DEPARTMENT OF THE INTERIOR

REPORT

OF THE

DIRECTOR OF THE NATIONAL PARK SERVICE

TO THE

SECRETARY OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1917

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ANNUAL REPORT OF THE DIRECTOR OF THE NATIONAL PARK SERVICE.

DEPARTMENT OF THE INTERIOR,
NATIONAL PARK SERVICE,
Washington, October 13, 1917.

SIR: I have the honor to submit the following report of the activities of the National Park Service during the past year.

NEW BUREAU ORGANIZED.

The National Park Service was organized as the ninth bureau of the Department of the Interior immediately upon the approval of the deficiency appropriation act of April 17, 1917,[1] which made funds available for its establishment. Mention of the act of Congress of August 25, 1916,[2] creating the new form of administrative machinery for the management of the national parks was made in your report for 1916, and an abstract of the important sections of the law was published therein for the information of the public. However, to briefly summarize again the principal provisions of this legislation which forms the solid foundation for all future development of the park and monument system and governmental participation in the movement to stimulate and encourage American tourist travel, would not, I venture to suggest, be uninteresting here because of the repetition of facts.

Provision is made in the law for the establishment of the new bureau, which is placed under the supervision of a director appointed by the Secretary of the Interior. Authority is also granted for the appointment of an assistant director, a chief clerk, and such other employees as the Secretary may deem necessary. An indirect limitation on the organization of the service, however, is contained in a clause inhibiting the appropriation for the Washington offices of more than $19,500 in a single fiscal year, without special authority of the National Legislature. The act also specifically charges the director of the service with the supervision, management, and control of the several national parks and national monuments already under the jurisdiction of the Department of the Interior, and especially refers to the Hot Springs Reservation in the State of Arkansas as a part of the park system.

FUNCTIONS OF THE NATIONAL PARK SERVICE.

The eloquent statement of the functions of the new service is an important feature of the act, but it can hardly be summarized without loss of clearness in the expression of sentiment and without

[1] Public No. 2, 65th Cong. [2] 39 Stats., 535.

detraction from the forcefulness of the sentence structure. I will therefore quote the statement from the law itself:

> The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations hereinafter specified by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

What a brilliant statement of constructive conservation policy this is. What a field of endeavor in the public service it prescribes for this new bureau. What benefits for the people of our time and for posterity in the direction of safeguarding health and providing recreational facilities are promised. What splendid recognition is given to the economic and educational value of our wonderful playgrounds. The statement breathes hope and encouragement and inspiration to all who study, enjoy, and love the wild places and the sublime works of nature.

The organic act then goes on to authorize the promulgation of rules and regulations for the use and management of the parks and monuments and prescribes the penalties that may be imposed for the violation of such rules and regulations. Provision is made, too, for the leasing of park lands and the granting of permits for the use of these lands for the accommodation and entertainment of visitors. The unusual conditions under which timber may be cut, under which animals may be killed, plants destroyed, etc., and under which grazing of live stock may be permitted are also included in the law.

The officers appointed by you to organize and manage the new service are: Director, Stephen T. Mather, of Illinois, former assistant to the Secretary of the Interior; assistant director, Horace M. Albright, of California, former assistant attorney of the Interior Department; chief clerk, Frank W. Griffith, of New York, formerly attached to the office of the chief clerk of the department.

It is with regret that I record at this point a serious illness of Director Mather, which has necessitated an extended absence from Washington and the temporary assumption of his duties by the assistant director. His recovery is now regarded as complete, and he will be at his desk again within a very short time.

Quarters in the new building of the Interior Department were assigned to the service, and it now occupies the south section of the fourth floor, east wing. The temporary organization of the former field establishment under the direction of the Superintendent of National Parks, authorized by Congress under date of February 28, 1916,[1] to be located in Washington, was absorbed by the new organization, and the office of Superintendent of National Parks was abolished. The last incumbent of this office, Mr. R. B. Marshall, had resigned on December 31, 1916, to resume his duties as chief geographer of the United States Geological Survey.

DAWN OF A NEW ERA.

Thus the national park system came to possess the machinery for its government that it has required for decades. Thus the old method of managing these great recreational areas in a subdivision of the

[1] 39 Stats., 23.

Secretary's Office in common with a multitude of miscellaneous reservations, eleemosynary institutions, etc., has passed, and all temporary expedients adopted for the improvement of the national park administration have been eliminated or crystallized into permanent form in the organization of the new service. In the past, each park and each monument was administered with no definite relationship to other members of the system. Each was established by organic laws or proclamations that differed widely in their provisions and in the application of authority contained in them to problems of administration. There was scarcely an opportunity to harmonize any of the many conflicting principles, and as the supervisory officers in Washington could only give the parks and monuments incidental attention, a correlation of methods of management was impossible. Indeed, the operation of the whole park system was unbusinesslike and unsatisfactory.

We stand now in the light of a new order of things, but as we gaze back from the threshold of the future to the efforts of the past, accomplishments of large importance gather before us and we recognize in them tremendous influences that will wisely guide us in our onward and upward steps. As I have intimated, these accomplishments are the results of farsighted efforts on the part of men who were burdened with details of other governmental interests in addition to those of the parks themselves. In the activities of the new service their efforts and their achievements will not be forgotten nor minimized.

THE JURISDICTION OF THE NATIONAL PARK SERVICE.

There are now 17 national parks and 22 national monuments under the jurisdiction of the National Park Service. The total area of the national parks is 6,254,568 acres, and the total area of the monuments is 91,824 acres. (See map opposite page 98.) All of the national parks were created by act of Congress or by presidential proclamation under special authority of an act of Congress. All of the monuments were established by presidential proclamation under the act of June 8, 1906,[1] entitled "An act for the preservation of American antiquities." The names of all of these parks and monuments are given on pages 100 to 103 with a brief statement of their characteristics, their locations, the dates of their establishment, and other interesting data relating to them.

BIRTH OF THE NATIONAL-PARK IDEA.

The first national park to be set apart was the area embracing the hot springs of Arkansas. The reservation of this land was made April 20, 1832.[2] However, it was nearly 50 years after the act of reservation before steps were taken to develop the park in the public interest. In the meantime the remarkable area which is now Yellowstone Park had been discovered and explored, and the famous Washburn-Langford party in its camp near the junction of the Firehole and Gibbon Rivers[3] in the Yellowstone region had conceived of the

[1] 34 Stats., 225.
[2] 4 Stats., 505.
[3] Chittenden, Gen. H. M., The Yellowstone National Park, 1915 edition, p. 60 et seq. Langford, N. P., The Discovery of Yellowstone Park, p. 115 et seq.

"national park" idea,[1] placed a broad unselfish, public-spirited construction upon the term, and had brought the wonders of the region and the splendid patriotic national-park plan to the attention of Congress, with the result that, on March 1, 1872,[2] Yellowstone National Park was established. Forty-five years have passed since that legislation was enacted and in that lapse of time other parks have occasionally been carved out of the public domain for the benefit and enjoyment of all the people. The seventeenth and youngest member of the system is the Mount McKinley National Park, which was established by the act of Congress approved February 26, 1917.[3]

The first national monument to be established was the Devils Tower Monument, in northeastern Wyoming. It was set apart from the public domain on September 24, 1906,[4] a few months after the passage of the act authorizing the creation of this type of reservation by presidential proclamation. Since that date 21 other monuments have been placed under the jurisdiction of the Secretary of the Interior. The monument most recently added was the Verendrye National Monument, in North Dakota, established by President Wilson upon your recommendation, in a proclamation dated June 29, 1917.[5] There are, in addition to these 22 monuments, 13 others on reserved public lands beyond the Mississippi River, 11 of which are under the Forest Service of the Department of Agriculture and 2 under the control of the War Department. Lists of these monuments, with their special characteristics, will be found on pages 102 and 103. Two monuments, Lassen Peak and Cinder Cone, formerly under the jurisdiction of the Department of Agriculture, have been included in the Lassen Volcanic National Park and thus transferred to the control of this Service. The monuments over which we have no jurisdiction are in national forests or in military reservations, and were placed under the control of the Secretaries of Agriculture and War, respectively, because they have supervision of the territory immediately surrounding them. I shall make another reference to this division of control.

NATIONAL PARKS AND MONUMENTS NOW PRACTICALLY IDENTICAL.

The distinction between national parks and national monuments is not easy to comprehend, especially when one considers the status of the Grand Canyon of the Colorado River and, for instance, the Yosemite region. Both possess scenic features of equal sublimity, yet the Grand Canyon is a national monument and the Yosemite region is a national park. The National Park Service act makes no distinction between the two reservations in its provisions for their development for tourist patronage. The act merely refers to the different classes of reservations by name, but does not define them. In another connection I have already mentioned the chief difference between the two types of reserved areas.[6] It is to be found in the methods of reservation employed. The national parks are established by act of Congress, the monuments by presidential proclamation. Generally speaking, the monuments are smaller areas than the parks and are not entitled to the same consideration by Congress that the latter enjoy. Moreover, they do not receive the same consideration that the parks are accorded. On the other hand, there are a few monuments of enormous area that deserve a larger degree of attention than some of the smaller national parks. There are monuments that should be made national parks, and all of the monuments would mean infinitely more to the American people if their funereal surname could be changed.[1]

[1] Chittenden, Gen. H. M., Yellowstone National Park, 1915 edition, Chap. X. Langford N. P., Discovery of Yellowstone Park, p. 117.
[2] 17 Stats., 32–33, Secs. 2474–2475, R. S.
[3] 39 Stats., 938.
[4] 34 Stats., 3236.
[5] 40 Stats. Proc., 1380.
[6] Supra, p. 3.

PARKS AND MONUMENTS SHOULD BE ADMINISTERED BY THE SAME AUTHORITY.

As I have already pointed out, 13 of the national monuments are under the jurisdiction of the Secretaries of Agriculture and War because they have control of the national forests and military reservations, respectively, in which these monuments are located. Some economies in administration, doubtless, may be effected by dividing the jurisdiction over these reservations, but their management as a part of the national park system and their promotion as points of interest for tourists to see and enjoy seem so essential that the apparent reason for the original division of control of reservations of this character becomes of little consequence in comparison with the advantages to be gained by bringing all of the parks and monuments together for development under a single authority.

The National Park Service has broad powers that it may employ in the development and promotion of national monuments. The language of the National Park Service act places both parks and monuments upon the same basis so far as their administration is concerned. They are, from every point of view, in the same status. Furthermore, Congress has recognized the necessity for developing the monuments under this service and has already made several substantial appropriations for their improvement.[2] Would it not be the logical thing to place all of the monuments under the department that is most interested in their promotion? It would be entirely possible to effect economies in protection of several of the monuments now under the control of other departments through cooperation with them while the reservations themselves are being managed and developed under this department.

For instance, the Devil Postpile Monument in California includes within its boundaries some of the choicest bits of scenery in the Sierra Nevada Mountains. The wonderful basaltic formation known as the Devil Postpile stands in the northern section of the monument near the bank of the Middle Fork of the San Joaquin River. The river at this point is very beautiful; there is a fine spring of soda water a few yards away; there are excellent camping places along the river; there are meadows where horses may be pastured; fishing in the river is always good; and 1 mile down stream from the Devil Postpile, within the limits of the monument, is Rainbow Falls, which forms the finest scenic feature of the reservation. This monument is a miniature national park; it is readily accessible from the Yosemite Park; and it should be visited by hundreds of travelers each

[1] On this point see pp. 202–203, Hearings before Public Lands Committee, House of Representatives, on National Park Service bill. Sixty-fourth Congress.
[2] See statement of appropriations, p. 221.

year. It is not under the jurisdiction of this department, however, and there seems to be no ground for mentioning its wonders in the publications of the National Park Service. Nevertheless, the public should know about this little park and others in the same status.

ORGANIZATION AND COOPERATION.

The Devil Postpile Monument might well be patrolled by forest rangers assigned to duty in the surrounding region, while the administration of the monument could be assigned to the National Park Service. The protection of the monument would be a small matter involving a cooperative plan of service such as is necessary when the National Park Service and the Bureau of Entomology work together in the eradication of pests and diseases that attack the trees of the parks, or when the National Park Service and the Geological Survey unite their efforts to secure stream flow data, or when the Public Health Service joins representatives of the park administration in a study of sanitary conditions in a national park.

The comments that I have made upon the possibilities of the Devil Postpile Monument under national park control apply to the other reservations of the same class now under other departments. The Grand Canyon Monument, of course, should receive the status of a national park. You have recommended this action to the President and to Congress.[1] A similar change in status might be advisable in the case of the Mount Olympus Monument in Washington. There is a bill now pending in Congress to establish the Cliff Cities National Park in New Mexico. This project embraces the Bandelier National Monument.[2] All of these monuments are under the Department of Agriculture at the present time.

The necessity for consolidating the monument system under a single authority was first emphasized by Mr. Frank Bond, chief clerk of the General Land Office, who has for many years transacted business in the Land Office relating to lands reserved under the monuments act. Speaking at the First National Park Conference in Yellowstone National Park, September 12, 1911,[3] he said:

> Under existing conditions two departments are charged with jurisdiction over national monuments, and three may be. Responsibility is divided. There can be no uniformity in administration under such conditions unless there is uniformity in letting the monuments alone. * * * I believe, therefore, that not only should we have effective local custodianship, but the administration of all national monuments of whatever character, or wherever located, or however secured should be consolidated and the responsibility for their development, protection, and preservation placed where it can be made effective.
>
> It is possible that 28 national monuments, or that portion of them which needs development, do not form a sufficiently weighty trust to warrant a separate administrative unit to develop and administer them. If this be true, why not consolidate a little further? Create an administrative unit for the national monuments and national parks together. The method of creating these reserves is different, but after creation there is no evident difference between them. They are as like as two peas in a pod. Furthermore, with the exception of the ruins, any general plan of development which may be adopted for the one will be equally applicable to the needs of the other. Experience shows that there can be no effective administration for either under present methods and regulations, because the time given to them is largely stolen from that assigned to other work. As a whole, they receive only incidental consideration when the public interest is great enough, and the reservations are important enough to demand a sympathetic and energetic effort directed exclusively toward solving the problems of development and administration they present.

[1] Annual Report of the Secretary of the Interior, fiscal year ended June 30, 1915, p. 23. Report to the Senate Committee on Public Lands on S. 8250, 64th Congress, "A bill to establish the Grand Canyon National Park in the State of Arizona." This is Senate Report No. 1082, excerpts from which will be found on pages 93 and 94.

[2] S. 2291 and H. R. 3215, 65th Congress.

[3] Proceedings of the First National Park Conference, 1911, p. 100.

Mr. Bond's words in 1911 disclosed an unsatisfactory condition. How much more unsatisfactory this must be to-day, when the travel to the parks and monuments is over 100 per cent greater than it was the year of the Yellowstone conference!

NATIONAL PARKS IN THE WAR DEPARTMENT, TOO.

This discussion brings me to a similar question that deserves consideration soon. It has arisen numerous times during the past year when this Service has been requested for information regarding the military national parks—where they are located, how they are reached, what trips to them would cost, etc. The question is whether these parks should not also be placed under this department in order that they may be administered as a part of the park system. The interesting features of each of these parks are their historic associations, although several of them possess important scenic qualities. Many of the monuments and at least three of the national parks[1] were established to preserve the ruins of structures that have historic associations of absorbing interest, or to mark the scene of an important event in history.

One of the chief functions of the national parks and monuments is to serve educational purposes. It is one of your announced policies that the educational value of the parks should be especially emphasized in all publications.[2] Should not the educational value of these military parks be brought to the attention of the American people through our publications? Should not travel to them be encouraged, and full information regarding accommodations for visitors in or near them, cost of trips to them, etc., be compiled for public use? At the present time the following comprise the military park system: Gettysburg, Vicksburg, Chickamauga and Chattanooga, Shiloh, and Guilford Court House National Military Parks and the Lincoln Farm National Park. The last-mentioned park, while not a military park, is administered with the other five reservations. The pending park project to include Monticello, the home of Thomas Jefferson, contemplates vesting jurisdiction of this historic place in the War Department.[3]

Mr. J. Horace McFarland, president of the American Civic Association, had this desirable consolidation of all of the national parks of the country in mind when he made the following statement before the Fourth National Park Conference in January of this year:

> We want also unification in national park management. It is now the fact that there are three departments handling national parks—an obvious absurdity.[4]

Other students of park problems have similarly emphasized the importance of this question.

[1] Mesa Verde, Sullys Hill, and Casa Grande Parks.

[2] "It is the destiny of the national parks, if wisely controlled, to become the public laboratories of nature study for the Nation." Annual Report of the Secretary of the Interior for the fiscal year ended June 30, 1915, p. 24.

[3] H. R. 6444, by Mr. Dent.

[4] See proceedings of the Fourth National Park Conference, 1916, p. 108. See also American Civic Association Bulletin No. 6, Series 11, December, 1912.

THE ONLY PLAN OF ORGANIZATION.

Perhaps the time has not yet arrived when legislation should be enacted to harmonize all national park and monument interests and to define a general policy of administration that will make it possible to conduct a broad campaign of education with the object in view of stimulating American travel in America, particularly after the war. The following analysis of the problem, however, would seem to indicate that this time is at hand. Hundreds of thousands of Americans have, during the war, traveled in their own country and gazed upon the extraordinary scenery of the great western parks, and many of them have seen several of these wonderful scenic reservations. Others, attracted by the historic associations of parks like the Mesa Verde, with their remarkable cliff and plateau dwellings of an ancient race, have gone into the Southwest and have been amazed by what its canyons and mesas mutely display for the pleasure and edification of the visitor. But, what of the time when the war is at an end? Will not countless thousands of our people go over to Europe again, not just once or twice to see the ruin that war has wrought and tarry for a time upon the battle fields of this great struggle, but year after year; will they not harken to the call of France, Switzerland, and Italy as they did before travel on the seas became dangerous and passports difficult to obtain? Will not the warring nations, immediately upon the conclusion of peace, at once consider the economic value of the American traveler and regard the tourist business as the most important industry to rebuild with all possible speed? Will not these nations attach a greater degree of importance to this tourist travel after the war than they did before it began, and are they not looking forward confidently to the time when the $500,000,000 and more will come to them annually from this country just as regularly as interest will accrue from an American Liberty bond?

EUROPE WILL PREPARE FOR TOURIST INVASION.

If the reports that are current in this country are correct, France and other countries have already taken long strides in the rehabilitation of their tourist business.

A letter from Paris, under date of June 7, published by American newspapers about July 1, told of a decree appearing in Journal Official which created a "national office of touring," attached to the ministry of public works. The letter went on to state that the objects of this office are to "centralize" and put at the disposal of the public information of all kinds concerning touring, and to study and seek out an appropriate means for developing touring in France. It also pointed out that Americans who go to France after the war should find more comfortable lodgings and better touring facilities than have been afforded in the past. Moreover there was a tone of assurance that such accommodations and facilities would be provided, now that the Government had taken an interest in the development of tourist travel. A United States consul recently reported that France proposes to be an active bidder in the United States tourist trade after the war is over. He stated that a 5,000,000-franc company had been organized to erect, open, and maintain a chain of hotels along the entire western battlefield, with automobile service between each hotel. He stated further that arrangements are being made to use the "all expense" tour method of inducing travel, and that hotels will be constructed and maintained along American lines. It appears also that a commission of hotel managers, financiers, and architects will visit the United States to gather facts as to the best American methods of building and conducting tourist resorts. Plans will also be made to conduct a publicity campaign that will insure the systematic dissemination of information regarding travel in France throughout the world.

SPAIN TO ORGANIZE A NATIONAL PARK SERVICE.

Representatives of the Government of Spain are also studying American methods of park administration, and it is understood that arrangements are being made for the establishment of national park areas in Spain. Reports are also available that disclose the consideration of park projects by several of the South American nations.

SWITZERLAND FINDS ADVERTISING PROFITABLE.

There never has been any cessation in Switzerland's advertising of her scenic resources. Swiss glacier scenes, Swiss mountain climbing pictures, views of Swiss alpine life still go into our schoolrooms, because our teachers are not familiar with the great glaciers of Mount Rainier and Glacier Parks nor the mountain climbing in Colorado's parks, and in the Yosemite, and because they have not experienced the thrills of living in the Rockies, the Cascades, or the Sierra. They teach the youth of the Nation about Switzerland's wonders because it is easy to obtain pictures of her natural features and data relating to them, and yet our scenic resources are more sublime than those of any other Nation on the earth. Consider for a moment our historic grounds. How much better known is almost any European cathedral that might be mentioned than Missions San Juan Capistrano and San Gabriel or other missions of California, Mission San Xavier del Bac and Tumacacori Mission in Arizona, the latter in the Tumacacori National Monument, or Gran Quivira and Acoma churches in New Mexico. And soon the majority of traveling Americans will know more about the physical environment of the battlefields of the Marne than our own hallowed Valley Forge and Yorktown, or Vicksburg, Gettysburg, and Appomattox.

TIME FOR A NATIONAL TOURIST BUREAU.

It therefore seems that the coming year is precisely the time for our Government to adopt a policy similar to those already established in the European nations, and actively encourage touring in the United States. We should supplement the work that the railroads, the automobile associations, the tourist bureaus, and the chambers of commerce are doing to encourage travel in this country. We should assist in the correlation of the activities of these agencies by active cooperation with them. There should be a fund available for the conduct of a systematic campaign of education regarding our national parks and monuments, historic points, and other features of national interest.

During the past year this Service has supplied information regarding many points of interest far from the reservations over which it has administrative control. Inquiries have been made regarding such vastly different natural features of really national importance as Niagara Falls, the Everglades of Florida, the sand dunes of Indiana, the lakes of Maine, Luray Cavern, the mountains of Kentucky, etc. These and numerous other inquiries have been satisfactorily answered. Anticipating a larger volume of general requests relating not alone to the national parks and monuments but to points of interest all over the country that would naturally attract the traveler, there is being gathered in this service a vast quantity of data for use in supplying general information of this character.

A VIGOROUS EDUCATIONAL CAMPAIGN.

The reference I have made to the desirability of initiating a very active campaign of education to acquaint the people of this country with our scenic, historic, and recreational areas with a view to inducing more extensive American travel at home must not be construed as carrying with it the inference that nothing is being done at the present time to stimulate this travel. The fact is, much has been done to advance the educational work begun over two years ago. No opportunity has been overlooked to utilize the means at our command to proceed with this work of promotion, and the result has been steady progress along broadgauge lines.

Information regarding the scenic features and accessibility of the national parks and monuments has been circulated throughout the year. Over 128,000 copies of bulletins of information relating to the national parks have been given free of charge to the public, and 83,000 automobile guide maps have been distributed for the use of the motorist during the tourist season that has just closed. Copies of the little pamphlet "Glimpses of our National Parks" numbering 117,000 passed through the mails to parties seeking general information regarding the entire park system. These various informative publications naturally stimulated the demand for the scientific pamphlets describing the special features of the park system that are for sale by the Superintendent of Documents, with the result that this latter class of publications has received during the year an unusually wide circulation.

The dissemination of all this literature began during the distribution of the National Parks Portfolio, the special illustrated production of Robert Sterling Yard, which appeared early in the summer of 1916. It will be recalled that this beautiful document was issued with the cooperation of the western railroads, and that these railroad lines subscribed $43,000 to cover the cost of printing, binding, and mailing the edition of 275,000 copies. It is pertinent to remark here that the demand for this portfolio subsequent to the completion of the distribution of the first edition has been very large. It is estimated that over 20,000 applications for this document have been received during the past year. It would have been eminently desirable to have issued another large edition of this portfolio for free distribution had funds for its publication been available.

The tremendous demand, however, for the portfolio prompted the preparation of a second edition by Mr. Yard. This new edition will

shortly be ready for sale by the Superintendent of Documents. The new portfolio will contain the nine pamphlets that composed the first series and, in addition thereto, a large new pamphlet on the national parks not covered by the first edition. It will also include a description of the national monuments under the jurisdiction of this Service. There will be many new pictures in the second edition and from every point of view it will be more attractive than its popular predecessor.

Another important addition to our sale publications that will shortly appear, is Dr. W. T. Lee's guidebook of Rocky Mountain National Park, a copiously illustrated volume which may be obtained from the Superintendent of Documents. This book will not only be a practical guide to the scenic features of Rocky Mountain Park, but will contain interesting popular descriptions of the geology of the region.

AUTOMOBILE GUIDE MAPS FOR NATIONAL PARKS.

The automobile guide maps of Yosemite and Yellowstone National Parks, which were issued for the 1916 season, met a long-felt want and largely influenced the increase in motor travel to these parks last year. Recognizing their popularity with the motorist, the Service this year issued automobile guide maps for Yellowstone, Yosemite, Mount Rainier, Crater Lake, Glacier, Rocky Mountain, Sequoia, and General Grant National Parks, and gave these maps very wide distribution. They were eagerly sought by automobilists and motor clubs in all sections of the country. The automobile guide maps have come to stay. Copies of these maps will be found in an appendix of this report,[1] and it will be noted that they not only show the automobile highways leading to the parks and the road systems within the parks themselves, but also indicate the hotels, camps, garages, and supply stations, and give other valuable data for the information of the traveler. Most of the maps are also trail guide maps, and are useful, therefore, when the saddle horse is substituted for the automobile or when the motorist goes on trails afoot.

THE MOTION-PICTURE SERVICE.

Another direction in which we have advanced our educational work has been in the motion-picture and lecture field. It has been the practice of the Service to permit the taking of motion pictures in the national parks and, indeed, to give assistance in the making of scenic film wherever practicable on condition that one positive print of all film taken should be deposited in the Service for use in educational work after a certain period of time has elapsed, during which the owner of the negative film may give the pictures such exclusive public circulation as he desires. As a result of following this practice there has been accumulated in the bureau a very large quantity of excellent scenic film which is being edited and distributed as fast as the terms under which the film is delivered to the Service permit. It is estimated that the equivalent of approximately 348,000 feet of motion-picture film was circulated during the past year and

[1] See maps opposite pp. 139, 153, 158, 164, 167, 184, 187.

numerous sets of lantern slides were maintained in use constantly. The use of the motion-picture film and the slides was granted free of charge to universities, colleges, schools, churches, commercial organizations, outing clubs, etc.

NATIONAL PARK LECTURES.

Occasionally illustrated lectures of the parks and monuments were given by officers of the Service. Under the auspices of the New York City School Department a series of free lectures, illustrated with motion pictures and lantern slides, was delivered. This important motion-picture and lantern-slide phase of the educational program, begun in a small way and always a development of modest proportions, has nevertheless stimulated an amazing demand for the extension of our service. Indeed, the demand has become so great that we are now able to loan film and lantern slides in response to only a few of the requests for the picture service. Within the last week it has been necessary to decline the requests for motion-picture film of the national parks made by the extension departments of two of the large State universities. If it had been possible to meet the requests of these two universities alone many thousands of people would have had an opportunity to gain excellent first-hand information regarding the scenic resources of America. The cost of arranging and maintaining a free motion-picture film and lantern-slide service to meet the demand on the part of universities, public schools, and churches will not be large, and yet the educational value of the service is inestimable. In the establishment of the lantern-slide service the cooperation of the western railroads has been invaluable.

TRAVELING EXHIBIT OF NATIONAL PARK PICTURES.

The experimental traveling exhibit of national park pictures is also worthy of mention at this point. Twenty-four handsome enlargements, framed, with surface treated so that the necessity for glass was obviated, packed in two specially-made cases constructed to accommodate 12 pictures each, have been sent to libraries for exhibition for limited periods, then by them passed on. The circuit, of course, is dictated from this Service. The exhibiting libraries pay all express charges. This experimental exhibit, with the shipping cases included, costs approximately $83.50 apiece. The demand for the exhibit has been amazing, and the libraries have not been content with the use of the pictures for a week each, but many have wanted them for a month. Libraries from neighboring cities are demanding them, and several inquiries from State library associations have been received. One request from the library association of a populous Middle West State called for the use of a set for two years to circulate through all the libraries of the State.

Lack of funds has made it impossible to develop this service to large proportions, yet I believe that we could put 50 exhibits into permanent circulation at once by merely announcing in library circles that they were available.

Besides library demands, we have had numerous requests from public schools for the use of the exhibit, and undoubtedly we could circulate hundreds of sets on school circuits. The success of the experiment was not only complete, but overwhelming. It would be a splendid thing to establish a picture service of this character on a broad scale, but probably the cost per set of photographs should be advanced to about $100, and the exhibits should be accompanied by national park literature. The upkeep of the exhibits would be very small, as there is no glass to break and the carrying cases are designed to prevent scratching of the photographs in transit.

THE INVALUABLE HELP OF THE PRESS.

Transcending in importance the work of informing the people regarding the national parks that this Service has accomplished during the past year is the patriotic and unselfish interest in the parks and monuments that the magazines and newspapers have taken. Articles, beautifully illustrated, have appeared during the year in scores of the best magazines, and the newspapers in every section of the Nation have been most generous in their publication of news items and articles on the national parks and monuments and the work of the Service. A fairly complete bibliography of magazine articles that have appeared since September 1, 1916, will be found on page 231. The automobile departments of many of the largest newspapers have given special attention to motoring in the parks and have lavishly illustrated their articles with maps and pictures. The same may be said of the motor magazines, and it is proper in this connection to call attention to the special consideration given to the national parks of the West in the Automobile Blue Book series for 1917. Not only are the scenic features of the parks themselves and the accommodations for travelers therein carefully described, but the routes to the parks and the highway systems in them are explained in detail. National park pictures are scattered throughout the series. Thus I might continue commenting upon the interest in the development of the park system that the publishers of the country have displayed. The Service has endeavored to cooperate in the preparation of articles and the loan of pictures for publication wherever possible.

The Conservation Department of the General Federation of Women's Clubs, under the direction of its chairman, Mrs. John Dickinson Sherman, has contained its study of national-park problems and its rendition of assistance in the dissemination of information regarding the work of the Service and the beauties of the parks and monuments.

CREATING A NATIONAL PARKS LITERATURE.

