only such work as could not be postponed. In addition to handling minor building repairs from regular park funds Master Carpenter Bowman has spent a portion of his time in supervising the carpenter and mason work in connection with Federal Project 349 - Elimination of Fire Hazards. Out of the funds in this project we are now building several new chimnies in various government buildings and plan to build approximately 15

Electrical Department. The personnel in this department during the month of January was kept to a minimum, with Chief Electrician Charles D. Dale handling all of the regular telephone and electrical maintenance at Mammoth. In addition to handling this maintenance he spent part of his time supervising electrical work on Federal Project 349. As an allotment of approximately $10,000 was made for elimination of fire hazards a considerable amount of this kind of work was done by this department during the month of January.

Shops. In addition to the usual maintenance of equipment in operation at Mammoth, a thorough overhauling has also been given nine trucks, one motor patrol and one tractor. These trucks were all of the heavier duty class, one and a half to three-ton dump trucks, except one freight truck. Due to the fact that considerable equipment is being used on CW projects, including about 15 one and a half ton dump trucks, naturally a great portion of the time has been spent on looking after these pieces of equipment. This department also supervised the setting up of the rock crushing plant near Gardiner and having it ready for operation by the end of the month. This plant will be used for a CW project.

Paint Shop. Work of this department for the month consisted entirely of minor repairs and was handled by Master Plumber L.M. Tompkins. No extensive work was done at all and minor painting jobs, some paperhanging and linoleum laying constituted the work.

Plumbing Department. In addition to the usual maintenance of this department during the month, the personnel of which was kept to a minimum with only two men, a portion of the time of the master plumber was taken in supervising a Public Works project and making plans for new CW and PW projects which concerned this department. A considerable amount of tin work and plumbing was necessary in connection with Federal Project 349 - Elimination of Fire Hazards. As a result several fire hazards have been eliminated such as stove pipes, air-tight heating stoves, etc., putting in steam radiation instead.

230 - New Construction

Fifteen Civil Works projects were in progress during the month and five of the smaller items of the program have been completed. Federal Works Project 349 - Elimination of Fire Hazards was under way during the period with satisfactory progress to be reported.

No contract construction was under way during the month.

300 - Activities of Other Agencies in the Park

310 - Public Service Contractors

The general store at Mammoth was kept open during the entire month.

400 - Flora, Fauna and Natural Phenomena

410 - Ranger, Naturalist and Guide Service

Chief Ranger Baggley was on annual leave from January 15 through the balance of the month. He will return to duty on February 6.

Assistant Chief Ranger Miller has been Acting Chief Ranger during Mr. Baggley's absence.

Assistant Chief Ranger LaNoue is still on special detail at Scottsbluff Natl. Monument in connection with CWA projects.

Assistant Chief Ranger Johnston remained on duty in Washington the entire month.

Park Ranger Trischman was engaged on CWA projects in a supervisory capacity the entire month.

Park Ranger E.L. Arnold suffered a broken thumb on January 2 while feeding the horse herd at Tower Falls. He returned to duty from this injury on January 14. He again suffered another injury when his shoulder was dislocated by a jerking mule on January 22. He returned to duty January 29.

The usual patrols for the observations of the park wild life and the protection of the natural park features were carried on during the entire month.

420 - Museum Service

Assistant Park Naturalist Crowe was on a lecture tour in central Wyoming from January 12 to January 28 inclusive, under the auspices of the Boy Scouts. Mr. Ralph D. Childs, the State Executive, arranged the tour and dates at the following towns; Powell, Lovell, Cowley, Greybull, Worland, Casper, Riverton and Lander, returning to Casper for further engagements at the end of the trip. The lectures were before schools, civic organizations and sportsmen's clubs and were very well received. One radio broadcast was given from Casper. On this trip Mr. Crowe gave 50 lectures to a total of 8039 people.

On January 13 Park Naturalist Bauer began a trip to St. Paul, Omaha and Lincoln in connection with oral examinations for junior park naturalists. On this trip he visited the biology and geology departments and museums of the University of Minnesota, University of Nebraska and University of Colorado. The trip proved very satisfactory from every standpoint and he returned to headquarters on the 25th.

