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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Yellowstone NATIONAL PARK

FILE NO.

MONTHLY REPORT

March, 1935.

IMPORTANT

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ARNO B. CAMMERER,
Director.

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April 4, 1935

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

Following is the report of activities for Yellowstone National Park for the month of March, 1935:

000 - General.

While the month of March came in like a lamb instead of a lion by the third of the month it took on lion-like proportions, which continued throughout almost the remaining twenty-nine days. There were only two days during the entire month, the 1st and 30th, when there was not at least a trace of rain or snow. Either snow or strong winds were almost daily occurrences, a total of 25.1 inches of snow having been recorded at Mammoth, the average snowfall for March being 16.1 inches. There was more snowfall during this March than any March since 1930, excepting 1932 when 26.8 inches were recorded. The precipitation recorded was greater than in any March since 1930, there being 1.41 inches as compared to 0.96 last March and 0.54 in March, 1933.

The month was in direct contrast to March 1934, which was unusually mild. Last year the roads from Mammoth to Tower Falls and from Mammoth to Old Faithful and West Yellowstone were traversible by the end of the month but by the end of this March it was not possible to get outside of Mammoth. As early as March 20, 1934 a truck was driven from Old Faithful to West Yellowstone, without the necessity of opening this section by snowplow, but it appears that it will be late in April before it will be possible to get these roads open this year. It is proposed to have the west and north entrances open to motorists by May 1 but this will not be possible if the weather which characterized the month of March continues into April.

Members of the Mammoth community played golf almost every day last year during the month of March on the golf course at Gardiner but this year there was not one day when the local club wielders could get out to tee off.

While the weather was extremely disagreeable the snowfall will be of great benefit this summer. The severe dust storms which struck the middle-west during the month will leave a very serious condition in that section of the country and the run-off from the streams in the park will be a boon to the country through which it travels. This park should be even more beautiful this summer because of the added moisture of March.

While the heavy snowfall will be a decided advantage to the park itself it was a handicap to the contractor working on the apartment house at Mammoth and somewhat slowed up his work. Mr. Frank P. Anderson, the successful contractor on this job, arrived in the park on March 12 and immediately organized his crews for removing old buildings from the site of the proposed apartment. The contractor on the section of road from Lava Creek to Mammoth was likewise handicapped because of the bad weather although considerable progress was made on this project. The road at Undine Grade was closed on March 15 and will remain closed until April 17, excepting Saturdays and Sundays, because of work under way at that location.

020 - General Weather Conditions.

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

021 - In the Park.

March was an unusually stormy month in Yellowstone Park. Total snowfall at park headquarters amounted to 25.1 inches, the heaviest for several years. A much greater fall of snow occurred at practically all interior stations, 64 inches being recorded at Old Faithful, 56.5 inches at Gallatin, 56 inches at Bechler River and 48.5 inches at Snake River.

Snow depths throughout the park at the close of the month were very much greater than in March 1934, and the water content of the snow was materially higher. In general, March snow conditions compared closely with those of 1933.

Strong winds were frequent during the latter part of the month which resulted in extensive drifting of snow in all areas. On many portions of the Canyon-Lake road snowdrifts have been built up to a depth of 20 feet and at Sylvan Pass (on the East Entrance road) snow has drifted in the pass to a depth of 25 feet.

Comparative snow depths over the park are given in the following table, the figures including the past nine years.

COMPARATIVE MARCH SNOW DEPTHS IN YELLOWSTONE NATIONAL PARK
(Figures in inches)

Location	1927	1928	1929	1930	1931	1932	1933	1934	1935
Buffalo Ranch	10	20	15	13	10	24	20	0	11
Cub Creek		75				80	20	44	--
Canyon	47	45	38	41	23	72	58	14	42
Cooke Station	52	52	20	33	24	36	36	30	34
Cold Creek			42			22	45	14	--
Upper Slough Creek	38	38	34	16	14	40	28	13	30
Lower Slough Creek	30	30	20	10		38	30	5	26
Tower Falls	12	13	14	12	6	18	20	0	12

Location	1927	1928	1929	1930	1931	1932	1933	1934	1935
Bellrosring	10	4	10	2		19	20	0	13
Soda Butte	20	16	16	17	22	20	21	0	12
Thorofare	55	59	39	45		30	42	23	45
Miller Creek					22	20	30	9	--
Upper Miller Creek						22	45	15	--
Lake Station	44	42	36	35	19	38	28	16	36
Cabin Creek						42	34	10	40
Park Point						48	33	16	38
Cache Creek		76	54		32		54	36	--
Crystal Springs	72	49				48	40	20	36
Old Faithful	46	33	28	36	12	56	46	20	52
Fountain					12	37	34	8	44
Madison Junction					12	37	34	8	40
West Yellowstone	45	48	30	26	14	47	42	12	41
Norris	34	27	30	37	17	48	40	18	28
Grayling		36	35		18	40	40	14	36
Two Ocean Plateau		81				100	96	50	--
Snake River	72	70	57	38	40	78	59	24	54
Snake River (7 mi. Post)		120	92		53	132	108	61	98
Fox Creek		69					79	34	--
Aster Creek		84	69			92	80	40	74
Bechler River	90	62	84	43	43	90	69	16	60
Cascade Creek		126	94		55	92	104	48	75
Boundary Creek						75	69	17	--
South Riverside		54	60				72	42	--
Gallatin Station	26	31	21	40	23	40	36	18	36
Sylvan Pass Station	48	47	30	33	12	36	45	18	47
Sylvan Pass						*35ft.	*20ft.	* 7ft.	*25ft.
Mammoth						12		0	6.8

*Drifts.

In the table below are given the March precipitation figures for eight cooperative weather stations in the park, compared with figures for 1934 and the twenty-year average.

COMPARATIVE MARCH PRECIPITATION IN YELLOWSTONE NATIONAL PARK

Location	1934	1935	20-year Average
Buffalo Ranch	.42"	.69"	1.34"
Tower Falls*	.95"	1.32"	1.38"
West Yellowstone	.98"	2.71"	1.49"
Bechler River**	4.06"	4.75"	---
Lake Yellowstone	1.21"	1.98"	2.21"
Snake River	--	4.21"	3.08"
Mammoth	.96"	1.41"	1.71"
Gallatin	1.34"	3.56"	1.55"

*Eight—year average.
**No "average" figures.

023 - Approaches to the Park.

Heavy snows fell along all approaches to the park, but on the north approach road from Livingston, Montana, most of the snow melted as it fell or largely disappeared shortly after the storms. With the use of snowplows, the Wyoming highway department succeeded in keeping the road open from Buck Springs to Jackson most of the month. During the latter part of the month, the road as far north of Jackson as Gravont was opened; but an effort to open the highway on north to Moran will not be made until about the middle of April.