Referring again to the bibliography in the appendix of this report, and particularly to that section which refers to recent books on the parks, the following new volumes relating almost exclusively to the national park system are worthy of careful reading by all who are interested in the work of this Service or in the great recreational areas that it controls:

Your National Parks. By Enos A. Mills. Houghton, Mifflin Co., Boston and New York. 1917. Price, $2.50. Illustrated.

Glacier National Park, Its Trails and Treasures. By Mathilde Edith Holtz and Katharine Isabel Bemis. J. H. Doran & Co. 262 pages. 1917. Price $2. Illustrated.

Mount Rainier, A Record of Explorations. By Edmond S. Meany. The Macmillan Co. 300 pages. 1917. Price $2; by mail 10 cents extra. Illustrated.

The Top of the Continent. By Robert Sterling Yard. Scribners. 244 pages. 1917. Price 75 cents. Illustrated.

Going Abroad Overland. By Rev. Dr. David M. Steele. 1917. Putnams. 197 pages. Price $1.50. Illustrated.

In the Alaskan Wilderness. By George Byron Gordon. 1917. The John C. Winston Co. Price $3.50 net. Illustrated.

THE NATIONAL PARK CONFERENCE.

Before leaving the discussion of our educational work to comment upon the tourist season of 1917 reference should be made to the National Park Conference which was held in Washington, January 2 to 6, inclusive. This convention might, from one point of view, be called the Fourth National Park Conference, because in 1911, 1912, and 1915 there were conferences of park supervisors, concessioners, and other parties interested in the development of the national park system called by the Department of the Interior at different points in the Western States, and this last conference was also called for the purpose of gathering together similar classes of interested people. On the other hand, the Washington conference was so vastly different in its scope that it robbed the gathering of practically all resemblance to those that had been held before. The excellence of the program and the broad scope of the discussions of this conference are worthy of enthusiastic comment, but the program itself outlines the story so eloquently that I have included it in this report. In lieu of writing more I call attention to pages 251–253, where the document is printed in full.

The conference was held in the new National Museum and was participated in, as the program indicates, by scientists, educators, Members of Congress, high officials of the executive departments, journalists, lecturers, and men and women of national prominence in many walks of life. The needs of the national park and monument system were considered from every point of view. Desirable legislation looking toward the improvement of the system was carefully considered. The future needs of the Service and its future avenues of progress were defined and analyzed. Especial attention was given to the advancement of touring in the United States, and in all of the discussions that were held there were the gratifying notes of deep interest and sincerity of expression. The advice and encouragement delivered at this conference will long guide and influence the officers of this new Service in the performance of their official duties, and the proceedings of the conference in published form will be pointed out in future years as the repository of basic ideas that have bettered the administration of the national parks and the national monuments and advanced their interests in other important directions.

FIRST EXHIBITION OF NATIONAL PARKS PAINTINGS.

In connection with the Washington conference there was opened in the gallery of the National Museum the first exhibition of national parks paintings. Twenty-eight canvases by artists of distinction were displayed in the gallery from the evening of January 2 until after the inauguration on March 5. A list of the paintings will be found on page 253. The exhibition was opened by a reception which

was attended by all who participated in the conference discussions and by many high officials of the Federal Government and their wives. The exhibition was an inspiring one and was, we hope, the forerunner of what may in the future become an annual event.

The Washington conference, the distribution of the information circulars, the automobile guide maps and other pamphlets, the circulation of the motion-picture films and the lantern-slide series, the lectures, the work of the General Federation of Women's Clubs, the distribution of railroad literature, and, most important of all, the dissemination of information by magazines and the newspapers, all combined to complete the great cooperative work of inducing travel to the parks and monuments during the 1917 season. After all, then, it is not surprising that the volume of travel in them was heavier this season than ever before.

AN UNFORTUNATE REPORT.

Persistent reports that the Government regarded it as inadvisable for the people of this country to travel for pleasure during the war because such unnecessary movements would congest trains and interrupt traffic; that railroads would not quote excursion rates during the 1917 season; and that some or all of the national parks would be closed, threatened for a time to discourage tourist travel. The unusual delay in issuing the announcement of the excursion rates for the summer, especially by the eastern railroads, served to give a degree of authenticity to these reports that seriously disturbed the organized party business for the season. Furthermore, there was some apprehension regarding the effect that the pending war tax bill would have upon the national park transportation rates. This was probably due to a general understanding that transportation tickets of all kinds would be taxed. The war tax bill, of course, never at any time carried a provision for taxing excursion or other tickets covering service in the national parks. Nevertheless, these rumors, uncertainties, and delays influenced summer plans. Recognizing the disturbing nature of these forces, you authorized on May 2 the issuance of a general statement that had the instantaneous effect of clarifying the situation. The following vital paragraphs of this statement were accorded special consideration by the press:

> When asked to-day whether the national parks are to be closed to visitors during the season of 1917, Secretary Lane stated that the persistent rumors which have been current for the past few days, particularly in the Middle West, that such action was to be taken by the Interior Department, have absolutely no foundation in fact. All of the parks are to be opened at the usual time.
>
> The Secretary believes that the entrance of the United States into the war will not materially affect western tourist travel, and expressed the conviction that the national parks will be quite as well patronized this year as they have been during each of the past two years, when upward of 400,000 people visited them. He pointed out that it is even more important now than in times of peace that the health and vitality of the Nation's citizenship be conserved, that rest and recreation must materially assist in this conservation of human tissue and energy, and that the mountainous regions of the national parks offer opportunities in abundance for thoroughly enjoying a vacation of long or short duration.

It is interesting to point to the prediction of the second paragraph, that the parks would be patronized during the 1917 season quite as extensively as they were during the past two years. The prediction has been splendidly realized.

ENORMOUS INCREASE IN PATRONAGE.

The total travel to the national parks for the season was 487,368. The analysis of this figure, showing the travel by parks, will be found in the table on page 190. Necessarily the element of conjecture could not be wholly eliminated in the compilation of the travel figures, because in some parks it is very difficult to count or check the number of visitors entering their gates. In practically all the parks, however, the count of visitors has been absolutely accurate and estimates have been made in only a few instances. Where we have estimated the travel, we have carefully checked the hotel registers and employed other sources of information that made only slight inaccuracies in the counts possible. In the case of Rocky Mountain National Park, where such an amazing increase in tourist travel is shown, as estimated, an actual count of tourists was made between July 1 and October 1, and an estimate for the travel prior to July 1 is the only particle of guessing that required checking from the hotel registers. Because this estimate was necessary the final figure unavoidably appears as an estimate, but nevertheless it is a very accurate calculation, and one that is entitled to full credit.

I shall not comment upon the national monument travel further than to state that it has materially increased. The Sieur de Monts Monument, in Maine, enjoyed a very large patronage, approximately 53,750 people having entered the reservation prior to October 12. Muir Woods Monument, in California, was visited by approximately 26,000 people during the season.

The enormous increase in national-park patronage does not represent merely an increase in local travel; that is, travel from various park States and immediately adjacent territory. It represents an increase in both local travel and in patronage of tourists from distant States and foreign countries. The tourist traffic of the railroads possibly did not increase, but it is not probable that it decreased appreciably. Many of the railroads enjoyed an increased tourist patronage.

Private automobile traffic increased tremendously in every park. Of this motor traffic I shall have more to say.

MANY VISITORS FROM ABROAD.

There was a very gratifying increase in the number of citizens of foreign countries who visited the parks during the season. In almost every park I personally met citizens of the South American Republics enjoying the playgrounds of the United States for the first time, and at El Portal, Cal., on the 17th of August, I had the honor of welcoming to the Yosemite National Park, on your behalf, Viscount Ishii and other members of the Imperial Japanese Commission. The distinguished commission, accompanied by Hon. Breckenridge Long, Third Assistant Secretary of State, Mr. Gavin McNab, of San Francisco, representing the President, Mayor James Rolph, jr., and several other prominent officials and professional and business men of San Francisco, spent the day motoring in the park.

Señor Don Luis Sanguino, representing the Government of Spain, spent several weeks in the national parks studying administrative methods and the protection of the forests and wild life. Mr. Van Tienhoven, of Amsterdam, who has been for several years a leader in a public enterprise to conserve important natural features of the Netherlands, went through several of the larger parks on his way to Australia.

ASTONISHING INCREASE IN PARK-TO-PARK TRAVEL.

Our travel reports also disclose an astounding increase in what we choose to call park-to-park travel. Hundreds of parties during the past summer visited more than one national park; just how many, it is impossible, of course, to ascertain, and scores visited groups of parks, such as the parks in the Rocky Mountains, the Pacific coast parks, the northwestern parks, the southwestern members of the system, etc. I had the pleasure of meeting one party that visited 10 national parks and the Grand Canyon Monument. This tour consumed the entire summer and was enthusiastically proclaimed by the members as an indescribably wonderful trip. I met another party of four ladies, residents of Indiana, who started west early in the spring and visited, before the middle of July, six national parks and Alaska. These ladies traveled alone. They assured me that their trip had been the most comfortable, the most enjoyable, and yet the most thrilling journey that they had ever experienced. The Massachusetts Forestry Association, which made an extended trip, including visits to six national parks and the Grand Canyon Monument, is another party that enthusiastically indorses the park-to-park tour.[1] Arrangements for the trip of this association were made by Dr. Clinton L. Babcock, formerly of the Bureau of University Travel, the organization which promoted an extensive park tour last year. These and many other parties traveled between the parks by train.

SUBSTANTIAL HELP OF THE RAILROADS.

The railroads encouraged these park-to-park trips. The three national park trip of the Chicago, Burlington & Quincy Railroad, including Rocky Mountain, Yellowstone, and Glacier National Parks, and the "two national parks in two weeks" trip (Yellowstone and Rocky Mountain National Parks) of the Chicago & North Western and Union Pacific lines are instances of the efforts of the railroads to stimulate tourist travel to more than one park during the summer season. Practically no western railroad confined itself to promotion of travel to one particular park. The Northern Pacific Railway encouraged travel to Yellowstone and Mount Rainier National Parks. The Great Northern Railway promoted Glacier National Park and Lake Chelan in the Cascades. The Southern Pacific lines induced travel to Yosemite, Sequoia, Lassen Volcanic, and Crater Lake National Parks, and also to Roosevelt Dam via the Apache Trail, and to Lake Tahoe in connection with park trips. The Santa Fe promoted both the Yosemite National Park and the Grand Canyon Monument. The Denver & Rio Grande Railroad extensively advertised the Mesa Verde National Park, the Colorado and Wheeler National Monuments, and offered various side trips to Taos and the Cliff Dwellings of the Pajarito Plateau. The Chicago,

[1] See itinerary of the Massachusetts Forestry Association, p. 256 et seq.

Milwaukee & St. Paul system encouraged travel to both Yellowstone and Mount Rainier National Parks. The Chicago, Rock Island & Pacific lines devoted attention to the inducement of travel to several of our national playgrounds. The same may be said of the activities of the Missouri Pacific system and the Iron Mountain lines. The Salt Lake route began the promotion of Zion Canyon (Mukuntuweap National Monument) and other monuments in southern Utah. The Union Pacific system also aided in the development of travel to Mount Rainier Park and Zion Canyon in addition to the attention that it gave the Yellowstone and Rocky Mountain regions.

The tourist bureaus and commercial organizations of the West have joined the railroads in making the national park system the general inducement for western travel, establishing them as the "permanent expositions" of the West, as they were designated in 1915 in a speech made by Director Mather in San Francisco.

The work that the travel bureaus of the express companies have done in the way of encouraging American travel in the park system is also worthy of special mention. A very useful pocket guidebook of the national parks, which includes the authorized rates for the 1917 season, was issued early in the spring by the Wells Fargo Express Co. and very wide circulation was given to it.

PHENOMENAL MOTOR TRAVEL TO THE PARKS.

Let us examine for a moment the chart on page 204, which graphically analyzes the automobile travel in the national parks during the past four seasons, and then turn to page 191, where the motor travel statistics are analyzed by parks. What an astonishing increase in the number of cars in the national parks is shown by these tables, and yet these figures tell scarcely anything of the story of the 1917 motor travel in the park system. Moreover, the story can not be told, because there is not the space in this report to devote to it. Many pages might be written on the automobile routes to the various national parks and the accommodations that have been provided for the traveler along the way. Detailed descriptions of the big free automobile camps maintained by the cities along these routes would be most interesting. The efforts of the automobile clubs, highway associations, and other organizations to accurately and completely sign the roads, leading over mountain and plain, are worthy of extended comment, and the projects of the State highway commissions, involving extension and improvement of road systems, are closely related to the subject of motoring in the parks, and I regret sincerely that they can not be outlined here. Briefly, I may state that the highways in national park States have been greatly improved during the past year.

INCREASE OF FREE AUTO CAMPS.

The free automobile camp idea in its various phases, as first adopted by Denver, Colo., Ashland, Oreg., Cody, Wyo., and other cities near large parks, has been developed and extended until scores of cities now have comfortable, completely equipped camps that are placed at the disposition of the automobilist free of charge. The only charge exacted at any auto camp is a nominal rate for fuel. Parking space, water, toilet facilities, and cooking grates are free. Many cities even omit the fuel charges. It is an inspiring sight to go into a park, like the beautiful city park of Denver, and see several hundred cars neatly parked in their allotted spaces and their happy owners, many of them with large families, enjoying the camp life or recreational facilities of their surroundings. I went into numerous camps of this kind during the summer and talked with the tourists. In this way I was impressed deeply with a function of this institution that had never occurred to me before. The few days spent in the free public auto camp of a big city park were giving hundreds of families from farms and small towns the opportunity to enjoy its advantages for the first time. The day will soon come when tens of thousands of cars from all over the United States will be found in these western city parks en route to one or more of the national parks. The maintenance of these free camps is another instance of the cooperation of the chambers of commerce, tourist bureaus, and civic associations with this Service in its efforts to encourage the use of the national parks.

HEARTY HELP FROM ASSOCIATIONS.

The work of signing the automobile highways in the Western States has kept pace with the improvement of the highways themselves. During the season of 1917 motoring between the parks was fraught with less difficulty than ever before. There was, however, sufficient uncertainty as to routes between members of the park system to demonstrate clearly the necessity for the immediate designation of a park-to-park highway connecting all of the great scenic areas of the West. Great progress has been made in the past two years in the designation of this highway, but the work is not nearly completed.

The National Parks Highway Association, with headquarters in Spokane, has this year assumed the leadership in this movement, and during the spring mapped and sign-posted a route from its terminus of last year in Mount Rainier National Park to Crater Lake, thus connecting Yellowstone, Glacier, Mount Rainier, and Crater Lake National Parks by what is known as the National Parks highway. In connection with the latest link added to this important system the beautiful Columbia River highway has been marked as a side trip, and I believe that all of the parties that have traveled over the National Parks highway this year have not overlooked the opportunity to see the wonderful scenery of the Columbia River gorge. This park-to-park highway should now be extended and marked in California, Arizona, Utah, New Mexico, Colorado, and Wyoming and the circuit completed. When the work of designation has been accomplished all interested in the development of travel to the national parks can join hands in securing the improvement of the highway. In more than one sense this road will become a national asset.

In mentioning this work of designating the highways connecting the various parks, the splendid efforts and the continuous activity of the National Park-to-Park Highway Association, organized in 1916 in the Yellowstone National Park to designate and promote an interpark road system, must not be overlooked. This association,

headed by Mr. Gus Holm's, of Cody, Wyo., has already accomplished the designation of a feasible route to Yellowstone Park from Denver and has actively engaged in securing the improvement of connecting roads in the State of Wyoming. This organization is absolutely unselfish in its activities and is ready to heartily indorse any movement that has for its purpose the designation of the park-to-park highway. It stands ready to cooperate to the limit of its capacity in the advancement of any such movement.

I can not too strongly recommend that consideration be given to this highway problem by individual motorists and by the automobile associations in all sections of the Nation. It is a worthy project, and when the highway with its properly designated laterals is finally established and improved it will stand for all time as the greatest scenic highway in the world. The system would, of course, include the highways of the national parks themselves. It would also include the splendid roads of the Denver Mountain Park system, the automobile road to the top of Pikes Peak, and other scenic highways of similar distinction, in addition to the Columbia River Highway which I have just mentioned.

INTERPARK AUTO TRAVEL.

Despite the fact that the roads connecting many of the national parks were not designated as parts of a park-to-park highway system, many parties motored through several of the great playgrounds of the West. Recently I had the unusually good fortune to meet a party that had motored through nine national parks and several monuments in the course of the summer and another, an Iowa party, that had visited six national parks during a college vacation. I also chanced to meet a score of motoring parties who had toured, or were planning to tour, three or four parks. All of the interpark travelers with whom I discussed road conditions advised me that in general the roads they used were entirely safe and in a very good state of repair. Of course, hundreds of miles of the highways between the national parks of the West are paved in accordance with the latest methods of road building, but here and there are stretches of exceedingly poor roads.

PARK ROADS GENERALLY IMPROVED.

Conditions for motoring in the parks themselves during the 1917 season were most favorable. With one possible exception the park highway systems were in better condition than ever before. Every effort was made to safeguard travel on the roads. When automobile traffic was particularly heavy, extra traffic rangers were assigned to regulate the movement of cars, and all traffic on dangerous grades was carefully checked to eliminate all possibility of accident. Free automobile camp service in several of the national parks was extended during the summer, and it shall be our policy to make still further additions to and improvements in this service. These free camps are specially cleared areas provided with water, and are located at convenient distances from supplies of fuel. Where shelter for cars is needed, buildings for this purpose are erected. Toilet facilities are provided, and the installation of grates for cooking purposes is proceeding rapidly. A photograph of a Yellowstone auto camp will be noted in this report.

The automobile guide maps, as I have already stated, were particularly useful to motor parties. The overwhelming increase each year in the number of automobiles that are entering the parks clearly signifies that by far the greatest portion of park travel will in the future be in private machines, and fixes the obligation of the Federal Government to construct new roads and continue the improvement of the highways already built, in order that the enormous volume of automobile traffic may be handled safely and expeditiously, and in a manner that will afford a maximum of enjoyment to the traveler with a minimum of inconvenience.

WHY THE MOTOR FEE IS CHARGED.

A discussion of motor traffic in the national parks invariably leads to the question of charging a fee for the admission of private cars to these reservations. These fees, which are based on the mileage of automobile roads in the various parks, vary from 50 cents in the General Grant National Park to $7.50 in the Yellowstone, where 303.55 miles of road are available for the use of the motorist. The fees, however, are regarded by many motorists as discriminatory and unjust.

The purpose of the fees is generally not understood because the average citizen is not familiar with the financial policies of Congress. Congress, while always willing to appropriate funds for the maintenance, protection, and improvement of the national parks, demands that those who use and enjoy these playgrounds shall contribute toward their administration and upkeep. The amount of this contribution is fixed, of course, by the Department of the Interior, but the funds derived by the collection of the various fees must be paid into the Treasury and an account to Congress must be rendered. Heretofore the revenues of several of the parks have been available for expenditure in these particular reservations without specific reappropriation from the Treasury by Congress annually. This policy was laid aside a few years ago and no provision for such use of revenues was contained in the organic acts of the parks recently created, and the sundry civil bill of June 12, 1917,[1] contained a clause that withdrew the general privilege of using the revenues of the older parks, except those of the Hot Springs Reservation, which is and has been for years self-supporting. This clause becomes effective July 1, 1918. It has been our policy to expend the bulk of the revenues of the parks in the improvement of roads.

The following principles have governed Congress in its consideration of the national park revenue problems:

1. The parks are far from the center of population and are not visited by the majority of the people, hence the burden of maintaining them should be shared in larger measure by the traveler in these reservations.

2. There is a relatively large volume of local travel which should bear a heavy share of maintenance costs. People who live near a park necessarily are able to make a larger use of it than those who

[1] 40 Stats., 152. See p. 227.

come from afar. (This is a faulty principle in that it fails to recognize what the local people contribute to the construction and upkeep of State roads over which tourists going to the national parks must travel, and also fails to recognize the fact that large areas in the national park States are public lands, hence not subject to taxation, thus making the per capita burden of building and maintaining highways unusually large in States sparsely settled. Also, consideration is not given to what these people do in the way of providing free automobile camps, supplying information, etc.)

3. The tourist must pay for the use of roads and streets at home; also he must pay for service by public utilities, such as the gas company, the electric power company, the telephone company, the traction corporation, etc. There is no reason why he should not expect to help defray cost of similar service in the national parks where public utilities are very costly and expensive to maintain. Bearing these principles in mind, is there discrimination in the imposition of the automobile fee?

THE SOURCES OF NATIONAL PARKS REVENUE.

There are four sources of revenue in a national park.

1. Taxes on concessions, which may be (*a*) a fixed portion of the authorized rate for service; (*b*) a reasonable arbitrary tax based on the number of guests accommodated during the season; (*c*) a stipulated annual fee fixed after careful analyzation of the concessioners' gross revenue, operating expenses, net profits and other elements; (*d*) a percentage of the gross receipts of the season's business; or (*e*) a fair share of the net profits of an enterprise determined by deducting from gross revenues, interest on investment at a reasonable rate, depreciation charges on a fair basis, and expenses of operation. These concession taxes are being studied carefully and one of the five mentioned will shortly be adopted as a standard for use throughout the park system. (*d*) and (*e*) appear to be the most equitable methods of concession taxation.

2. Public utilities such as water systems, electric power plants, telephone service, etc.

3. Natural resources. The revenue in this case is derived from the sale of dead timber, stone, hides of predatory animals, etc.

4. Automobile and motorcycle permits.

A MATTER OF FAIRNESS ALL AROUND.

As former General Superintendent Daniels pointed out in his report of 1915, these sources of revenue are taxes in proportion to the benefit received, rather than the ability to pay. This fact is significant. The tourist who reaches a national park by train and makes a tour by an automobile transportation line pays no direct tax, but revenue accrues to the Government from the sale of his transportation ticket through one of the channels outlined in the first class of revenue sources. The cost of his ticket will, in final analysis, measure his travel contribution to the park revenues under the transportation company's contract with the department. If a party enters a park and camps in the most comfortable manner, using electric lights, taking water from the park water mains, installing a telephone in his tent, etc., he pays a reasonable rate for this service direct to the

park management, and this revenue is in proportion to the service rendered to him.

The operation of the third source of revenue is plainly similar to the public utility service.

The automobile fee covers a permit which authorizes the use of all roads safe for motor-driven vehicles. It is similar to a State license tax. If there are only a few miles of roads, such as there are in the General Grant Park, the small charge of 50 cents is made for a permit which is good for the entire season. On the other hand, in Yellowstone Park, where there are 303.55 miles of automobile highways, a charge of $7.50 is made. The Yellowstone road system is not only fifteen-fold more extensive than that of General Grant Park, but it is better improved. The benefit received in the use of the largest system is what has governed the fixing of all auto fees. Occasionally the criticism is made that a car carrying two or three individuals should not be charged the same as one carrying seven, for instance. On first consideration this seems to be a fair criticism, but when one considers the administrative difficulties involved in determining the capacity of a car, the reason for a single fee becomes evident. Also when one calculates that the party of seven will probably spend the same length of time at the hotels and camps as the party of two or three, it is reasonable to conclude that in the long run, under ordinary circumstances, the large party will contribute directly and indirectly approximately the same revenue as the smaller party will, hence the per capita revenue will be the same. Furthermore, it must be understood that a car carrying two or three individuals will cause as much wear and tear on the roads as the ordinary car of larger capacity.

The per capita revenue which is derived from visitors in the national parks really constitutes such an exceedingly small portion of the cost of the travelers' summer tours that the matter of exact equality of taxation and the amount thereof is scarcely worthy of extended consideration. The department has been very careful to keep all rates for service by concessioners fair and reasonable, and direct taxes, such as those placed on motor-driven vehicles entering the parks, are always maintained at an equitable figure.

MOTOR FEES REDUCED.

Prior to the opening of the 1917 season the old single trip automobile permit was abolished and in almost every park the season trip rate was lowered to the former single trip rate. For instance, the season permit in Yellowstone Park was $10 and the single trip permit was $7.50. The latter permit was abolished and the former reduced in cost to $7.50. The following table indicates the season permit rates of 1916 and 1917:[1]

	1916	1917		1916	1917
Yellowstone	$10.00	$7.50	Mount Rainier	$6.00	$2.50
Sequoia	3.00	2.50	Crater Lake	3.00	2.50
Yosemite	8.00	5.00	Mesa Verde	2.00	.50
General Grant	2.50	.50	Glacier	2.00	1.00

[1] No charges made for the use of roads in Casa Grande Ruin, Rocky Mountain, Wind Cave, Hot Springs, Hawaii, Lassen, Volcanic, Sullys Hill, and Platt National Parks, because of the relatively small road mileage. There are no roads in Mount McKinley National Park.

APPROPRIATIONS AND REVENUES.

It is unquestionably the policy of Congress to appropriate an amount equal to the park revenues for park purposes in addition to funds for new construction work and general maintenance of improvements. Under ordinary circumstances, the park that is well developed will yield a large revenue, but, on the other hand, a park that is not developed can not possibly yield revenue of consequence. Rocky Mountain Park, for instance, can not yield revenue because it only has two or three hotels and camps within its boundaries, has no public utilities and no automobile roads in improved condition. When appropriations are made for the general improvement of this park, revenues may reasonably be expected, but hardly before that time.

PARK REVENUES INCREASING.

The remarkable increase in national-park travel has naturally increased park revenues materially. At this date it is too early to compile the complete tables of revenues for this season, but we are already aware of the fact that the parks will yield a larger revenue this year than ever before. And the revenues will grow larger each year, even though it may appear advisable later to revise some of the fee schedules downward, thus reducing auto taxes and rates for service in the parks affected. Each year several schedules require adjustment. I believe the time will soon come when Yellowstone, Yosemite, Mount Rainier, Sequoia, and General Grant National Parks and probably one or two more members of the system will yield sufficient revenue to cover costs of administration and maintenance of improvements. An appropriation for extension of improvements and new construction work will be all that these parks will require. There probably never will be a time when all of the parks will not require appropriations over and above the revenues for one purpose or another, and it would not be proper and just to require these great national playgrounds to yield sufficient revenue to cover all the costs of operation any more than it would be fair and reasonable to expect Rock Creek Park, in Washington, to pay all costs of its operation as a public recreational area. It seems that the national parks and the Federal Government that controls them must jointly provide the necessary funds for their administration, protection, and improvement after the Federal Government has advanced their development to a point where they can yield revenue without placing a burden upon the tourist. If this should not be the policy of the future, either the Federal Government will have to support the parks entirely, which, of course, would necessarily result in a reduction in the costs of touring the parks, or the revenue fund would have to be increased to cover all costs of operation of the system. The latter course, if ever adopted, would aim a fatal blow at American tourist travel. This discussion is largely academic, however, because the middle course is plainly an accepted policy of Congress, and a change in this is not at all likely, because it is based on at least two sound business principles, as I have already explained.[1] The total revenue for the fiscal year ended June 30, 1917, was $180,571.05. The total appropriations, including deficiency

[1] See pages 21 and 22, first and third principles.

items, for the parks for the same period were $514,966.67. The tables on page 192 analyze these figures and segregate the financial statistics for each park.

APPROPRIATIONS PROVE SYMPATHY OF CONGRESS.

The appropriation for the current fiscal year for the park system is $524,780; for the monuments, $5,000. The revenues for the 1918 fiscal year already reported are $132,675.87. A comparison of the appropriations of the fiscal years 1917 and 1918[1] with those of preceding years will indicate clearly that Congress is heartily in sympathy with the development of tourist travel to the parks and is ready to cooperate by making both the parks and the monuments fully accessible. The appropriations that are now being made for many parks, however, are inadequate, and no funds whatsoever were made available for the following national parks recently established: Hawaii National Park in the Territory of Hawaii, Lassen Volcanic Park in California, Mount McKinley National Park in the Territory of Alaska. In this connection attention is invited to the statement of appropriations for national parks and national monuments on page 221. The principal appropriations that are required now are for the extension and improvement of road systems. As I have already stated, the bulk of the tourist travel will soon be by private automobile, and we must be ready at all times to properly accommodate and protect this traffic on the highways.

THE ROCKY MOUNTAIN NATIONAL PARK.

Advancing now to a brief summary of conditions in the various national parks during the 1917 season Rocky Mountain National Park will receive first consideration. This park is selected for a place at the head of the list not because it is more important than any other member of the system nor because it possesses scenic qualities and recreational facilities superior to those of the other parks, but because it enjoyed a larger tourist patronage during the 1917 season than any other scenic national park; also because it is the most accessible national park, being only 30 hours distant from Chicago and St. Louis; also because it has not been improved under congressional appropriations since it was established in January, 1915. Its needs are worthy of special mention.

This park, which lies in the heart of the Rocky Mountains, approximately 50 miles northwest of Denver, embraced within its boundaries, as originally established, 229,062 acres of public land. The Continental Divide traverses the park in a northerly and southerly direction and the scenery in this section of the Rockies is of the very first order. The most striking scenic feature is Longs Peak, 14,255 feet in altitude. Prior to the dedication of this territory as a national park it had received no improvement in the way of road and trail construction for the accommodation of tourists. A few short wagon roads barely entered some of its eastern canyons and a few patrolling trails, scarcely fit for the use of the ordinary traveler, penetrated its mountain fastnesses. The State of Colorado had be-

[1] See recapitulation of appropriations for years 1904–1918, inclusive, on p. 194, and detailed statements beginning on p. 206.

gun reconstruction of an automobile highway across the Continental Divide by way of the Canyon of the Fall River, but only a few miles of this highway had been completed. The State promised to finish the road to Grand Lake on the west side of the park. The extensive open area lying at the base of the mountains and east of the park boundary known as Estes Park was to a large extent accessible, and there were several very good county roads entering the Estes Park region from Denver, Longmont, Loveland, Fort Collins, etc.[1] The park was reached from Loveland on the Colorado & Southern Railway, from Lyons on the Chicago, Burlington & Quincy Railroad, from Ward on the Denver, Boulder & Western Railroad, from Fort Collins on the Colorado & Southern and Union Pacific Railroads, from Longmont on the Chicago, Burlington & Quincy and the Colorado & Southern Railroads, and from Granby on the Denver and Salt Lake Railroad.[2] Automobile transportation lines connected these railroad points with the village of Estes Park, except in case of the Granby terminus where connection was made with automobile for Grand Lake.