A large spear point from Daly Ranch in Yellowstone Valley was received, also a hand-wrought iron clevis from Independence Rock, Wyoming.

A portion of a tree 6" x 18" was recovered from a ditch in the travertine of the so-called Hotel Terrace at Mammoth Hot Springs, from a depth of seven feet below the surface. The exterior of the log had rotted and was missing but the interior was remarkably well preserved, although several thousand years old it was not petrified. Wood buried in the travertine apparently does not petrify.

460 - Birds

Trumpeter swans were observed on numerous occasions in the Lake district and at the end of the month about 50 of these swans were to

be found in that vicinity. On January 6, 47 trumpeters were observed near Fishing Bridge; 23 of these were cygnets. On the following day Yellowstone Lake froze over and there was considerable activity noted among this group of birds, many of which migrated to other waters and to other parts of the park. Various swan were seen at West Thumb on January 9. On January 11, 17 swan were seen on the ice near Dot Island. On January 18, two swan were observed at the outlet of Fern Lake. On January 19, 28 swan were observed on Yellowstone River just below Mud Volcano and four others were seen near Fishing Bridge. Twenty eight swan were observed on Shoshone Lake January 10. These birds were observed while in flight but it is presumed they were all trumpeters.

Two hundred and eighty five geese were counted from Fountain to West Yellowstone along the Firehole and Madison Rivers. On this same count 250 ducks were seen with about one-half of them noted as goldeneyes.

Magpies and ravens have been observed in large numbers. From the numbers seen, we would presume that there is a great increase of these two birds in Yellowstone.

Other birds seen during the month include Harry woodpeckers, chickadees, Clark's crows, camp robbers, etc.

470 - Animals

The lack of snowfall, with the excellent prevailing warm weather, has proven to be a great boon to our larger animals. The lack of sufficient forage would have caused a hard winter and taken a terrible toll in our big game; however, the loss of game animals this year will be very light, provided the present snow conditions continue until spring.

Elk. The excellent weather, while not forcing the elk to stay in any one locality, has brought them down, more or less, into their winter range due to the lack of forage than for any other reason. In the Mammoth district an incomplete count shows over four thousand of these animals. Only a small number of them may be seen during the day due to the warm weather at which time they go into the higher elevations and bed down in the snow. However, during the night, many hundreds of them may be seen coming down and feeding in the lower valleys along the rivers, especially so between Mammoth and the Game Ranch.

About 2500 are following this same procedure in the Tower Falls district.

About 1500 are in Slough Creek but only half of this number are coming into the Slough Creek Ranch proper for feed.

There are also about 1500 head of elk in the Lamar Valley surrounding the Buffalo Ranch.

be found in that vicinity. On January 6, 27 [illegible] were observed [illegible] fishing [illegible] of these [illegible]. On the [illegible] day Yellowstone Lake [illegible] that they are [illegible] with [illegible] among this group of [illegible], many of which [illegible] and to other parts of the park. [illegible] January 9. On January 11, [illegible] January 12, [illegible] January 13, [illegible] January 15, [illegible] observed while in flight but it is [illegible] [illegible].

Two hundred and eighty-five geese were counted from [illegible] to near Yellowstone along the Yellowstone River. On [illegible] count 350 ducks were seen with about one-half of them located on [illegible] area.

Eagles are reports have been observed in large numbers. From the numbers seen, we could assume that there is a great increase of these birds in Yellowstone.

Other birds seen during the month include [illegible] chickadees, Clark's crows, camp robbers, etc.

420 - Wildlife

The loss of property, with the accident involving [illegible] has proven to be a great boon to our larger animals. The loss of artificial feeds could have caused a [illegible] and [illegible] hill in our big game; however, the loss of [illegible] this year will be very slight, provided the present snow conditions continue until spring.

II. The accident member, while not [illegible] the [illegible] any one locality, has brought them down, some of them, into [illegible] range due to the lack of forage than for any other reason. In the Yellowstone District an incomplete count shows over four thousand of these animals. Only a small number of them may [illegible] to be the same number of which live long on [illegible] and [illegible] in the park. However, during the winter, some increase of these may [illegible] coming down and feeding in the lower valleys from the [illegible] Especially on Bunsen Peak are the [illegible].

About 4500 are following this same procedure in the lower Gallatin district.