Due to constant snow storms, much difficulty was experienced by the Montana highway department in opening the Bozeman road toward West Yellowstone and at the close of the month the plow crew was still about ten miles from the West Entrance.

From West Yellowstone south the highway remains blocked with heavy snow as far as Buck's Inn, and it will likely be mid-April before this road is cleared into West Yellowstone.

The Gallatin approach is blocked to Aldridge, Montana, nine miles outside the park.

Snow blocks the East Entrance (Cody) road as far as Sapiti, a distance of about twenty miles.

023 - In Nearby States.

During most of March, storms in nearby states were almost as frequent as in the park and considerable difficulty was experienced by travellers in negotiating the highways through southern Montana, northern Idaho and central western Wyoming. Heavy winds were frequent over the entire mountain area and there was much drifting of snow which, in several instances, completely stalled traffic for a day or two. However, by the end of the month all roads had been cleared and no difficulty was experienced on main routes, except on the higher mountain passes.

100 - Administration.

110 - Status of Work.

Superintendent Toll was in Denver throughout the month on work in connection with the inspection of proposed parks and monuments. Clerk W. Edgar Jessie has been assisting him in his work there.

Assistant Superintendent Emmert was Acting Superintendent during the month.

We were without the services throughout the month of Clerk Fred G. Bussey whose transfer from Mt. Rainier National Park has been approved but the Superintendent of that park will not permit him to report until the person who is to take

his place in Mt. Rainier arrives. This has left us shorthanded in our clerical force and has considerably handicapped the work, necessitating much overtime on the part of other clerks. Also, the changes occasioned by the transfer of Miss Whitney to Hawaii National Park and the resignation of Parke Poole has necessitated breaking in clerks on work new to them, which has somewhat slowed us up.

Clerk Jerry Tonini returned from leave on March 11, having been absent during the early part of the month.

Clerk Edwin Stevens departed on leave on March 30, to be gone about two weeks.

120 - Inspections by:

121 - Acting Superintendent

Acting Superintendent Emmert made inspections around headquarters and into the interior and outside the park as follows:

March 4 - To Livingston with Assistant to the Superintendent Joffe to attend Rotary meeting and to give talk before Rotarians; returned in evening.

March 11 - To inspect new reservoir under construction at Mammoth with Park Engineer Lord.

March 14 - To Tower Falls with Acting Chief Ranger LaNoue, by car; returned in p.m.

March 18 - To Livingston with Messrs. LaNoue, Kipp and Childs to attend meeting in connection with the purchase of submarginal land north of the park; returned in evening.

March 22 - With Mr. Joffe, attended road conference in Bozeman; night in Bozeman.

March 23 - With Mr. Joffe, proceeded to Butte to attend meeting of Pacific Northwest Tourist Association which was formed to aid in promoting travel to the Northwest; night in Butte.

March 24 - Returned to park from Butte with Mr. Joffe.

123 - National Park Service Officers.

Mr. W. H. Gebhardt, Assistant Architect, N.P.S., who has been designated as architectural inspector on the apartment house building at Mammoth, arrived with Mrs. Gebhardt on March 17 and will remain during the erection of this structure.

A. F. Miller, Project Investigator, Submarginal Land Division, N.P.S.,

Omaha, arrived via Gardiner on June 18 following a meeting of Forest Service, A.A.A. and Park Service officials in Livingston on that date in connecting with the purchase of submarginal land north of the park. He departed on the 19th.

George Morgan, Submarginal Land Division, H.F.A., Omaha, arrived via the north gate on March 31 to attend a meeting in Livingston on April 1 in connection with the purchase of submarginal land north of the park. He departed on April 1.

W. C. Mitchell, Engineer from the San Francisco office, arrived on March 31 to be in charge of the erection of the Elk Creek Bridge.

125 - Other Governmental Officers

Richard Thomas, in charge of the Reemployment Office in Mammoth recently established by the National Reemployment Service, arrived on March 5 and was assigned office space in the Barracks Building.

Ed Anderson, B.P.R. engineer, arrived on March 7 to spend several days looking over the Lava Creek-Mammoth road project.

140 - Labor Situation

The starting of work on the apartment building at Mammoth and the Lava Creek-Mammoth road project afforded an opportunity to put a few men to work, while the Public Works project on the Mammoth reservoir allowed a small number of men to be engaged. While weather conditions were not very favorable for work during the month comparatively little time was lost on any of the going projects. Every effort has been put forth to get as many men as possible to work as early as possible in order to carry out the wishes of the Secretary of the Interior but because of the great amount of snow in the interior of the park it was not possible to get under way any of the projects outside of the immediate vicinity of Mammoth. By the end of the month a camp was established at Tower Falls to take care of the crew to be engaged on the erection of the Elk Creek bridge, which project will start the first of April.

The opening of the placement office of the National Reemployment Service in the barracks building has been responsible for many men coming to Mammoth seeking employment and in order to register for work later on. However, this office does not register men for work but merely handles the placing of men from reemployment offices in Wyoming, Montana and Idaho. It is believed that this new set-up will work to the advantage of the Government and the contractors, as well as to the men themselves.

150 - Equipment and Supplies

Five carloads of coal were received in addition to two shipments of wallboard, one shipment of tire chains, two shipments of lubricating oil, one carload of linseed, and one shipment of catch basins weighing 14,463 lbs.

160 - Status of Alienated Lands

Considerable progress has been made in appraising and getting things in readiness for the taking of options on the submarginal lands north of the park which it is proposed to purchase to enlarge the northern elk herd winter range but the work has been handicapped considerably because of the lack of personnel and a definite set-up of money to finance the project. Mr. C. H. Swim of the Forest Service and Park Ranger Donald Kipp have been carrying on the work in connection with this project. Because of the transfer of Ranger Kipp to the Forest Service, Park Ranger Albert Elliott will replace him on this assignment. A meeting of Forest Service, A.A.A. and Park Service officials was held in Livingston on March 18 to go over this project and a similar meeting is to be held on April 1 in Livingston.

170 - Plans, Maps and Surveys

Personnel of the Engineering section was the same as for the preceding month. Work consisted of routine office and field activity in connection with active and proposed Public Works projects.

180 - Circulars, Placards, Publicity Bulletins, etc.

There were no circulars issued during the month. The January-February issue of Nature Notes was prepared and mailed. A copy is attached. A number of articles and pictures were sent out to newspapers and magazines for publicity purposes.

200 - Maintenance, Improvements and New Construction

210 - Maintenance (Road)

A small maintenance crew was organized for the Mammoth section early in the month and under the supervision of the park General Foreman started the seasons maintenance of the Gardiner-Mammoth section and roads around headquarters, work consisting mainly of cleaning ditches and opening ice-blocked culverts. The snow plow opened the Mammoth-Tower Junction section three times during the month.

