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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Zion NATIONAL PARK

FILE NO.

ANNUAL REPORT FOR 1933



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STEPHEN T. MATHER,
Director.

 **COPY**

January 4, 1933

The Director
National Park Service
Washington D. C.

Dear Mr. Director:

In reviewing the Zion and Bryce annual reports forwarded with my letter of December 31, I find that a typographical error was made on page 4 of the Zion report under the heading "River Control for Road Protection." The sentence starting on the 3rd line of this paragraph should read: "With these funds 5,000 feet of channel change were excavated and 1,800 feet of basket dams constructed." It is requested that correction be made on each of the three copies forwarded to your office.

Due to very small supply of mimeograph paper on hand, it will not be possible to mimeograph these annual reports to supply the various field offices. However, extra carbon copies were typed and one copy is being sent to Field Headquarters for their records.

Very truly yours,

P. P. Patraw
Superintendent

ANNUAL REPORT
ZION NATIONAL PARK
1933

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ZION NATIONAL PARK
P. F. Patraw, Superintendent
Springdale, Utah

GENERAL

This is the annual report of the administration of Zion National Park in its fifteenth year and covers the fiscal period of July 1, 1932 to June 30, 1933, and the administrative and construction year beginning October 1 1932 and ending September 30, 1933.

Zion National Park was established by Act of Congress approved November 19, 1919. It is the seventeenth park, in order of establishment. Located in southwestern Utah, it was first reserved as a national monument in 1908 with the name "Mukuntuweap" which was subsequently changed to Zion. The boundaries now include 143 square miles. It is made accessible to visitors by an 18-mile road system including the famous Zion Tunnel of more than a mile length, three trails from the valley to the rim, and a system of bridle and foot trails in the valley. Hotel accommodations, of the lodge type, and transportation service are provided by Utah Parks Company, which also operates similar services in Bryce Canyon National Park, Cedar Breaks National Monument and on the North Rim of Grand Canyon National Park. A public auto campground supplied with running water, fuel wood and sanitary facilities is maintained by the Government. A new public campground of the individual campsite type is now under development, and the Utah Parks Company is now preparing its plans for construction of a cabin camp to adjoin the new public campground at the park south entrance.

Railroad connection to the park is provided by the Utah Parks Company busses from Cedar City, on the Zion-North Rim of Grand Canyon-Bryce-Cedar Breaks loop tour, during the summer tour season, June 1 to September 30.

Although hotel accommodations are made available only during the summer, May 15 to October 15, the park is accessible by auto road and is visited each day throughout the year. When the proposed cabin camp is completed it is to be expected that patronage will be sufficient to justify its operation on an all-year basis.

In spite of the fact that statistics of travel show a small decrease for the entire 1933 year over the preceding year, there was a small seasonal increase, the loss during the off-season period having been sufficient to cause a loss for the year.

From an administrative and construction standpoint the year was an unusually busy one. One Emergency Conservation Work summer camp was established and supervised by this office on the mountain plateau above the park, where heavy overgrazing in the past had created a condition

in which much excellent erosion and flood control work could be performed, not only for direct results but also as a demonstration to adjacent land owners of proper erosion protective measures. In mid-summer the allotment of \$294,250 from Public Works funds greatly increased the duties of the park personnel in the preparation of plans and the initiation of the authorized projects into the construction stages. In addition to the administration of Zion National Park, the supervisory organization administers Bryce Canyon National Park and the recently established Cedar Breaks National Monument.

This is an opportune time to call attention to one factor which as much as any other promises a bright future for record visitation to Zion National Park. This is the program under which Highway U.S.89 from Flagstaff, Arizona, and the south rim of Grand Canyon National Park to the Zion-Mt. Carmel Junction is rapidly being constructed to modern highway standards, replacing the old desert road which was fraught with danger to the novice and with arduous, careful driving to the veteran motorist. It does not require a great stretch of the imagination to visualize a doubling of the 50,000 visitors, soon after return of prosperous business conditions, through diversion of motorists from the transcontinental route U.S.66 to the South Rim, over U.S.89 to the North Rim, to Zion, Bryce Canyon and Cedar Breaks and thence to Las Vegas and Boulder Dam, and on to California either over U.S.91 or by rejoining U.S.66. Work completed and now in progress on this route has or will have improved it to the extent that it can be recommended to all classes of motorists. The construction of the section of U.S.89 between Bryce Junction and Mt. Carmel Junction at high standards has been completed or is in progress with the exception of a 5-mile stretch of fair road from Alton Junction southward, reducing the driving time between the two parks to two or two and one-half hours. All of U.S.91 from Salt Lake City to Anderson Junction and to Los Angeles is now oil surfaced or paved with the exception of a four-mile section south of Fillmore, Utah.