This briefly presents the status of the park and its improvements when it was established in 1915.

AN OBSTRUCTIVE INHIBITION.

The organic act creating the park contained the following inhibition on appropriations for its protection, improvement, and maintenance:

> *Provided*, That no appropriation for the maintenance, supervision, or improvement of said park in excess of $10,000 annually shall be made unless the same shall have first been expressly authorized by law.

On account of this provision no more than $10,000 a year has been available, and as this amount has been just about sufficient to properly protect the park, it has been impossible to undertake any improvement project. The fact is, the appropriation of $10,000 is barely sufficient for protective purposes now. The act of February 14, 1917,[3] added to the park the region mentioned above as the Estes Park area, the Twin Sister Mountains, and other territory, in all 25,265 acres, thus increasing the area to be protected to 254,327 acres, and adding problems of traffic control, camp supervision, sanitation, and a multitude of other similar problems requiring an increase in the ranger force and the assumption of other financial obligations.

There was no part of the appropriation available for improvement purposes this year, and yet the obligation remained to care for all visitors to the region. Our records show that prior to October 12, 117,186 visitors entered the park boundaries, more than the combined tourist patronage of Yellowstone, Yosemite, Glacier, and Crater Lake Parks. These visitors came from all sections of the country. The large majority of them came from States east of Colorado. The hotels and camps were filled to capacity, notwithstanding the fact that 365 rooms had been added to the various hostelries and camp enterprises since the preceding year. Furthermore, the visitors

[1] See map showing position of Yellowstone, Glacier, Rocky Mountain, and Mesa Verde National Parks with principal connecting roads, p. 38.

[2] See map showing railroad routes to Rocky Mountain and Mesa Verde National Parks, p. 77.

[3] 39 Stats., 916.

who remained in the park seemed to be in no hurry to move on to other regions. Several hundred stayed all summer. The park demonstrated again that it is in the "repeater" class. Hundreds of its guests had spent one or more seasons there and, attracted by its scenery, cool, clear atmosphere, and healthful waters, returned again for rest and recreation.

AN ILLOGICAL SITUATION.

This situation is without precedent in national park history. There were thousands of people who came from distant points. They came to stay, see and enjoy this great park, and yet it was impossible for any but the most hardy to reach its most beautiful spots or catch a glimpse of its most stupendous scenic features.

Plainly the $10,000 inhibition on the appropriation should be removed. To accomplish this purpose, bills S. 1555 and H. R. 171 were introduced and are now pending in Congress. Their early enactment can not be too strongly recommended. A favorable report on S. 1555 has been made by the Public Lands Committee, and the measure is now on the Senate calendar. A bill identical to these measures passed the Senate in the Sixty-fourth Congress.[1]

In the consideration of this bill in the previous Congress, it appears that the completion of the Fall River Road by the State of Colorado was regarded as a condition precedent to the development of the park by Federal appropriations; in other words, that more than $10,000 should not be appropriated by Congress for a single fiscal year until the State of Colorado had completed this road and the Interior Department had accepted it. This association of the larger park development and the Fall River road project is not logical. The construction of the Fall River road is apparently progressing as rapidly as State funds and short working seasons will permit, and doubtless by the end of the 1918 season the two sides of the park will be connected with a very good automobile road.

On the other hand, numerous other development projects should be undertaken independently of the Fall River road construction. Several of these projects would open to the public some of the canyons, lakes, basins, and alpine meadow regions below timber line on the east side of the range. Others would involve the construction of new tourist trails into the higher mountains. Furthermore, it is most desirable to build roads to reach new camping areas, and all

[1] S. 6854, 64th Congress, by Senator Shafroth. Secretary Lane in his report on this measure said:

"Rocky Mountain National Park incloses an area of over 229,000 acres, or approximately 360 square miles, of the Rocky Mountains, lying in the north central section of Colorado. It is the scenic national park most accessible from the centers of population of the United States. It is possible to reach this park from St. Louis or Chicago in 30 hours. It contains mountain scenery of unsurpassed grandeur, and is visited yearly by approximately 50,000 tourists from all sections of the Nation. The territory embraced wifhin the boundaries of the park is practically undeveloped. A few trails reach some of the most beautiful sections, and it is principally by trail transportation that the park is visited by the many tourists that come to its borders. This trail development, however, has not been extensive, and there are practically no roads in the park.

"Section 4 of the organic act establishing the park, which this bill is designed to repeal, specifically inhibits the appropriation of more than $10,000 for its improvement, protection, and administration. Appropriations for this park, therefore, since its creation have been small, and it has been clearly demonstrated they will little more than cover the actual cost of administering the park. The balance remaining is hardly sufficient to maintain the existing trails and telephone lines. There should be authority for making larger appropriations for this park. I therefore recommend the enactment of this legislation, because the repeal of the inhibition which it contemplates would be in the interests of reasonable and proper development of the park."

of the roads of the recently added section of the park should be improved. These projects are all necessary to make the park accessible for the throngs that are entering its gates, and not a single one of them has any relation to the Fall River road.

IMPORTANCE OF THE FALL RIVER ROAD.[1]

The importance of the road that the State is building must not, of course, be minimized. It stands as the greatest single project of the park development and when it is completed it will form the basis for all lateral road improvement on the top of the mountains. It will also afford a circle trip for motorists, making it possible to go from Denver through the park and back by way of Grand Lake, Granby, and Berthoud Pass. Moreover, it will offer an opportunity to establish transportation concessions and thus eliminate the unsatisfactory jitney business that now flourishes uncontrolled with the village of Estes Park as its base of operations.

Rocky Mountain Park is the great scenic park that is most easily reached. This year it has demonstrated that it is one of the most popular with the traveling public. What further arguments are necessary to make clear the necessity for proceeding with its improvement? Private enterprises are supplying the hotels and camps and other accommodations for tourists. Millions of dollars have already been invested in these establishments. Federal improvement of the park must come next.

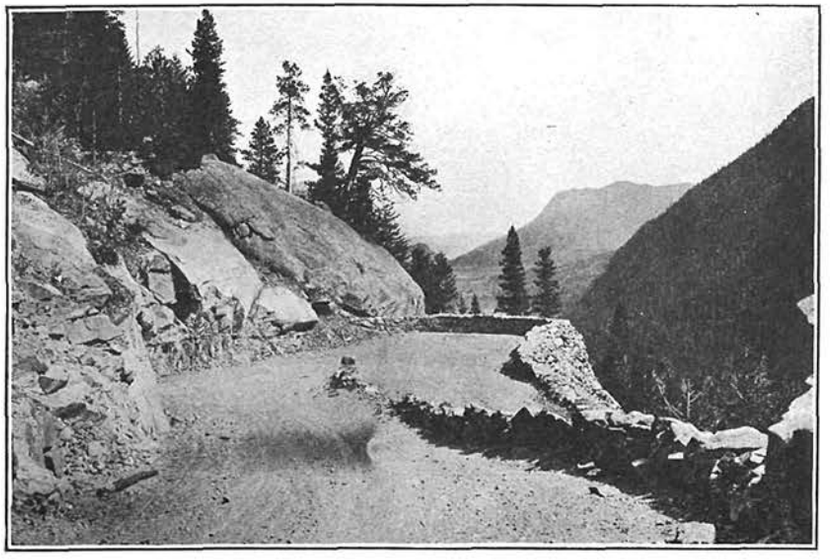
THE WINTER SPORTS CARNIVAL.

The park demonstrated last winter that its accessibility in winter and its unparalleled opportunities for the enjoyment of winter sports are deserving of quite as much attention as most of its attractive summer features. A winter carnival was held in February, and over 400 people participated in the various events on the schedule of sports. Skiing, ski-jumping contests, snowshoeing, skating, and tobogganing were the most popular amusements. Conditions were most favorable for all of these sports. Moreover, the snow deposits on the mountains, the rocks, the trees, and the shrubs afforded a scenic spectacle of supreme magnificence. Winter sports in this park will be given every encouragement by the Service. Arrangements are already under way for the operation of a big snow and ice carnival during the coming winter.

Hearty cooperation between the various railroads interested in the promotion of the park and the new Rocky Mountain Parks Transportation Co., an automobile line, has resulted in the establishment of unusually attractive and diversified routes from Denver.

For instance, it has been possible during the past season to purchase tickets to Denver via any one of the important rail lines and to secure in connection therewith a ticket covering a round-trip passage via the automobile line in both directions to Rocky Mountain National Park, via train to one of the railroad termini near the park, thence via automobile to the park and return to one of these termini, or via automobile between Denver and the park in one direction and via automobile and rail in the other. Hundreds of tourists

[1] See picture of Fall River Road in this report.



ROCKY MOUNTAIN NATIONAL PARK.

FALL RIVER ROAD.

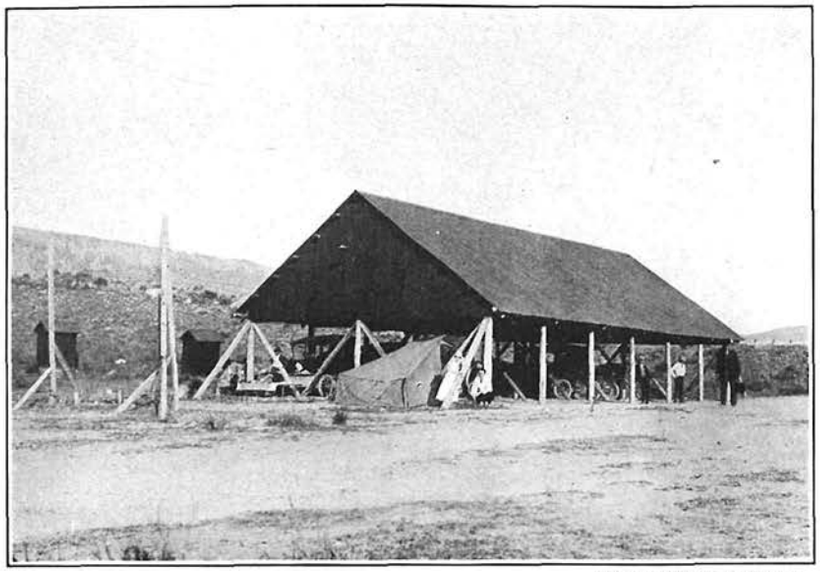
Showing turn at second switchback.



ROCKY MOUNTAIN NATIONAL PARK.

FALL RIVER ROAD.

Showing first switchback. Horseshoe Park in the background.



Photograph by J. E. Haynes

YELLOWSTONE NATIONAL PARK.

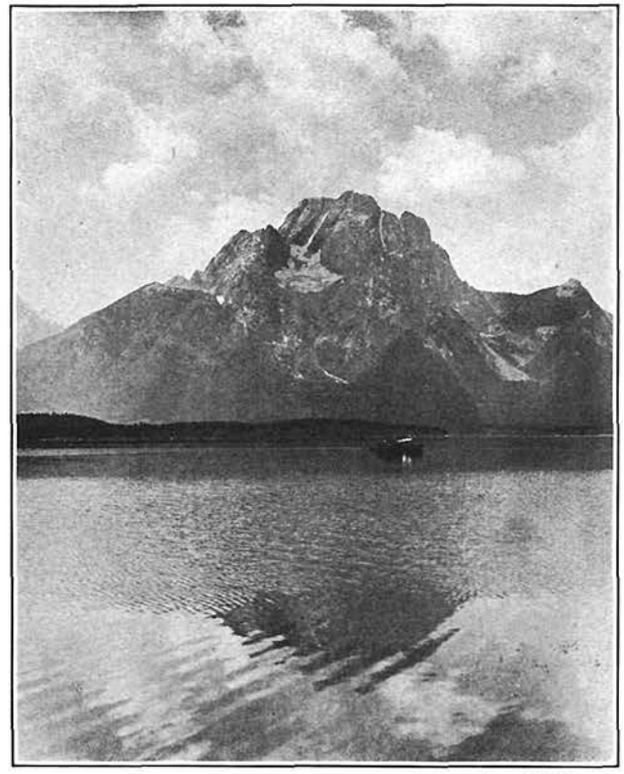
FREE PUBLIC AUTOMOBILE CAMP IN USE DURING 1917 SEASON.



Photograph by J. E. Haynes.

YELLOWSTONE NATIONAL PARK.

NEW 10-PASSENGER CARS OF YELLOWSTONE TRANSPORTATION COMPANY ON THE CHITTENDEN BRIDGE OVER THE YELLOWSTONE RIVER.



Photograph by J. E. Haynes.

"THE GREATER YELLOWSTONE."

Will include part of the Jackson Hole region, geographically and scenically, a part of the mighty Yellowstone exhibit. This is a picture of Mount Moran and Jackson Lake. Mount Moran is one of the peaks of the Teton Range, which extends to the south of Yellowstone Park along Jackson Lake.

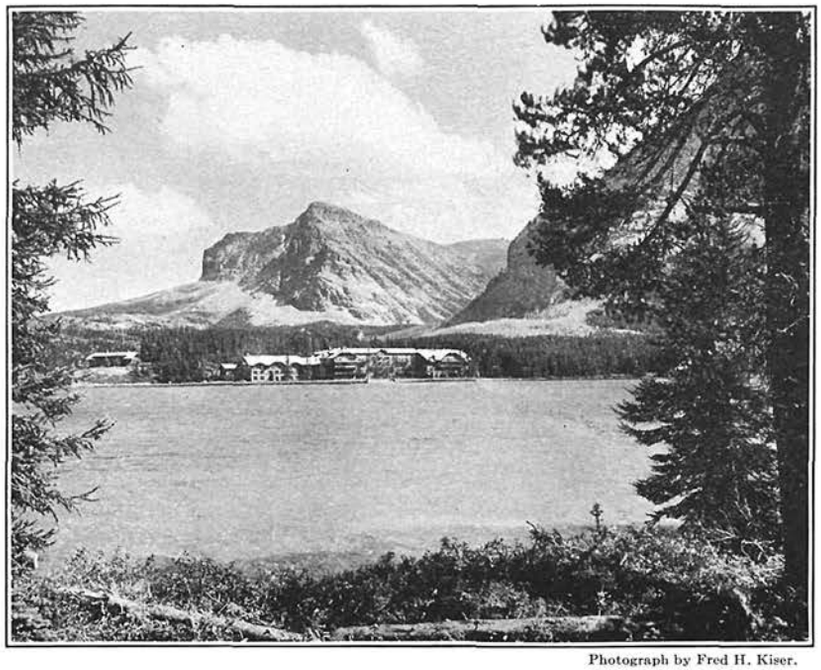


Photograph by J. E. Haynes.

YELLOWSTONE NATIONAL PARK.

FISHING AND BOATING ON LAKE YELLOWSTONE.

The National Park Service is encouraging the use of Yellowstone Park as a great all-summer resort. Fishing is excellent and facilities for boating can not be surpassed.



Photograph by Fred H. Kiser.

GLACIER NATIONAL PARK.

MANY GLACIER HOTEL ON LAKE McDERMOTT.

A large addition to this hotel was constructed during the past summer.



Photograph by Fred H. Kiser.

GLACIER NATIONAL PARK.

Party of women on tour of the park trails.

have during the season taken advantage of these exceptional opportunities to vary the course of their park trip, and the broad-gauge cooperation in the public interest that has afforded these travel facilities has, without question, had an influence in making the park so tremendously popular with the visiting public. When the Fall River road connects both sides of the park, combination rail and automobile trips into the park and over the mountains will become features of great interest to the tourist, particularly the traveler who can not remain long in the park and leisurely enjoy its marvels.

YELLOWSTONE NATIONAL PARK.

This year has been epoch making in Yellowstone National Park history. The entire concession system has been reorganized; large 10-passenger automobiles, especially adapted to the requirements of tourist travel have superseded the ancient stagecoaches; the regular park tour has been extended to include Dunraven Pass and Tower Falls, regions of splendid scenic quality; and the development of the park as a great summer resort, instead of a region to be glimpsed in four or five days of hasty travel, has been initiated. All of these projects have been revolutionary in their scope, and it is worthy of note that they were largely advanced and made effective during the tourist season without inconveniencing the public or interfering with its pleasure in any manner.

A BAD SYSTEM AND SERIOUS PROBLEM.

The reorganization of the concession system of the park was the most important accomplishment of the year. There had been numerous corporations and individuals engaged in furnishing transportation service, hotel and camp accommodations, photographic supplies, etc., and many of them had for years rendered indifferent service to the public.

There were different transportation lines operating from the northern and western entrances in the business of carrying visitors from the park terminals of the Northern Pacific and Union Pacific Railroads, respectively, through the reservation to the various hotels; there were two large camping enterprises (Wylie and Shaw & Powell companies), and one small poorly equipped camping concern engaged in the business of carrying passengers from the northern and western entrances and accommodating them in camps of a more or less permanent nature. There was an automobile concern, owned and operated by the two transportation companies and by the two large camping companies, none of which controlled the stock or the policies of the enterprise, which was engaged in the transportation of passengers from the terminus of the Chicago, Burlington & Quincy Railroad, at Cody, Wyo., through the eastern gateway to the Lake Hotel, where connection was made with the horse-drawn stage lines on the "loop" or circle route through the park. There was one hotel system involving a very large investment which embraced five hotels and two fully equipped lunch stations.

There naturally followed constant friction among so many groups of concessioners. This was particularly true of the transportation companies. Many of the concessions in the park were operated in an uneconomical manner, and the cost of this inefficiency in man-

agement was borne by the traveling public, not in the form of exorbitant charges for service, but in unsatisfactory and insufficient service.

The small camping company, after two years' operation with meager equipment and under incompetent management, had demonstrated clearly to the department and to the traveling public that it was utterly incapable of rendering permanent camp service that would even approach the standard of service established by the department. Its elimination from the park was inevitable.

Moreover, the time had come for the motorization of all transportation service in the park, and the all-important question was whether the corporations engaged solely in the transportation business and the two large camping companies should each be permitted to motorize its stage lines, or whether an adjustment of interests should be made whereby a single responsible automobile transportation line should purchase the necessary motor equipment and control all transportation service in the park. If the latter course should be chosen, large property interests necessarily would have to change hands on a fair and equitable basis. The determination of this basis involved the solution of many difficult problems. On the other hand, vast quantities of equipment, hundreds of stagecoaches, great forests of harness, scores of barns, blacksmith shops and corrals, several permanent camps and lunch stations and the Fountain Hotel would be rendered useless by the installation of motor transportation service without regard to the manner in which it should be effected.

The motorization and reorganization problems were therefore closely, yes, intimately related and were amazingly intricate.

THE PRINCIPLES OF REORGANIZATION.

The department finally concluded to grant a single transportation concession. The grounds upon which this decision was based were:

First. Because it would be uneconomical to permit the establishment of more than one transportation line on the Yellowstone roads with each touching the same point, just as it would be uneconomical to run more than one street-car line on a single street; also because each would require a separate management, a separate overhead expense account, and a separate operating supply base; likewise because there would necessarily be duplication in the establishment of garages, gasoline stations, etc.

Second. Because more than one line would be difficult to control by the park authorities, as questions of right of way on the roads would constantly arise for adjustment; and because there would be friction at railroad terminals, hotels, and other starting points in the handling of passengers.

Third. Because with more than one competing transportation system the tourist would be subjected to importunities and harassment at railroad terminals by rival solicitors, chauffeurs, and information clerks; and because the economic waste involved in the operation of the several systems would increase the cost of park tours.

Fourth. Because the investment required to establish a satisfactory transportation line in Yellowstone Park with necessary operating bases, supply stations and garages, would be very large, and it would be doubtful if more than one line could be operated at a profit.

Having determined the principles that would guide the motorization of the transportation service, reorganization of all of the important concessions was necessary before the new transportation concession could be granted. This was finally accomplished by mutual agreement between the various transportation, permanent-camp, and hotel interests. A money consideration accomplished the elimination of one transportation company and the motor line operated from Cody, Wyo. An adjustment of property interests and another cash consideration passing to a party that wished to withdraw from the camping business made possible the abandonment of the transportation features of the permanent camping business and the combination of the two important permanent camping companies. The third camping company was denied a renewal of its franchise.

When the reorganization reached the stage where there remained but one hotel company, one transportation company, and two camping companies that had disposed of their transportation privileges and combined their other property interests with the consent of the department, the policy of permitting the establishment of a single hotel enterprise, a single permanent camping business, and a single motor transportation line, as three Government-regulated public-utility monopolies, was adopted.

TOURING CARS SUPPLANT THE OLD STAGE COACH.[1]

Accordingly, the Yellowstone Park Camping Co. was organized by the former Wylie and Shaw & Powell camping interests and the permanent camping franchise was granted to it. The motor-service privilege was granted to the Yellowstone Park Transportation Co.; and the Yellowstone Park Hotel Co. was permitted to remain as the hotel concessioner. Contracts were entered into with all of these companies, and arrangements were made early in the spring for operations under the new agreements. The permanent camping company abandoned 10 of the camps and lunch stations operated by its predecessors, the Wylie and Shaw & Powell companies, built one new camp at Mammoth Hot Springs, and reconstructed the five remaining camps of the old systems; the hotel company abandoned the Fountain Hotel in Lower Geyser Basin and its two large lunch stations at Norris Basin and the West Thumb of Lake Yellowstone; the transportation company purchased 100 ten-passenger automobiles and 16 seven-passenger cars specially designed for the park service, and installed a high-class motor transportation line. The stagecoach of the Yellowstone passed into history; a new era for the park dawned with the opening of the 1917 season.

CIRCLE TOUR EXTENDED.

As I have stated, the circle tour of the park was extended this year to include the Dunraven Pass and Tower Falls regions, thus eliminating the Canyon-Norris trip and offering the visitor an opportunity to see a section of the park that contains some of the choicest bits of Yellowstone's scenery. Moreover, the schedule of the transportation line was arranged to give the visitor as much time as possible at the points of greatest interest—Mammoth Hot Springs,

[1] See picture of new cars in this report.

Upper Geyser Basin, Yellowstone Lake, and the Grand Canyon of the Yellowstone. A third advantage of the new motor system was the arrangement that the railroads and the transportation company perfected whereby it was made possible for park visitors to enter via one gateway, tour the park, and leave via another gateway. This arrangement was in effect throughout the season, and hundreds of visitors took advantage of the opportunities it offered for touring via diversified routes. For instance, 494 tourists entered via the Cody gateway and left the park via the Gardiner or northern gateway, 493 entered via the western gateway and departed in the Cody direction, 295 entered via the northern entrance and went out of the park at the western gateway.

YELLOWSTONE TO BECOME AN ALL-SUMMER RESORT.

The all-summer resort idea has not yet, of course, received much expression in actual work by concessioners, but the Service has entered upon its methodical development. For one thing, the Service, in cooperation with the Bureau of Fisheries, began the stocking of many lakes and streams not heretofore inhabited by fish; market fishing for hotels and camps in waters near these tourist centers was prohibited in order that angling might be better sport for the park visitor; new trails radiating in all directions from the hotels and camps were constructed; and other preparations and plans for the rapid development of the more general public use of Yellowstone Park were formulated.

The concessioners will now be required to encourage stop-overs in the park by offering side trips from the hotels and camps to points on the new trail system, boat trips, fishing trips, visits to interesting points, such as the Petrified Forests, the Buffalo Farm, Jackson Hole, and the Cooke City region. Mountain climbing will be encouraged, and in the near future provision will be made for the establishment of golf links and tennis courts.

Yellowstone Park has tremendous recreational advantages that are only just beginning to be appreciated. It will take time, however, to convince the general traveling public that it is worth while to spend more than five or six days in this great playground.

"CONTROL" THAT DOES NOT CONTROL.

The possibilities of the Yellowstone region are so numerous that the mere thought of them inspires enthusiasm to begin their development, but when an officer of the National Park Service stops to consider what control the Interior Department and the Service have over this vast park his enthusiasm turns to discouragement and regret. The Department of the Interior controls the concessioners and prescribes the character of service that they must render to the public. It also authorizes the rates that may be charged for service. Its officers supervise the admission of automobiles to the park and the care of the wild animals. The water system and electric light plant at Mammoth Hot Springs are under the control of this department; so is the telephone system.

But here its authority ends. All road and trail construction is under the Engineer Corps of the Army, and the protection of the park is intrusted to soldiers. The Army engineers report to the Chief of Engineers in Washington; the commander of the patrolling troops reports through the commander of the Western Army Department to the War Department; the supervisor of the park reports to the Director of the National Park Service. The supervisor is supposed to be the executive of the park, yet he has no control over the improvement or the protection of his reservation. He understands the handling of tourist traffic, he knows the necessity for accomplishing improvement work with the needs of the traveling public constantly in mind, he is familiar with the problem of protecting the forests and wild animals of the park; nevertheless, unless the engineer officer and commanding officer of the troops voluntarily place themselves under his general jurisdiction, he can not formulate or carry out a proper administrative policy for the park, nor can he advise the National Park Service as to the manner in which the park is being operated. He can not even open the park at the beginning of the season, yet the Park Service is charged by the traveling public with every failure to make conditions for touring satisfactory. Engineer officers are changed every two or three years or more often, and the commanders of the troops and the soldiers themselves come and go under the orders of the War Department: there is no opportunity for these officers to gain a thorough knowledge of administrative methods of the National Park Service before they are moved on to other spheres of activity.

The War Department recognizes this and is especially anxious to rid itself of the duty of maintaining old Fort Yellowstone and providing for the protection of the park.

ONLY ONE WAY TO EFFICIENCY.

The National Park Service under the direction of the Secretary of the Interior is charged by the act establishing the bureau with the "supervision, management, and control" of the national parks, including Yellowstone, but this Service has no effective control of this important member of the park system, because it can not control, supervise, or manage its protection or its improvement. This, in a single sentence, describes the status of the government of the Yellowstone to-day. The park may be likened to a great three-headed monster which is difficult to manage anyway because of its great size, but uncontrollable because of the diverse activities of its three heads. Legislation designed to remedy this unfortunate and really serious situation should receive the early consideration of the National Legislature.

In all of the other national parks, with the exception of Crater Lake, where road construction is also under the Engineer Corps of the Army, full powers of "supervision, management, and control" are exercised by the Interior Department.

THE PARK TELEPHONE SYSTEM.

During the past year the Service has devoted much attention to the improvement of the telephone system. Many miles of the system have been reconstructed, and some additions to the lines have been built. This work is still in progress. It is essential that excellent telephone service be maintained at all times in order that the various

patrolling stations in the park may promptly report to headquarters all forest fires, accidents, violations of the rules and regulations, and conditions generally in the outlying sections of the park. This work of reconstruction should be continued until the entire telephone system is rebuilt. From a financial standpoint the telephone system is also entitled to consideration as an important public utility.

FIRE LANES AND SCENIC TRAILS.

The Service has also maintained several hundred miles of fire lanes and has constructed numerous additional lanes. These lanes are built on a very satisfactory grade and will splendidly serve the purposes of a tourist trail system. They lead into the great scenic sections of the park, out to lakes and streams teeming with fish, far away into the foothills of the Absoraka Range, where the herd of wild buffalo ranges, into regions of strange geological formations, and they afford park tours touching the same important points of interest that the road system includes. We may now invite the traveler to visit the Yellowstone and offer him the choice of an automobile tour of the great park or a horseback trip over the fire-lane system, where there is greater opportunity for communion with nature, its wild flowers, its trees, and its rippling streams, where wild animals, gentle and unafraid, are to be seen in abundance, and where all is fresh and calm and beautiful.

Next year, it is proposed to build a broad new trail around Lake Yellowstone, penetrating the moose country and another region of striking scenery. This trail will also make a remarkable fishing territory readily accessible.

OPENING OF THE SOUTHERN GATEWAY.

The road system of Yellowstone National Park consists of 278.8 miles of automobile highways and 24.75 miles of secondary roads. The system includes 106.5 miles of road in the forest reserves east and south of the park. Improvement of the road system was continued during the year, and hard surfacing of the main roads was begun under an initial appropriation of $20,000. The completion of the road in the Shoshone National Forest east of the park made possible the opening of the scenic Cody or eastern gateway, which the Burlington Route has developed by the establishment of through train service to Cody, connecting with the automobile transportation line to the park. The road in the Teton Forest south of the park has opened the wonderful Jackson Hole country, with its beautiful lakes and its imposing mountains of the Teton Range, great, jagged, snow-covered peaks that rise perpendicularly from the surface of the lakes in the valley. During the 1917 season, for the first time, automobiles were operated from the Lake Hotel to the Jackson Hole on a regular schedule.

With the opening of the southern gateway the park came to possess four entrances and four great feeders to the "loop" road system connecting the important points of interest. Two of these feeders in the adjacent forest reserves, as I have pointed out, are maintained as a part of the park road system on the correct principle that as they are used almost exclusively by visitors to the park their

maintenance should not be placed as a burden upon the counties in which they lie, counties that are only sparsely settled and contain little taxable property in proportion to their size.

The status of the roads in Montana leading directly to the north and west gateways is similar in many respects to those of the Wyoming feeders, and it is a question as to whether or not Federal aid should be authorized in the maintenance of these roads which are used principally by park tourists. This matter invites thorough investigation because the exceedingly heavy motor traffic on the north and west approach roads has impaired them, and is each year placing a heavier maintenance burden upon the counties in which they lie. The ability of these county organizations to bear this burden is the phase that deserves serious study.

In this connection it is proper to state that there has been at all times perfect cooperation between the State authorities of Montana and Wyoming and the National Park Service in protecting the park interests and in making conditions attractive for travel to the park. The municipalities of the two States have been active in providing free automobile camps for the use of motorists. The State game commissions of the two States have actively assisted in the protection of the wild animals of the park in the seasons when they have been driven from their natural habitats by stormy weather. The State and county highway authorities have rendered consistent aid in improving road conditions. Relations have been most harmonious.

GREATEST WILD ANIMAL SANCTUARY.