220 - Improvements

Shops. Thirteen trucks, four graders and one concrete mixer were completely overhauled during the month. There were also four trucks repainted during the month of March.

Carpenter Shop. Miscellaneous repairs were made at several of the buildings at Mammoth.

Plumbing Department. The usual maintenance and operation was carried on during the month. Water connections were made for Frank E. Anderson, contractor, in connection with the new apartment house.

Paint Shop. Miscellaneous jobs such as sanding and refinishing floors, enamelling several new cupboards besides sign work and mixing of stain and paint for E.C.W.

Electrical Department. In addition to the usual maintenance and repair work during the month phones were installed in several of the government quarters.

230 - New Construction

The following Public Works projects were active during the month:

F.P. 346 - Apartment Building - The contractor arrived on the 18th of the month and began immediately to organize his forces. The old building housing the paint shop and plumbing storage was razed as soon as the contents had been removed by Park Service force account. Work was under way with a maximum crew of 15 men and excavation for the basement, footings and foundation is about 80 per cent complete.

F.P. 509 - Trail Bridges - Organization for the construction of the Elk Creek suspension trail bridge was begun on the 28th, miscellaneous supplies being trucked to the site preparatory to starting actual construction on April 1. Mr. Mitchell, detailed from Field Headquarters as construction foreman, arrived at Mammoth the last day of the month.

F.P. 564 - Old Faithful Water System - Plans for this project were completed on March 6 and forwarded to Field Headquarters for review and transmittal for the Director's approval.

F.P. 598 - Water and Power Development (Mammoth) - A crew of 10 men was kept on this project during the month, working mostly on excavation of the penstock trench and although weather conditions were far from ideal only four working days were lost because of inclement weather. An attempt was made to grub the reservoir site but frozen ground and mechanical difficulties in starting the tractor on cold mornings made it advisable to suspend this item of work until more favorable weather conditions prevailed. Approximately 675 cubic yards of unclassified and 40 yards of rock excavation were moved during the month.

F.P. 253 - Fire Trails - A crew of 8 men started work on Section 1 of the Lower Yellowstone Trail, about five miles east of Gardiner on the 27th. Very little work other than establishing camp was accomplished for the period.

The J. L. McLaughlin Construction Company started actual construction work on the Iava Creek-Mammoth surfacing project on March 12th with a crew of 12 men for the preliminary work and gradually increasing the force to 30 men at the end of the month. The work at present consists entirely of crushing operations with an output of 1250 cubic yards per day from material obtained from widening the "Undine Cut".

300 - Activities of Other Agencies in the Park

310 - Public Service Contractors

The general store at Mammoth remained open throughout the month to take care of local residents.

The transportation garage at Gardiner opened on March 1 to begin the overhauling of its buses. F. E. Kammermeyer, superintendent of transportation for the company, is in charge of operations. This is about a month earlier than the transportation company opened its garage work during the past two years.

400 - Flora, Fauna and Natural Phenomena

410 - Ranger, Naturalist and Guide Service

Chief Ranger Baggley continued on special E.C.W. detail in the Washington office during March and Acting Chief Ranger LaNoue devoted most of his time to the office which was unusually overloaded with E.C.W., P.W., A.A.A. and other detailed work. A few days were devoted to field work and inspections in connection with game counts, sub-marginal land acquisition plans and P.W. projects.

Assistant Chief Ranger Miller devoted his entire time to the supervision of E.C.W. work in the park. He made one trip to Missoula, Montana, to discuss plans for summer CCC camps with army officials. A great portion of his time was occupied in the E.C.W. office drawing up plans and working out details of the coming summer work program which is necessary for the six CCC camps which will be set up in the park during May.

Assistant Chief Ranger Childs devoted practically all of his time in March to wildlife work in the field and in the laboratory. He made one trip to Livingston, Montana, to attend a conference of forest service and park service A.A.A. officials in connection with the proposed acquisition of sub-marginal land in the Yellowstone River valley north of the park.

Acting Assistant Chief Ranger Harrows was engaged during most of the month on such forestry problems as detection planning, E.C.W. planning, fire equipment repair and marking, insect control plans, estimates for trails, forest protection and fire prevention, and forest nursery planning. In addition, he assisted with the March elk count, organized a trail crew and camp for construction of the Lower Yellowstone Trail, and devoted some time to general office work. On the last day of the month he left for Missoula, Montana, to spend several days conferring with forest service and university authorities regarding the establishment of a forest nursery in Yellowstone Park.

Ranger McCarty, in charge of fish culture during the summer months, skied in from West Yellowstone station on March 5th and worked two days in the office on fish culture plans for the coming season.

Ranger Kipp continued his work as project assistant on the submarginal land acquisition project north of the park.

Ranger Walker skied in from Lake station during the latter part of the month and was assigned to assist Acting Assistant Chief Ranger Barrows in planning a forest nursery for Yellowstone Park.

Rangers Chapman, Anderson and Gammill were on annual leave after March 16.

Other rangers in the field made ski and snowshoe patrols covering their districts for protection and observational purposes. Due to the heavy snow storms which characterized the month, patrols were more difficult than normally in March.

420 - Museum Service

Lectures at the C.C.C. Camp No. 1349 continued during March by the National Park Service employees.

The Mammoth Museum was open to the public on March 12 from 7:00 to 9:00 p.m. A total of 101 visitors were in attendance.

450 - Animal Disease Control

Assistant Chief Ranger Childs, with U.C.W. Naturalist Assistant Mr. R. R. Mills, made a number of field and laboratory examinations of dead sheep and elk during the month. The results of these examinations will be included in a special report covering this winter's studies in this field.

460 - Birds

Among the summer birds which appeared in March along the north side of the park were the meadow lark, bluebird, junco, red-winged blackbird, and Bohemian waxwing. Only one to two of each of these bird groups were seen, and it is likely that these individuals were lone scouts well in advance of the summer migration.

SWAN - Fourteen swan were observed on Yellowstone River between Lake and Canyon and two were seen at Mary Bay in Yellowstone Lake.

470 - Animals

ELK - During the early part of the month, 12 elk were slaughtered at Mammoth and the butchered carcasses shipped to the Consolidated Ute Agency at Ignacio, Colorado. Twenty-four animals were shipped out alive for stocking purposes near Helena, Montana.

A census of the Northern Elk herd, taken about the middle of the month, accounted for a total of 9634. A count made in the Gallatin section about the same time accounted for 1129 animals in that area. Since weather and snow con-

ditions were extremely unfavorable for an accurate count, it is estimated that the actual number of animals seen is only 80 per cent of the total numbers wintering on these two ranges.

Tick infestations are unusually heavy this spring which, coupled with poor forage conditions in many areas, probably accounts for the poor condition of many of the elk at this time. A number of deaths occurred during the latter part of March and it is likely that an increasing number of deaths will occur among old animals and calves during April and May.