PERSONNEL

The permanent organization consists of the superintendent, assistant superintendent-engineer, park naturalist, chief ranger and two rangers, chief clerk, clerk-stenographer, storekeeper-costkeeper, a foreman and a general mechanic. Three ranger-checkers and three ranger-naturalists are employed during the summer season, their terms of appointment ranging from three to six months. Maintenance and construction forces are recruited from nearby communities when needed, on day-wage basis, their numbers varying from none to one hundred or more. The only change in the permanent personnel during the year was the appointment of Clifford C. Presnall as Park Naturalist by transfer from Yosemite National Park on June 24, 1933.

WEATHER

Great extremes in mean monthly temperatures were recorded. The mean of February was 34.1 degrees, the lowest on record; the mean of 34.3 degrees for December was 6 degrees below normal for that month, and the mean of July, 85.4 degrees, has been exceeded in the last thirty years only by the June 1931 record of 87.4 degrees. The annual mean was 59.22.

Minimum temperature of one degree was recorded on December 13 and on February 9. Maximum temperature of 107 degrees on July 12 and 13 was the highest since July 1931. Extremely hot weather prevailed all summer until a heavy shower on September 8. The peak of warm weather was from 9th to 29th of July when the maximum fell below 100 degrees on only three days.

Another unusual weather condition was an extremely late spring. Snow left the valley by March 31, but cold weather with snow and sleet flurries continued until May 20. The first snowfall was six inches on December 24. The greatest depth was during the storm of January 17 to 31 - 48 1/2 inches in the Temple of Sinawava and five feet at the east entrance. The heaviest rainstorm was 0.73 inch on September 8. Total precipitation was very light, being only 9.21 inches.

There were 207 clear days, 61 partly cloudy, and 27 cloudy.

TRAVEL

The total of 48,763 visitors was a loss of 2,887 or 5.56% from the preceding year. However, all of the loss was endured in pre-season travel, the summer season showing a slight gain. The month of heaviest travel was July, with 10,123 visitors, and the largest day was September 3 with 632.

Visitors came from every State, the District of Columbia, and from 28 foreign countries. Utah and California provided the greatest number of visitors, 36.9% and 36% respectively. Among the states east of the Mississippi, New York was first with 1041, and Illinois second with 874 - the same ranking as last year. New Hampshire sent the fewest with only 9.

For the first time since 1929 railroad-stage travel showed an increase over the preceding year, 1,215 as against 1,087, an increase of 11.77 per cent.

Comparison with 1932, by Modes of Transportation

	Private Autos	Visitors			Total
		By Auto	By Stage	Miscel	
1933	14,980	47,485	1,215	63	48,763
1932	15,180	50,483	1,087	80	51,650
Loss or gain	-200	-2,998	128	-17	-2,887

Comparative Travel by Months

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Total
1933	1394	1141	808	618	694	954	3016	4604	9250	10123	9495	6666	48763
1932	2445	1233	750	982	804	2717	2699	4385	8689	11146	10440	5360	51650
Gain	--	--	58	--	--	--	317	219	561	--	--	1306	--
Loss	1051	92	--	364	110	1763	--	--	--	1023	945	--	2887

MAINTENANCE, IMPROVEMENT AND CONSTRUCTION

The construction program was greatly accelerated through assignment of an Emergency Conservation Work camp to the park, and the allocation of \$294,250 from Public Works funds, resulting in more work being undertaken than would ordinarily have been done in several years of programming. At the close of this period the park was giving employment to 274 persons, including the members of the Civilian Conservation Corps.

Maintenance

In the fall of 1932 rather extensive patching of the surfacing was necessary on the section of the East Rim Road between the Virgin River bridge and the Zion Tunnel. Snow plowing was almost continuous from December 17 to the end of February. On December 30 the East Rim Road was closed for four hours by a snowslide. Drifting conditions were bad.

Summer work consisted of routine removal of rock sloughing from cut banks, and the blading of pea gravel on the seal-coat of the Valley Road section in order to get the gravel uniformly spread and imbedded into the top surface. Section 3 of the East Rim Road was bladed twice. Oil was applied to the gravel surface in the small tunnel section as a dust palliative. Parking strips were painted on the parking area at the Temple of Sinawava, and temporary curb stones were placed to protect the planting areas from traffic.

The routine maintenance of the valley and rim trails to place them in condition after winter damage was performed in May. A dry wall of 450 square feet was installed near the bottom of the East Rim Trail where Cable Creek was undermining it.

The water storage for headquarters was increased to 7,000 gallons by erection of a 3500-gallon wood-stave tank acquired through a land purchase in 1931. The construction of a new intake was made necessary by a change in the outlet of the spring which furnished the water supply.

A 10 x 14 foot room was added to the 2-room cabin. A photographic dark room was built in the basement of the warehouse in April, and later the basement room was further improved to make it suitable as an engineering office and drafting room. A flagstone walk and a small parking area were put in at the superintendent's residence. A few native trees were transplanted at this place for screen and shade purposes.

The public campground was maintained in excellent condition throughout the open season.

Building Construction

Contract for a 3-stall equipment shed was awarded on November 25 to Anderson-Excell Brothers of Springdale for \$1,347.35. Construction commenced in December and finished in excellent condition on March 15, in spite of almost a month lay-off due to bad weather. Excavation of site was done by force account.