The killing of wild animals, except predatory animals when absolutely necessary, is strictly forbidden in Yellowstone Park by law. The park is therefore the greatest wild-animal sanctuary in the world. We endeavor to refrain from calling it a game sanctuary, because park animals are not game in the popular sense of the term. The park is, however, the great source of game supply for the surrounding territory, and the States of Wyoming and Montana have wisely sought to assist in the protection and control of this supply.

The State of Wyoming for many years has pursued a broad policy of game conservation, with the result that wild animals are carefully protected not only in the park region but in all sections of the State. Another result is that hunting may be permitted in proper seasons on State lands without impairing the game supply, and to the delight and satisfaction of the sportsman. On the other hand, Montana is rapidly developing a similar policy of game conservation, and the State game warden is cooperating with the National Park Service in the protection of animals in the region adjacent to the north and west boundaries of Yellowstone Park. Each State has established game refuges immediately along the borders of the park, thus increasing in an important degree the protection afforded their game. The cooperation of the two States was particularly valuable during the past winter when snows almost unprecedented in the history of the Northwest drove thousands of elk, antelope, and other animals beyond the park boundaries. Park rangers, State game wardens, and forest rangers carefully watched them through the long period of recurring storms, and every effort was made to prevent the loss of these wandering and hungry animals.

All of the animals that could not find sustenance and were accessible to the park authorities, particularly the bighorn sheep and deer and the antelope, were fed hay during the period of heavy snowfall in extremely cold weather.

EFFECTIVE WINTER CARE OF THE ELK.

There was little loss among the animals to which this special care was given. The death rate among the very old and very young animals was higher, because of loss of strength from long conflict with the elements rather than from hunger. Large quantities of hay were also fed to the accessible elk, but the elk loss was considerably larger than that sustained by the herds of other animals, because they wandered over many square miles of territory outside of the park and ranged in localities far from the roads and beaten paths. It is important, however, to observe that the percentage of loss in herds of domestic animals in the region surrounding the Yellowstone was considerably greater than the loss in the elk herds.

I have dwelt upon this care of the animals during the long, cold winter, because there was severe and unjust criticism of the National Park Service on account of losses that occurred in the elk herds. The Service, and even the department, were arraigned for the alleged neglect of their charges, and many demands were made even after the worst storms had passed that the wild animals should be fed forthwith. As a matter of fact, all of the animals that needed feed and could be reached were fed, and every other precaution to save them from death or injury was taken. Furthermore, all the hay stored in the park was used and then all supplies elsewhere available were purchased and carefully rationed out to the animals. The effectiveness of this work is best indicated by the relatively small actual losses.

There is no ground for adverse criticism, because all was done for the animals that it was humanly possible to do. In this connection, commendation is due the park ranger force for the efficient work accomplished. The members of this force braved tremendous hardships at times during the winter while engaged in watching the animal herds.

The spectacle of the wild animals in the snows of the Yellowstone in winter is one of the most interesting that one can imagine. In 1916 excursions to the park for wild animal observation were offered by the Northern Pacific Railroad, and were very well patronized. The extreme cold and fierce storms of the past winter, however, made the operation of excursions of this character inadvisable.

Many fine photographs of the animals in the Gardiner Canyon during the winter storms have appeared in various magazines during the year and have attracted much attention.

ELK DISTRIBUTED TO STATES.

In the winter it is not difficult to catch the elk. The Service accordingly makes a practice of allotting these animals to States, counties, municipalities, and other governmental organizations and public institutions for exhibition purposes where their future protection is assured. This practice has obtained for several years. During the past year 496 elk were shipped from the park. Many more will be shipped during the winter that is approaching. Approximately 300 head have already been allotted.

BISON HERDS INCREASING.

The bison herds in the Yellowstone continue to grow apace. The tame herd now numbers 330 animals, and the herd of wild bison, the only herd of its kind in the world, numbers 67. This latter herd ranges in the east-central part of the park on the headwaters of the Lamar River and in other valleys close to the base of the Absoraka Range.

The report of the park supervisor on page 131 contains much interesting data on the wild animals of the Yellowstone.

THE EASTERN GATEWAY.

During the summer of 1916 the opening of the scenic Cody gateway of the park was the sensation of the season. The marvelous grandeur of the Shoshone Gorge, the Shoshone Dam, the second highest structure of its kind in the world, the beautiful lake that it forms, the fantastically carved canyon of the North Fork of the Shoshone, Sylvan Pass in the Absorakas, and the beautiful vistas to be obtained all the way from Sylvan Pass to Lake Yellowstone, surprised and overwhelmed the hundreds of visitors that selected this new route into the park. This route was still more popular during the 1917 season.

CLIMAX OF YELLOWSTONE SCENERY.

During the season of 1917 the scenic southern gateway was formally opened to the traveling public by the establishment of the new scheduled automobile service to the Jackson Hole from the Lake Hotel, of which mention was made in the discussion of the park road system. The scenery of this beautiful region is vastly different from that of the territory east of the park through which the Cody road runs, but it stands shoulder to shoulder with it in quality. The splendid scenery of both may only be described by profusely using superlatives. The road into Jackson Hole leaves the main road system at the West Thumb of Lake Yellowstone and proceeds in a southerly direction over the Continental Divide down through a forest of unusual density; thence along the shore of Lewis Lake, nestled in the timber and well stocked with fish; thence across the Lewis River below a point where the stream roars down a gorge forming two splendid waterfalls, the upper 80 feet and the lower 50 feet high; and thence across the Pitchstone Plateau to the southern gateway on the Snake River.

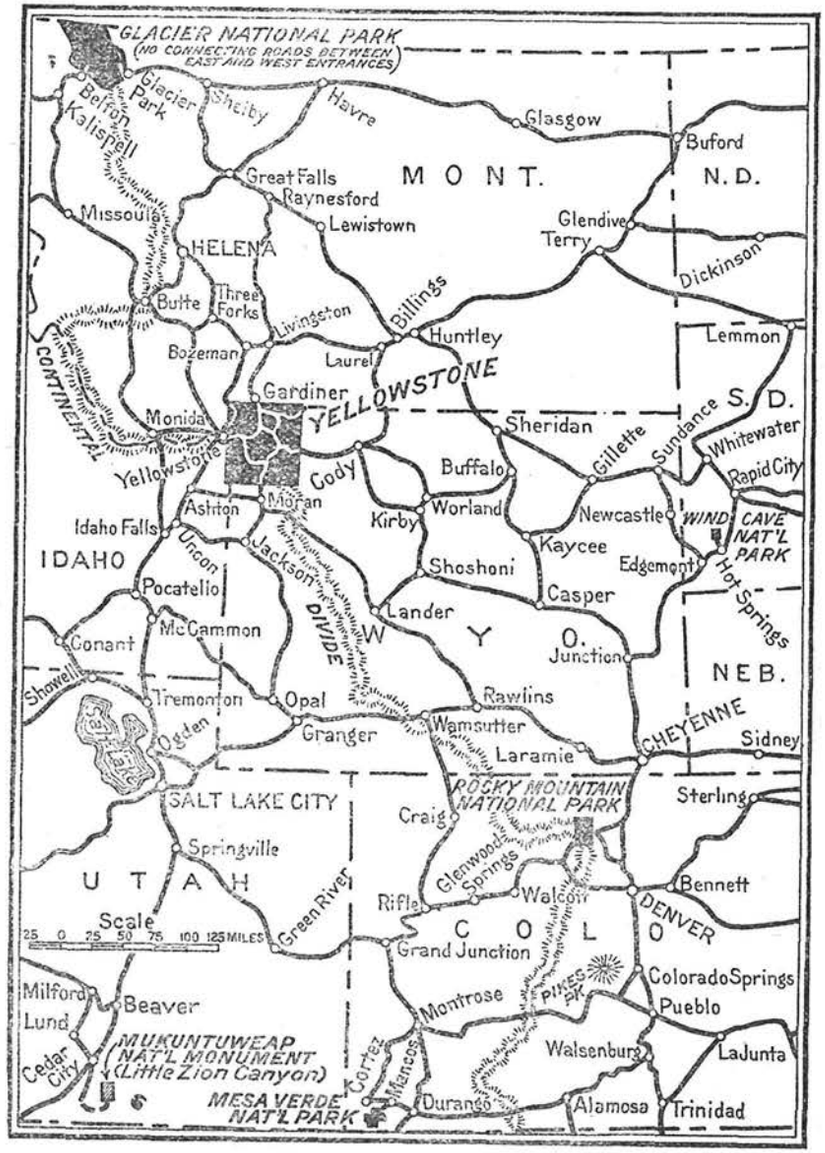
From this point the road proceeds down the picturesque valley of the Snake to beautiful Jackson Lake at the base of the Teton Mountains. A striking portion of this range, including Mount Moran and the Grand Teton, towers above the lake in astounding magnificence.[1]

All who took advantage of the opportunity to visit this region during the summer were thrilled by its splendors. One traveler of large experience made the statement that this was "the climax of Yellowstone scenery." Another said the region was "more wonder-

[1] See picture of Mt. Moran and Jackson Lake in this report.

ful than Wonderland (meaning Yellowstone) itself." All who gave the status of the region any thought declared that it should be added to the park.

This is precisely our view of the destiny of the Jackson Hole. A suggested boundary for this addition embraces the Teton Range to



MAP SHOWING THE POSITION OF YELLOWSTONE, GLACIER, ROCKY MOUNTAIN, AND MESA VERDE NATIONAL PARKS, AND MUKUNTUWEAP NATIONAL MONUMENT, WITH PRINCIPAL CONNECTING ROADS.

and including the Grand Teton and the road from Victor, on the Union Pacific system; thence it follows along the hydro-

north of Buffalo River, thence to the Continental Divide, thence around the headwaters of the Yellowstone to the east boundary of the park. The area described by this line is not large, and its inclusion in the park should receive the early consideration of Congress.

The principal roads in this region are already being reconstructed and made ready for heavy automobile travel. In the meantime the Wyoming authorities are improving the highways running northwest from Rawlins and Lander and north from Granger and other points in southern Wyoming. Of the projects involving additions to national parks, this proposed Jackson Hole addition to the Yellowstone is one of the most meritorious.

THE NORTHWESTERN ROUTE TO THE YELLOWSTONE.

Another gateway that deserves more attention than has been given to it in the past is the northwestern entrance from Bozeman, Mont. The road from Bozeman leads up the Gallatin River through a splendid scenic region and connects with the main road system of the park at the western gateway. Automobile parties following this road from the west gateway or the main highway from Livingston on the north to Bozeman will find little difficulty in making an interesting trip to the Lewis and Clark Cavern National Monument, near Sappington, Mont. It is planned next season to open this cavern for the inspection of the traveling public. It is one of the most extensive caves in the United States.

REGULAR TOURIST TRAVEL SUBSTANTIALLY INCREASED.

Yellowstone Park enjoyed a heavy tourist patronage during the 1917 season, substantially exceeding that of the preceding summer. A comparison of yearly totals shows a slight advantage in favor of 1916 over 1917, which was attributable wholly to the special wild animal excursions during the early spring of 1916. These trips, as I have explained, could not be repeated in the spring of the current year because of the intense cold and unusually deep snows. The legitimate summer travel of this season, however, exceeded that of last year, and the increase in private automobile travel to the park this year is particularly gratifying. Cars to the number of 5,703 entered the various gateways of the park this season, as against 3,445 in 1916. Tables analyzing the Yellowstone travel are printed in the report of the acting supervisor of the park on page 117. The tables on page 191 show the yearly increases in the number of visiting automobiles since motor traffic was permitted in 1915; also the increase in automobile revenue which, of course, means better highways in the park.

Hundreds of motoring parties entered the park with their own equipment and supplies, and camped near the lakes and streams or in the public automobile camps which are maintained by the National Park Service. Many other parties toured the park in their private cars, stopping each night at hotels or permanent camps.

FREE AUTOMOBILE CAMPS ESTABLISHED.[1]

The free public automobile camps are located at Mammoth Hot Springs, Upper Geyser Basin, Yellowstone Lake, and the Grand

[1] See picture of automobile camp in this report.

Canyon. In each of these camps there is a spacious structure for the shelter of cars, plenty of water for drinking and cooking purposes, grates to be used for cooking, and toilet facilities. The camps are policed by park employees and a small truck is used for carrying away garbage and keeping the camping grounds strictly sanitary. This system of free automobile camps will be extended in the park as the demand for them increases. The continued improvement of roads leading to Yellowstone Park from eastern points and the complete establishment of the park-to-park highway will tremendously encourage the automobile travel in the park.

YELLOWSTONE RAILROAD ROUTES.

Railroad traffic to the park this year was somewhat less than that reported last year, but was nevertheless gratifying. Three railroads reach Yellowstone. The terminus of the Northern Pacific is at Gardiner, Mont., which is reached by travel over the main line of the Northern Pacific to Livingston, Mont., thence up the scenic canyon of the lower Yellowstone River to the park boundary. The ride from Gardiner, the northern gateway, to Mammoth Hot Springs through the Gardiner Canyon is also very interesting. The famed Eagle Nest Rock is in the Gardiner Canyon and a herd of park antelope usually range on the meadow between the mouth of the canyon and the north boundary. It is in this region that the wild animals gather in the winter time. The Northern Pacific line to the park was the first to be established.

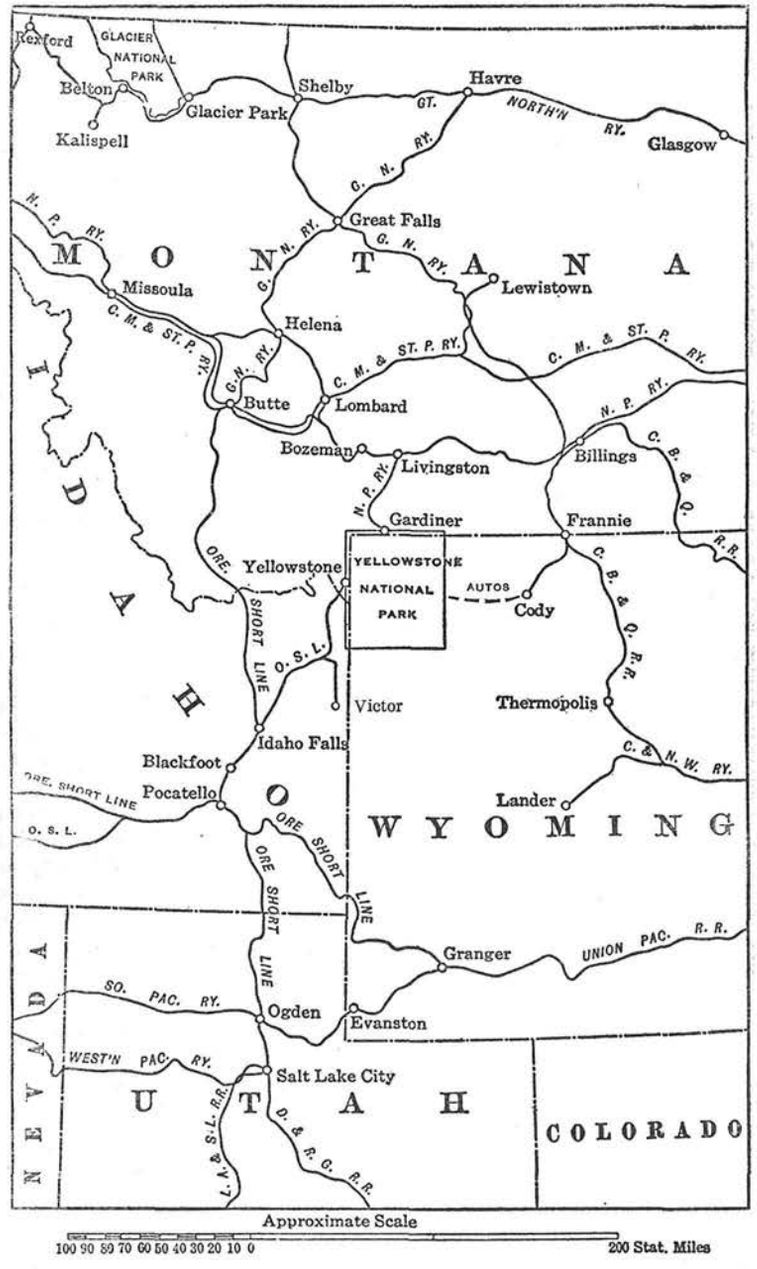
The second oldest line is the Union Pacific branch line to the western gateway at Yellowstone, Mont. Trains from the east connect with this line at Ogden, Utah, but usually the traveling public prefers to visit both Ogden and Salt Lake City in connection with the Yellowstone trip. The line to the western gateway is also scenic, particularly the Reas Pass section of the route where the railroad crosses the Continental Divide. The ride from Yellowstone, Mont., up the Madison River to the junction of the Gibbon and the Firehole Rivers, which form the Madison, is most attractive. At this point the western gateway road connects with the main road system.

It is also worthy of note that in connection with the park trip through the western gateway connection may be had at Salt Lake City with the Salt Lake Route for Lund, Utah, at which place an automobile line is prepared to carry passengers into the beautiful Zion Canyon, Mukuntuweap National Monument. Connection may also be made at Salt Lake City and Ogden with the Denver & Rio Grande lines for Mesa Verde National Park, the Royal Gorge, etc.; also with the Southern Pacific and Western Pacific lines for California and with the Oregon Short Line subsidiary of the Union Pacific for the Northwest.

The third railroad route to Yellowstone National Park is the Burlington Route, with terminus at Cody, Wyo. From Cody the scenic trip to Yellowstone Park is made as described elsewhere in this report.[1] Cody may be reached from two directions, via the Burlington route. One line, from the southeast, passes through Edgemont, S. Dak., where connection may be made for Hot Springs, S.

[1] Page 37.

Dak., and Wind Cave National Park, thence through Sheridan, Wyo., near the Devils Tower National Monument and the Big Horn Moun-



MAP SHOWING RAILROAD ROUTES TO YELLOWSTONE AND GLACIER NATIONAL PARKS.

tains, thence through Billings, Mont., to Cody. The other line runs north from Denver and Cheyenne to Caspar, thence down the bril-

liantly colored and fantastically carved Wind River gorge through Thermopolis, where there are hot springs possessing recognized curative properties and a State zoological park, and on to Cody. The two Burlington lines join at Frannie, Wyo., in the Shoshone reclamation project, one of the largest and most successful of the Government reclamation enterprises.

REAL RAILROAD COOPERATION.

These three railroads interested in promoting Yellowstone travel have authorized the sale, during the park season, of round-trip excursion tickets covering railroad transportation to the park via the lines of any one of these roads and return via the same route or via the lines of one of the other two routes. Thus during the 1917 season, as I stated on page 32 in connection with the motorization of intrapark transportation, visitors to Yellowstone Park for the first rime had the privilege of entering the park at one entrance and leaving it at any one of the other gateways, except, of course, the southern gateway, which has not as yet been developed as a railroad entrance.

GLACIER NATIONAL PARK.

The outstanding features of the Glacier National Park season are:

First, the vast improvement in the road and trail system that has been effected under congressional appropriations.

Second, the increase in tourist patronage.

Third, the growth in popularity of the park as a summer resort, as evidenced by the return for another season of a large number of visitors of previous years and a substantial increase in the average length of time spent in the park by its visitors.

The appropriations for the 1917 fiscal year and for the current year for Glacier National Park have been sufficiently large to make it possible for us to accomplish much in the way of improvement work in all directions.

The road system on the east side of the park, which connects the various hotels and chalets of the Glacier Park Hotel Co. with the Great Northern Railway at Glacier Park station, as originally constructed, has been in very poor condition, and prior to the 1917 season this side of the park was rarely opened for tourist travel at the beginning of the season, because it was impossible to place the roads in condition for automobile traffic. Each year improvement was made, but there never were sufficient funds available in any one year to carry the work forward far enough to make travel conditions satisfactory.

The appropriation available for the last fiscal year was $110,000, for the current fiscal year, $115,000. With these funds it has been possible to improve the road systems on both sides of the park. The system on the east side has been largely rebuilt. The crossings of the river bottoms and lowlands have been filled to a sufficient depth to lift the road out of the mud and water in stormy weather. Bridges and culverts have been constructed, curves have been eliminated, grades realigned, and many miles of the system have received a graveled surface.

This improvement work has made tourist travel by the regular transportation line safe and, from the visitor's point of view, comfortable and delightful. On the other hand, conditions for private motor travel have been better than ever before.

ROAD IMPROVEMENT AND RECONSTRUCTION.

No new road construction was undertaken during the season. Extension of the road system, however, is now desirable, and when one takes into consideration the increase in tourist travel in the park he finds it absolutely necessary. As Director Mather pointed out in his "Progress in the Development of National Parks," issued a year ago, road extension in Glacier Park should proceed in two important directions. From Lake McDonald on the west side of the park one road should be constructed in a northerly direction up the McDonald River Valley through the Granite Park region and over Flattop to Waterton Lake. The other road should be constructed across the Continental Divide, thence through one of the beautifully glaciated canyons, to make a connection with the main east-side system.

IMPORTANCE OF A ROAD ACROSS THE CONTINENTAL DIVIDE.

Of these two road projects the latter is, of course, the more important, because it would join the highway systems of the two sides of the park, thus making it possible for motorists to reach the beautiful regions of the higher mountains, and to afford them a crossing of the range without the difficulties and expense of shipping their cars between Belton and Glacier Park stations on the railroad or accepting the alternative course of driving several hundred miles southward to the nearest automobile road over the Rockies.[1] This addition to the Glacier Park system would also form a very important link in the park-to-park highway system. It is very discouraging to motorists who visit Glacier Park with the intention of seeing both sides of its extraordinary mountains to find, when they arrive at one or the other gateways, that there is no road over the mountains and that they either will have to ship their cars from one side to the other or make a detour of several hundred miles in order to reach the road system of the opposite side. It is also discouraging to elderly people and the class that can not endure long walks or rides to reach the park and find that they really can not move a very great distance from the hotels reached by the automobile.

An estimate for the appropriation of sufficient funds to survey a feasible highway route through one of the passes of the park and to cover all expenses incidental to the preparation of all plans for this road project will be submitted to Congress for its consideration in the next session. When a feasible route across the mountains has been determined and the project completely planned, the department will be in a position to advise Congress as to the cost of this trans-mountain road.

[1] See map showing position of Yellowstone, Glacier, Rocky Mountain, and Mesa Verde National Parks and Mukuntuweap National Monument with principal connecting roads, p. 38.

LAKE M'DONALD ROAD A PRIME NECESSITY.

Prior to the construction of the road over the mountains or the road through the park to Waterton Lake, it will be necessary to complete a road along the shore of Lake McDonald to the Glacier Hotel at the head of the lake. This is an important link in both of the big road projects. Among other convincing reasons, it is necessary that this road should be built as soon as possible in order that motorists visiting the west side of the park may reach the Glacier Hotel and avail themselves of the accommodations of this excellent resort. At the present time it is impossible to go within 9 miles of this hotel, and all visitors to the park find it necessary to leave their cars at the foot of the lake and then take the boat across the lake to their destination. It would be impossible to overestimate the importance of this proposed Lake McDonald road.

Another road project, very important but smaller than those just discussed, contemplates the continuation of the Cutbank road several miles up the beautiful Cutbank Valley to a point where a new chalet will be built.

MANY NEW TRAILS.

The extensive trail system has also been improved and several miles of new trails have been constructed. The important new trail connecting Glacier Hotel on Lake McDonald with Granite Park Chalet was completed during the season. The construction of a new trail connecting Granite Park Chalet with Sun Camp, via Logan Pass, and a connecting trail to the Glacier Hotel, was begun and will be finished next summer. Several other important new trails will be completed this autumn.

Many new foot trails leading from the various hotels and chalets to scenic points in their immediate vicinity were built and made available for use this year. The most important of these trails lead from the Granite Park Chalet to points where thrilling vistas of the finest mountain scenery may be obtained. One of them proceeds for a considerable distance (2½ miles to Gould Mountain) along the Garden Wall on the very crest of the Continental Divide and from it one may step directly onto the Grinnell Glacier, one of the safest and most interesting glaciers of the park. It is proposed to continue this trail along the Garden Wall for several miles. Another new trail gives access to Swiftcurrent Mountain from whose summit, after a brief and easy climb of less than an hour. one may view the whole of Glacier National Park and portions of the Canadian Rockies on the north, the Blackfeet Indian Reservation on the east, and the American Rockies outside the park limits on the south and west.

Serious forest fires which threatened to destroy large areas of timber on the west side of the park necessitated the rapid construction of many miles of new fire lanes and secondary trails during the summer. The construction of these trails made it possible to rapidly move fire-fighting crews, equipment for combating the fires, and miscellaneous supplies for use in this work. These trails will hereafter be kept in repair as part of the general trail system. Some of them reach scenic regions which heretofore have been almost inaccessible, and these later will be improved and made a part of the general tourist trail system.

VISITORS GROW IN NUMBER AND STAY LONGER.

The increase in tourist travel to Glacier Park during the past season was notable. Our records show that 15,050 visitors visited the park prior to October 12, as against 12,839 in 1916. There was an increase in travel by rail as well as by private machine. I may go still further and say that of those who came to the park by both rail and automobile there was a larger percentage who availed themselves of the privileges of walking and riding over the trails than there was in previous years. Walking on the trails was particularly alluring this summer because of the weather conditions. The trails were in a better state of repair than ever before; there was little rain during the season. On the other hand, tourists availed themselves of the improved conditions for horseback riding and there appears to have been more general use of horses than during any other season in the history of the park.[1]

During the past year the saddle-horse concession has been reorganized and developed under a new franchise from the department. Much new equipment and many additional saddle horses have increased the capacity of the trail transportation company to meet the demands of the increasing throngs of visitors.

During the past two or three years it has been evident that the visitors to Glacier National Park have not been in a hurry to leave this beautiful region. Parties that had come to spend a few days remained for weeks, and those who had arranged for a few weeks in the park have let their visits extend into months. This year the average length of time spent in the park by visitors has been longer than the average of any previous year. Visitors made a practice of going from one hotel to another on one side of the park, then crossing over the mountains on the railroad or on the trails and visiting the resorts of the opposite side; often they have moved back and forth across the mountains several times in the course of their sojourn in the park.

Chalets in the higher mountains have been more popular than ever with this class of visitors during the past season. This is particularly true of the Granite Park Chalet, located just west of Swiftcurrent Pass, in a region where all of the highest and noblest peaks of the park may be seen in one glorious panoramic view. I saw Granite Park this summer when its whole surrounding region was spattered with snowfields. The scenic spectacle was as fine as anything I had ever witnessed in the mountains, and the development of the trails, as already described, has begun to open up the charms of the region. The Granite Park chalets are connected by trail with the Glacier Hotel, on Lake McDonald, and with the Many Glacier Hotel, on Lake McDermott. When the new Logan Pass trail is completed there will be direct connection between Going-to-the-Sun Camp and Granite Park.

GLACIER AN EXAMPLE FOR YELLOWSTONE.

Popularity of the character which Glacier Park now enjoys is precisely the sort of thing that we want to obtain for Yellowstone and other parks. We want the traveler to come into all of our great

[1] Note picture in this report.

playgrounds with the idea of staying as long as possible and exploring all their beauty spots. And we want him to come back again and again to these playgrounds and get new pleasures and renew the delightful thrills of former trips; thus will he upbuild his strength and health for the months when he can not heed the call of the mountains.

Glacier and Rocky Mountain National Parks now have a large number of faithful friends that return to them in summer just as regularly as vacation time comes around. Yosemite Valley, the Giant Forest in Sequoia National Park, Paradise Valley in Mount Rainier, and particular localities of other national parks enjoy a similar popularity, but in a smaller degree. We are doing all that we can to encourage the visitors to these other parks to explore those vast areas of mountains, canyons, forests, and streams which are as yet little known and go back to them again and again.

NATIONAL PARKS ARE NATURE'S OWN SCHOOLS.

Glacier Park has long been a favorite park for exploration by students of various sciences in the colleges of the country. The classes in geology from one large Middle West university make a practice of visiting Glacier Park each year. During the summer of 1917 these classes were in the park as usual.

It is our hope to encourage the general use of all of the parks as great fields for scientific study. Parks like Glacier, Yellowstone, Mount Rainier, Yosemite, and Sequoia afford unparalled opportunities for the study of the natural sciences—geology, physiography, botany, forestry, and all the rest, and nowhere can the study of archæology and anthropology be pursued with greater interest and satisfaction than in parks like Mesa Verde and Casa Grande, and in monuments such as Montezuma Castle, Chaco Canyon, Navajo, Tonto, and Bandelier.

CONVENIENT FOR STUDY OF INDIAN LIFE.

Another feature of Glacier National Park that is most interesting to its visitors is the Indian life to be observed along its eastern border. The Blackfeet Indians, one of the sturdiest and most vigorous of all the tribes of the Northwest, live on their reservation just east of the park, and side trips from several of the hotels will bring one into the very center of the Blackfeet settlement. Occasionally small bands of Indians cross the park borders, taking with them their picturesque tepees and establishing camp as their old men and forefathers did in the days when all of the park east of the Continental Divide was part of their reservation.

In this connection it is interesting to consider the opportunities for observing the life of the various tribes of Indians on their reservations while touring the national park system. The Crow and Wind River Reservations are not far from the Yellowstone; the Blackfeet Reservation adjoins Glacier Park; the Yakima Reservation is near Mount Rainier Park; adjacent to Crater Lake Park is the big Klamath Reservation. The Digger and other Indians may be seen in the Yosemite Park. A trip to the Mesa Verde takes one through the Southern Ute and Jicarilla Apache Reservations, and not far to the

Southwest lies the country of the Moquis and Navajos. It is a most interesting thing to study the life and growing civilization of the Indians tribes as one travels from park to park.

ROCKY MOUNTAIN GOATS AND OTHERS.

The Blackfeet Indians near Glacier Park, however interesting they may be in the summertime, make administration of the east side of the park difficult at other times of the year. These Indians insist that their treaty rights entitle them to kill the park animals when they wander over the east park boundary, driven by the storms originating in the high mountains. And each year they do kill large numbers of bighorn sheep, Rocky Mountain goats, elk, and deer. The Office of Indian Affairs and the National Park Service are cooperating to discourage this unlawful slaughter of the park animals. It is hoped that the practice will soon be stopped entirely.