DEER - Two deer, a buck and a doe, were observed at West Thumb near the shore of Yellowstone Lake in March. It is quite unusual for these animals to winter in the Lake region. Both animals appeared to be in excellent condition. With favorable forage conditions at that place, due to warm spring areas, it is likely that these two animals will winter through to the spring grass.

MOOSE - Moose observed by ranger on patrol in the Upper Yellowstone area all appeared in good condition and scattered groups seen in other areas of the park are also wintering well. The largest number observed in one area was 17 in the Upper Yellowstone country. One solitary yearling moose continues to browse along the Gardiner River between Mammoth and Gardiner.

SHEEP - From 40 to 45 sheep are seen regularly along the slopes of Mt. Everts between Mammoth and Gardiner and 30 were observed during the month near Tower Falls. Most of those seen were in excellent condition. One four-year-old ram died in Gardiner Canyon March 6. Death was attributed to vermicular pneumonia.

BUFFALO - Eighty-five buffalo were counted in the Lake district (Pelican Creek and Mary Bay areas) during March. From four to five hundred animals are still on the feed grounds at the Buffalo Ranch in the Lamar Valley.

OTTER - Five otter at West Thumb and two at Mary Bay were observed by rangers.

BEAVER - Beaver are very active in all streams in the Gallatin region.

BEAR - The first bear seen at Mammoth this spring emerged from his winter den March 30. One old male has been seen at Old Faithful since February 15.

480 - Phenomena

Angel Terrace - The flow from the springs to the south is still strong, and where it flows in one narrow channel, measures six inches wide by two inches deep. A large piece of the main formation has broken off and fallen on the front slope.

Blue Spring - Decreased greatly the first part of the month, but has increased slightly and is now flowing toward Pulpit Terrace with a small overflow also to the south.

Baby Spring - This spring continues with a strong flow, running over the road

and to the west. The coloration and algae are beautiful.

Cleopatra - There is evidence of renewed activity as the flow to the north has started again, and many of the old basins are now filling with water.

Cupid's (Cave) Spring - Continues with a strong flow and beautiful coloration of the algae.

Hymen Spring - Activity approximately the same as for February with active flow continuing toward Clematis Gulch.

Jupiter Spring - Slight activity with additional flow to the north.

Minerva Spring - Increased in activity with overflow to the southeast, and a continuance of overflow to the northeast.

Orange Mound - The flow continues about the same but with a very audible "muttering". The small bubbler immediately at the eastern base of Orange Mound is evidencing renewed activity.

Palette Spring - Continues to show an increase in flow with the western edge now flowing strong and at a depth of about two inches. The major flow continues as last month to the east of the Devil's Thumb.

? (New Spring) - This beautiful new spring has increased in size until it now measures about forty by sixty feet, and from ten to twelve feet in depth. It is now overflowing over the ledge toward Cleopatra and is becoming more beautiful each week. Orange colored algae is now much in evidence around the edges.

Main Spring - Activity has practically ceased.

Opal Spring - Continues with activity about the same as in February.

Soda Spring - Very active, bubbling vigorously and overflowing steadily.

500 - Use of Park Facilities by the Public

510 - Increase or Decrease in Travel

The number of visitors to park headquarters by way of the North Entrance was practically the same for this month as for March 1934. Most of this travel consists of parties who make the trip to view the elk and deer which are always plentiful about Mammoth during the winter months. Detailed travel statistics appear at the end of this report.

530 - Visitors

There were no special visitors in the park in March.

600 - Protection

620 - Fire Protection

One forest fire occurred along the Yellowstone River near Gardiner on March 13. It was caused by a campfire left burning, was Class A in size, and was suppressed by a ranger.

640 - Destruction of Predatory Animals

Three coyotes were killed by rangers during March.

900 - Miscellaneous

Postoffice - Business in the Post Office showed a gain of approximately 20 per cent over the same period last year. Baby Bonds were placed on sale March 1 at all post offices and promise to be popular once the public becomes acquainted with their terms, etc.

Church Services - Monday evening, March 25, by Rev. Webster E. Clement, English Lutheran Minister from Livingston, Montana.

Rev. Bewley, the District Chaplain of the C.C.C. organization with headquarters at Missoula, Montana, visited the park during March and had services at the C.C.C. Camp near Park headquarters.

Hospital and Medical - Dr. Budaeff reports that he had 27 house calls and 183 office calls during the month of March.

E.C.W.

This month ends the fourth enrollment period for E.C.W. Company No. 1349, which was the only E.C.W. camp in the park during this period. was somewhat of an experiment as some doubt was expressed as to whether or not climatic conditions would permit enough work to be accomplished to justify keeping a camp in the park during the winter months. The number and type of projects that were completed during the winter proved that winter camps for Yellowstone are very successful. In fact, we are desirous of having three of these camps next year if it is possible to obtain them. There was not any time lost due to weather conditions during the entire winter, with the exception of one day but which was made up on the following week-end.

The supervising personnel were very efficient and cooperative. After the summer's experience, the project superintendent, technical foreman and miscellaneous foreman were well qualified to carry on the winter program. The fine work that was accomplished speaks well for the ability, initiative and leadership of these men. The personnel for this past winter consisted of one project superintendent, one landscape foreman, one engineer foreman, one forestry foreman, 5 miscellaneous construction foremen, 2 mechanics, one wildlife

technician, one landscape architect assigned from the San Francisco office and one engineer, also assigned here from the San Francisco office.

The enrolled men, with very few exceptions, were a fine type, a large measure of the success of our winter camp due to their personal abilities and cooperation.

Sufficient equipment was on hand at all times to properly carry on our many winter activities.

The army personnel by their cooperation at all times helped to cut down inefficiency and loss of time on projects and interest in the progress of the work was reflected in the attitude of the men.

Company #1349 arrived in Mammoth on October 4, 1934 from Grand Teton National Park. The safety procedure of the summer was continued and developed throughout the entire winter until Safety First has become a habit with everyone connected with the camp. All safety rules and regulations and suggestions from everyone, especially those made by the enrollees, have been included in our Safety First programs. These Safety First meetings were held once each week without fail. The effectiveness of our efforts to perfect Safety First is fully demonstrated by the few injuries we have had during this enrollment period. We have had only 17 accidental injuries in the E.C.W. work during this past six months and half of them being minor injuries, such as sprains. The other injuries consisted of one broken arm, two fractured feet, two eye injuries, one foot punctured with a pick, one lacerated knee and one lacerated leg.