Roads and Trails Construction

Floor of Valley Road, Surfacing

The contract awarded to Reynolds-Ely Construction Company in August, 1932, for surfacing with asphalt mixed gravel of the 6 1/2 miles of this route was completed in November. A satisfactory job was obtained, and the surfacing proved itself excellently in the following year of use. The fact that the unusually high temperatures of the summer failed to cause "bleeding" demonstrated that this type is much superior to the oil-mix surfacing. The innovation applied on this road of surfacing the ditches also proved its value in protecting the road shoulders and the cut banks, and in preventing moisture from getting into the subgrade. Contract costs totalled \$75,435.35.

Supplemental Construction, East Rim Road

This project, which was commenced in July, 1932 under contract to Reynolds-Ely Construction Company and which consisted of placing additional timber and reinforced concrete lining where most needed in the main tunnel, reinforced concrete supports at galleries 1 and 3, and gunite surfacing of the remaining uncoated portions of the main tunnel and all of the section 3 tunnel, was completed in April. It also included line changes and slope stabilization on two sections of the switchback road below the tunnel. The work progressed slowly due to changes in plans made necessary by the cave-in below gallery 6 on September 27. It was necessary to close the tunnel to traffic from October 15 to 31 in order

to place reinforced concrete at this section. By the end of the calendar year the 150 feet of monolithic arch at this place had been completed and the sand backfill of 500 cubic yards was subsequently placed to fill the cavity left by the cave-in. Work during February and March consisted of resetting timber rings and placing concrete rings, resumption of guniting operations, and the grading work on the line change outside the tunnel. The project was satisfactorily completed on April 13, at a cost of \$144,704.51.

Post Construction

A retaining wall was built on the ditch line at the first switchback below the tunnel to protect the road shoulder from storm damage. A flagstone lining and cutoff wall was placed in one of the culvert catch basins on the Valley Road as an experiment toward remedying the clogging of culverts by debris during each heavy storm. The installation proved effective and will be at all culvert intakes.

EMERGENCY CONSERVATION WORK Zion National Park Camp No. NP-1

Preliminary Work

Camp was temporarily established on May 29 with one Army officer and six enlisted men and twenty-two enrolled men, at the South Entrance of Zion National Park, pending the accessibility of Blue Springs, selected for the summer campsite. The force of enrolled men was increased to 50 on June 3, 150 on June 22, and to the full strength of 200 by July 15. From the temporary camp a small crew was placed at work constructing an irrigation intake and a stub camp was established at Pine Springs for opening up and improving 22 miles of the Virgin-Blue Springs road sufficiently for truck travel for moving and supplying the summer camp at Blue Springs. By June 15 the road was in good enough shape and camp was moved. Betterment of the 30-mile road from Blue Springs to Cedar City, the railhead, was immediately commenced.

Erosion Control

Work on Kolob Creek started with a small crew on July 5th. By the end of the month an average of 140 men were working on this job. Experimental methods of erosion control were first tested out, then serious work centered on log check dams in the gullies with logs, rocks or brush below the spillways and a system of terrace ditching and log spillways on more gently sloping terrain at heads of gullies. Most of the work being on privately owned land, 35 separate agreements were needed for permission to carry on work. Full cooperation resulted in all cases, and we feel that much good was done by a program of education in grazing management among private land owners.

Summary of work accomplished:

- 1500 Check dams
- 4500 lineal feet of brush and rock fill
- 6000 lineal feet of terracing
- 220 acres seeded with seed supplied by Forest Service

Owners of land where seeding has been done will control grazing to permit a thorough trial of this project. Torrential rains during the summer proved the practicability of the work being done.

Other Work Accomplished

Fifty miles of road were bettered and maintained, only enough work on them being done to insure adequate transportation to camp. Seven miles of truck trail were constructed to permit transportation of men and equipment to areas within the park, where erosion control work was to be performed, and the road ultimately to serve for forest fire protection. Twelve miles of telephone line was constructed; camp buildings were constructed; and three thousand feet of water line was laid.

Personnel

All were from Utah, as follows: Two hundred enrollees, camp superintendent and twelve foremen; two commissioned officers and six enlisted men. Care and building of men was stressed, and fine results obtained in shaping green, under nourished boys into useful and healthy citizens. Disciplinary action was seldom necessary. Impromptu entertainments, ball games, boxing matches and informative talks given as often as possible by Park personnel contributed to a fine morale.

Conclusion

Erosion work was discontinued September 18 and work started to move camp back to Zion South Entrance. Orders were issued to move camp September 30, when all came down but twenty-seven men, who remained to dismantle the Blue Springs camp.