About 1100 are in Gardiner Canon but only half of this number are coming into the Jardine Creek Canon range for food.

There are also about 1500 head of elk in the Lamar Valley [illegible] the Buffalo Ranch.

Two winter kill elk have been found to date, both cows, one at Mammoth and one at Slough Creek.

Deer. In the Mammoth district, while snow and game range conditions were being studied, nearly 500 deer were counted. However, they are scattered over quite a large area all along the northern section of the park and no accurate checks have been made. All of these animals are noted to be in excellent condition.

The night hunters, during the nights of January 24, 25 and 26, obtained each night one deer along the county road in the new addition to the park on the west side of the Yellowstone River below Gardiner.

Immediately following these night killings, rangers were stationed at each end of the road in out of the way places with telephone field sets in an attempt to apprehend anyone going through that section with the sole purpose of getting themselves a deer. We have been unsuccessful this month. However, we are again planning to use this same system during the moonlight nights in February and will attempt to set an example for these night hunters.

Sheep. Fifty seven mountain sheep were counted this month on Mount Everts and along the Yellowstone River above Bear Creek. Twenty seven were seen at one time in the Gardiner Canyon between Mammoth and Gardiner. Forty five more were counted along the east bank of the Yellowstone River above Tower Falls. All of the sheep seen were noted to be in excellent condition with the exception of one old ewe in the Gardiner Canyon. All of the lambs appeared to be husky. Forage for the sheep appears to be abundant due to the lack of any deep snow.

Moose. Sixty three moose were counted by the Lake rangers on their patrol through the Thorofare country, 34 head being counted in one group about three miles below the Thorofare ranger station on January 12. The moose, according to the rangers, were exceptionally nervous and unapproachable which is quite the reverse of the early fall when they were very docile and easily approached. They were all reported to be in excellent condition with their foraging conditions good.

Buffalo. The buffalo slaughter was completed on January 5 and by January 8 all of the carcasses had been shipped to their various destinations. Practically all of the buffalo hides were shipped to the various Indian agencies, museums, etc. on January 12.

A check of the buffalo herd during the month disclosed 502 animals at the Buffalo Ranch, 300 head in Pelican Valley, and 100 head on the Upper Lamar River and Miller Creek. The 300 head in Pelican Valley, will without doubt, remain in that area the entire winter. It is very doubtful that they will even attempt to cross back into the Lamar Valley. This is the first time in many years that any great number of buffalo have attempted to winter in Pelican Valley. No doubt, these buffalo had a premonition that the winter snow this year was going to

be extremely light and are staying in a region which in years of ordinary snowfall would not be available for forage. In other words, should such a number of animals attempt to stay in that area during a heavy snowfall, a big majority of them would probably die of starvation. However, at the present time, these animals are very wild and seem to be in excellent condition.

Small Animals. Otter, rabbit, marten, weasel, and lynx tracks have been reported from various sections of the park. Beaver, mink and muskrat reported in the Madison, Firehole, and Gibbon Rivers.

The trappers along the east side of the park have reported trapping 80 marten, 12 coyotes, 3 cross foxes and one red fox. The trappers in the Thorofare region have 53 marten, 13 coyotes and 3 foxes.

Buffalo and Other Ranch Activities. From December 10, 1933 to January 31, 1934, 59 tons of hay have been fed to the buffalo in the vicinity of the Buffalo Ranch and from January 20 January 31, 2500 pounds of cottonseed cake were also fed to these buffalo. This is a very small amount of feed for these animals. However, only enough is being fed to keep them close at hand as forage conditions away from the ranch are very poor.

Five tons of hay have been fed to about 300 elk at the Lower Slough Creek Ranch since January 14 to the close of the month, only enough hay being fed to keep the elk more or less satisfied. Also some of the days since feeding was started on the 14th no hay was put out.

About six tons of hay was fed to the elk at Upper Slough Creek beginning January 21 to the close of the month.

480 - Natural Phenomena

Mammoth

A marked decrease in the flow of water from most of the springs was noted during the past month.

Angel Spring. Has lost over half its flow of December to the new spring 60 feet to the south. Seven basins six to eight inches deep have built up during the month, covering an area of 40 by 60 feet.

Baby Spring. Inactive.