Safety First for the operations of trucks, especially so in connection with the education of drivers, formed one of our greatest parts of our Safety First programs. All of these drivers have passed examinations and have been trained to think Safety First at all times. Safety First bulletins have been posted in trucks and on the bulletin boards for ready reference and reminders. It was necessary to remove a few of the drivers early in the period due to negligence and the proper care of equipment and speed. The trucks have been inspected frequently for proper lights, horns and windshield wipers, and especially the brakes. All dump trucks for the entire period had been fully equipped with hand rails and seats. The stake body trucks have been fully equipped with seats at all times.

The project superintendent or one of the E.C.W. foremen acted as chairman at all of the Safety First meetings which were held weekly, mostly on Monday evenings. The foremen have instructed the men while on the job the proper use of tools and have continually cautioned them against the hazards which might result in improper use of these tools or the use of defective tools. The fact that we have had no accidents caused by defective tools or equipment reflects admirably upon our supervisory personnel.

In accordance with Safety Division bulletins all supervisory personnel of this camp have taken the standard course of 15 hours of instruction on First Aid.

One of the foremen, who was located in one of the spike camps during the time that this course was given in the Mammoth camp, has been covering the course thoroughly during instructions in the evenings in order to keep fully advised of this important duty in connection with E.C.W. work. All of the leaders and assistant leaders were required to take the course and those who failed to pass the first time were required to continue their study until they were able to pass the examination.

The educational program for the Mammoth camp consisted in a great deal of correspondence courses from the Boise C.C.C. District, Boise, Idaho; University of Wyoming and the University of California. These courses covered psychology, journalism, auto mechanics diesel engineering, practical photography, blue-print reading, english, forestry and how to study. Classes held in the Mammoth camp by the educational advisor consisted of typing, mechanical drawing, trigonometry and journalism. This last class turns out the camp paper. This paper is issued every two weeks and contains the activities of the work projects and other interesting data regarding the camp.

There are over 100 books of fiction and non-fiction in the Camp library. Many of these books have been donated by people from Mammoth and Gardiner, some purchased from the welfare fund and some of these have been sent in from the Ninth Corps Area Headquarters. The recreational procedure during the winter here is quite different than during the summer months, as it is impossible during the winter time for the men to make trips to the various main points of interest around the park or go fishing as many of them enjoy doing. However, we did open our Canteen Building for the use of enrollees during this past winter and they used it to good advantage playing volley ball, basket ball and other interesting games which can be played indoors. There was not a week went by but what groups of boys were not taken to Livingston, Montana for the week-end. The recreation hall at the camp is well equipped, the Company having purchased a pool table, ping-pong table, radio and a piano. The Show Boat which is operated by the Forest Service made a trip to our camp every two weeks, showing educational, forestry and comic movies.

The projects under way during the Fourth Period had practically all been completed with the exception of the Mammoth campground, the barn roof at Mammoth, the barn at the Game Ranch, the obliteration of the stone quarry at Mammoth and the partitions in the E.C.W. office. All of these projects will be fully explained in the final report covering the Fourth Enrollment Period for E.C.W. One of the projects which drew the greatest amount of interest from the enrollees was the elk disposal or game management project. When this project started on January 9, the first group of men were sent to Slough Creek to form a spike camp where they were to carry on the elk slaughter operations. The killing of elk was postponed at that time. The men did a great many odd jobs at Slough Creek, such as hauling in wood, cleaning up in the near vicinity, digging an open ditch from a hillside spring, etc. The killing of elk at Slough Creek was started on February 7 and continued until February 15. This crew of men was left at Slough Creek until the second day of March with the expectation that somehow the hunters would not kill the necessary number of elk outside of

the park and it would force us to slaughter additional elk at that point. This spike camp moved to Mammoth on March 2, the enrollees very reluctant to leave their Slough Creek spike camp.

We feel very well satisfied with the amount of work and the type of work which was accomplished by the enrollees during this past period and we have proven that winter camps at Mammoth and vicinity can be worked very satisfactorily during the winter months.

- - - - -

Arthur Babbitt, pioneer restaurant and hotel man of Livingston, died in Livingston on March 2. Representatives of the Park Service were in attendance at the funeral, held on March 5. Arthur Babbitt and his brother, Ralph, have been fine friends of the Yellowstone and the Service.

A meeting of Federal Employees Union No. 465 was held in the Canteen lodge room on March 4.

An examination for the position of Forest and Field Clerk was conducted by the Local Civil Service Board on March 5 in the Canteen building. Two contestants participated. Messrs. Joffe and Satson conducted the examination.

A siege of volleyball hit the park during the month and some forty people, both men and women, participated in the sport. This is the first time so much interest has been manifested in the game, although some of the men have played during other winters. The interest of the park people in the game was aroused through the efforts of Miss Marguerite McMartin, who has been detailed to the park by the FERA to conduct adult education here. Five teams of eight players each were formed and a tournament lasting three nights was held on March 18, 19 and 20. The two losing teams were hosts to all those who participated in the tournament at a feast and dance held on the evening of March 22. Plans are underway to start another tournament within a couple weeks.

Classes are also being conducted by Miss McMartin in typewriting and physical education and many persons are taking tap lessons from a Miss Luckett, a school teacher from Gardiner. There has been more interest this winter in community activities than has been shown for a great many years and everyone seems to be enjoying the games, classes and affairs. These community activities have made for a better understanding and feeling among the members of the community.

Harry L. Smith of Chico, California demonstrated a Tucker Motor Snow Sled to several members of the park organization at Swan Lake Flats on March 21. While the demonstration was not entirely successful, due mainly to Mr. Smith having trouble with the motor of his machine, those who saw the demonstration were agreed that the machine has good possibilities. There was about two or three feet of snow on the ground at Swan Lake where the demonstration was made and the snow was packed hard enough to permit a suitable try-out. It is understood that a machine

of this type is in use in Yosemite Park by the operator there but it is doubtful if such a machine would prove of particular value in the Yellowstone because of the peculiar snow conditions and the distribution of winter activities.

A chess tournament, including players from Mammoth, Livingston, Billings and Hardin, Montana was held in Livingston on March 24. There are a number of devotees of this game in the park and a very successful tournament was held. While a player from Livingston won first place several representatives from the Park were near the top in the closing games. A state chess organization was formed at the tournament and [illegible]. T. Lathrop of the U. S. Weather Bureau at Mammoth was chosen President, while Clerk Keith [illegible]. Neilson of the N.P.S. was selected as Secretary. The Mammoth chess club is promoting a dance to be held at the Canteen on Saturday, April 6.

Dan Cupid is becoming active in the park again and on March 31 his dart hit another member of the ranger force. Park Ranger George Walker and Dorothy Caruso, of Livingston, were married at the Evangelical Church in Livingston. Park Ranger Gerald F. Yetter and Mrs. Yetter attended the bride and groom. Ranger Walker returned to the park to take up his station at Mammoth while Mrs. Walker will join him shortly in the park. Very few eligible bachelors remain on the park ranger force and speculations are rife as to who will be the next one to march to the altar.