PUBLIC WORKS

On August 13 notice was received in this office of the following Public Works allotment of funds for the park:

Major road projects	\$ 157,000
Minor roads & trails projects . . .	79,200
Physical improvement projects . . .	58,050
Total	\$ 294,250

The preparation of working plans for the authorized projects was immediately begun and by the 8th of September a few plans had been completed and approved, permitting the initiation of construction work. A crew of ten men was employed on that date, which was gradually increased to one hundred, exclusive of the engineering crew, by the end of September. Crews are employed six hours per day, five days per week, and are selected from Washington County unemployment rolls. This park was the first work agency to employ large numbers of men in this county under Public Works. At the close of the month and this period we had expended \$6,953.14 exclusive of engineering.

In September the following equipment required for force account work had been ordered:

- 1 Trail tractor, fitted with special trail oiling equipment
- 4 Air drills with hose and couplings
- 1 FWD 4-ton truck, with one-way snow plow

Major

Major Road Projects

FP-167, East Rim Road-South Entrance Road, Surfacing

This project, to consist of asphalt-mixed gravel surfacing of section 2B, South Entrance Road, and sections 1, 3 and 4 of the East Rim Road, together with gravel base surfacing of section 3 of the latter route, and to be financed from a Public Works allotment, had been advertised and bids received, but award not yet made at the close of the period of this report.

Minor Roads and Trails Projects

FP-169, Stream Protection

Under a Public Works allotment of \$32,400, work was begun on September 8, 1933, of extending basket dams and channel changes to confine the river in a defined channel and protect the valley from floods. To date channel change operations have removed 5,656 cubic yards of material and there have been 231 cubic yards of rock placed in revetment. Forty thousand square feet of six-inch square mesh wire has been purchased and delivered for use on basket dams.

FP-171, West Rim Trail, Erosion Control and Surfacing, Allotment \$18,000

One hundred six and two-thirds man days in preparing for main job by building roadway to foot of trail, building corral and draining and widening trail.

FP-172, Refrigerator Canyon Trail Reconstruction, Allotment \$3,600

Forty and one-half man days grading, quarrying and building dry wall.

FP-173, Clay Surfacing Valley Trails, Allotment \$900

Emerald Pool Trail completed on September 13, 2,250 feet surfaced. Weeping Rock also completed during month, including four flights of stone steps, 45 cubic yards of surfacing material being used. A small amount of surfacing done on Grotto Trail.

Physical Improvement Projects

FP-20, Sewer and Water Systems, Allotment \$27,900

Twenty two hundred fifty feet of trench for water system dug and ready for finish grade, four hundred feet being of extra width to take water supply pipe. Also eleven and one-third man days excavation to determine log of sewage disposal area.

The following is a list of other projects authorized but not placed under construction at the close of this period:

Minor Roads and Trails

FP-170, South Entrance Campground Service Roads	\$ 13,500
FP-174, Parking Areas	900
FP-175, Footpath to Camp or Building Headquarters	900

Physical Improvement Projects

FP-16, Employees Quarters, Headquarters (2)	9,000
FP-17, Employees Quarters, Headquarters (2)	7,200
FP-18, Comfort Station, South Entrance, (2)	3,600
FP-19, Campground Development	2,700
FP-21, Checking Station, East Entrance	720
FP-22, Employees Quarters, East Entrance	4,230
FP-23, Water System, East Entrance	1,800
FP-24, Electric System, South Entrance Campground	900

IMPROVEMENT OF NEARBY HIGHWAYS

Construction was begun on the Harrisburg Bench-Hurricane cut-off and a section of about four miles completed from Harrisburg Bench to the Virgin River. Subsequently a contract was awarded by the State and construction work is now in progress on a bridge across the Virgin River. There will still remain the construction of the section between the Virgin River and Hurricane to complete this route, which will shorten the Zion-St. George road distance by about eight miles over the Anderson Junction route.

Rapid improvement of route U.S. 89 from the Utah-Arizona line southward over Lees Ferry Bridge to Cameron has already placed this highway in condition for travel by all classes of motorists. Northward from the Zion-Mt. Carmel Junction this route has been or is now being reconstructed to high standards to the Bryce Canyon Junction.

Route U.S. 91 is now oil surfaced and paved over its entire length between Los Angeles and Salt Lake City with the exception of a four-mile section south of Fillmore, Utah, which is to be reconstructed before surfacing is applied.

The improvement of route U.S. 89 has in effect placed Zion National Park on an all-weather transcontinental highway, and its comparative winter isolation is a thing of the past.

Assurances have been received from the Utah Road Commission that the improvement of the LaVerkin-Zion approach road will receive early consideration.

PUBLIC SERVICE OPERATOR

For the first time since 1929, rail-bus travel showed an increase over the preceding year, with 1,215 patrons in 1933 as against 1,087 in 1932. Also there was an increase of 18.8 per cent in the number of guests accommodated at Zion Lodge, although revenues from this latter source declined slightly due to a reduction in rates.

Zion Lodge closed on October 11 and opened May 15. Good service was rendered throughout the season in spite of the fact that operations were conducted at a loss to Utah Parks Company. Horses for trail trips were available from the latter part of May until September 24.

Rates at Zion Lodge for this season were reduced ten to twenty per cent. There were material reductions made in tour rates also.