Blue Springs have decreased also. The flow extends a little way down the slope between Jupiter and Pulpit Terrace. On the west edge of this formation the surface has settled at least 14 inches. A slump occurred here early last fall. Numerous little cones, three to six inches in height and about two inches in diameter are building up a crack 40 feet long.

Cleopatra Spring. No changes from last month.

Cupids Cave has increased a little. The spring has shifted about four feet to the east.

Diana Spring shows increase in flow and the basins are refilled on the east edge of the formation.

Hymen Spring has also increased in its flow and the new outled on the west side of this formation is larger than in December.

Jupiter Spring shows just a little overflow

Main Spring has almost ceased flowing.

Mound Spring - the same as last month.

Minerva Spring is decreasing.

Opal Spring no change.

The algae in evidence are those of the darker shades of coloring.

Old Faithful District

Upper Geyser Basin

Old Faithful Geyser. The average interval of eruptions checked during the month of January was 65.5 minutes.

Giantess Geyser became more active during the latter part of January. A tiny vent, 75 feet south of the Giantess erupts to the height of about three feet whenever a sudden burst of boiling action takes place in the crater of the Giantess. This geyser started erupting at 2:40 p.m. on January 29 and was in action 21 hours.

Sawmill Geyser. During the fall months the Sawmill was seldom seen in eruption. During the month of January it was noted to be erupting almost constantly.

Giant Geyser. On the morning of the 6th increased activity was noted. The Mastiff, Bijou and Catfish Geysers were all erupting at the same time. On the morning of January 8 it was found that the Giant had erupted, throwing the log "indicator" over 40 feet from the cone. This geyser erupted again on January 25 or 26, and at noon on January 29.

All other activity was normal.

Black Sand Basin

Three Sisters Springs still remain almost dry. No changes from last month.

Old Handkerchief Pool. Beginning January 6 a decrease in water flow was noted. Since then the pool has been becoming constantly lower. At present it is almost dry.

Other activity was normal, except several changes in pools that supply the hot water to the winterkeeper's house and Hamilton's store. The spring that originally supplied most of the hot water has gone completely dry.

Midway Geyser Basin

Black Pearl Pool. Ranger Childs is not certain whether this is the name of the pool he has in mind. It is the first pool on the north side of the walk on the west side of the river. Under normal conditions it is a large double pool, milky blue in color. The west half of the pool was always very hot while the east side was always considerably cooler. Sometime during the latter part of the month, about January 20 (estimated) a violent eruption had taken place just east of the Black Diamond. Upon first observation it was thought that it was part of the Black Diamond that had erupted. Closer observation showed that the now existing pool, 40 feet by 40 feet in size, had not existed a week before. Evidence of large stones and wash scattered around the new pool shows that the eruption must have taken place with considerable violence and with a large volume of water. The new outbreak has thrown out several tons of rocks and broken pieces of formation. Some of the rocks, 30 feet from the pool would weigh more than 600 lbs. At present there is a narrow ledge of rock separating the new pool from the Black Diamond. The Black Diamond pool is about 14 inches above the level of the new pool. A small stream of water flows from the Black Diamond into the new pool, and about six times this amount of water is flowing from the new pool into the river. At present the new pool is very muddy and very hot. Violent boiling occasionally takes place on the north side. When this occurs a slight shock can be felt several feet from the edge. It is interesting to note the number of pine cones and twigs imbedded deep in the formation that was cast out at the time of the eruption; as at present there are no trees standing anywhere near the pool.

Silver Globe Spring. At irregular intervals this spring fills, erupts to a height of four feet and then drains almost completely.

Jewel Geyser. Activity normal. As late as last week an occasional well-washed handkerchief was thrown out by the eruption.

Other activity. About 100 feet west of the Jewel Geyser there are a series of vents forming an irregular shaped cone about two feet wide and 12 feet long. At intervals of about every three minutes these vents all play simultaneously to a height of about seven feet. The eruption of all the vents forms an almost symmetrical fan.

Lower Geyser Basin. All activity normal.

Firehole Lake Region. Not observed.

Shoshone Lake Geyser Basin

Union Geyser. Activity normal. Two eruptions noted this month. Interval not recorded as it was not certain whether these were consecutive eruptions.