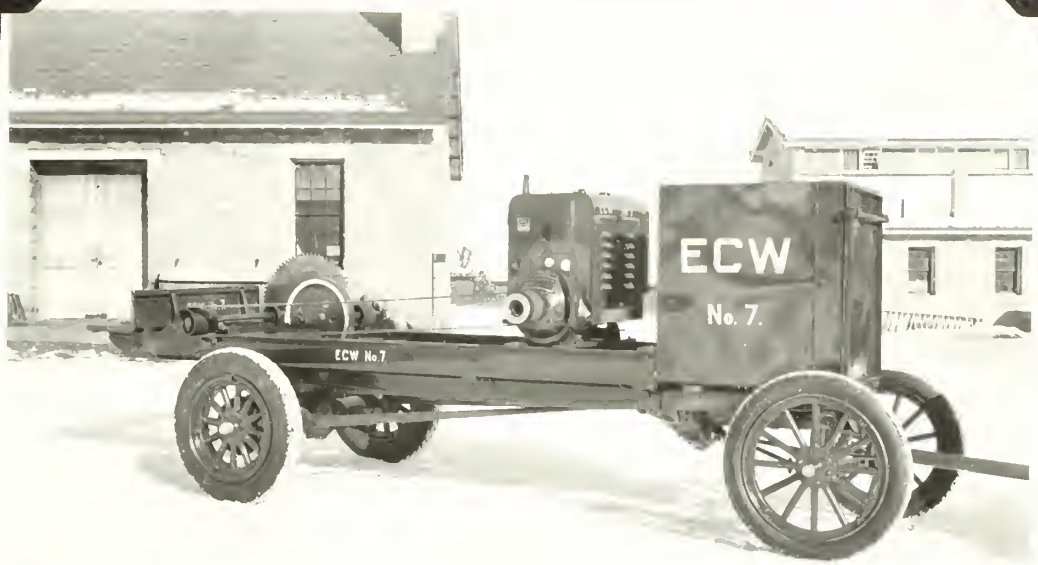
Yours very truly,

J. F. Emmert,
Acting Superintendent.

VG

On February 25, the first inspection trip ever made in an automobile to Lower Geyser Basin at this time of the year was made by Messrs. Emmert, Joffe, Lord and LaNoue. Car is shown between Norris and Madison Junction. (Road opened by McLaughlin Construction Co.)

Acting Superintendent Emmert and Mr. Lord at Nez Perce Creek, February 25, 1935.



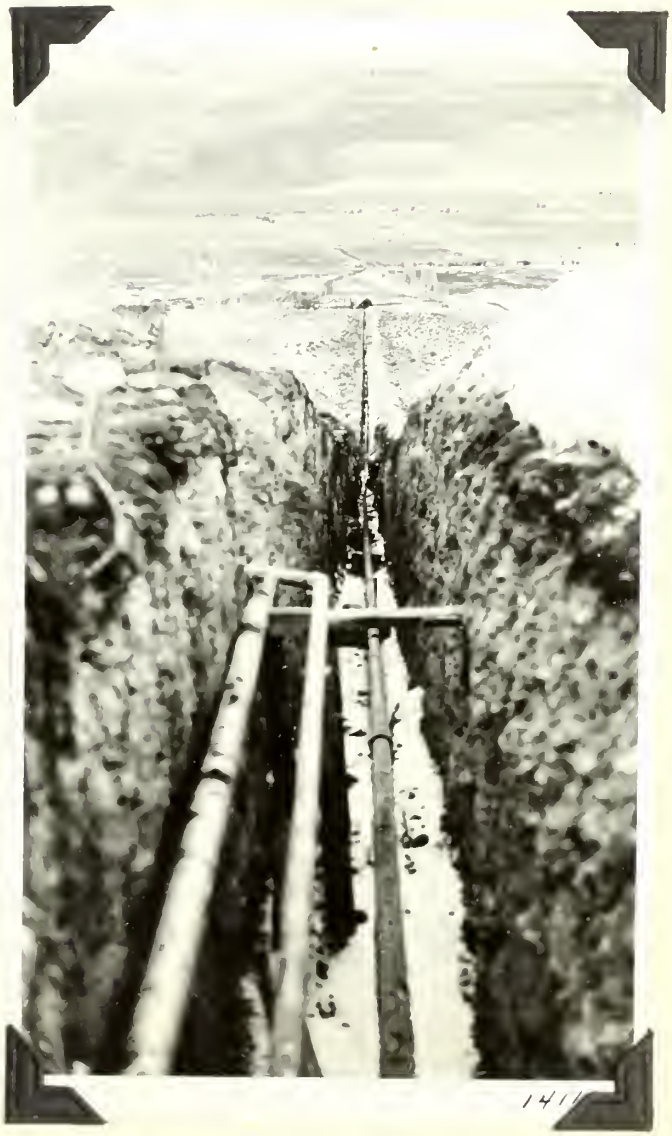
14098-

[illegible] sawsaw mounted on trailer. Box in front is for tools and spare tires. Picture to see behind safety screen was destroyed.

14172

[illegible] as above with safety screens installed.

(at left) Reservoir constructed by enrollees at Camp Lunch during fourth period, showing pipe line, blow-off and drain.



(at right) Pipe line laid by enrollees at Camp Lunch during fourth period. Pipe line (on left) is blow-off; center is manhole drain; and one on bottom of ditch is the main line.

11733-

Project F 540. Quartermaster Quarters, Yuma. View of building site, bowling alley razed, and excavation for basement underway. Low flat building on right edge of picture is contractors office.

11733-

Project F 540. Quartermaster Quarters, Yuma. View of old bowling alley, located on building site, being razed. Removal of left half of building completed. View looking easterly.

11233-5

Project No 508...Electric power plant in south. View of excavation for penstock line looking back from survey sta. 90 - 00, just south in south side.

11233

Project No 508. Electric power plant, in south. Another view of excavated trench for penstock line looking back from survey station 90 - 00. Now carried in bottom of ditch to a depth of about one foot.