The wild animals of the park are annually increasing in numbers and are becoming tame. It is a rare occasion when a visitor to the park does not see two or three different species of wild animals on a trail trip. The picturesque Rocky Mountain goat is the animal that attracts more interest and furnishes more delight than most of the other animals, and "Rocky M. Goat," as Mr. Yard in his book "The top of the Continent" calls him, is becoming each year less afraid of the tourist and hence more frequently visible along the trails and footpaths.

BOATING AND FISHING.

Boating has always been an important source of pleasure to the visitor to Glacier Park. Boats have been operated on Lakes McDonald, two Medicine, St. Mary, and McDermott for several years. This year the sport of boating on Lake McDermott became so popular that we have arranged to make Lake Josephine accessible from McDermott, and next year boating enthusiasts in the Many Glacier region will find their pleasure waters more than doubled in area.

Fishing in the park was better than ever during the 1917 season. Lakes that were stocked several years ago are now furnishing exciting sport for the angler. Glacier Park is peculiarly fitted by nature to be a great trouting resort, and the Service is now considering plans, in cooperation with the United States Bureau of Fisheries, for a trout hatchery within the park. If these plans are consummated large quantities of trout will be distributed to all of the accessible lakes of the park, and there will be no difficulty in keeping them stocked hereafter.

Other improvements in the park during the year include the construction of a large addition to the Many Glacier Hotel on Lake McDermott and the erection of additional accommodations at the Glacier Hotel on Lake McDonald. The improvement of the saddle-horse service under a new concession from the department by the purchase of many new horses and the addition of much new equipment was an important forward step. The new saddle-horse concession was granted under a contract which provides for compensation to the Government on a profit-sharing basis. Twenty-five per cent of the net profits accrue to the Government during the first three years of the period of the contract and 50 per cent thereafter.

PROPOSED DEVELOPMENT AT BELTON.

During the year a tract of 160 acres of patented land on the north bank of the Flathead River, directly opposite the railroad station of Belton at the western gateway, was purchased and donated to the Government for use as an administrative site. This tract was the gift of Director Mather. A new and attractive administrative village will be constructed on this site, and ultimately it is hoped that a bridge of dignified proportions and in complete harmony with the environment of the region may be constructed across the river at this point. Proper administration buildings for Glacier National Park are desperately needed. At the present time the supervisor's office is located in the woods on the west shore of Lake McDonald; it is almost inaccessible to the traveling public and very difficult to find unless the seeker for information is conducted to the administration cabin by some party who is well acquainted with the park. The reason why the quarters were established at this undesirable place was due solely to the fact that all of the land between the Flathead River and the foot of Lake McDonald is held in private ownership; even the Government road through the beautiful forest connecting Belton and the foot of the lake traverses private holdings.

This strip of road, while short, is one of the most scenic highways in the national park system on account of the forest growth through which it runs. Efforts are now being made to effect an exchange of timber under the authority of a recent act of Congress which provides that lands along roads in this particular section of the park may be exchanged for timber or timber and lands of approximately equal value in other portions of the park or in the national forests of Montana. The text of this act will be found on page 225. If a satisfactory exchange can be effected the scenic character of the Belton-Lake McDonald road will be forever preserved.

RAILROAD FACILITIES.[1]

Glacier National Park is reached by the Great Northern Railway. In fact, the main line of this railroad forms a portion of the south boundary of the park. Two first-class trains are operated on a fast schedule from the east and west each day. The Burlington Route also operates a first-class train daily from the east and south over its own lines to Billings, Mont., thence over the Great Northern Railway to the park on to Puget Sound.

There is much travel between Glacier and Yellowstone National Parks but the schedules of trains operating between the two parks do not afford opportunities for a very comfortable trip in either direction. It is particularly inconvenient to go between the two parks by way of Helena, as it is necessary to arise at 3 o'clock in the morning to board the Helena train at Livingston. Of course, the sleeper may be taken to Butte, where connections may be made for a train to Helena, but if one wishes to go on to Glacier Park the same day, or to Yellowstone if he is coming from the other direction, he will have no opportunity to stop in Montana's capital for longer than a few minutes. The route via Billings is more convenient. It is to be hoped that the tourist traffic between the two parks will soon be

[1] See map showing railroad routes to Yellowstone and Glacier National Parks, p. 41.

such as to justify the establishment of a through service connecting the two parks, either by way of Billings or via Helena and ultimately by way of both cities.

MOUNT RAINIER NATIONAL PARK.

It is difficult to imagine a splendid new hotel with every modern convenience, located in one of the most beautiful spots in the world and filled to capacity with guests, and yet completely surrounded by snow from 4 to 10 feet deep. It is more difficult to conceive of such a picture upon July 15. One naturally thinks that the date, at least, must be mistaken. Nevertheless, the hotel I have in mind, a beautiful new structure erected last autumn in Paradise Valley, Mount Rainier National Park, was opened for the season and thronged with visitors long before July 15, with snow heaped from 6 to 14 feet deep around it. On July 15 I saw this hotel surrounded by snow which then had an average depth of 4 feet.

Why was the hotel opened? What was there for its guests to do in this snow-bound place?

WINTER SPORTS IN SUMMER.

My answer is that they were engaging in winter sports. The management of the new hotel provided large quantities of skis, snowshoes, toboggans, and specially-made sliding trousers for men, women, and children, and all went out into the snowdrifts for the best fun and most thrilling experiences that one could enjoy anywhere at any time of the year. Experienced guides were employed to teach the various sports and the use of the winter equipment necessary. Everyone, young and old alike, went out into the snow and played until sheer fatigue drove them into the hotel lobby, where a cheerful fire was always burning in the great fireplace. The young people even tobogganed and skied for hours by moonlight. It was delightful to hear their happy cheers as they sped down the mountain sides.

Visitors to Paradise Inn, while the road to the hotel was closed by snow, reached the hotel by sleighs, snowshoes, or on horses made available at Narada Falls by the hotel concessioner. Strong waterproof boots for men and women were also available for those who cared to walk to the hotel over the snow. Parking space for machines was provided at Narada Falls, and rangers were placed at this point to regulate the traffic and protect the cars. The snow spectacle en route to the hotel was beyond description. I am sure that those who enjoyed Paradise Valley under these unusual circumstances will never forget their experiences.

"Winter sports in the summer time"[1] will continue to be a feature of the Mount Rainier National Park season. The hotel will always be opened before the snow melts, and appropriate announcement of the sports that may be enjoyed on the mountain will be made from time to time by the hotel management and also by the National Park Service.

It is proper to mention here that the Mountaineers, the great outdoor organization of the Northwest, snowshoed to Paradise Valley

[1] See picture in this report, "The Human Toboggan."

last New Year's Day and enjoyed winter sports in the winter time. The new hotel was opened for them, and the hardy members of this club found conditions as favorable for their sports at that time as the summer visitors found them in July. Opportunities for enjoying snow sports during the winter months are unlimited, but, of course, they should be promoted in the lower levels of the park rather than in the higher valleys.

REAL ACCOMMODATIONS AT LAST.

Striking improvements in Mount Rainier Park are in evidence all around the mountain. First in importance is the fine new hotel in Paradise Valley.[1] Next may be mentioned the picturesque new camp at the snout of the Nisqually Glacier. A new hotel has been built on the patented land at Longmire Springs, and this alienated tract has been cleaned up and improved in a manner that makes it impossible to recognize the old Longmire property. This hotel does not have as many facilities for accommodating guests as the National Park Inn across the road on Government land possesses, but it is a comfortable hostelry and I understand that it has been well patronized.

The Longmire Springs property should be owned and controlled by the Government. While there are other tracts of park lands in private ownership, the Longmire property is the only one that is absolutely needed for park purposes.

The National Park Inn has been operated under the management of former years and the service to guests at this resort this year has been up to the high standard of former seasons. This hotel is fully equipped with an electric-light plant, a refrigeration plant, clubhouse, etc.

The National Park Service has concentrated its improvement work entirely upon the road and trail system during the past year. Under an appropriation of $75,000, the largest ever made by Congress for this park, the entire road system, including the Storbo road, has been improved. The road from the southwestern gateway to Nisqually Glacier has been widened, graded, and surfaced, several new bridges have been constructed, and new culverts installed. The road beyond the glacier to Narada Falls and Paradise Valley has been somewhat widened, curves have been eliminated, parapets have been constructed, and the road throughout its length graveled and made entirely safe for automobile traffic. A large parking space has been cleared at Narada Falls for use when the continuation of the road to Paradise Valley is blocked with snow. In fact, the road above the glacier has been so much improved that the rule prohibiting the driving of cars above Nisqually Glacier by women and boys under 21 will be abrogated next season.

The trail system around the mountain has been much improved during the year. Miscellaneous construction work, including the erection of a residence for the supervisor at the southwestern or Nisqually River gateway, was accomplished.

THE CARBON RIVER ROAD.

In 1915 a survey for a road up the Carbon River Valley was completed and in 1916 a survey of the road through the southeastern

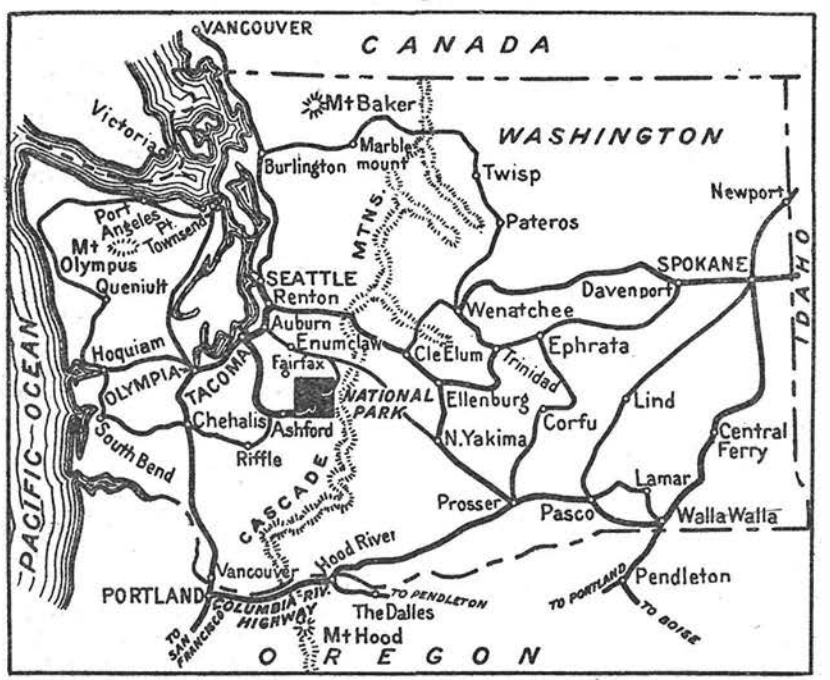
[1] See picture of new Paradise Inn in this report.

section of the park to Cayuse Pass was finished. This year a survey has been conducted to determine a feasible route for a road between the Carbon River and the road system in the southwestern part of the park by way of the west side of the mountain. This survey has not yet been completed.

Appropriations for the construction of the Carbon River road have not yet been made by Congress, but the project is receiving the serious consideration of the appropriation committees. It will be recalled that it was proposed to construct this road from the end of the Northern Pacific Railroad above Fairfax, Wash., to the snout of the Carbon Glacier. When completed, it will open a region of marvelous beauty. The forest growth will be one of the most attractive features of the new highway.

A PUBLIC MISFORTUNE.

Visitors to the Carbon River section in the past will regret to learn that the magnificent forest just outside of the park in the Fairfax direction has been entirely cut over during the past year. Not even the strip along the surveyed right of way for the Carbon road was left to preserve intact the sylvan beauty of the projected highway. Where an almost impenetrable forest stood there is now nothing but broken branches, tree tops, and stumps.



PRINCIPAL AUTOMOBILE ROADS IN WASHINGTON.

The havoc wrought in this beautiful forest raises again very vividly the question as to how the magnificent trees along the road between Tacoma and the park may be preserved. The beautiful

forest growth along this road is famed throughout the world and yet it stands every moment in danger of destruction. The owners of the trees can not be expected to allow them to stand forever and forever. They are very valuable in these days when there is such a demand for timber, and not even donations of strips of this timber growth to the Government can be expected. The public-spirited owners of the property are loath to cut the trees, but, unless arrangements are made for their preservation by purchase and donation to the Government or to the State, the timber will have to go. Therefore, there is time to save the trees, and all lovers of Mount Rainier and the beautiful road connecting it with Puget Sound should get together and see what can be done to meet the exigencies of the situation.

Mount Rainier National Park has long been known as the wild flower park, and this year the wild flowers appeared to grow in a greater abundance even than in past seasons. It was wonderful to see the luxuriant growth in little spots on the mountain where the snow had melted early but which were still surrounded by snowdrifts. In one small spot, approximately 10 square feet in area, I counted eight different species of wild flowers. A canyon a few yards from this spot contained a snow bank approximately 100 feet deep.

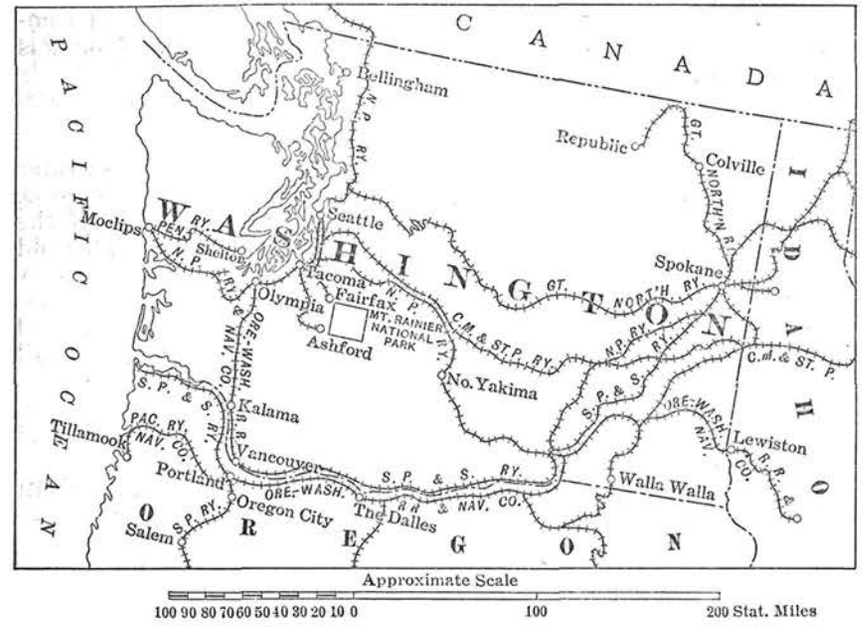
WANTED: BETTER GAME PROTECTION.

The animals of the park are increasing but rather slowly, because when they drift down from the higher altitudes in the autumn and wander outside of the park, as they are bound to do, they are killed in large numbers by the waiting huntsmen. A refuge for these wild animals should be established around the park in order that fall and winter grazing areas may be provided for them. Sanctuaries of this kind would give the animals the desired measure of safety, would make propagation conditions better, and would effect the very desirable result of making the animals less afraid of man. These wild-animal refuges should not be so large that all hunting in the vicinity of the park is completely cut off. They should be reasonable in extent. Their establishment would improve the game supply and make hunting within a few years better than it is to-day.

A few small additions to Mount Rainier National Park are also desirable. A small strip should be added to the southern part of the park. This should be sufficiently wide to include the part of the park road system that now lies in the adjacent forest and also the Ohanapecosh Hot Springs which are only accessible from the park trail system. It would also be desirable to add a reasonable area to the west side of the park in order that the forest growth and the wild animals in this region may be better protected.

The travel to the park during the year has exceeded all past records. Its tremendous increase was largely accounted for by the great influence of the motorist. The number of automobiles entering the park this year were 5,894, against 3,070 last year. The total tourist travel was 35,568, against 23,989 last year. Conditions for motoring in the park are better now than ever before, and we have every reason to expect that automobile traffic will continue to increase by leaps and bounds.

The railroads which reach the points nearest the park boundaries are the Chicago, Milwaukee & St. Paul, with terminus at Ashford, Wash., and the Northern Pacific, with terminus at Fairfax, near the northwestern corner of the park. Until the Carbon River road is built tourist travel via the Northern Pacific to Fairfax will be of little importance. As the Rainier National Park Co. operates an automobile line from Tacoma and Seattle to the park on daily schedule, the park is as readily accessible by this route as it is by the railroad lines. As I have indicated in another part of this report, Mount Rainier Park is on the National Parks Highway.



RAILROAD ROUTES TO MOUNT RAINIER NATIONAL PARK.

VIA COLUMBIA RIVER HIGHWAY.

In going from Mount Rainier Park to Crater Lake, either by automobile or train, the national park traveler should go through Portland, Oreg., and make the trip over the wonderful Columbia River Highway and enjoy the scenic grandeur of the gorge of the Columbia. This highway is designated as a part of the National Parks Highway. It was constructed at the cost of several millions of dollars and it combines the skill of trained road engineers of large experience with the dreams of practical landscape artists. Upon one side the traveler sees several magnificent waterfalls, including the famous Latourelle, Wahkeena, and Multnomah Falls, and on the other hand the incomparable panorama of the Columbia River gorge. Should the Mount Hood national park project,[1] as recommended by you in your report to the President, be favorably considered by Congress at some future time, this beautiful highway should be continued to Mount Hood.

[1] Annual Report of Secretary of the Interior, fiscal year ended June 30, 1915, p. 23.

CRATER LAKE NATIONAL PARK.

Crater Lake National Park was rather late in opening this season, due to the fact that there was so much cold weather in the spring to prevent the thawing of the snow. If arrangements could have been made to establish snow sports in this park, as the Rainier National Park Co. did in the more northern park, the season could have been lengthened considerably. The time, however, for the utilization of the snow in Crater Lake National Park has not yet arrived. In time the early opening of the park, when the snow fields are available for skiing and tobogganing, will be advisable from an administrative standpoint and possible to concessioners. It is worthy of comment that Crater Lake Park when covered with a mantle of snow is a spectacle of marvelous beauty.

NEW TRAIL TO THE LAKESIDE.

Some very interesting development work was undertaken in Crater Lake Park this year under the $15,000 appropriation by Congress, including a broad new trail on a low grade from the rim of the crater to the surface of the lake at the old boat landing. This old trail, which made the lake accessible from the rim, was very narrow and steep and in places actually dangerous. A section of it was constructed through a wet gorge where running water constantly washed it out and made its proper maintenance impossible. The new trail is being constructed with the idea of making it possible for men, women, and children of all ages and conditions of health to get down from the rim of the crater to participate in the sports of boating and fishing on the lake itself.

The trail will be ready for use next year and will, I believe, result in lengthening the stay of every visitor to Crater Lake Park.

TRAILS UP GARFIELD PEAK AND TOWARD THE WATCHMAN.

Another new trail, constructed on a steeper grade, however, was built to the top of Garfield Peak. This trail will afford a very interesting side trip from the lodge on the rim and will afford an excellent view of the entire park and its surrounding region. Still a third important new trail was built along the rim in the direction of the Watchman. This will afford a splendid side trip for hotel visitors. The trails projected for next year include a broad new trail to the top of the Union Peak, a high mountain in the southern part of the park, from which a splendid view of the Klamath region may be obtained. It will also afford a beautiful trip through the forests of the park.

DIAMOND LAKE SHOULD BE ADDED.

Very little is known about the scenery of Crater Lake Park beyond that which is to be observed from the rim of the crater. The park really has an interesting variety of scenery, and its boundaries should be extended to include the Diamond Lake region to the northward. Then the park would have a variety of scenic features to offer to the tourist that would compare favorably with the diversity

of scenery in most of the very large mountain parks. Diamond Lake lies a few miles north of the park in a region that is valuable for none other than recreational purposes. Fishing in the lake could be improved and the region around about it made attractive for camping. A chalet or hotel, operated in connection with the hotel on the rim of Crater Lake, could be constructed near Diamond Lake when travel to the park warranted these additional accommodations. It would be reasonable to expect that the majority of visitors to Crater Lake would not overlook an opportunity to see the wonderful scenic region to the northward. Besides Diamond Lake the proposed addition to the park would include Mount Thielsen, a peak considerably over 9,000 feet in altitude and known as the "lightning rod of the Cascades," because during electric storms brilliant and fantastic flashes of lightning play about its needlelike summit.

INTERESTING SIDE TRIPS NEEDED.

Another area that logically belongs to Crater Lake Park is the Lake of the Woods region just south of the park. This area has not been investigated by representatives of the National Park Service, but it is known to be an exceptionally beautiful region and valuable for scarcely anything besides park purposes. The addition of the Diamond Lake and Mount Thielsen regions, however, can not be too strongly urged. A branch road from the main highway from Medford already makes the Diamond Lake country accessible, and at some future time a circle trip might be provided by the construction of a road from the north rim of Crater Lake to Diamond Lake.

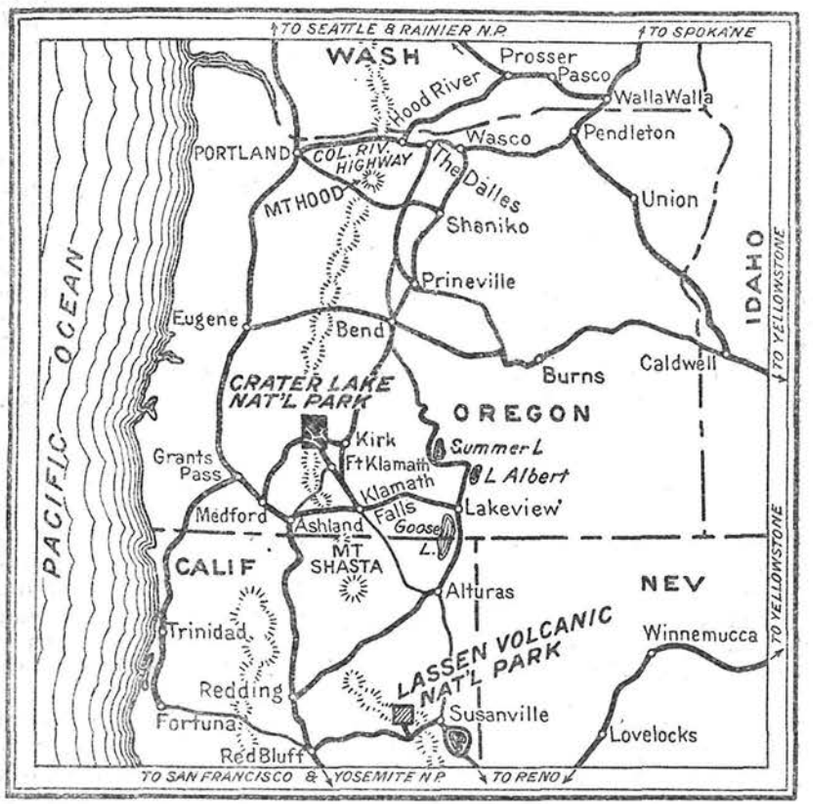
ROAD ROUND THE RIM.

The road system of the park has been maintained and new construction on the road around the rim of the crater carried forward under an appropriation of $50,000, to be expended under the direction of the War Department. It is expected that the clearing and grading of the rim road will be completed during the 1918 season, thus making it possible for the motorist to travel entirely around the lake on a well-graded road which opens up at every turn a thrilling vista, either of the lake itself or of the beautiful forest region surrounding the base of Mount Mazama.

The recommendation that I have made with respect to the control of the roads in the Yellowstone Park applies also to the road construction and maintenance in Crater Lake Park. All of this work should be done under the direction of the Department of the Interior rather than the War Department in order that uniform policy in the improvement of all parks may be formulated and followed and for the further reason that it is most desirable to have all park roads maintained for the benefit of the tourist solely and with his interest constantly in mind.

The roads leading to the various gateways of the park from Medford, Klamath Falls, and Kirk, Oreg., have not been in good condition during the past season. The road from Medford to the park boundary, a total length of 72 miles, was not built as an automobile road in the beginning and must be largely reconstructed. Jackson County and the citizens of Medford have spent large sums of money in improving sections of this road, and their work is of such a

permanent character that the surfacing of their improvements is all that now remains to finish them. It is a fact that Jackson County and its citizens have aided in the improvement of this road to the limit of their capacities, and the time has now come when the State of Oregon and the Federal Government must combine to permanently improve this main highway into the park. It is my understanding that the State of Oregon has already arranged to cooperate with the Federal Government and that the basis of Federal assistance under the good roads act is all that is necessary to be determined before improvement work is begun.



AUTOMOBILE ROUTES TO CRATER LAKE NATIONAL PARK.

APPROACH ROADS A COMPLICATED PROBLEM.

If a satisfactory basis can not be determined within a short time, it would seem that a new plan involving direct appropriations by the Federal Government and by the State for the purpose of rebuilding the approach roads, not only from Medford but from Klamath Falls, in connection with the intrapark system, should be devised. It must be understood that the counties of southern Oregon can not possibly build these approach roads or even keep them in repair. They can not raise sufficient funds by subscription or taxation—Jackson County, in which the Medford approach road lies, has already reached the limit of its authority to bond itself for road-building purposes.

It is amazing to observe the road construction that this county has already completed in the directions of Crater Lake and the summit of the Siskiyou Mountains. The road over the Siskiyou range was built to connect with the California State highway system and is already paved to the summit of the range. The State will double the width of the paving, but the grading and foundation for this additional surfacing has already been performed by the county. I mention this work because it emphasizes the efforts of the citizens of the Crater Lake region to do their share and more than could ordinarily be expected of them in the way of building first-class roads. Road building on the Klamath side of the park has been less extensive, but the country authorities are at work. This county, of course, is still less able to build first-class roads in the mountain regions, because its development has been more recent.

A park tour, including a trip over both the Medford and Klamath Falls roads—that is, in one gateway and out the other—is and should be the favorite way of seeing this park. The road up the Rogue River Canyon on the Medford side is interesting on account of the volcanic origin of the canyon itself and beautiful because there is so much timber and so many vistas of far-away scenery visible between the trees. On the other hand, the road down from Crater Lake to Klamath Falls through the Klamath Indian Reservation and along the shore of Klamath Lake is a scenic road of the highest order.

RETURN OF THE WILD FLOWERS.

Wild animals are becoming more numerous in the park, and it was observed this summer that a very few wild flowers are returning. There have been no wild flowers in the park since it was established, the sheep that ranged over this region before the creation of the park having utterly destroyed the wild-flower growth.

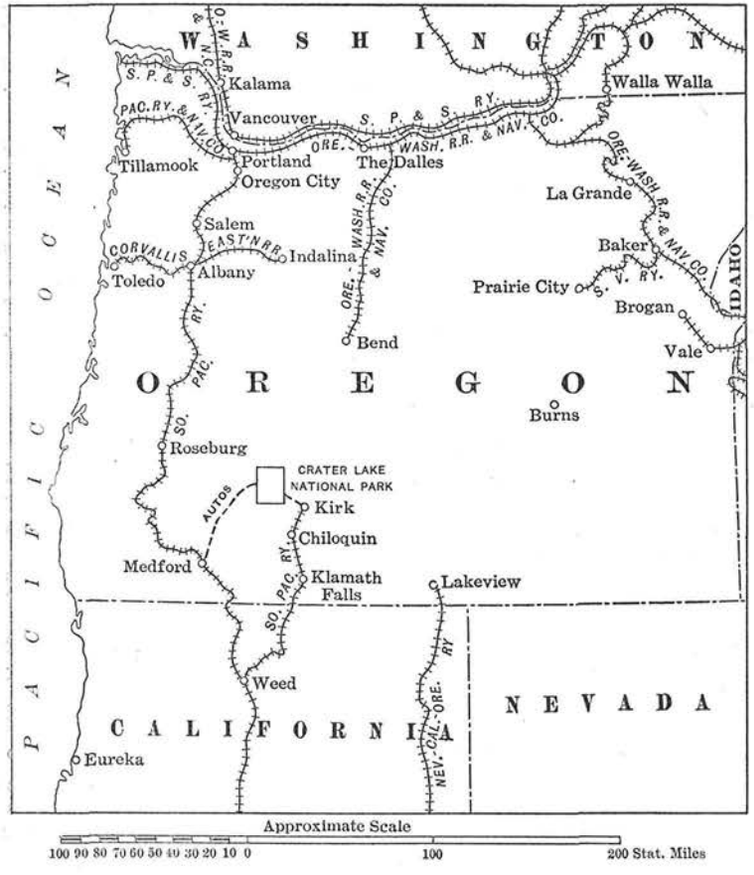
A WEIRD FRATERNITY HALL.

Among the visitors to the park during the 1917 season was a large group of members of the Knights of Pythias Order. Several years ago the Knights of Pythias originated the idea of holding initiation ceremonies in the crater of Wizard Island in Crater Lake, and the idea was carried out in a manner that afforded unusual delight to all who participated in the ceremonies. This year, on August 14, the visiting Knights held another conclave in the Witch's Cauldron, as the crater of the island is called, and once more the fraternity men announced a most delightful experience.[1] One can hardly imagine a more weird and mysterious environment for the initiation or other ceremonies of a fraternal order than the Witch's Cauldron, under the pale ghost-making light of a waning moon.

The story of travel to Crater Lake Park this season is not that of all the parks. The travel has been gratifying, but there was no increase over that of last year. There was, however, an increase in the number of automobiles in the park this year; 2,756 automobiles entered the park this season as against 2,649 last year. The total number of park visitors this season was 11,645 as against 12,265 last season.

[1] See picture in this report.

The park lies between the main line of the Southern Pacific Railroad and the Klamath Falls branch line. All through tickets between Portland and California points during the past season have entitled purchasers to stop over at Medford for the Crater Lake trip, and, should the traveler enter via one gateway and leave by another, his ticket was honored without question for continuation to his destination; thus it was possible to go into the park from Klamath Falls and out of the western gateway to Medford in connection



RAILROAD ROUTES TO CRATER LAKE NATIONAL PARK.

with a trip to Portland. On the other hand a party bound for California was permitted to stop at Medford, go through the park, and connect again with the Southern Pacific lines at Klamath Falls.