The small geyser (name not known) on the east side of the creek almost due east of the Shoshone Cabin is very active. The average interval is about 20 minutes and the average height of eruptions is about 20 feet.

500 - Use of Park Facilities by the Public

510 - Increase or Decrease in Travel

Travel for the month consisted of 185 visitors traveling in 65 cars. Last year during the same month, we had 110 visitors traveling in 50 cars. Our increase in travel can only be credited to the excellent prevailing weather in this country.

520 - Special Visitors

January 24 - Mr. Ned Frost, guide and big game hunter of Cody, Wyoming and his son, in north, out north 27th. Mr. Frost was here for the purpose of photographing mountain sheep and elk.

600 - Protection

640 - Destruction of Predatory Animals.

Eighteen coyotes were killed this month as compared with 30 for the same month last year and 25 in 1932. This makes a total of 160 coyotes killed this year; 131 last year; 105 in 1932, and 76 in 1931 for the same periods.

900 - Miscellaneous

CWA Program.

The Civil Works program has progressed very satisfactorily during the past month. No time was lost at all due to bad weather. The quotas for both Montana and Wyoming were kept full up until January 19, with the men working on a 40-hour basis. However, on this date we received notice that the hours of labor would be 15 hours per week and no further funds authorized for materials, or supplies. As a result, the men worked eight hours on Friday, the 19th, and seven hours on Monday the 22nd. They then were layed off for th balance of that week, with the understanding that they would work three days each week, five hours a day beginning Monday, January 29. However, after several telephone calls and telegrams, our orders were changed, allowing us to work the men 30 hours a week. We received this order the morning of January 23. Although many of the men had left for their respective homes we managed to get word to practically all of them and as a result all but about 15 were on duty January 24 and all on duty by January 25. Fortunately in one way January 23 was so stormy that the men could not have worked anyway. Since the 30-hour order went into effect the work has run along very smoothly again, the men working on a basis of five six-hour days.

As we have shown in our weekly Civil Works reports, a few of the jobs have already been completed and several of them are almost completed.

[illegible]

We were very fortunate in having especially good foremen sent us as well as a rather high type lot of men and as a result the turn-over in personnel has been very small. The general morale of the men is high and we have heard very few complaints. The cooperation between the state and local administrators for both Montana and Wyoming continues to be very fine and we have enjoyed working with the personnel of these different agencies.

We are hopeful that this Civil Works program will continue until at least the first of May, as is rumored, as it would be very unfortunate to lay off this number of men at this time of the year. Furthermore, the weather here now is ideal for the kind of projects we are working on and we would not only like to see the principal projects completed but would like to see other projects started and completed.

The naturalist department, under Dr. C. Max Bauer, has been assigned the duty of furnishing entertainment and as much reading matter as possible for the men. On the evening of each Monday, except one, an entertainment in the way of moving pictures and talks has been given by this department. In addition to the papers and magazines furnished the men through this office and the residents of Mammoth, the newspapers of both Livingston and Cody have cooperated in furnishing daily and weekly papers for the men.

Postoffice. Receipts show a marked increase over the corresponding period for previous years, due to the increased population. This was especially noticeable in the number of money orders and postal savings transactions.

Church Services. Episcopal church service was held in the chapel the evening of January 28 by Rev. I.D. Smith, of Livingston Montana, with a choir under the direction of Mrs. Edwards. English Lutheran services were held in the chapel on Monday evening, January 29, by Rev. Webster H. Clement, also of Livingston.

Hospital and Medical. Dr. Ivan Budaeff, resident physician, returned to the park on January 27, and Mrs. Grace Snyder, who has been handling the medical work, returned to the Park Hospital in Livingston on the same date. Since returning Dr. Budaeff has had 15 office calls.

The Federal Employees' Union held its regular monthly meeting on January 8 for the election of officers. They are as follows: Lloyd Holman, president; W.T. Lathrop, secretary and treasurer; and Gerald P. Yetter, vice president. Miss Verna Roe was elected chairman of the executive committee.