10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Yellowstone National Park for the Month of March 1935

	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, ...	95	1331	110	2560	-1229	-48
Cars reentry, ...		958		82	876	1068
Motorcycles, ...		3		3		—
Total motor vehicles, ...	95	2292	110	2645	-353	-13.4
Persons entering via motor vehicles, ...	285	6768	300	8321	-1553	-18.6
Persons entering via other private transportation, ...		44				—
Total persons entering via private transportation, . . .	285	6812	300	8321	-1509	-18.1
OTHER TRANSPORTATION:						
Persons entering via stages, .	5	5			5	--
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	5	5			5	—
GRAND TOTAL ALL VISITORS, . . .	290	6817	300	8321	-1504	-18

	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 August 1929

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase or Decrease Travel Year Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry.	86	1,621	110	2,040	-419	-20.5
Cars reentry.		859		82	274	1,048
Motorcycles.		3		3		
Total motor vehicles. . .	86	2,483	110	2,125	-342	-16.1
Persons entering via motor vehicles.	290	8,240	300	9,995	-1,755	-17.6
Persons entering via other private transportation .		49				
Total persons entering via private transportation. .	290	8,289	300	9,995	-1,706	-17.1
OTHER TRANSPORTATION:						
Persons entering via stages.	5	5		5		
Persons entering via trains.						
Persons entering otherwise.						
Total other transportation.		4			4	
GRAND TOTAL ALL VISITORS. . .	290	8,298	300	9,994	-1,696	-17.0

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

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Yellowstone National Park for the Month of March, 1935

	This Year	Last Year
Park revenue on hand beginning of month,	$ 69.60	$ -
Received,	253.10	65.10
Total,	$ 322.70	$ 65.10
Remitted,	322.70	65.10
On hand close of month,	-	-

Park revenues received this year to date,	$206,559.63
Park revenues received last year to date,	128,803.02
Increase,	77,756.61
Per cent of increase,	60.3686

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Yellowstone National Park for the Month of June, 1937

	This Year	Last Year
r revenue on hand beginning of month	$ [illegible]	$ -
ceived	[illegible]	[illegible]
Total	$ [illegible]	$ [illegible]
mitted	[illegible]	[illegible]
hand close of month	-	-
rk revenues received this year to date	[illegible]	
rk revenues received last year to date	[illegible]	
Increase	[illegible]	
Per cent of increase	[illegible]	

10-159
May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Yellowstone National Park for the Month of March, 1935

	This Month				This Month Last Year	
	Appointed	Non-Appointed			Appointed	Non-Appointed
Number of employees beginning of month	95	Reg.	11		75	40
		P.W.	15			
Number of additions	P.W. 1	Reg.	13		3	18
		P.W.	13			
Total	96		52		78	58
Number of separations	0	Reg.	4		1	22
		P.W.	6			
Number of employees close of month	* 96		** 42		77	36
Number of promotions during month	0				0	
Aggregate amount of annual leave taken	PW 1 ECW 1½ Reg. 60½				65	
Aggregate amount of sick leave taken	Reg. 1				6	
Aggregate amount of leave without pay	0				11	

*Includes 75 regular, 4 P.W. and 17 E.C.W. employees

**Includes 20 regular and 22 P.W. employees

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Yellowstone National Park for the Month of [illegible]

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	[illegible]	[illegible]	[illegible]	[illegible]
Number of additions	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]
Number of separations	[illegible]	[illegible]	[illegible]	[illegible]
Number of employees close of month	[illegible]	[illegible]	[illegible]	[illegible]
Number of promotions during month	[illegible]		[illegible]	
Aggregate amount of annual leave taken	[illegible]		[illegible]	
Aggregate amount of sick leave taken	[illegible]		[illegible]	
Aggregate amount of leave without pay	[illegible]		[illegible]	

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UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

*ELECTRICITY GENERATED, SOLD, USED, ETC.

Yellowstone National Park for the Month of March, 1935

	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, ...	64,641	190,459	64,549	199,693	-9234	- 4.6
Sold to park operators, . . .	443	1,333	396	1,625	- 292	-17.9
Sold to others, ...						
Furnished to other Governmental agencies, ...						
Used by National Park Service, lost in transit, etc., . . .	64,198	189,126	64,153	198,068	-8942	- 4.5
Total current generated, . .	64,641	190,459	64,549	199,693	-9234	- 4.6

Amount receivable from the sale of electricity, ... $ 22.15

* Indicated by K. W. H.

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REVENUE GENERATED, BOOK, WORK, ETC.

Yellowstone National Park for the Month of [illegible] 1963

	This Month	Year To Date	Last Year To Date	Last Month Last Year	Thirty Days Previous Number	Thirty Days Previous Second
[illegible] generated	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] to park operations	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] to others						
[illegible] items to other Government agencies						
[illegible] by National Park Service [illegible] in trust	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] generated	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] income from the sale of electricity $ [illegible]

[illegible] to [illegible]

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF TELEPHONE AND TELEGRAPH BUSINESS

Yellowstone National Park for the Month of March, 1935

	This Month	This Month Last Year	Increase	Percent Increase
LOCAL BUSINESS				
Miles of circuit maintained.	582	545	37	6.7
No. of telephones connected, ...	225	205	20	9.7
No. of measured service calls, ...				
No. of other local calls, ...				
Total No. of local calls, ...	5533	5070	463	9
Peak load in calls per day, ...	252	241	11	4.56
Receipts from measured service calls. . .				
" " coin boxes, ...				
" " telephone rental, ...				
TOTAL RECEIPTS				
LONG DISTANCE BUSINESS				
No. Outbound calls, ...	59	90	- 31	34
No. Inbound calls, ...	128	90	38	42
TOTAL LONG DISTANCE CALLS				
Peak load in calls per day, ...	In 9 / Out 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-				

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF TELEPHONE AND TELEGRAPH BUSINESS

National Park for the Month of _____ Year _____

	This Month	This Month Last Year	Increase	Decrease
A. SERVICE				
Number of local calls	[illegible]	[illegible]	[illegible]	[illegible]
" of telephone messages	[illegible]	[illegible]	[illegible]	[illegible]
" of messages sent over lines				
" of toll calls				
Total No. of local calls	[illegible]	[illegible]	[illegible]	[illegible]
Average time in calls per day	[illegible]	[illegible]	[illegible]	[illegible]
Service from Government owned cells				
" " Leased lines				
" " Commercial lines				
Total receipts				
B. OPERATING EXPENSES				
Operating costs	[illegible]	[illegible]	[illegible]	[illegible]
Repairs costs	[illegible]	[illegible]	[illegible]	[illegible]
Total costs				
C. ACCOUNTS RECEIVABLE				
Amount due on July 1st, 19__	[illegible]			
Amount from Government Departments	[illegible]			
D. ACCOUNTS RECEIVABLE				
Amount due on July 1st, 19__				
Amount from Government Departments				
Total receipts				
Service from Commercial Companies				
Service from Government Departments				
Service				
E. ACCOUNTS RECEIVABLE				
Amount due on July 1st, 19__				
Amount from Government Departments				
Total receipts				

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L PARTMENT OF THE INTERIO

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Yellowstone National Park for the Month of March, 1935

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

NO CHANGE IN STATUS OF PROJECTS, EXCEPTED AS NOTED UNDER P.W.