LASSEN VOLCANIC NATIONAL PARK.[1]

There is little that can be said about the Lassen Volcanic National Park, because no funds have been appropriated for its administration, maintenance, or protection since it was established under the

[1] Maps showing position of Lassen Volcanic National Park, pp. 63, 66.

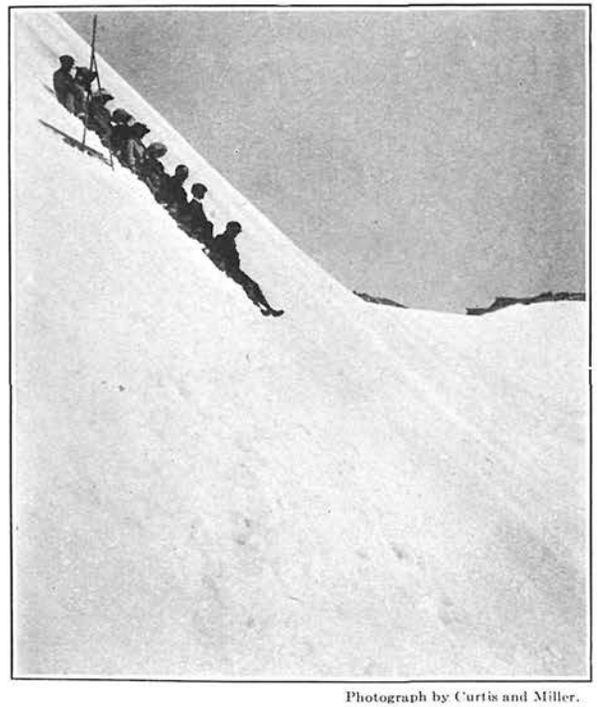


Photograph by Asahel Curtis.

MOUNT RAINIER NATIONAL PARK.

NEW PARADISE INN, IN BEAUTIFUL PARADISE VALLEY.

Note the wild flowers in the foreground.

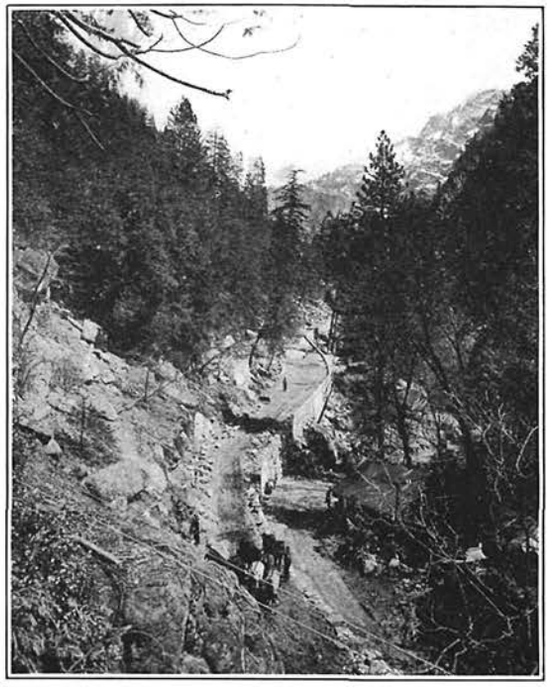


Photograph by Curtis and Miller.

MOUNT RAINIER NATIONAL PARK.

PARADISE VALLEY.

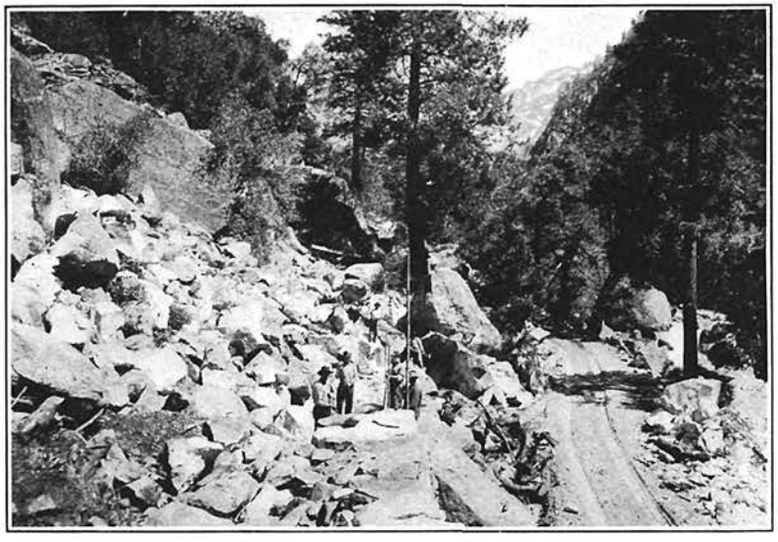
"Winter sports in the summer time." The human toboggan.



YOSEMITE NATIONAL PARK.

EL PORTAL ROAD.

Showing rock wall construction.



YOSEMITE NATIONAL PARK.

EL PORTAL ROAD.

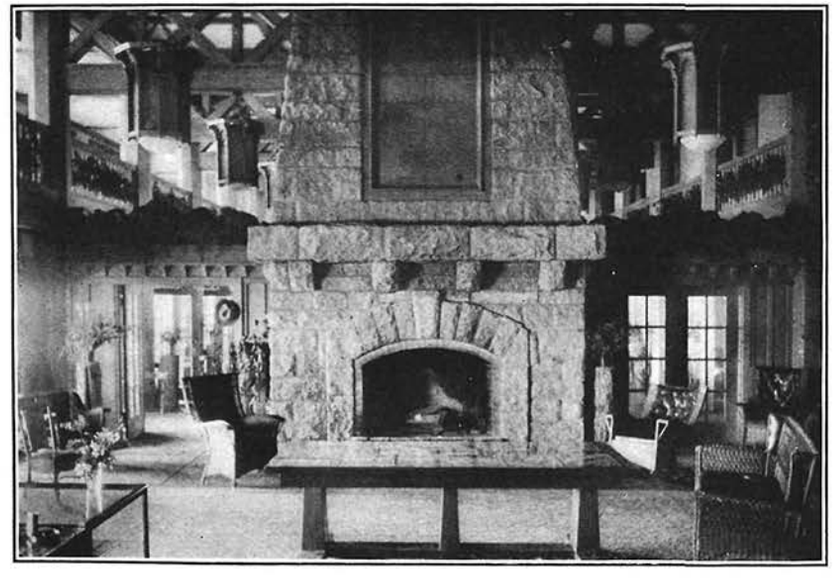
Showing enormous rocks in the surveyed right of way. The picture above is taken near the same place after construction was well along.



YOSEMITE NATIONAL PARK.

NEW GLACIER POINT HOTEL.

Half Dome in the background.



YOSEMITE NATIONAL PARK.

INTERIOR OF NEW GLACIER POINT HOTEL.

Showing lobby and fireplace.



CRATER LAKE NATIONAL PARK.

NEW RANGER CABIN AT WESTERN OR MEDFORD ENTRANCE.

This cabin illustrates the type of ranger station adopted for this park.



CRATER LAKE NATIONAL PARK.

Knights of Pythias starting for Wizard Island, where their initiation ceremonies were held in the crater on August 14, 1917.

act of August 9, 1916.[1] In fact no officer of the National Park Service has yet been able to visit the park and no plans have been made for its improvement. Officers of the Forest Service assigned to duty in the surrounding national forests have protected the park from fire and given such other consideration to it as was practicable and consistent with the performance of their duties.

The forest supervisor reports that 8,500 people visited the park during this season. Many motorists visited Mount Lassen while touring the parks of the Pacific Coast States. It is accessible from the California State highways and from the Southern Pacific Railroad. No concessions for transportation of passengers from the railroad or for the accommodation of tourists in the park have yet been granted. Accommodations are now provided for tourists by owners of patented lands within the park boundaries.

It is essential that funds be provided for the administration of Lassen Volcanic Park as a part of the park system. It has many wonderful scenic features and interesting volcanic formations. There are numerous lakes and streams well stocked with fish, and the forest growth of the park is especially worthy of note. The volcano has shown some activity during the year, but there have been no violent eruptions.

YOSEMITE NATIONAL PARK.

In the Yosemite National Park during the past year there has been improvement in every direction; improvement in roads and trails, improvement in accommodations for visitors and facilities for travel in the park by the erection of new hotels and camps and the installation of additional transportation service; and improvement in camp grounds, public utilities, and sanitation system. There has been a general increase in tourist patronage and an astonishing increase in motor-car travel. There have been larger appropriations by Congress for general purposes than ever before, and the revenues have been larger, thus making the consummation of much-needed improvement work possible. The year 1917 has been one of the most important years of Yosemite history.

FINE NEW HOTEL ON GLACIER POINT.[2]

Probably the most important project to be completed this year was the erection, furnishing, and opening of the new Glacier Point Hotel on the rim of the famous valley. This hotel was completed during the winter and formally opened to the public early in July. It is beautifully located on the very rim of the gorge where a magnificent view may be obtained of all of the great canyons through which the Merced and its tributaries flow. Vernal and Nevada Falls are plainly visible and the panorama of the peaks of the Sierra that may be had from the hotel beggars description. The hotel itself is very attractive from every point of view. It is equipped with every modern convenience; even electric energy for lighting is transmitted from the power plant in the valley below.

The new hotel was constructed by the Desmond Park Service Co., the general concessioner operating under franchises from the depart-

[1] 39 Stats., 442.
[2] See pictures in this report.

ment covering the establishment of a complete system of hotels, camps, transportation service, and other facilities for the accommodation of the traveling public. During the year this company added materially to its transportation equipment. It suffered one reverse in the loss of the dining room and lobby of its El Capitan Camp on the floor of the valley as the result of a fire. Merced Lake, Tuolumne Soda Springs, and Tenaya Lake Lodges, in the high Sierra, were operated during the summer. Two of these high mountain lodges were well patronized. Tuolumne Soda Springs Lodge, however, seems to have been poorly located and received little patronage, so was closed early, with a view to effecting its removal to a more advantageous site.

Conditions attributable directly to the war with Germany made the construction of the new hotel on the floor of the Yosemite Valley impossible, but the establishment of this much-needed enterprise will be undertaken as soon in the future as it is possible to make the necessary financial and other arrangements. Until this hotel project is completed, the old Sentinel Hotel will be retained. Before the opening of the next season, however, its accommodations will be greatly improved.

In addition to the Glacier Point Hotel and the lodges in the high Sierra, the general concessioner operated Camp Ahwahnee, Camp Yosemite Falls, and Camp El Capitan, all on the floor of the valley, and Crocker's resort on the Big Oak Flat road. Considerably more than a half million dollars has been expended in permanent improvements in the park by this concessioner.

Camp Curry, also in the Yosemite Valley directly under Glacier Point, was improved in many respects during the year, and was operated under the management of Mrs. D. A. Curry. Her husband, David A. Curry, "the stentor of the Yosemite," who founded and operated Camp Curry for many years, died in San Francisco on April 30, 1917.

In discussing hotel and camp accommodations for the Yosemite visitors, it is pertinent to remark that Miami Lodge, on the road between Merced and Wawona, has been greatly improved, and that very attractive additions to the Wawona Hotel have been completed during the past season. Neither of these resorts is within the boundaries of Yosemite Park, but they furnish incentives for delightful stop-overs en route to the park from Fresno, Madera, Merced, and other points, and are also patronized by travelers leaving the park by the southern gateway. Side trips may also be made to these points from the Yosemite Valley or Glacier Point.

COMPLETING THE NEW POWER PLANT.

Federal improvement of the park under appropriations by Congress and under the park revenues has gone forward rapidly. The new power plant, the erection of which was begun a year ago, will soon be completed. Originally $150,000 was appropriated for the installation of this plant, including dams, pipe lines, transmission lines, etc. Unexpected difficulties were encountered in excavating for the dam in the Merced River, which greatly increased the cost of this structure and made the completion of the plant under the original

appropriation impossible. It also became evident a year ago that a 1,000-kilowatt plant, the plant originally planned, would not supply the needs of the park. Accordingly, an estimate for an additional $60,000 was presented to Congress and this money was made available in the sundry civil act of June 12, 1917. Under this appropriation the plant will be completed. It will have a total capacity of 2,000 kilowatts and will furnish power for lighting the National Park Service buildings, hotels, camps, roads, and footpaths in Yosemite Valley, and for heating and cooking at the hotels and camps. The power house has been constructed on the Merced River and may be seen by all visitors entering the park via the El Portal road. It is a structure of simple but attractive design and the materials of construction used were steel and concrete.

The appropriations for the general improvement of Yosemite National Park, as I have stated, were larger this year than ever before. The heavy tourist patronage, especially the large increase in motor travel, naturally increased the park revenues over former years. The bulk of the funds available, however, was expended in the construction, maintenance, and improvement of the road and trail system.

EL PORTAL ROAD A MAGNIFICENT HIGHWAY.[1]

Seventy-five thousand dollars of the appropriation is being expended on the new El Portal road under the project adopted by Congress a year and a half ago. Thirty thousand dollars was spent upon the road last year. Work is progressing rapidly and satisfactorily, despite the fact that the construction of the new road to date has involved the heaviest and most difficult rock work of the entire project. The road, when completed, will be a magnificent highway and will connect at El Portal with a road of similar proportions which the State of California and cooperating counties will shortly build as a part of the State highway system. It was expected that State road would be constructed this year, but difficulties beyond the control of the State highway commission prevented the early initiation of construction work and it is not likely that the road will be commenced before next season. When completed, this State highway will furnish a splendid entrance road, with low grades, which will be open every month of the year.

With the park open in winter to both motorists and visitors by train, and with a new hotel on the floor of the valley to accommodate the winter traffic, Yosemite Park will probably become as famous as any winter resort in the world. The winter snow scenes in Yosemite Park are already famous and it is reported that the snow spectacle to be observed from the Glacier Point Hotel far surpasses even the domes and spires of the valley when clothed in their winter mantles. Yosemite Park also offers opportunities for winter sports that can not be excelled.

Besides the El Portal road, the Tioga, Big Oak Flat, and Wawona roads were maintained in good condition for traffic. The road system on the floor of the valley was also placed in excellent condition. When the improvement of the valley roads is completed during the autumn months, we may point proudly to this system as the best that the

[1] See pictures of the new El Portal road in this report.

national parks have to offer to the traveler. The Yosemite Valley has long needed a proper road system, and when one considers the fact that there are weeks during the summer when several hundred cars are being operated in this relatively small area each day, and that there may be during this time four or five thousand visitors in the valley all told, no road system may be considered too highly improved for this public use.

WAWONA ROAD ACQUIRED AND TOLLS ELIMINATED.

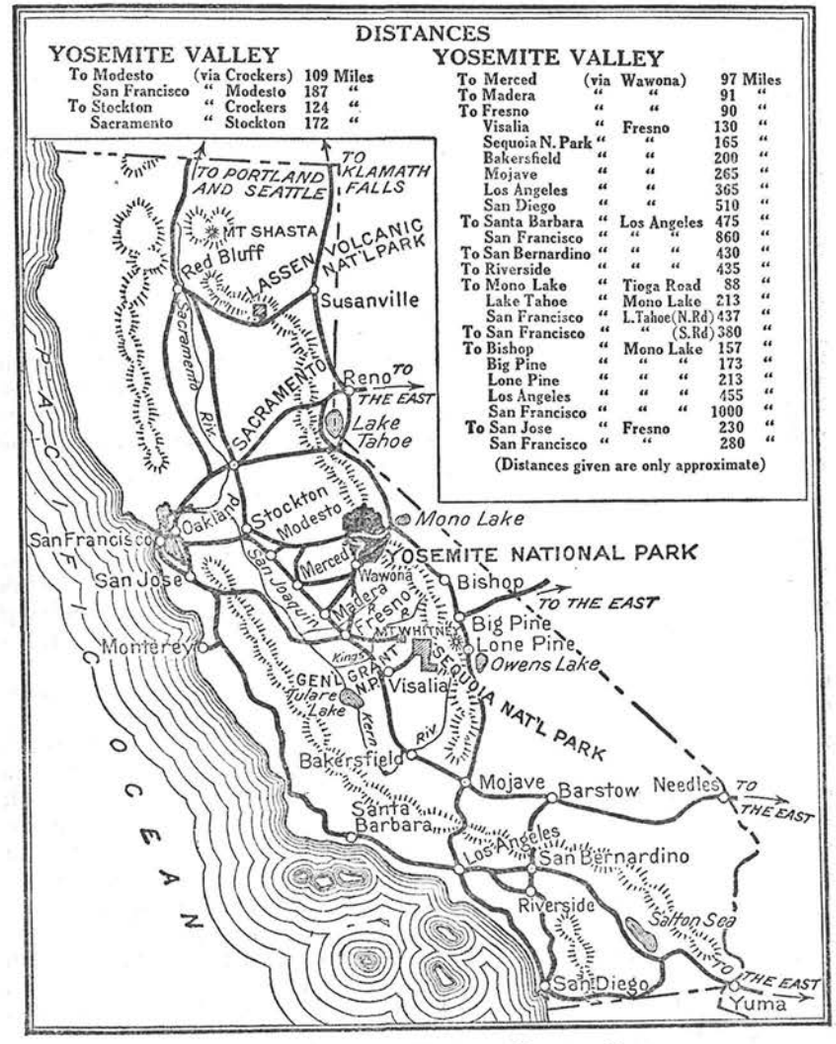
The old Wawona toll road system connecting Wawona with Fort Monroe, near Inspiration Point on the rim of the Yosemite Valley, with its lateral to Glacier Point from the old stage station at Chinquapin, was turned over to the Federal Government by its owners in the spring of this year. Tolls, of course, were eliminated, and during the season the road system was maintained by the National Park Service. All of the old toll roads except the Coulterville road, which is no longer in general use, have now been acquired by the State or Federal Government. The Yosemite Stage & Turnpike Co., the corporation that built and maintained the Wawona toll road system for many years, still operates an automobile transportation line from Merced, by way of Miami Lodge and Wawona, to Yosemite Valley, in connection with what is called the "Horseshoe route," because passengers are carried in one direction by automobile and in the other by the train service of the Yosemite Valley Railroad.

REMARKABLE TRAVEL FACTS.

The popularity of the roads of the Yosemite is best proven by reference to the automobile travel for the season. Cars to the number of 6,521 entered the park prior to October 12, as against 4,043 last year. A complete analyzation of this traffic by park entrances will be found on page 148 in the report of the supervisor of Yosemite Park. All of the gateways enjoyed a gratifying share of the motor travel. It should be understood, of course, that nearly every motorist enters the park by one gateway and leaves by another, whenever time and his vacation arrangements will permit.

In this connection mention should be made of the Tioga road crossing the central part of the park, a scenic highway which runs through Tioga Pass on the crest of the Sierra, where it connects with the Tioga State road in the Leevining Canyon. At Mono Lake the Leevining Creek road joins the State highway system on the eastern side of the mountains, running from the northern part of California through the Lake Tahoe region, thence to Mono Lake and the Owens Valley, and on to southern California. At Lake Tahoe this State road intersects the Lincoln Highway. It appears that both California and eastern motorists traveling over the Lincoln Highway to Lake Tahoe during the past season made the trip to Yosemite by way of Mono Lake and the Tioga road. In fact, one of the most popular automobile roads in California is the Lincoln Highway or its feeders from coast and central California points to Lake Tahoe, thence south on the State highway to the Tioga road, and over this scenic Federal link in the circle trip to the Yosemite, and finally back to the central valleys.

While the popularity of the Tioga road among California motorists has been growing rapidly and it has been used considerably by eastern traffic reaching Lake Tahoe by the Lincoln Highway, it has not received the patronage of the eastern cars that its scenic character invites. Hundreds of motorists have, during the past season, left the Lincoln Highway at Ely, Nev., and have gone over the Midland



AUTOMOBILE ROUTES TO YOSEMITE NATIONAL PARK.

Trail into California, and after reaching California have gone south into the southern part of the State instead of turning north at Big Pine on the State highway and crossing the Sierra Nevada Mountains by way of the Tioga road and Yosemite Park. Lack of information regarding this route has, of course, caused these motorists to go over the Mojave Desert instead of taking the State highway

north at the village of Big Pine and thus enjoying the beautiful mountain trip through the park. It shall be our purpose to assist in the dissemination of information regarding the Tioga road next season to the end that it may enjoy the eastern travel that it rightly deserves.

THE YOSEMITE AND LAKE TAHOE.

In this connection I record with pleasure the decision of the Lincoln Highway to include in its new road guide a description of the scenic beauties of the Tioga road and a map showing this route.

The astounding increase in the Tahoe-Yosemite travel makes close cooperation between the National Park Service and the various resorts along "The Lake of the Sky"[1] advisable, and it should be our purpose to foster the maintenance of cooperative relations to the end that the traveling public in both of these beautiful high Sierra playgrounds may have opportunities to visit and enjoy each in the course of a summer season.

As I stated in the beginning of this discussion of the Yosemite season, travel to the park this year has been heavier than at any time in the past. People to the number of 34,510 registered at its gates this season, as against 33,390 last year. The major portion of the travel was by automobile. There was a noticeable increase in the number of camping parties in the park this year. The free public camps of the Yosemite Valley were occupied throughout the summer, and early in the season were quite congested.

THE FALLS ARE ALWAYS BEAUTIFUL.

The travel to Yosemite Park early in the season invites comment. For many years the idea that Yosemite's chief attractions are its waterfalls has been prevalent, and this impression is really operating to discourage the traveler to the park at a time when the facilities for the accommodation of visitors, opportunities for motoring, horseback riding, hiking, boating, and fishing are better than ever before. The general impression still exists that if one can not see the Yosemite in the spring when the volume of the waterfalls is abnormal, the park is not worth seeing at all. Hence thousands of visitors throng the valley in June, and in August, when the Tioga, Big Oak Flat, and Wawona roads are open and in the best of condition for motoring, when all of the beautiful camping sites in the high Sierra are inviting the vacationist, when the lakes and streams all over the park are accessible to the fisherman and the boating sportsman, the park enjoys a comparatively small patronage.

The waterfalls in the spring, of course, are more wonderful than they are in the late summer or fall, but they are extremely beautiful then, too. Besides, they are only one of scores of Yosemite attractions, and the visitor to this great park should either plan to come early and stay late, or time his trip to make possible the full enjoyment of all that the park has to offer, not only in the incomparable valley, but throughout its great mountainous area of 719,622 acres.

The sport of boating on the Merced River was developed this summer for the first time and it promises to become one of the

[1] George Wharton James has written a book on Lake Tahoe entitled "The Lake of the Sky."

leading amusements of the valley in the near future. The vistas of the carved walls and wonderful glaciated features of the Yosemite Gorge from a motor boat on the Merced are worth going a long distance to see.

THE FAMOUS FIREFALL REESTABLISHED.

The famous firefall from Glacier Point was authorized again this season and nightly delighted hundreds of visitors who gathered to see it.

THE SIERRA CLUB IN THE PARK.

The Sierra Club held its 1917 outing in the Yosemite Park and headquarters were established at Tuolumne Soda Springs, where the club recently erected the Parsons Memorial Lodge, a picturesque structure which is used as a gathering place for club members and their friends. From the Tuolumne Soda Springs members of the club explored all of the surrounding mountain regions, engaged in the sport of climbing the highest peaks of the park, and enjoyed together the camp-fire sports and songs that make Sierra Club life in its mountain camps so delightful. The club will also spend next summer in the park. A permanent camp will again be established at Tuolumne Soda Springs and expeditions will be made from this base to Mount Ritter, Thousand Island Lakes, the Devil Postpile Monument, etc. It will also explore the Ten Lake Basin, a beautiful region that is rarely seen by the park visitor.

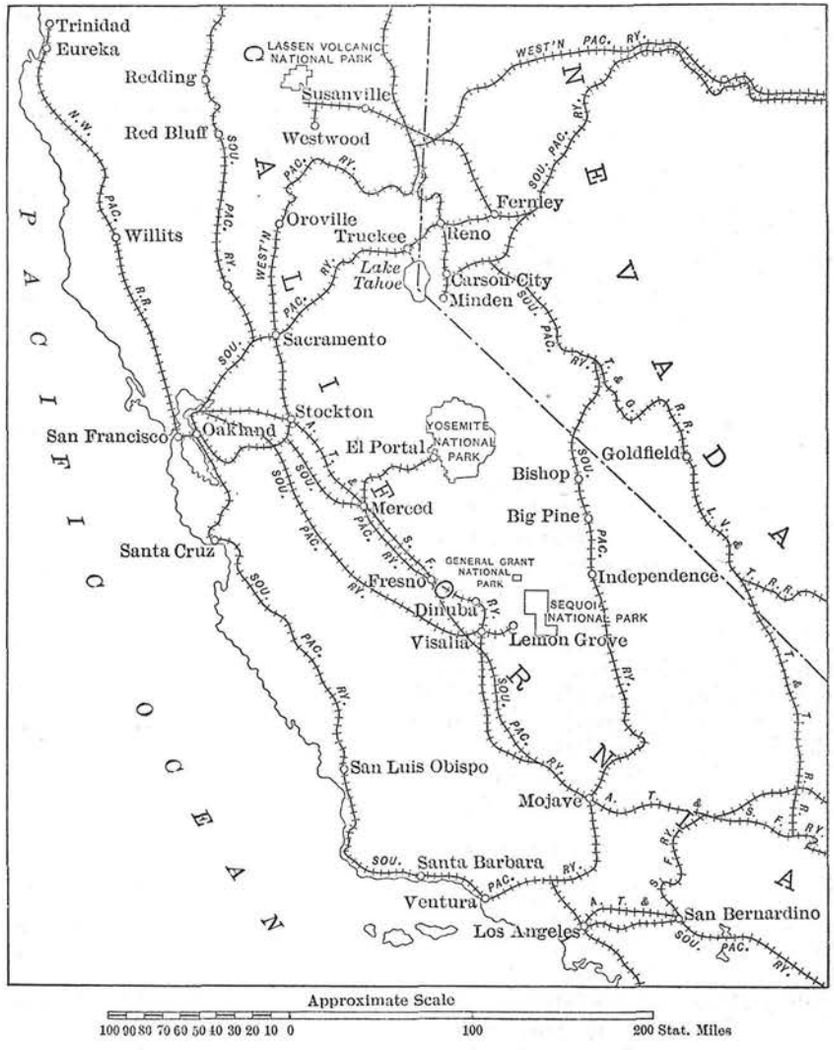
The National Park Service welcomes the use of the national parks by the big mountaineering organizations of the country. The Prairie Club of Chicago has visited Mesa Verde, Yellowstone, and Glacier National Parks during the past three summers. This season it was in Glacier Park for three weeks. The Mountaineers of the Northwest have visited Mount Rainier annually for many years. The Colorado Mountain Club spent several summers in the Rocky Mountain Park region, and the Sierra Club makes a practice of going each year into either the Yosemite Park or the beautiful regions of the Kings and Kern River Canyons, which it is now proposed to add to the Sequoia National Park. Another western mountain club that has visited the parks on its outings is the Mazama Club, with headquarters in Portland, Oreg.

CENTER OF THE JOHN MUIR TRAIL.

The relation of the John Muir trail to the parks of California is an intimate one and deserves attention here because the Yosemite Park is about to become the center of this important high mountain trail system. It was projected several years ago by the Sierra Club, and an appropriation was made by the State of California for its construction south from the Yosemite Park through the Kings River country to the summit of Mount Whitney. This trail traverses the finest scenic regions of the Sierra Nevada Range, and should the Sequoia Park to be enlarged as proposed it will form an important means of travel and communication between the two parks. It is now proposed to extend the John Muir trail north to Lake Tahoe, through another region of scenic grandeur. When this extension is

completed, the Yosemite Park will become the center of the John Muir trail, and in any event it should become the mecca for hikers from all over the country, as well as those who enjoy traveling in the mountains with a pack train.

The wild animals of Yosemite National Park are increasing, but here again we have a situation that demands State cooperation. The



RAILROADS TRIBUTARY TO NATIONAL PARKS IN CALIFORNIA.

deer of the park are driven down into the lower altitudes by the snow and eventually wander outside of the park boundaries, where they are killed by the hundreds. A game refuge just outside of the park should be established at the next session of the State legislature, in order that these animals may receive proper protection. As I

have pointed out in discussing Mount Rainier problems, hunting in a few years just beyond such a refuge would be better by far than it is now. Near several of the national parks State game refuges, such as those established by Wyoming and Montana outside of Yellowstone National Park, should be created by the State in order to give the park animals a larger measure of protection.

The principal railroads approaching Yosemite National Park are the Southern Pacific and Santa Fe lines, both of which connect with the Yosemite Valley Railroad at Merced. These two lines have promoted travel to the park this year as usual, and have made very satisfactory arrangements for through service. Through most of the season two trains a day from San Francisco and Los Angeles were operated by each line. Excursion tickets covering a trip to Merced by rail, thence over the automobile line of the Yosemite Stage & Turnpike Co. to Wawona and Yosemite Park and return by El Portal and the Yosemite Valley Railroad to Merced, were sold throughout the season. These arrangements for entering the park through one gateway and leaving in another direction received the hearty approval of the Yosemite patrons and there was considerable travel over this "Horseshoe route."

SEQUOIA NATIONAL PARK.

The most important work accomplished in Sequoia National Park during the past year has been the assumption of control of the Giant Forest lands by the National Park Service and the preparation of these lands for the use of the traveling public, especially the camper and angler. The Sequoia National Park was originally created to preserve the great redwood trees (Sequoia washingtoniana, or gigantea, as they are sometimes called) of the Giant Forest, but after the park was established it was discovered that practically the whole forest was patented to parties who had taken up the land under various laws relating to the disposition of the public lands. For 26 years the anomalous situation of this noblest forest on the earth, being located in a national park and yet privately owned, continued to exist.