Sincerely yours

Guy D. Edwards,

Acting Superintendent

CW

10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Yellowstone National Park for the Month of January, 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year Number	Increase for Travel Year Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...	65	2371	50	1875	496	26
Cars reentry, ...		82		89	-7	-8
Motorcycles, ...		3			3	300
Total motor vehicles, ...	65	2456	50	1964	492	25
Persons entering via motor vehicles, ...	185	7841	110	6542	1299	20
Persons entering via other private transportation, ...						
Total persons entering via private transportation, . . .	185	7841	110	6542	1299	20
OTHER TRANSPORTATION:						
Persons entering via stages, .						
Persons entering via trains, .						
Persons entering otherwise. . .						
Total other transportation, .						
GRAND TOTAL ALL VISITORS, . . .	185	7841	110	6542	1299	20

	This Year	Last Year	Increase Number	Increase Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Yellowstone

National Park for the Month of January, 1929

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry.	[illegible]	[illegible]	[illegible]	1,[illegible]	[illegible]	[illegible]
Cars reentry.		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Motorcycles		[illegible]		[illegible]	[illegible]	[illegible]
Total motor vehicles. . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Persons entering via motor vehicles.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Persons entering via other private transportation. . .						
Total persons entering via private transportation. . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OTHER TRANSPORTATION.						
Persons entering via stages.						
Persons entering via trains. .						
Persons entering otherwise.						
Total other transportation.						
GRAND TOTAL ALL VISITORS . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	This Year	Last Year	Increase Number	Percent
Automobiles in public camps during month.				
Persons in public camps during month. . .				

10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Yellowstone National Park for the Month of January, 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	128	* 29	74	15
Number of additions	1	**34	0	2
Total	129	63	74	16
Number of separations	0	***27	0	6
Number of employees close of month	129	36	74	12
Number of promotions during month	0		0	
Aggregate amount of annual leave taken	furlough 28½		51½	
Aggregate amount of sick leave taken	45		3	
Aggregate amount of leave without pay	30		0	

Includes 6 days for December

* 7 [illegible]
** 7 [illegible]
*** 3 [illegible]

4637

10-163

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

*ELECTRICITY GENERATED, SOLD, USED, ETC.

Yellowstone National Park for the Month of January

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year Number	Increase for Travel Year Percent
Current generated,	72,567	510,500	60,469	405,855	101,645	19
Sold to park operators,	927	34,764	516	34,730	29	.0008
Sold to others,						
Furnished to other Governmental agencies,						
Used by National Park Service, lost in transit, etc.,	71,640	475,736	59,953	371,125	101,616	21
Total current generated,	72,567	510,500	60,469	405,855	101,645	19

Amount receivable from the sale of electricity, $ 46.35

* Indicated by K. W. H.

10-162

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF TELEPHONE AND TELEGRAPH BUSINESS

Yellowstone National Park for the Month of January, 1924

	This Month	This Month Last Year	Increase	Percent Increase
LOCAL BUSINESS				
Miles of circuit maintained	545	542	3	.005
No. of telephones connected,	204	197	7	4
No. of measured service calls,				
No. of other local calls,				
Total No. of local calls,	4620	4600	20	.004
Peak load in calls per day,	230	215	15	7
Receipts from measured service calls,				
" " coin boxes,				
" " telephone rental,				
TOTAL RECEIPTS				
LONG DISTANCE BUSINESS				
No. Outbound calls,	74	46	28	38
No. Inbound calls,	56	59	-3	-5
TOTAL LONG DISTANCE CALLS				
Peak load in calls per day,	in 7 out 8	6		
Receipts from Long Distance business,				
TELEGRAPH BUSINESS				
Messages via Western Union,				
Messages via				
TOTAL MESSAGES				
Receipts from telegraph business,				
No. of money transfer messages,				
" " " " receipts,				
TOTAL RECEIPTS TELEPHONE & TELEGRAPH DEPTS-				

10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Yellowstone National Park for the Month of January, 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion

No construction projects other than CCC projects active during January.