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

MARCH, 1935

The first fifteen days of March were above normal in temperature with four exceptions. From the 16th on, every day was below normal except two. The average temperature for the entire month was 25.6, or 0.9 below normal. The highest temperature of the month was 52 on the 14th; the lowest, 2.6 on the 6th. On the 14th the mean temperature was 20 degrees above normal; on the 31st the daily mean was 19 degrees below normal. With the exception of March 1932, it was the coolest March since that of 1926.

Precipitation, totalling 1.41 inches, was the greatest for March since 1928. The normal for the month is 1.68 inches. Rain fell on the 13th,14th,15th, and 26th, but all the month's precipitation except 0.16 inch came from snow. The total snowfall was 25.1 inches. This is 9 inches over the average for March, and approaches the heaviest March snowfall of recent years, 26.8, of 1932 Precipitation amounting to .01 inch or more fell on 20 days. The greatest amount in 24 consecutive hours was 0.34 inch on the 14th-15th. A 5.0 inch snowfall at this time was the heaviest snowfall of the month. Average depth of snow on the ground at the close of the month was 6.8 inches.

Southwest winds prevailed, with an average velocity of 10.3 miles per hour. This high average was mainly due to remarkably sustained high winds on the 25th, when a maximum at the rate of 41 miles per hour (four-cup anemometer corrected) was recorded. The average velocity for that day was 25.4 miles per hour.

The first thunderstorm of spring occurred on the 14th.

W. T. LATHROP, Meteorologist.

a No. 1030—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MONTHLY METEOROLOGICAL SUMMARY.

Station, Yellowstone Park, Wyo. ; *month,* March, *19* 35.

e.	Temperature. (Degrees Fahrenheit.) Max.	Min.	Mean.	Precipitation. (In inches and hundredths.)	Character of day.
	42	36	34	0	Cloudy
	44	19	32	.02	Pt.Cl'dy
	41	27	34	.02	Cloudy
	35	14	24	.02	Cloudy
	15	6	10	.04	Cloudy
	24	3	14	T.	Cloudy
	36	18	27	T.	Cloudy
	37	20	28	.06	Cloudy
	30	15	22	.03	Cloudy
	25	9	17	T.	Cloudy
	38	20	29	.04	Cloudy
	38	29	34	.01	Cloudy
	44	37	40	T.	Cloudy
	52	39	46	.05	Clear
	39	19	29	.31	Cloudy
	31	10	20	T.	Pt.Cl'dy
	34	16	25	.05	Pt.Cl'dy
	33	14	24	.10	Pt.Cl'dy
	35	11	23	T.	Clear
	29	20	24	.12	Cloudy
	32	19	26	.04	Cloudy
	30	20	25	.10	Cloudy
	34	17	26	T.	Cloudy
	37	23	30	T.	Cloudy
	40	23	32	.12	Cloudy
	27	14	20	.05	Pt.Cl'dy
	26	9	18	.01	Cloudy
	34	15	24	T.	Cloudy
	43	9	26	.16	Cloudy
	32	5	18	0	Clear
	17	6	12	.06	Cloudy
				Total.	
n	34.0	17.1	25.6	1.41	

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

Mean 29.942; highest 30.33, date 11
lowest 29.35, date 8

TEMPERATURE.

Highest 52, date 14; lowest 3, date 6
Greatest daily range 34, date 29
Least daily range 7, date 13

MEAN FOR THIS MONTH IN—

1871	82		93				04				15				26					
1872	83		94		27.2		05		25.2		16		30.4		27		29.2			
1873	84		95				06		32.3		17		32.4		28		26.7			
1874	85		96		24.9		07		19.6		18		16.8		29		30.0			
1875	86		97		19.5		08		29.6		19		31.8		30		23.2			
1876	87	36.0	98		20.9		09		25.2		20		29.2		31		25.8			
1877	88	22.3	99		25.0		10		28.0		21		23.5		32		27.0			
1878	89	36.1	100		34.0		11		36.0		22		30.0		33		21.6			
1879	90	26.2	101		27.2		12		31.9		23		26.5		34		28.4			
1880	91	22.3	102		25.0		13		17.6		24		21.8		35		35.8			
1881	92	27.9	103		23.7		14		22.3		25		22.1		36		25.6			

Normal for this month 26.5
Absolute maximum for this month for 49 years 62
Absolute minimum for this month for 49 years -25
Average daily excess (+) or deficiency (−) of this month as compared with the normal -0.9
Accumulated excess (+) or deficiency (−) since January 1 +22.3
Average daily excess (+) or deficiency (−) since January 1 +2.5

PRECIPITATION.

Total this month 1.41; snowfall 25.1
Greatest precipitation in 24 hours 0.34, date 14-15
Greatest 24-hour snowfall 5.0, date 14-15
Snow on the ground at end of month 6.8

TOTAL PRECIPITATION THIS MONTH IN—

1871	82		93	0.96			04	2.98			15	1.05			26	0.53				
1872	83		94	2.30			05	1.41			16	1.46			27	0.65				
1873	84		95	2.79			06	1.35			17	1.99			28	1.60				
1874	85		96	2.62			07	4.56			18	1.39			29	1.03				
1875	86		97	1.06			08	1.39			19	1.00			30	1.10				
1876	87		98	1.4			09	0.77			20	1.95			31	0.60				
1877	88		99	3.00			10	0.82			21	1.24			32	1.25				
1878	89	0.53	100	3.13			11	0.95			22	0.66			33	0.54				
1879	90	4.92	101	1.46			12	2.57			23	1.00			34	0.96				
1880	91	2.41	102	2.46			13	2.00			24	1.21			35	1.41				
1881	92	3.05	103	0.85			14	0.66			25	1.00			36					

Normal for this month 1.68
Excess (+) or deficiency (−) of this month as compared with the normal -0.27
Accumulated excess (+) or deficiency (−) since January 1 -1.71

MEAN RELATIVE HUMIDITY (Percentage).

6 a. m. 79.5; local noon, 58.4; 6 p. m. 64.8

WIND.

Prevailing direction SW.; total movement 7,666 miles; average hourly velocity 10.3; maximum velocity (for five minutes) 41 miles per hour, from southwest on 25
Maximum wind velocity this month since 1904 (~~XXX~~ three-cup anemometer) 43-south; 1921

WEATHER.

Number of days, clear 3; partly cloudy 5; cloudy 23
on which .01 inch, or more, of precipitation occurred 20

MISCELLANEOUS PHENOMENA (dates of).

Auroras none; halos: solar 8, 15, 23, lunar 21
Hail none; sleet none; fog light, 5
Thunderstorms 14
*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, 35%, on 26th, at noon, local time.

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

—1650 GOVERNMENT PRINTING OFFICE

Form No. 1030—Met'l.

U. S. DEPARTMENT OF AGRICULTURE,

WEATHER BUREAU.

MONTHLY

METEOROLOGICAL SUMMARY.

STATION

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