Finally, in 1916, Congress appropriated $50,000 to purchase these private holdings. This sum proved to be insufficient when negotiations for the purchase of the lands were initiated with their owners. For a time it looked as if the purchase could not be consummated, but finally the National Geographic Society came to the aid of the department and made available from its funds the sum of $20,000, the additional amount needed to effect the acquisition of the Giant Forest lands. The transfer of the lands was formally completed in January of this year and the full consideration, $70,000, was paid over to the former owners upon the tradition of the deeds to a representative of the National Park Service in California.

Thus the Giant Forest came back into the public domain, there to remain to the end of time for the pleasure and edification of all future generations. It is reasonable to assume that the trees of the forest will stand until the end of time, because many of them are already 4,000 years of age and still as vigorous as the saplings of a fews decades' growth.

Much of the forest has been cleared during the season and made available for camp grounds. The water system has been extended to the recently acquired areas and the sanitation of new grounds has been carefully provided for. Underbrush and superfluous tree growths that have hidden many of the giant sequoias from view have been removed in all parts of the Giant Forest and along the road to Moro Rock. Hundreds of magnificent and inspiring vistas of the great trees as they stand singly or in groups will delight the visitor to Sequoia Park next season.

INCREASING NUMBER OF CAMPERS.

During the past season the park enjoyed an astonishing increase in patronage. The largest increase was in the number of people visiting the park in private automobiles. Hundreds of visitors came and camped in the Giant Forest for weeks. Many others went on up to Wolverton, above the forest, and camped where they could fish in Wolverton Creek or in the Marble Fork River, a short distance beyond.

It was a most pleasing sight to stand in the midst of the Giant Forest during the past summer and gaze upon the attractively situated and tastefully decorated camps nestled each at the base of an enormous Sequoia. It was a peaceful scene and a beautiful one. There was nothing to do in the forest but rest, breathe the health-restoring air, drink the clear, cold water, and contemplate the dignity and beauty of the biggest and oldest of living things. Fishermen came and went, and the hikers and horseback riders took to the trails and returned from the higher altitudes of the park, but the peacefulness and quietude of the forest was never disturbed. Camping in the Giant Forest is all that anybody has written about it and more. It is a glorious experience.

The enormous increase in travel to the park this year early in the summer disclosed the fact that it would only be a matter of a year or two before all available camping space would be taken long before the height of the season; also that the streams of the park, unless carefully stocked each year, would be fished out before the summer would be half gone. Anticipating the inevitable need of more camping grounds, the Giant Forest road has been continued from Wolverton to the Marble Fork River, where a splendid opportunity for the development of a fine big camping area exists. There are no Sequoia trees here, but there is a fine forest of pines and firs, and the ground is covered with a clean white gravel that will make camping especially satisfactory. This new camp area will be near the best fishing waters that are at all accessible, and an effort will be made to keep these waters well stocked with trout.

To provide sufficient trout for the streams of the park hereafter, and particularly for the Marble Fork River, there should be a field hatchery established in the park itself.

ROAD TO THE GENERAL GRANT NATIONAL PARK.

The road which is just being extended to the Marble Fork River should be continued in the next year or two to the north boundary of the park where connection may be made with the road which Tulare County is now building to connect the General Grant Park with the Sequoia Park. I inspected the county road during the past summer, and found that an excellent highway is being constructed between the two parks.

The road traverses a scenic region, and the engineers who are building the highway are disturbing natural conditions as little as possible. When this county road and the Federal connection in Sequoia Park are completed, the circle route through the two national parks will afford one of the most interesting scenic trips of the national-park system. Few park roads will enjoy a larger patronage than this new road because every party that goes into either General Grant or Sequoia Park will visit both before leaving this scenic region. I can not too strongly recommend the continuance of the Government road work in order that the two national parks may be connected by the automobile highway as soon as possible.

No discussion of Sequoia road conditions would be complete without a mention of the Marble Fork Bridge on the road which makes the Giant Forest accessible. Many years ago a timber structure was built to span the Marble Fork. A few years ago it began to show signs of weakening, and nearly two years ago a portion of it fell into the stream under the pressure of snow accumulation. An appropriation of $6,750 was made by Congress to erect a new bridge on the site of the old structure, but it was impossible to obtain a bid for the erection of the bridge. Several different designs for the bridge were submitted, but all efforts to obtain consideration of the project were unavailing. The money appropriated was returned to the Treasury, and another estimate in amount $12,000 is being submitted for the bridge project.

It is very doubtful if any substantial structure can be erected over the Marble Fork River at the crossing of the Giant Forest road for any less than $12,000. Funds for this bridge should be made available in the early future, because the old bridge, which has been temporarily repaired, is likely to fall again during the period of heaviest snows in the park.

A few years ago the Mount Whitney Power & Electric Co. constructed a road up the Middle Fork of the Kaweah River. It operates a power plant in this canyon, and the road was built to make this accessible. It has, however, been thrown open to general tourist use. It was considerably traveled during the past season by motoring parties. The road is known as the Elk Park road because in the Middle Fork Canyon there is a small herd of elk ranging.

The Mineral King road, farther south, should be reconstructed, especially when the area east of the park, including part of the Mineral King region, is added to the park. This road constitutes the only means of reaching Mineral King.

WANTED: HEADQUARTERS.

While, from the tourist's point of view, the Giant Forest has been excellently developed during the past season, from an administrative point of view a most essential improvement remains to be accomplished. I refer to the great need of adequate administrative buildings in the Giant Forest. At the present time there is no residence for the supervisor of the park, no office from which information may be given to the public, and no place where the supervisor can come

in contact with the public except around a camp fire at night and in one of the photographic galleries, the store or the hotel-camp, during the day. Funds should be immediately provided for two or three buildings in the Forest, and proper furnishing for same. Such new buildings would make the administrative problems of the park much easier of solution and would please the traveling public.

Last winter a huge Sequoia tree, over 20 feet in diameter at its base, fell over during a fierce wind storm. Fortunately, it was a tree near the road to Moro Rock. It now lies almost parallel to the road, and automobiles can be taken upon its prostrate form with little difficulty. It has afforded much amusement for motorists during the summer. Automobiles can be operated over the tree for a distance of more than 200 feet, and 20 small cars can be driven upon the tree at the same time. There is a picture in this report which shows an automobile camp established upon the trunk of the tree at its largest diameter.

STAIRWAY TO THE SUMMIT OF MORO ROCK.[1]

Another feature of unusual interest to Sequoia visitors during the past summer was the stairway to the summit of the great granite dome, Moro Rock. This stairway was built to afford the best possible opportunity to view the magnificent scenery of the park region and the mountains beyond. Moro Rock, 6,719 feet in altitude, is a monolith of enormous, yet graceful, proportions. Its summit is nearly 4,000 feet above the floor of the valley of the Middle Fork of the Kaweah below, and the huge granite mass stands apart from the canyon wall in a manner that affords one a marvelous panoramic view. The new steps to the summit were built carefully and are perfectly safe. As the top of the rock is flat, and there is no opportunity to gaze down perpendicularly, it may be enjoyed by most people without fear of dizziness.

The view from the top of the rock is indescribably wonderful, the panorama of the peaks of the Great Western Divide being the most thrilling scene to greet one as he mounts the summit of Moro.

The trails of the park have also been extensively improved during the season, and there has been much travel over them, both in the direction of the Kings River gorges and the canyon of the Kern. The Giant Forest is a favorite starting point for extended pack-train trips into the high Sierra of the Kings and Kern regions, both of which are scenic regions that can not be surpassed in the entire world.

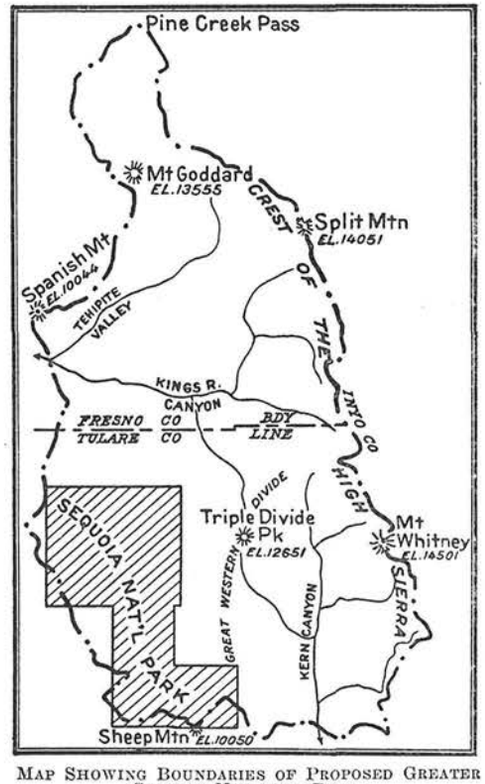
"THE GREATER SEQUOIA."

This leads me to the project which contemplates the addition of the Kings River country, the Great Western Divide, the Kern Canyon, and about 70 miles of the very crest of the Sierra Nevada, including Mount Whitney, the highest mountain in the United States, exclusive of Alaska, to the Sequoia National Park. The proposition is called the "Greater Sequoia" project. It stands at the very top of the list of meritorious park extension projects, and we earnestly hope that Congress in its next session will enact legislation along the lines of

[1] See picture in this report.

Senator Phelan's bill (S. 2021), entitled "A bill to add certain lands to the Sequoia National Park."

The accompanying map shows the boundaries of the proposed enlarged park. The mountainous area to be added is valuable for no purposes but those of a national park. There is practically no merchantable timber on the lands, and most of what is classed as merchantable is giant Sequoia timber that should be preserved for park purposes and not sold to lumber interests to destroy. There are relatively small grazing areas in this region, and some of the grazing land should be set aside for pasturage of tourist stock. Ultimately, it may all be needed for the visitors.



MAP SHOWING BOUNDARIES OF PROPOSED GREATER SEQUOIA NATIONAL PARK.

By far the largest portion of the whole territory involved in the extension plan is a wild mountainous region of extraordinary grandeur, a tumbled sea of mountain peaks from 12,000 to over 14,000 feet in altitude, with Mount Whitney as the climax of the whole thing; with hundreds of lakes, clear as crystal, beautiful beyond description, and many of them well stocked with trout; with great deep gorges that compare favorably with the famous Yosemite Valley, gorges that were carved by the Ice King in the same manner as the Yosemite was chiseled from the solid granite; with raging rivers, great waterfalls and even glaciers; a region that is national park in character from north to south and from east to west, every foot of it.

This park extension was recommended to the President by you in your annual report for 1915.[1] In this report the following statement was made:

> Congress so carefully cut the boundaries of the national parks to the express purpose for which each was created that, in some instances, scenic features of the very first order were excluded. In the careful study which the department has since made of each such territory it has become apparent that, in several instances outlying territory should be added to these reservations. The most distinguished of these instances is Sequoia National Park, the boundaries of which should be extended to include the superb Kings Canyon on the north and on the east the Kern Canyon and the west slope and summit of Mount Whitney * * *.[2]

[1] See Annual Report of the Secretary of the Interior, 1915, pp. 25 and 121.
[2] Annual Report of the Secretary of the Interior, 1915, p. 121.

In Director Mather's report, "Progress in the Development of the National Parks, 1916," the following statement with reference to the Greater Sequoia project was made:

> Bills providing for enlarging Sequoia National Park to include the Kings and Kern Canyons and several miles of the crest of the Sierra Nevada, including Mount Whitney, are now pending in Congress and will be considered in the short session which convenes in December. The early enactment of this legislation can not be too strongly urged.
>
> The public land proposed to be added to Sequoia National Park by these measures will never be valuable for any other than park purposes. * * *
>
> Sequoia Park now has the giant Sequoia trees as its one attraction, but if enlarged as proposed it will become a scenic park of as much distinction as that possessed by any other park in the system. Furthermore, it will become a game sanctuary of as much importance as the Yellowstone National Park.[1]

A GREAT ANIMAL SANCTUARY.

The wild animal sanctuary feature of the park project emphasized by Director Mather is most important. Should Congress authorize the extension as proposed, the Sequoia Park as a great animal refuge would take its place with Yellowstone and Mount McKinley Parks.

From every point of view the Sequoia extension is a meritorious project and should receive early consideration by Congress. Within a short time the encroachment of the timber interests will seriously impair the scenic value of much of the lower country, and the alienation of lands in other sections of the region will make its development as a national park more difficult.

Summarizing travel to the Sequoia Park for the 1917 season, there were 18,510 visitors to the park as against 10,780 last year; 2,334 automobiles this year as against 736 last. The revenues for the year were higher than ever before, $10,326.60, as against $5,169.86 for 1916.

GENERAL GRANT NATIONAL PARK.[2]

General Grant National Park is small but one of the rarest jewels to be found among California's chain of high and rugged mountains. Nestled in a forested nook in the Sierra, it welcomes each summer almost as many visitors as its neighbor, the Sequoia National Park, and offers camping facilities that compare favorably with those of any other national park. It is true that side trips from this park are not so numerous as those of other larger parks nor is fishing as easily found, but, so far as the ordinary requisites of a good camping area are concerned, the park is not to be eclipsed by any other.

Water is piped from springs of clear, cold, perfectly pure water to a large number of beautiful camp sites. Each year the greater influx of visitors has made extensions of this water system necessary. Already a larger extension than usual is being made to meet the demands of next year's travel. Shower baths are also being installed. The camping scene in the Giant Forest was not more pleasing to

[1] See also Proceedings of the Fourth National Park Conference, Washington, D. C., Jan. 2 to 6, inclusive, pp. 337 to 362. "Problem of the Greater Sequoia," by Representative Frederick H. Gillett, of Massachusetts; "National parks and the railroads," by E. O. McCormick, vice president, Southern Pacific Co.; "Perhaps our greatest national park," by Enos Mills; "The Top of America—Mount Whitney," by Emerson Hough; "The Tehipite Valley and Kings Canyon," by Robert Sterling Yard.

[2] Maps showing position of General Grant National Park, pp. 63, 66.

observe than that of General Grant Park. Approximately 700 people were camping in its beauty spots when I visited the park in August. Some families had been there for more than six weeks, and there were a few who had no plans for leaving the park during the remainder of the summer.

The forest of giant Sequoia trees in General Grant Park is its most striking and most important feature. It is a wonderful grove. Its giant of giants, the General Grant tree, is very conspicuous, as are several other monster trees. Beyond the Sequoia grove just outside of the park boundaries lies Sequoia Lake, a body of water that must have been very pretty when it was surrounded by the forests that have long since been cut away. The lake, however, affords opportunities for boating and swimming, and if it can be kept stocked with trout it will become popular with the fishermen.

Travel to the park this year is 17,390, as against 15,360 last year. Automobile travel was also heavier, 2,158 cars having entered the park as against 1,778 last year.

Public accommodations for visitors to the park are not what they should be and an effort will be made to reorganize the camp concessions before the opening of the 1918 season. The camp is small and inadequate and has not been well managed.

The needs of General Grant National Park are not many. The small-road system needs some improvement. A new road should be built from the central part of the park to the Sequoia grove. The existing road to the grove is in good repair, but its grades are very difficult to negotiate except with a high-power car. An administration building should be constructed which would house the post office and information bureau.

With these improvements to be made in the park it would need a very small sum of money for its maintenance. Probably the revenues of the park will provide for its maintenance, protection, and improvement. In my discussions of conditions in Sequoia National Park I mentioned the construction of the road to join the two parks by the county of Tulare. It is now possible to travel on this new road from General Grant Park as far as the Big Meadows in the region proposed to be added to Sequoia.

MESA VERDE NATIONAL PARK.

From a dozen points of view Mesa Verde National Park stands shoulder to shoulder with all the other important members of the national park system, yet it was little visited by the traveling public until the last two or three years. There seems to have been a strange idea abroad in the land that Mesa Verde Park was not easily accessible, that there were no satisfactory accommodations for visitors to this park, and that it was located in a remote section of the country which was a combination of desert and mountain that was not altogether attractive. It seems, also, the idea that there were "only ruins" and nothing else to invite the traveler discouraged tourist travel to this park.

No more completely mistaken impressions could possibly seize the mind of man than these conceptions of Mesa Verde Park. In the first place, Mesa Verde is readily accessible, and it costs practically the same to make a trip to this park as it does to visit Yellowstone

and Glacier. In the second place, there are very comfortable accommodations in the park for the traveling public, and in the little town of Mancos, the railroad point nearest the park, there is an excellently managed hotel. In the third place, Mesa Verde Park is located in one of the most beautiful sections of the Southwest. There is no desert in nor near the park, and if there were it would only add to its loveliness, because after all the desert of the Southwest is exceedingly beautiful.

Mesa Verde, however, stands in the midst of fertile valleys. On one side there is the broad green valley of the Mancos, filled with farms and a contented people, and on the other side there is the beautiful Montezuma Valley, equally fertile and also intensely cultivated by the thrifty owners of its farms, and south and southwest of the park lies the Southern Ute Indian Reservation.

A LAND OF WONDERFUL BEAUTY.

The Mesa Verde itself is about 15 miles long by 8 miles wide and rises abruptly from the Montezuma and Mancos Valleys over a thousand feet. It is called the Mesa Verde (green table-land or plateau) because it is covered with a fine growth of cedar trees. This tree growth adds much to the scenic character of the park. The panorama of the surrounding region that one obtains from the top of the mesa is even more wonderful than the scenery of the mesa itself. Below the Montezuma and Mancos Valleys lie peaceably in the protecting embrace of the distant mountains. Over to the west lies the Sleeping Ute Mountain and south of the park Shiprock greets the gaze of the awe-inspired visitor, and on the north and east the high peaks of the Colorado Rockies pierce the very skies.

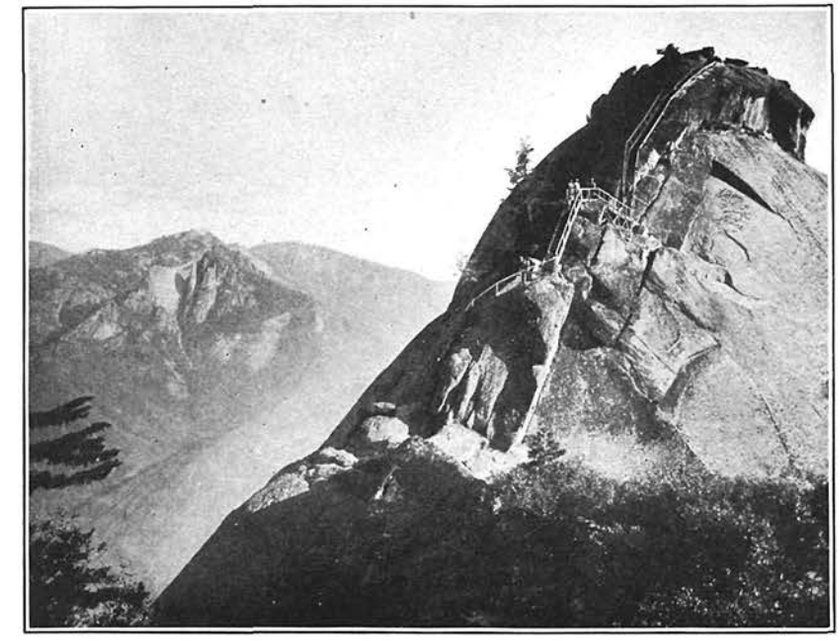
This view from the rim of the mesa is marvelous at any time, but at sunset it is more beautiful than at any other time of the day. It is sufficient to state that the Mesa Verde sunset is alone worth a trip to southwestern Colorado. So much for the summary of the location of the park and its natural beauties. The ruins, of course, constitute its greatest charm, and no one can appreciate what these ruins are unless he has seen them.

Mesa Verde is cut by numerous deep canyons running in a northerly and southerly direction through its entire length. These canyons begin with small depressions at the north end of the mesa and become deeper as they approach the canyon of the Mancos River beyond the south boundary of the park. In these canyons the peoples of a forgotten race erected among the cliffs the magnificent structures that the park was established to forever preserve. Just as it is impossible to paint a word picture of the magnificence of Mount Rainier, the unbelievable beauties of Crater Lake, the enormous dimensions of the Sequoia trees, so also is it impossible to tell the story of the great cliff dwellings of the Mesa Verde. When one stands on the edge of a canyon and looks upon one of the great cliff dwellings, such as Cliff Palace or Spruce Tree House, he is overcome with the same emotions that grip his very soul at the edge of the Grand Canyon. The scene can not be described in words, neither can the feeling that one experiences.



SEQUOIA NATIONAL PARK.

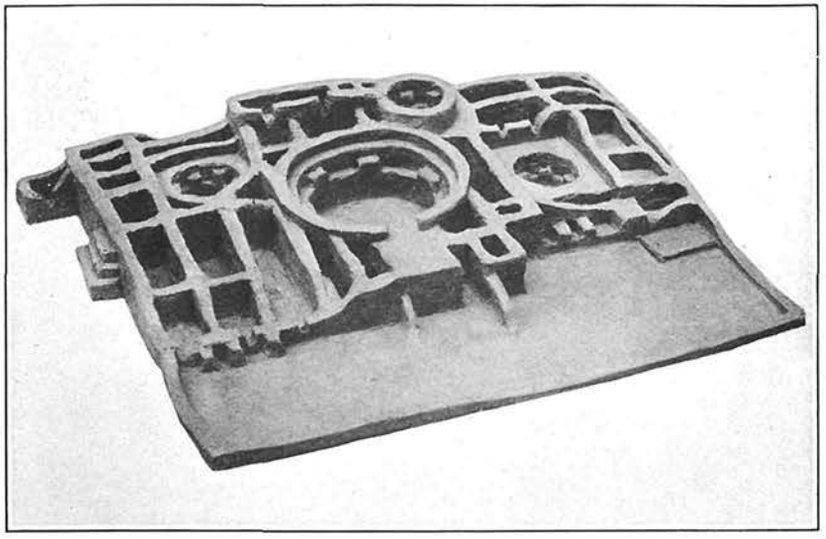
Camping out on fallen sequoia tree, over 20 feet in diameter at base.



SEQUOIA NATIONAL PARK.

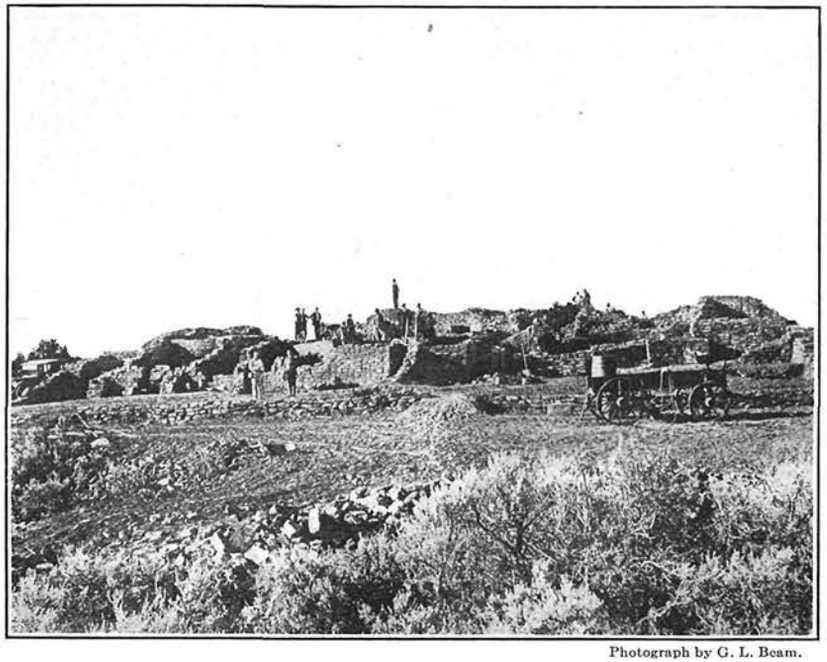
MORO ROCK.

This picture shows the new stairway, 346 feet in length, erected to the top of the great granite monolith.



MESA VERDE NATIONAL PARK.

Photograph of a model of Far View House as uncovered last year.
Reprinted from "Explorations and Field Work of the Smithsonian Institution in 1916."

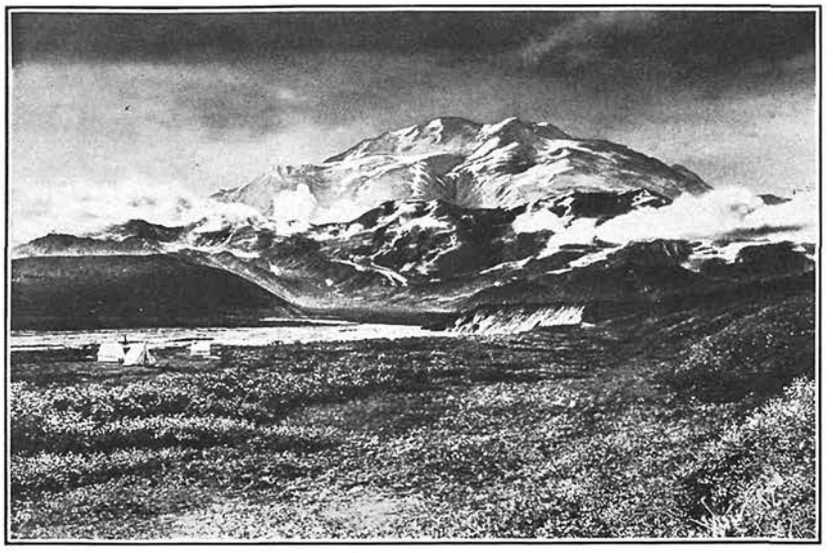


Photograph by G. L. Beam.

MESA VERDE NATIONAL PARK.

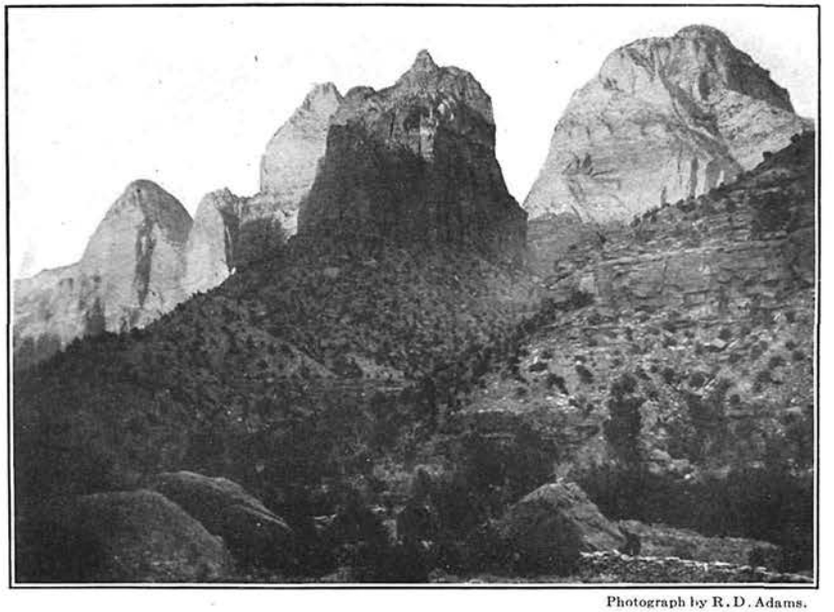
FAR VIEW HOUSE FROM THE SOUTH.

This mesa pueblo was excavated in 1916. It is one of the Mummy Lake group of ruins.



MOUNT McKINLEY NATIONAL PARK.

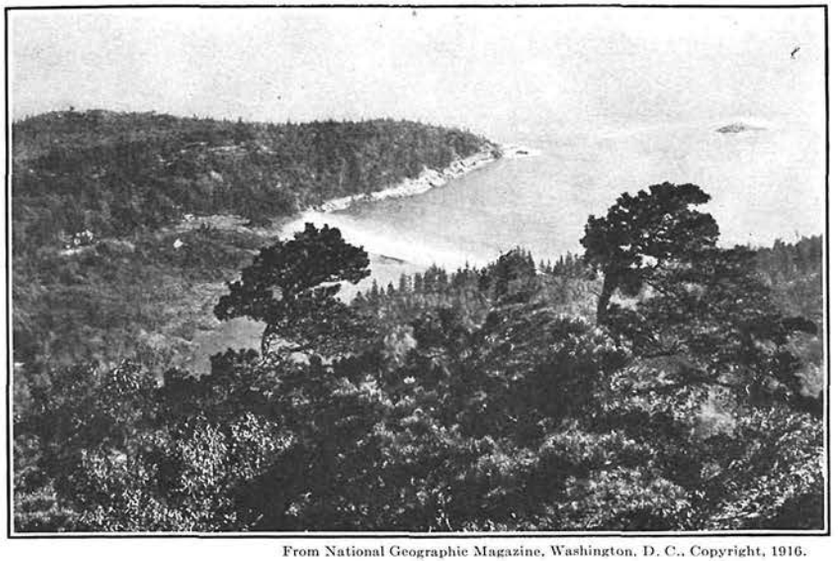
Mount McKinley, 20,300 feet above the sea.



Photograph by R. D. Adams.

MUKUNTUWEAP NATIONAL MONUMENT.

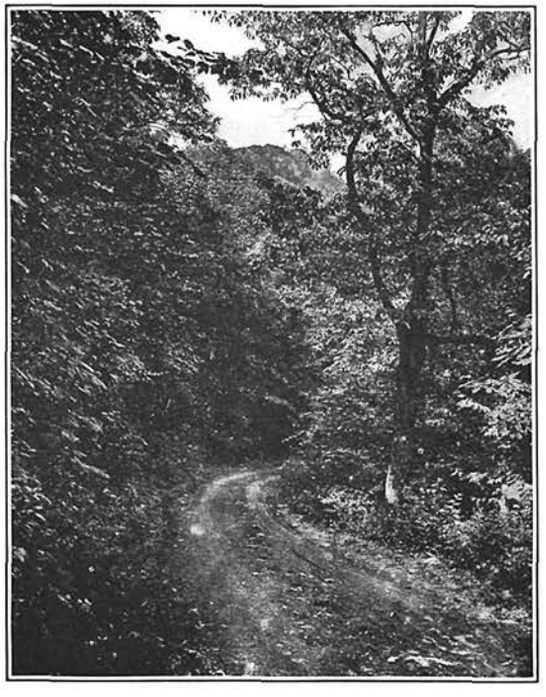
Scene in Zion Canyon, showing the beautiful East Temple of the Virgin.