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

National Park for the Month of _____

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion

10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Yellowstone National Park for the Month of January, 1934

	This Year	Last Year
Park revenue on hand beginning of month,	-0-	$4,066.43
Received,	$ 986.40	1,340.95
Total,	$ 986.40	$5,407.38
Remitted,	986.40	5,407.38
On hand close of month,	-0-	-0-

Park revenues received this year to date,	$127,780.82
Park revenues received last year to date,	$131,607.97
Decrease,	3,827.15
Per cent of decrease,	2.9079

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Yellowstone National Park for the Month of January, 1944

	This Year	Last Year
Park revenue on hand beginning of month	-0-	$4,[illegible].[illegible]
Received	[illegible]	1,[illegible].00
Total	[illegible]	$4,[illegible].[illegible]
Remitted	[illegible]	3,[illegible].00
On hand close of month	-0-	-0-

Park revenues received this Year to date	$[illegible]
Park revenues received Last Year to date	$[illegible]
Increase	$[illegible]
Per cent of increase	[illegible]

SUMMARY OF WEATHER CONDITIONS
at
MAMMOTH HOT SPRINGS, YELLOWSTONE NATIONAL PARK

JANUARY, 1934

Since the beginning of autumn January is the third month to establish a new record for high average temperature. October set a new high mean, and December was the warmest December on record. And now January, four years later than the coldest of record (4.8 degrees in 1930), with a mean temperature of 26.2 degrees, or 8.6 degrees, on the daily average, above the normal of 17.6 degrees, makes the third month in the last four to exceed old means. On 22 days of the month the maximum temperature rose above 32.0 degrees. The month's maximum was 42 degrees on the 28th. The lowest temperature of the month was 1 degree above zero on the 7th. No day, however, failed to show freezing temperature at some time. The old January high mean of 25.6 degrees has stood since 1896.

Precipitation was light, and no precipitation other than snow occurred. The total snowfall was 9.2 inches, the water in which amounted to 0.61 inch, or 0.98 inch less than normal. .01 inch or more fell on 10 days. The greatest precipitation in 24 consecutive hours was 0.30 inch on the 23d. The lightest January total precipitation on record is the 0.11 inch recorded in 1931.

Three days of the month averaged clear, 12 partly cloudy, and 16 cloudy. Bright sunshine was recorded 43 per cent. of the possible time. Prevailing wind direction was southwest, and the average hourly wind velocity was 9.4 miles per hour, with a maximum on the 23d at the rate of 31 miles per hour (from southwest).

W. T. LATHROP, Meteorologist.

Form No. 1030—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MONTHLY METEOROLOGICAL SUMMARY.

Station, Yellowstone Park, Wyo. *; month,* January *, 19* 34.

Date.	Temperature (Degrees Fahrenheit.) Max.	Min.	Mean.	Precipitation. (In inches and hundredths.)	Character of day.	Per cent. of Possible Sunshine
1	37	29	33	.08	Cloudy	0
2	38	24	31	T.	Cloudy	6
3	36	29	32	.04	Cloudy	0
4	34	22	28	T.	Pt.Cl'dy	15
5	32	20	26	.02	Cloudy	24
6	28	6	17	T.	Pt.Cl'dy	74
7	23	1	12	0	Pt.Cl'dy	100
8	26	3	14	0	Pt.Cl'dy	82
9	37	12	24	0	Clear	100
10	35	20	28	T.	Pt.Cl'dy	68
11	28	12	20	T.	Cloudy	36
12	21	9	15	.02	Cloudy	32
13	30	20	25	.06	Cloudy	0
14	37	24	30	.01	Cloudy	26
15	35	13	24	0	Clear	96
16	35	16	26	0	Cloudy	54
17	36	24	30	T.	Cloudy	23
18	35	24	30	0	Pt.Cl'dy	80
19	35	23	29	T.	Cloudy	10
20	36	23	30	T.	Cloudy	11
21	31	23	27	.04	Cloudy	0
22	39	28	34	.02	Cloudy	30
23	38	22	30	.29	Cloudy	0
24	31	15	23	T.	Pt.Cl'dy	74
25	26	19	22	.03	Pt.Cl'dy	62
26	38	24	31	T.	Cloudy	40
27	37	25	31	0	Pt.Cl'dy	59
28	42	24	33	0	Pt.Cl'dy	91
29	40	13	26	0	Clear	100
30	33	19	26	T.	Pt.Cl'dy	58
31	33	17	25	T.	Pt.Cl'dy	33
Mean	33.6	18.8	26.2	Total. 0.61		45

ATMOSPHERIC PRESSURE.
(Reduced to sea level; inches and hundredths.)