With the granting of allotments to the park for campground development at the south entrance and the construction of a water and sewer system, the way is now open for the operator to begin its projected development of a much-needed cabin camp and the company is now preparing construction plans for this purpose. Construction, dependant on procuring the necessary appropriation from the parent company, will probably consist of a cafeteria, comfort station, shower building, and about twenty housekeeping cabins. This type of accommodation has been needed for several years, with the demand constantly growing, and it is expected that eventually it will develop into an all year business, making the park an all year one in every sense of the phrase.

Mr. T. A. Wells, who for many years had been manager of the hotel department of Utah Parks Company, was transferred to Portland, and Mr. Harry A. Hansen superseded him as superintendent of the company, giving him charge of the transportation as well as the hotel department.

President Carl Gray of the Union Pacific System was unable to make his annual visit to the park this year. However, there were frequent visits through the season from other officials, including Vice President Jeffers.

ACTIVITIES OF OTHER AGENCIES

The Bureau of Public Roads continued to supervise major road construction. Their engineers had charge of the three projects under construction or program during the year - surfacing of the Floor of the Valley Road begun during the preceding report year and completed in November, 1932; supplemental construction on the East Rim Road begun in the preceding report year and completed in April, 1933; and the surfacing of the East Rim and South Entrance Roads, which at the close of this period had completed plans and bids but was not yet actively under construction.

The Weather Bureau station was moved from the south entrance checking station to the chief clerk's quarters and the chief clerk was assigned as cooperative observer for the Weather Bureau. Park rangers continued reading and recording the Virgin River gauge for the Geological Survey. Survey officials installed a new gauge in a better location for determining the flow of the river.

EDUCATIONAL ACTIVITIES

Educational work in Zion National Park has recently passed through a period of readjustment to improve efficiency, with effective results, as indicated by the closing months of the year. An outstanding example is the month of August, when educational contacts reached the highest percentage of park travel (102%) since the start of the work in 1925. Chart A shows the situation better than can be described in words.

The heavy black "contact line" merits a short analysis, however, as it is a valuable indicator of past trends and future necessities. Starting with only 26 contacts per man per day in 1925, a slow and careful foundation was laid that made possible the high figure of 142 in 1928 - too high for efficient work in this park, where careful study shows that the optimum number of contacts per man per day under present travel figures is from 95 to 110. The defect of 1928 was remedied by an increased staff, resulting in more effective work during the next three years. In 1932 there began the readjustment period mentioned above, with a resultant drop below optimum efficiency (a drop which had started in 1931, however) and an even more serious drop in numbers contacted.

Increased efficiency was achieved in 1933. By mid-season conditions had improved and continued to do so throughout the remaining two months with pleasing results. Much credit for this is due to the fine spirit of cooperation and loyalty displayed by the temporary ranger-naturalists, without which it would have been impossible to recover as much lost ground as has been done this year.

New innovations in the manner of presenting nature education were not attempted this year since that appeared to be one of the major contributing causes of lowered efficiency last year. Instead, the usual accepted methods were continued, with emphasis on two things: (1) An informal and helpful attitude that would encourage the asking of questions and make the public feel it was sharing with the naturalist in making new discoveries, rather than being talked down to about things that only a scientist could fully understand; and (2), unobtrusive advertising of all educational features at every opportunity, particularly after each lecture or guided trip. The latter was especially effective through the cooperation of checking rangers, who handed mimeographed "what-to-do" leaflets to all visitors and further stimulated their interest by conversation.

One phase of educational work deserving special mention was the large number of mutually beneficial contacts with organized groups of students and scientists within the park. Eleven such groups availed themselves of outdoor nature study as interpreted by the naturalist staff. Most important of such groups was a party of 28 scientists from the International Geologic Congress, to whom the full time of one ranger-naturalist was assigned for a five day tour of Zion, Bryce and North Rim of Grand Canyon.

The following tabulation shows educational contacts made during the 1933 summer season (April to September):

	No.	Atten- dance	No.	Atten- dance
Guided trips:				
Auto caravans	12	194		
Nature hikes	<u>247</u>	<u>6,450</u>		
Total			259	6,644
Lectures:				
Campfire	98	4,276		
Lodge	118	5,707		
Museum	<u>110</u>	<u>3,475</u>		
Total			326	13,458
Museum visitors				<u>11,678</u>
Total contacts				31,780

During the same period there were 43,154 visitors to the park, giving a figure of 736 contacts for each 1,000 visitors.

Work on self-guiding trails, exhibits in place and museum exhibits was impossible this year due to the heavy demand for personal contact work, but several projects were planned for execution this coming winter, when Zion will for the first time have a full-time resident naturalist.

PROTECTION

The east entrance checking station was closed October 18 for the winter and opened on May 20. The south entrance station was kept open all year. The seasonal personnel of three ranger-checkers and one of the permanent park rangers were constantly assigned to checking stations throughout the summer season. Permanent personnel was engaged in checking, patrolling roads and trails, inspecting public campgrounds and sanitation conditions, safeguarding of park features, and other assigned duties. Boundaries were patrolled during the hunting season, October 21 to 31.