Mean 30.282 highest 30.97, date 7
lowest 29.52, date 23

TEMPERATURE.

Highest 42, date 28; lowest 1, date 7
Greatest daily range 27, date 29
Least daily range 7, date 3

MEAN FOR THIS MONTH IN—

1871		82		93	16.7	04	18.6	15	18.6	26	20.0
1872		83		94	17.2	05	19.9	16	6.7	27	19.2
1873		84		95	18.6	06	22.3	17	11.4	28	22.2
1874		85		96	25.6	07	14.8	18	16.2	29	10.7
1875		86		97	15.8	08	20.3	19	22.2	30	4.8
1876	87	18.7		98	14.7	09	21.2	20	22.7	31	22.8
1877	88	10.9		99	20.4	10	15.8	21	20.6	32	13.7
1878	89	14.8		00	22.1	11	20.8	22	12.5	33	19.2
1879	90	10.0		01	21.4	12	20.2	23	20.8	34	26.2
1880	91	20.4		02	17.4	13	13.5	24	16.2	35	
1881	92	16.4		03	22.6	14	24.6	25	20.6	36	

Normal for this month 17.6
Absolute maximum for this month for 48 years 49
Absolute minimum for this month for years -41
Average daily excess (+) or deficiency +8.6 of this month as compared with the normal +267
Accumulated excess (+) or deficiency (−) since January 1 +8.6
Average daily excess (+) or deficiency (−) since January 1

PRECIPITATION.

Total this month 0.61; snowfall 9.2
Greatest precipitation in 24 hours 0.30, date 23
Greatest 24-hour snowfall 2.5, date 1
Snow on the ground at end of month 3.6

TOTAL PRECIPITATION THIS MONTH IN—

1871		82		93	1.82	04	0.93	15	0.41	26	0.35
1872		83		94	1.82	05	0.25	16	2.60	27	1.10
1873		84		95	4.76	06	1.48	17	0.69	28	0.70
1874		85		96	2.21	07	2.44	18	1.98	29	1.09
1875		86		97	1.12	08	0.85	19	0.88	30	0.88
1876		87		98	0.31	09	1.61	20	0.28	31	0.11
1877		88		99	4.21	10	1.90	21	1.49	32	0.83
1878		89	1.05	00	0.90	11	3.56	22	0.74	33	1.19
1879		90	....	01	2.26	12	0.89	23	1.49	34	0.61
1880		91	0.48	02	0.96	13	2.60	24	0.80	35	
1881		92	1.40	03	0.60	14	0.97	25	1.32	36	

Normal for this month 1.59
Excess (+) or deficiency (−) of this month as compared with the normal -0.98
Accumulated excess (+) or deficiency (−) since January 1 -0.98

MEAN RELATIVE HUMIDITY (Percentage).

6 a. m., 80.9; local noon 63.7; 6 p. m. 67.4

WIND.

Prevailing direction SW.; total movement 7,024 miles
average hourly velocity 9.4; maximum velocity (for five minutes) 31 miles per hour, from southwest
on 23
Maximum wind velocity this month since 1904 (By three-cup anemometer) 35-SW, Jan.2,1933

WEATHER.

Number of days, clear 3; partly cloudy 12; cloudy 16
on which .01 inch, or more, of precipitation occurred 10

MISCELLANEOUS PHENOMENA (dates of).

Auroras None; halos: solar 7,10, lunar 7,23
Hail None; sleet None; fog None
Thunderstorms None
*Frost: light ....., heavy ....., killing .....

NOTE.—"T" indicates trace of precipitation.

*The autumn frosts are not recorded after the occurrence of "killing," except in Florida and along the immediate coast of the Gulf of Mexico.

Lowest observed relative humidity, 42%, at local noon, 11th.

W. T. LATHROP, Meteorologist. *Weather Bureau.*

1030 GOVERNMENT PRINTING OFFICE

Form No. 1030—Met'l.

U. S. DEPARTMENT OF AGRICULTURE.

WEATHER BUREAU.

MONTHLY

METEOROLOGICAL SUMMARY.

STATION

.....

.....

MONTH

....., *19*

8—1650 U. S. GOVERNMENT PRINTING OFFICE: 1929