Violations of park regulations were few and of a minor nature, and all were handled by disciplinary action by the superintendent or arresting officer. The most serious infringement was by two local residents of Springdale, who wrecked their car while driving in an intoxicated condition, and were forbidden to drive within the park thereafter. There were several other automobile accidents of a minor nature, principally trucks engaged in hauling through the park. Highway patrol was diligently maintained all summer.

Sanitation in the public campground was very well handled. Mesquito control consisted of draining and oil spraying stagnant pools in March and again in June. Tent caterpillars on the cottonwoods were effectively controlled by spraying in May. No control of boxelder bugs was practicable.

FORESTRY AND WILD LIFE

Very few deer were killed around Zion during the hunting season, October 21 to 31. Forty hunters along the south boundary killed only five deer during the first three days. Deer were numerous inside the park (75 to 100 to be seen almost daily) and all are in fine condition. Almost all of them left the upper canyon in December, wintering in the Oak Creek region until March, when migration to high country began. Two deer were unavoidably killed by cars on the Valley Road during the summer.

In December a female mountain sheep was taken in a cattle round-up in Parunuweap Canyon outside the park. It was kept in the park horse corral all winter and became very tame. It was liberated in March and

was not seen again until August 28th when it returned, as tame as ever, and it has been hanging around ever since. From May 9 to 24 Joseph Dixon studied the status of mountain sheep in the park; he saw four on ledges above the east tunnel portal and estimated twenty-five within the park.

Cougar signs were quite numerous within Zion Canyon this year. In June a Canada lynx was killed by an automobile on the East Rim Road.

One forest fire occurred within park boundaries in 1933, a brush fire covering one-eighth acre which destroyed 900 feet of cordwood and was put out at a cost of \$4.22.

LANDS

In September the Utah State Road Commission relinquished jurisdiction over two sections of highway in Zion Park to the Government. One section was on the East Rim Road between the new boundary line and Washington-Kane county line, and the other on the South Entrance Road in section 21, township 41 south, range 10 west. A warranty deed for the latter was given by Washington County Commissioners conveying title to the United States.

OFFICIAL VISITS AND INSPECTIONS

Official visits were received from the following government officials:

- Oct. - Roger W. Toll, Superintendent, Yellowstone National Park.
A. W. Burney, Assistant Chief Engineer.
- May - Messrs. Wooten and Eccleston, Inspectors of accounts.
Joseph Dixon, Wild Life Research Division.
- June - Earl A. Trager of Branch of Education.
- July - Arno B. Cammerer, Associate Director.
Ansel F. Hall, Senior Naturalist and Forester.
- Aug. - Harold C. Bryant, Assistant Director.
- Sept. - Charles L. Gable, Chief Investigator.
Harry B. Hommon, Sanitary Engineer, U. S. Public Health Service.
Thomas C. Vint, Chief Architect.
Assistant Secretary Tugwell, Department of Agriculture.
L. I. Hewes, Deputy Chief Engineer, Bureau of Public Roads.

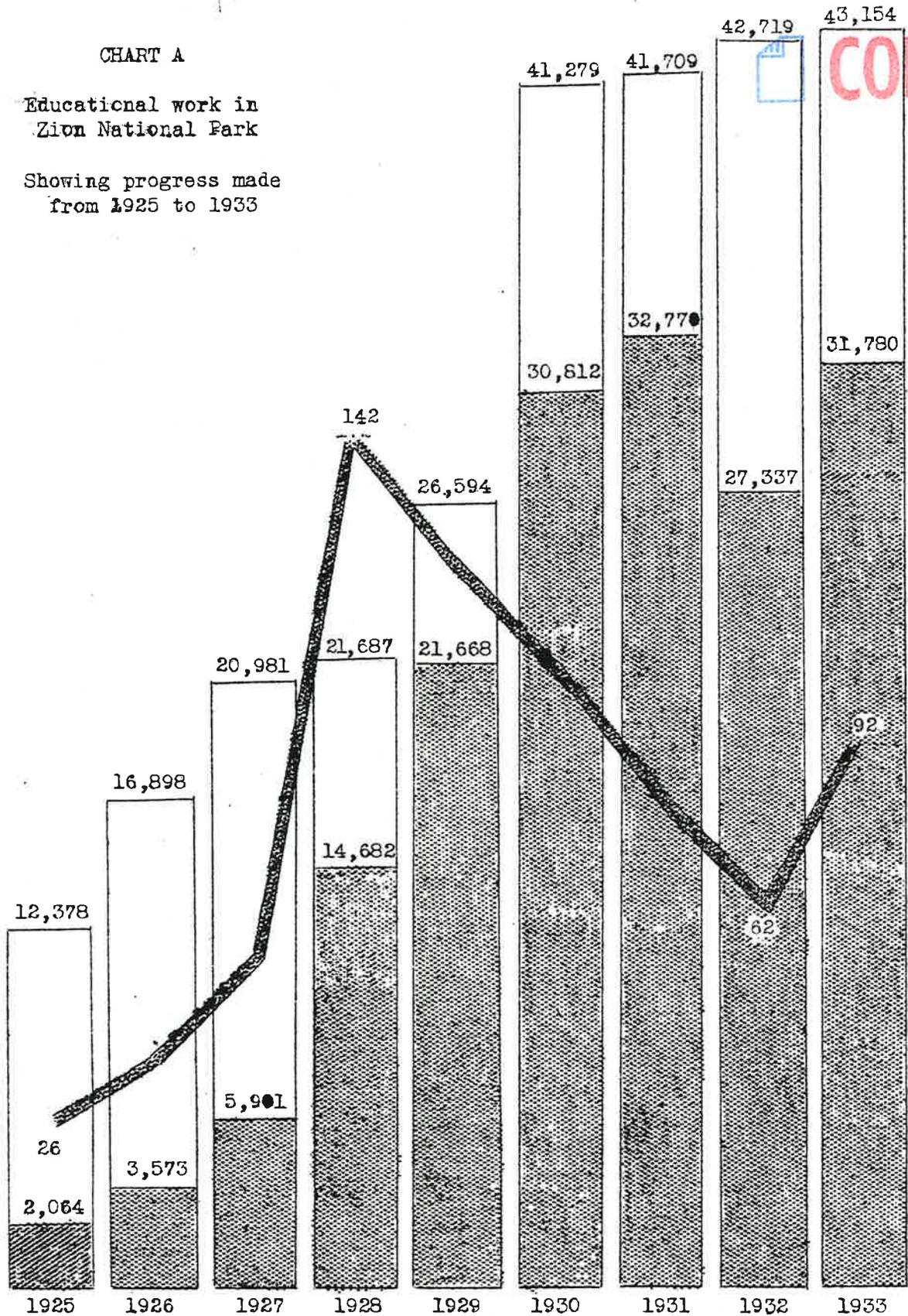
Inspections of tunnel and road work at Zion were made in January, February, March and April by various Bureau of Public Roads officers from the district and regional offices.

Assistant Landscape Architect Langley was in the park at various times from April to October in connection with new developments and planning.

CHART A

Educational work in
Zion National Park

Showing progress made
from 1925 to 1933



Shaded columns indicate educational contacts; white columns indicate park travel during the period that educational work was carried on each year (usually May 15 to Sept. 30). Black line indicates educational contacts per man per day.

U. S. Geological Survey officials as follows: In November, A. B. Purton, to install new river gauge; in June, Dr. H. E. Gregory.

Brigadier General P. Whitworth inspected our E.C.W. camp on several occasions.

RECEIPTS AND EXPENDITURES

Receipts

Automobile entrance fees	\$ 12,230
Total deposited in the General Treasury to credit of Miscellaneous Receipts	12,194

Expenditures

Zion National Park Appropriation:	
Administration, protection and maintenance	\$ 40,892.87
Purchase of equipment	1,921.79
Physical improvements	<u>2,268.82</u>
Total	\$ 45,083.48
Forest Protection and Fire Prevention	721.78
Roads and Trails	<u>228,701.33</u>
Total Expenditures	\$ 274,506.59

Resume of the year of 1933
in
ZION NATIONAL PARK

Travel to Zion National Park during the spring and summer season, from April through September, about equalled the figures of the same period of the previous year. Pre-season travel however was very light, so that for the whole year the loss was about eight per cent. For the months of April, May and June encouraging increases in travel were received, but thereafter losses were endured, presumably because of the adverse effect of hot weather, the summer of 1933 being one of the hottest on record, each month showing a positive departure from normal. The month of July in Utah was the second hottest July in the State's 70-year record, and August was not far behind.

The excellent hotel service rendered by Utah Parks Company was maintained at the usual high standard throughout the open season, which begins May 15 and ends October 15. Both lodge and transportation tour rates were reduced for this season. It is encouraging to note that there was a ten per cent increase in the number of guests accommodated at Zion Lodge.

Because of the unusually high temperatures, the public camp ground was not used as heavily this year. While the number of visitors entering the park was about the same as for the previous year during the summer season, many campers sought the higher elevations for over-night stops.

Increased emphasis on rendering a friendly, personal service to all visitors has elicited much favorable comment from the visiting public and resulted in an unusual number of valuable contacts with visiting scientists. The geologic importance of Zion Canyon attracted several university summer school groups, notably Western Reserve University, Miami University, and Antioch College. Most noteworthy was the International Geological Congress group of 28 scientists. A greater proportionate number of visitors were reached through educational contact, and in August, for the first time, the number of educational contacts exceeded the number of visitors.

The supplemental construction work for the purpose of strengthening structural weaknesses in the Zion tunnel, which was begun in 1932, was completed in March 1933 at a total expenditure of \$144,704.51. The surfacing of the Floor of the Valley road with asphalt mixed gravel was completed in November 1932. This higher type of surfacing has already demonstrated its superiority to oil surfacing in the manner in which it has withstood the extremely high summer temperatures without bleeding or creeping.

At this writing Public Works funds have been set up for \$157,000 of major road construction, \$79,200 for minor roads and trails and \$58,050 for physical improvements. Plans are in course of preparation and approval, and it is expected that active construction work will start at an early date. Included in the physical improvements projects is the important one of \$27,900 for construction of a water and sewer system for the south entrance area, where development plans call for the main tourist camp to be located. The water and sewer systems will permit the construction next year of a housekeeping cabin camp, to fill a need keenly felt in the past few years. The highway system of the park is kept open throughout the year, and to that extent the park is considered an all-year one, and visitors actually arrive every day of the year, but accommodations have been kept available only for five months of year. The construction of a housekeeping cabin camp, which can be operated with a low overhead, and therefore kept in operation for longer off-season periods, will be a big step forward in making an actual all-year park here.

v One emergency conservation work camp was assigned to the park, for performing erosion and flood control work on private and public lands north of the park in the watershed of the Mukuntuweap River. The project area is 25 square miles in extent and will be entirely cleaned up this summer. Work undertaken consists of installation of small water checks and dams and brush mats in gullies for the purpose of retarding erosion and to check the flash run-off of heavy storms. A surprising quantity of work has been turned out by the C.C.C. boys. Along with actual construction work some educational missionary activity is being undertaken to demonstrate to local ranchers proper methods of range management and the value of preventing and reducing soil erosion, to the end that the conservation work we have performed may be protected and carried on by the property owners themselves.

(end)

206-502
COPY

September 5, 1933.

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

Dear Mr. Director:

In compliance with your letter of July 12, a resume of the activities of Zion and Bryce Canyon National Parks is submitted herewith.

Very truly yours,

P. P. Patraw,
Superintendent.

2 Incls in dup.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
ZION AND BRYCE CANYON NATIONAL PARKS

 COPY

UTAH

OFFICE OF THE SUPERINTENDENT
P. O. ADDRESS:
SPRINGDALE, UTAH

September 1, 1933

Data for Director's Annual Report.

ZION

Increased emphasis on rendering a friendly, personal service to all visitors has elicited much favorable comment from the visiting public and resulted in an unusual number of valuable contacts with visiting scientists. The geologic importance of Zion attracted several university summer school groups, notably Western Reserve University, Miami University, and Antioch College. Most outstanding was the International Geologic Congress group of 28 scientists, to whom one ranger-naturalist devoted his entire time during their five-day tour of Zion, Bryce and Grand Canyon. They all agreed that these three parks constitute the most outstanding and significant geologic exhibit in the United States.

BRYCE

The effectiveness of educational work at Bryce has been greatly increased this year by two new features: a daily auto caravan on the partially completed Rim Road, and a temporary installation of museum exhibits in the new information office. By these two means it has been possible to increase public contacts about 40% above last year.

Clifford C. Presnall
Park Naturalist

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON



July 12, 1933.

Mr. Preston P. Patraw,
Superintendent, Zion National Park,
Zion National Park, Utah.

A red stamp with the word "COPY" in large, bold, sans-serif letters. To the left of the text is a small blue icon of a folder or document.

Dear Mr. Patraw:

The Washington Office has just received a call from the office of the Secretary for the submission on October 1 of the annual report of the operations of the National Park Service. The report, as in the past, will cover the fiscal year ending June 30 on financial matters, but will report on travel, construction, and other seasonal activities for the year ending September 30.

In the interests of economy it will be necessary this year to follow the plan initiated in the 1931 report of eliminating the individual park and monument reports from Appendix D, and substituting therefor a brief review of the most important park activities in the body of the report, under the heading "The Year in the Parks."

You are hereby directed, therefore, to send to the Director at the Washington Office, not later than September 1, a resume of the activities of the Zion and Bryce Canyon National Parks, touching briefly but adequately on the important activities. Please check carefully to see that none is omitted. Photographs of important new activities should accompany the resume. A brief summary of the emergency conservation work performed in Zion Park should be included, but no effort should be made to go into detail.

You are also instructed to wire the Washington Office the night of September 30 the total number of visitors to the park for the travel year October 1, 1932, to September 30, 1933, and also the total number of private automobiles entering during this period.

In addition to the resume, and telegraphic travel report you will also be expected to submit a complete report of the activities of your park for the year, as has been done in the past. This, however, may be prepared later and need not reach Washington before January 1, 1934. You may mimeograph it or not, as your own judgment dictates. Please acknowledge receipt of these instructions.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "A. E. Demaray".
A. E. Demaray,
Acting Director.

 COPY

July 17, 1933

The Director
National Park Service
Washington D. C.

Dear Mr. Director:

Receipt is acknowledged of your letter of July 12 containing instructions for submission of resume of the current years operations, telegraphic report of travel on September 30 and of the regular annual reports for these parks.

Very truly yours,

P. P. Patraw
Superintendent