From National Geographic Magazine, Washington, D. C., Copyright, 1916.

SIEUR DE MONTS NATIONAL MONUMENT.

Vista of the sea from Newport Mountain.



PROPOSED GRANDFATHER MOUNTAIN, NATIONAL PARK, NORTH CAROLINA.

Yonahlossee Road along the side of Grandfather Mountain.

DISCOVERY OF FAR-VIEW HOUSE.

The cliff dwellings are not all that remain of the ancient civilization that the park contains. Dr. J. Walter Fewkes, of the Smithsonian Institution, uncovered the wonderful Sun Temple on the top of the mesa, not far from Cliff Palace, in 1915, and last year, in the Mummy Lake group of mounds, he unearthed and restored Far-View House, a splendid mesa pueblo of enormous size. A picture of this ruin and a model of its structure are contained in this report. It can not be described here, but Dr. Fewkes has recently published a full report on his excavation of Mummy Lake and has fully explained the features of Far-View House.

BIG RESULTS FOR LITTLE MONEY.

The excavating that has been done in Mesa Verde Park has been accomplished on a very small scale. Dr. Fewkes, with small allotments of funds made only occasionally, has accomplished an unbelievable amount of invaluable archæological work. First, he explored and excavated several of the larger cliff dwellings, then he devoted himself to the pueblo ruins, with the result that we now have Sun Temple and Far-View House added to the long list of the Mesa Verde's accessible prehistoric structures. Much more archæological work should be done.

A few thousand dollars a year would make possible the early excavation of the other mounds at Mummy Lake, and within a comparatively short time a great group of cities of the past could be cleared out and restored. Funds should also be provided for further archæological work among the cliff dwellings.

The wonderful Peabody House should be restored at once. Its great four-story tower, one of the most interesting features of the Mesa Verde cliff dwellings, is in danger of toppling over, and there are other unique features of this structure which demand immediate attention. This cliff dwelling has kivas or ceremonial chambers that are still covered with the original roofs of cedar poles, installed, of course, hundreds of years ago, just how far in the past no one knows. This cliff dwelling is not easily reached at the present time, and it is not proposed to build a good trail to it until the needed work of restoration has been completed.

MESA VERDE'S TWO GREAT NEEDS.

Funds for the excavation of more pueblos and for cliff dwelling repairs constitute one of Mesa Verde's two greatest needs. The other is a new road ascending the mesa. The existing road around Point Lookout is not satisfactory. In rainy weather it is impassable, and rocks and débris from the mountain above are constantly sliding into the middle of the road. Engineers state that it will never be possible to prevent blocking of the road by débris, and that as long as it is used the cost of maintaining the park road system will be high, but by building a new road eliminating this ascent to Point Lookout, the present cost of maintaining the Mesa Verde road system can be cut at least one-half, and perhaps three-fourths of the maintenance expense can be eliminated. The entire road system of the park, with the exception of the Point Lookout road, is in excellent condition. It is very easy to maintain.

There was an increase of 100 per cent in travel to Mesa Verde during the 1916 season, when 1,385 people toured the park, and reports for this year indicate that this figure has almost doubled during the season just closed. Prior to October 12, 7,223 registered in the park. There was a large increase in automobile travel; 364 cars entered the park during this season, as against 185 last year.[1]

Very good accommodations for travelers in the park have been maintained during the season at Spruce Tree Camp, and next year these accommodations will be considerably enlarged and many new improvements will be made in the camp establishment.

The National Park Service will construct an automobile shelter and free camp for motorists and will establish in a new structure, originally built for a ranger station, a museum and gallery of pictures of the park. All relics of the cliff dwellings and pueblo ruins now in the park and those that may hereafter be accumulated will be installed in this museum. The museum building has a broad veranda, where visitors may sit and contemplate the beauties of Spruce Tree House in the cliff on the other side of Navajo Canyon. In this building Dr. Fewkes may lecture to the visiting public on the history of the Mesa Verde and on his archæological work in the park—provided, of course, that the continuation of his work is authorized.

SCHOOL OF ARCHÆOLOGY BOUND TO COME.

Sometime in the future there may be a school of archæology in Mesa Verde Park, where students may gather from all of our great colleges for a study of the institutions, customs, and characteristics of the vanished race that once inhabited the park. As the National Park Service encourages the use of the parks by students of the natural sciences, so does it invite students of archæology, anthropology, and related sciences to foregather in the Mesa Verde and its monuments of the Southwest, where the remains of a past civilization are preserved.

Ultimately there may be other parks like Mesa Verde established in the Southwest, and certainly there are other cliff dwellings and prehistoric structures that should be preserved under the monuments act. The National Park of the Cliff Cities, including the Bandelier Monument, is already projected.[2] Investigations have been made during the summer that will doubtless disclose ruins that should be included in the national monuments by presidential proclamation.

It is very easy to visit other interesting points in the Southwest from Mesa Verde Park. It is only a short trip to Taos in one direction and to the land of the Moquis and Navajos in another direction. In the Navajo Reservation there is a national monument, the improvements of which will be described in another part of this report, and down in New Mexico there are the ruins of Chaco Canyon Monument that are administered by the Interior Department, and those of Bandelier and Gila Cliff Dwellings Monuments under the Agricultural Department.

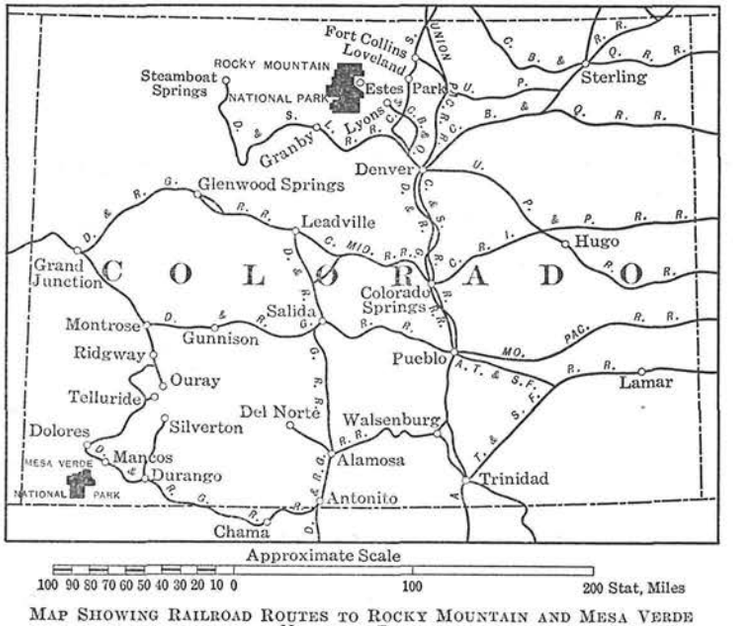
[1] See map showing position of Yellowstone, Glacier, Rocky Mountain, and Mesa Verde National Parks, and Mukuntuweap National Monument, with principal connecting roads, p. 38.

[2] See p. 94.

Mesa Verde National Park may be reached from Salt Lake City, Utah, from Denver and other points in Colorado, and from Santa Fe, N. Mex., via the lines of the Denver & Rio Grande Railroad. These lines traverse some of the finest scenery of the Rocky Mountains.

A CHOICE OF SCENIC ROUTES.

If what is known as the "Round the Circle" tour is taken from Denver, the Mesa Verde traveler may enjoy the trip through two great gorges with walls nearly 3,000 feet in height and along the rim of another gorge 3,000 feet deep, and he may ride over three passes, the altitudes of which are over 10,000 feet. The gorges are



MAP SHOWING RAILROAD ROUTES TO ROCKY MOUNTAIN AND MESA VERDE NATIONAL PARKS.

the Royal Gorge of the Arkansas River, the Black Canyon of the Gunnison, and the Toltec Gorge of the Los Pinos; and the three passes, the Marshall Pass, 10,856 feet, Lizard Head Pass, 10,250 feet, and Cumbres Pass, 10,015 feet. If the trip is made from Salt Lake, the pass at Soldier Summit in the Wasatch Mountains is of great interest to the traveler, as it affords splendid panorama of Utah's great central valley.

But the deep gorges and high passes to be seen and enjoyed on the railroad trip to Mesa Verde are only a few of the features of the circle tour. The fertile valley of the Uncompahgre River is traversed and from the train one may view some of the works of the Uncompahgre reclamation project. Other beautiful valleys which the railroad passes through are those of the San Miguel, Dolores, and San Luis Rivers, and from Durango a side trip may be made up the beautiful Las Animas Valley. In either direction one must spend a night in the Colorado Rockies on his way to the park.

If the trip is made via Marshall Pass and the Black Canyon of the Gunnison from Denver, or via Soldier Summit and Grand Junction (Colorado National Monument near here) from Salt Lake City, a night is spent in the picturesque mining town of Telluride, where the Rockies tower high above the village and its great mills. If the trip is made in the other direction, via Alamosa, Cumbres Pass, and the Toltec Gorge, the night is spent in Durango.

There is scenery everywhere along the line, and if Pullman sleepers were provided for the traveler he would miss much that he should see. Sleepers, of course, are provided from Denver and Salt Lake City to the junction points of the broadgauge lines of the Denver & Rio Grande, with its narrow gauge at Alamosa, Salida, and Montrose.

HOT SPRINGS RESERVATION, ARK.

The 1917 season marks the beginning of a new era for Hot Springs Reservation, Ark. In the sundry civil bill of June 12, 1917, Congress authorized the use of $10,000 of the revenues of the reservation for the preparation of a general plan of development, including the landscape improvement of the park and a new Government free bathhouse. The contract for the preparation of this comprehensive improvement scheme was awarded to the firm of Mann & Stern, architects, of Little Rock, Ark., who have designed and constructed several of the splendid new bathhouses on the reservation front.

Preliminary plans that have already been submitted to the department indicate that a solution of the landscape problem involved has been found and the perplexing question of where the new Government bathhouse shall be located has also been solved. Studies for the new free bathhouse have already been submitted and a design selected, and an estimate for an appropriation for the construction of the new bathhouse will be submitted at once for the consideration of Congress at its next session.

It is expected that the complete plan for the entire improvement of the park will be ready for submission to Congress a year hence. When this comprehensive scheme for the development of Hot Springs shall have been carried to completion, this great park and its health-restoring waters should take a place among the finest spas of the Old World.

During the past year approximately 135,000 people visited Hot Springs. This is the largest patronage that it has enjoyed in recent years. It is expected, however, that the number of visitors during the coming season will exceed that of all previous years.

Among this great throng of visitors there are, of course, thousands of indigent sick who swarm into the city, and many of them soon require the attention of the charitable institutions of the community. I venture the opinion that there are few towns in the United States where there is so much charitable work required and so few to shoulder the burden. The attitude of Congress toward the development of the reservation, particularly in connection with projects involving work in the city as well as on the reservation, should be guided largely by what this community does for the suffering humanity that it finds each year within its gates and ministers to through its charities and civic associations.

The operation of the free clinic by public-spirited doctors of the city is another example of what the Hot Springs people are doing for the poor and sick within their gates. The work of the free clinic has been continued throughout the year with very satisfactory results. The cases treated, with a full analysis of their reports, will be found on page 110 of the report of the supervisor of the reservation.

During the past year a relentless war has been waged on the drumming evil, with the result that 14 doctors have been stricken from the list of registered physicians and 17 drumming hotels were punished by having their guests denied the baths of the park so long as these individuals patronized their establishments. The beneficial results of the elimination of the drumming evil can hardly be estimated.

HAWAII NATIONAL PARK.

The act of Congress approved August 1, 1916,[1] created the Hawaii National Park from lands on the islands of Hawaii and Maui, in the Territory of Hawaii. This reservation includes four tracts of land totaling 75,295 acres, within which are located two of the most famous active volcanoes in the world, Mauna Loa and Kilauea, and another volcano Haleakala, which erupted less than 200 years ago, in addition to the wonderful lava lake, a mass of fire 1,000 feet in diameter.

The Hawaiian volcanoes are wholly unique of their kind, the most famous in the world of science, and the most continuously, variously, and harmlessly active volcanoes on earth. Kilauea crater has been nearly continuously active with a lake or lakes of molten lava for a century. Mauna Loa is the largest active volcano and mountain mass in the world, with eruptions about once a decade, and has poured out more lava during the last century than any other volcano. Haleakala is a mountain mass 10,000 feet high with a tremendous crater in its summit 8 miles in diameter and 3,000 feet deep, with many high lava cones built up inside the crater. It is probably the largest of all known craters among volcanoes that are technically known as active.

In view of the provision in the act creating the park that no appropriations shall be made until conveyance is effected of such perpetual rights of way over private lands within the exterior boundaries of the park as the Secretary of the Interior shall find necessary to make it reasonably accessible in all its parts, the matter of obtaining definite information as to conveyance of these rights of way has been taken up with the Governor of the Territory and with the Commissioner of Public Lands. Assurances have been obtained that needed rights of way will be granted within the Haleakala tract, and within the crater itself there will be no difficulty in obtaining camp and building sites, rights of way for trails, etc.

All of the private holdings within the Mauna Loa tract, so-called because it includes the very summit of the mountain, Mauna Loa, with its crater, Mokuaweoweo, will probably be conveyed to the Government within a short time. These lands will be donated by their owners.

[1] 39 Stat., 432.

It is expected also that arrangements will be made shortly for the transfer of the Kilauea Crater to the Government. Some readjustments of boundaries of the Kilauea tract remain to be effected. An estimate has been submitted to Congress for the appropriation of funds to continue negotiations with reference to the adjustment of private holdings and the securing of rights of way, conditions precedent to the further development of the park under the organic act.

The National Park Service should assume active control of the Hawaii Park areas as soon as possible. Travelers to the park are becoming more numerous each year, and acts of vandalism are daily occurring and may be expected to increase. Questions may be asked as to how volcanoes and their surrounding regions may be injured in any manner, and doubt may be expressed as to the necessity for protecting a volcanic park. The fact is there are many volcanic formations that are as susceptible to injury as the formations of Yellowstone Park. There are caves in the crater of Kilauea, for instance, where the lava in cooling has produced wonderful formations which might be termed stalactites and stalagmites. These beautiful formations will be entirely ruined unless they are protected from the unthinking travelers who delight in throwing bottles at them. The lava is exceedingly brittle and delicate, breaking very easily, and it is a source of amusement to tourists possessing vanadalistic propensities to strike them with bottles and watch them shatter.

In the crater of Haleakala the beautiful silver sword plant grows. Tourists are in the habit of pulling up these plants and taking quantities of them away as souvenirs. This plant grows no place else in the world, and if a measure of protection is not given to it in the Hawaii Park it will soon become extinct.

Furthermore, the beauty of the floor of the Kilauea Crater to a considerable extent is lost because it is impossible to compel the traveling public to clean up the camp and picnic grounds.

There is an inhibition of $10,000 on the appropriation for the park, but at least this amount should be provided for protective purposes after the conditions precedent to an initial appropriation have been fulfilled, until such time as Congress considers it advisable to proceed with the general development of the park in the public interest.

WIND CAVE NATIONAL PARK.

Wind Cave National Park in South Dakota, like most other members of the system, has enjoyed an increase in patronage this year. The increase in automobile traffic was especially notable. Considerable work was done during the year in improving facilities for exploring the cave.

Other general improvements have been made, but the most important need of the park has not yet been met. This requirement is an adequate lighting system for the cave. A limited amount of funds is available for the installation of a lighting system, but up to the present time it has been impossible to find an adequate plant that could be purchased with the amount available.

Improvement in the wild animal preserve of the park under the direction of the United States Biological Survey has been progressing very satisfactorily. Several animals were brought to the park for

addition to the herds during the past year. The wild animals are securely inclosed by fences and visitors have no difficulty in seeing them. They constitute the attraction second only in importance to Wind Cave itself. Ultimately this park will become one of the most important wild animal sanctuaries of the United States.

PLATT NATIONAL PARK.

Platt National Park in Oklahoma has been visited by more people this season than ever before. It is estimated that approximately 35,000 persons visited the park during the year, but of course it is impossible to state how accurate this estimate is. It is not feasible to actually count every person entering the park nor is there any way to determine the number of parties who entered the park more than once in the course of the year. It is a fact that the popularity of the park is growing rapidly and that people are coming from long distances to enjoy the cool atmosphere and drink the medicinal waters. A large quantity of water from the medicinal springs has been shipped from the reservation during the year under departmental concession.

The roads and trails of the park have been improved and a small swimming pool has been constructed on one of the streams for public use. Much additional improvement is needed, and ultimately it may be advisable to construct a bathhouse in order that a larger use of the mineral waters may be had. This project will be given consideration during next year, as well as other plans for the betterment of the park.

The park is easily reached by train, and it is also accessible to the motorist. The roads in the park are few, but they are all well improved and they reach the most beautiful sections of the reservation.

SULLYS HILL NATIONAL PARK.

Sullys Hill National Park is being developed as a wild animal preserve under the general direction of the Biological Survey. Under appropriations made by Congress, the work of fencing and improving the park is progressing rapidly, and already several species of animals have been liberated in the park.

CASA GRANDE RUIN.

Little improvement work was done in Casa Grande Ruin during the past year because of lack of funds. At the request of this service, however, the Commissioner of the General Land Office had the roof of the custodian's house, which was blown off during a severe storm, replaced and also had some improvement work done on an old well which was sunk many years ago. The expense of these improvements was charged to the appropriation for protecting the public lands.

The walls of the well have again caved in and it is now in bad condition. It is, therefore, recommended that a new well be drilled a short distance west of the present one. The pump and engine installed by the General Land Office in connection with its improvement work last year could be moved to the new well.

At present the Ruin is unprotected from incursions of stray cattle, and a fence is badly needed. It is estimated that such a fence would cost $1,500.

THE APACHE TRAIL.[1]

In connection with the Casa Grande Ruin mention should be made of the "Apache Trail," which the Southern Pacific Railway is promoting in southern Arizona. The Apache Trail tour involves a side trip from the main line of the Southern Pacific, the "Sunset Route," from either Maricopa or Bowie, dependent upon whether the traveler is going east or west.

From east to west the trip is made as follows: Cars carrying parties holding tickets for the Apache Trail trip are sent from Bowie over the Arizona Eastern Railroad to Globe. Here connection is made with an automobile transportation line for the famous Roosevelt Dam of the Salt River reclamation project, 45 miles distant. At the Roosevelt Dam the railroad maintains a hotel. The present establishment has recently been renovated, but it will shortly be replaced by a new structure of imposing proportions, which will embody the principles of the architecture of the Southwest. Ordinarily the tourist remains overnight at the Roosevelt Dam, proceeding to Phoenix the next day by way of the Canyon of the Salt River, a ride of 75 miles through a very scenic region. At Phoenix the sleeper is taken for the continuation of the westward journey. The Tonto National Monument, with its well-preserved cliff dwellings, is near the Roosevelt Dam.

In connection with the trip over the Apache Trail it is possible with small changes in plans to visit Casa Grande Ruin and the Papago Saguaro National Monument, with its many varieties of cacti and other desert plants. The Papago Saguaro Monument is near Tempe, Ariz. The trip to the Casa Grande Ruin can also be made from the town of Florence and from Casa Grande station on the main line of the Southern Pacific Railway. The route to the Ruin by Florence is a little shorter than by way of the station at Casa Grande.

MOUNT M'KINLEY NATIONAL PARK.[2]

This new reservation, which incloses an area of 2,200 square miles, lies in south-central Alaska and contains the loftiest mountain in America—Mount McKinley. It was established by the act of Congress approved February 26, 1917,[3] and is the second largest national park.

Mount McKinley[4] rises 20,300 feet above sea level and is nearly 6,000 feet higher than Mount Whitney, the loftiest summit within the borders of the United States proper. The south side of Mount McKinley, which is the stupendous climax of the great Alaskan range, is nearly impassable. It is covered by glaciers of enormous bulk. The annual snowfall in some places reaches a depth of 60 feet. On the north side, however, is a rolling country dotted with beautiful lakes and forests and inhabited by great herds of caribou, bighorn

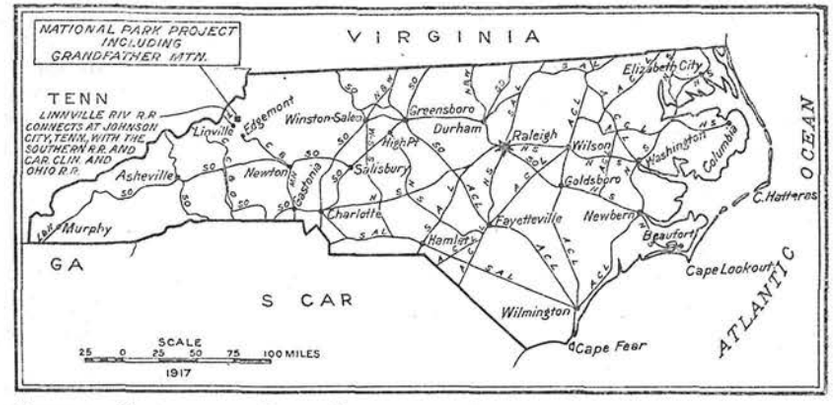
[1] See map opposite p. 98.
[2] See bibliography of publications on the Mount McKinley region, p. 243.
[3] See p. 224 for text of organic act.
[4] See picture of Mount McKinley in this report.

sheep, moose, and deer. The huge Alaskan bear is also native to the park.

Congress established this reservation as a refuge and breeding ground for conservation of Alaskan big game against inroads which may be expected to develop upon completion of the new Alaskan Railway. In the absence of specific appropriation for administration of the park the governor of Alaska continues to afford protection to the animal life through the small force of Territorial game wardens under his direction. Promptly upon passage of the act creating the park an estimate for an appropriation in the sum of $10,000 for protective and improvement purposes was submitted to Congress, but this failed to receive favorable consideration in either the Sixty-fourth or the Sixty-fifth Congresses. The estimate has been again submitted in the regular estimates for the 1919 fiscal year.

FIRST NATIONAL PARK EAST OF THE MISSISSIPPI.

Within a short time there will be a national park established in the southern Appalachian Mountains under the authority contained in the sundry civil act approved June 12, 1917.[1] Doubtless the new park will be called Grandfather Mountain National Park, because the famous peak that will form its center has long been known as the "Grandfather." The tract will be donated to the Federal Govern-



PRINCIPAL RAILROADS IN NORTH CAROLINA AND LOCATION OF PROPOSED GRANDFATHER MOUNTAIN NATIONAL PARK.

ment by public-spirited citizens of North Carolina and will be a very valuable addition to our national playground system. The service will publish a detailed description of the area, with full data as to its location, means of access, etc., as soon as the transfer of the property has been completed.

Grandfather Mountain was said by the early settlers to have received its name because it was supposed to be the highest mountain in the East when measured from its base in the Johns River Valley to the peak. While it does not rise to as great a height as Mount Mitchell, the base of its eastern slope is probably a thousand feet lower than the base of Mount Mitchell. Taking in consideration its

[1] See p. 226.

height, ruggedness, beauty of scenery, and the forests which surround it, the mountain is most striking and impressive. The Grandfather is the highest mountain in the Blue Ridge Range. It appears that all higher peaks are in spurs of the Blue Ridge. The ridge approaches one side of Grandfather Mountain from the southwest at an elevation of about 4,500 feet, and seems to run under the mountain and leave the other side, going northwest at about the same elevation. The mountain is said to be the center of more river systems than any other peak. The East and West Forks of the Linville River, the North Toe River, the South and East Forks of the Watauga River, and Wilson Creek, which runs into the Catawba, all have headwaters on the slopes of Grandfather Mountain; and the headwaters of the Yadkin River are not far distant. The mountain is covered with a growth of hardwood and in the park area of 1,400 acres the growth is largely spruce, fir, and balsam. There has been considerable road and trail improvement accomplished already and the area will be accessible to visitors as soon as it is dedicated for park purposes.

MUKUNTUWEAP NATIONAL MONUMENT (ZION CANYON).

During the past year considerable attention has been directed toward the exploration and improvement of Mukuntuweap National Monument in southern Utah. This monument embraces the beautiful canyon of Zion Creek (a branch of the Virgin River) a gorge that ranks with the finest canyons of the park system. In some respects it resembles the Yosemite Valley and in others the Grand Canyon of the Colorado River. There are domes and spires in the canyon, as there are in the Yosemite, but the Zion Canyon formations[1] were carved, we are told by geologists, through water erosion, while the Yosemite was chiseled out by ice. The walls are perpendicular, as in the case of the Yosemite gorge, but they are not quite so high. On the other hand, they are colored as brilliantly as are the terraces of the Grand Canyon of the Colorado. The height of the walls varies from 2,500 to 3,000 feet and occasionally a magnificent mountain, such as the West Temple of the Virgin, rises more than 3,000 feet above the floor of the canyon. The monument includes most of this gorge, although its extension northward is not reserved and has not even been explored.

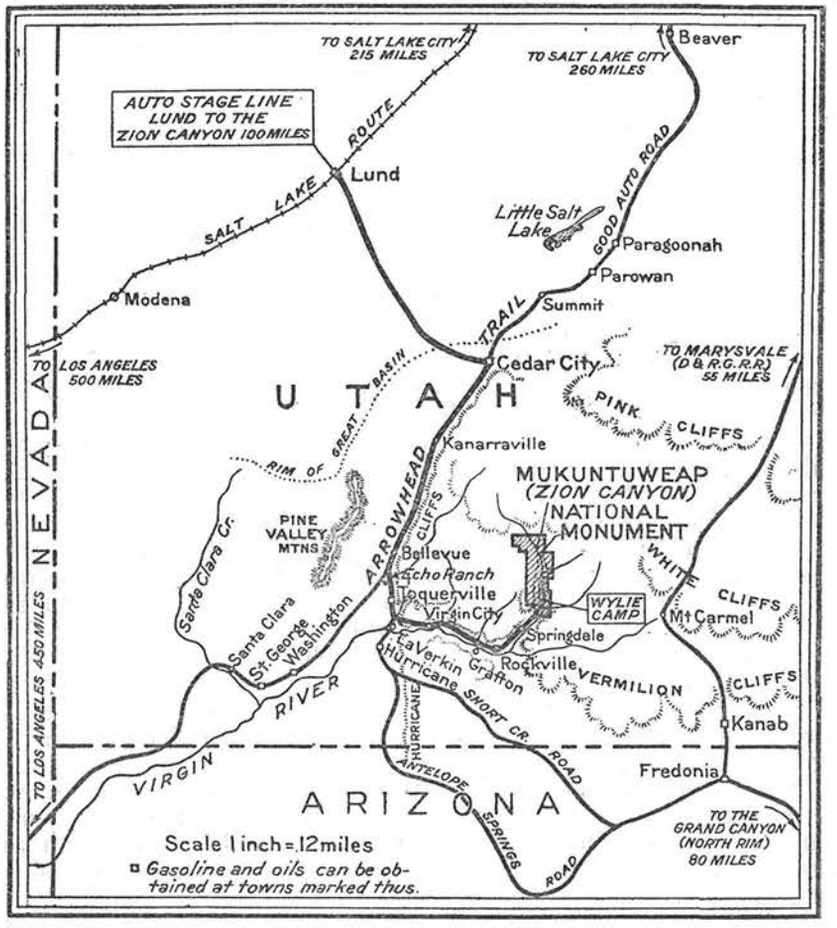
The monument is little known by its Indian name, Mukuntuweap, but is generally called Zion Canyon, the name given to it years ago by the Mormon pioneers.

The monument is reached from Lund, Utah, on the Salt Lake Route, via the Utah State highway to the little village of Springdale at the mouth of Zion Canyon. This village is nearly 100 miles from the railroad, but the entire route is through a surpassingly beautiful region.

Besides its scenic qualities it possesses historic associations and geologic formations that are extremely interesting. For instance, the State highway proceeds for several miles along the Hurricane Cliffs formed by the great Hurricane Fault and through the outlet of the great Lake Bonneville, so important in the geologic history of the

[1] See picture of East Temple of the Virgin, in Zion Canyon, which is reproduced in this report.

United States. Again, the road takes its course through the site of old Fort Hamilton, where the Mormons built a stockade more than a half century ago for protection against the Indians, and through several other very interesting historic settlements. The history of the Mormon settlements in southern Utah and the life in the thrifty Mormon communities in "Dixie," as this country is generally known,



MAP SHOWING POSITION OF MUKUNTUWEAP NATIONAL MONUMENT IN SOUTHERN UTAH, WITH CONNECTING ROADS.

which one hears about and observes on a trip to Zion Canyon, make the journey inexpressibly delightful.

During the past year the department granted to Mr. W. W. Wylie, formerly of the Wylie Camping Co., in Yellowstone Park, and his associates a five-year concession to maintain and operate a permanent camp in Zion Canyon and a transportation line from Lund, Utah, to this canyon. An excellent camp was established in one of the most beautiful spots in the gorge and is operated throughout the summer; in fact it is still open for auto travel.

Over 300 people visited the canyon during the season. This travel is considered remarkable when attention is given to the fact that this is the first year that the monument has been accessible. The transportation line from the railroad to the canyon has been excellently managed.

Plans for the complete development of this monument as an important tourist resort are now under way. Under an appropriation of $15,000 several miles of new automobile highway were constructed during the spring of this year. Next year this road and others in the monument will be further improved and trails to side-trip destinations from the Wylie Camp will be constructed.

SIEUR DE MONTS NATIONAL MONUMENT, MAINE.

Sieur de Monts National Monument, on Mount Desert Island, near Bar Harbor, is the only national monument east of the Mississippi River. It is estimated that it was visited this year by approximately 53,750 people.

Custodian George B. Dorr reports that a large amount of improvement work was accomplished in the monument during the past year. Approximately all of this work was accomplished by Mr. Dorr and his associates through the contribution of their private funds and the expenditure of much personal effort on the part of several of these gentlemen, who have a very high ideal of public service.

It will be recalled that the Sieur de Monts Monument was originally donated to the Federal Government by a group of New England citizens. These same gentlemen are now arranging to donate to the Federal Government a tract of land which will nearly double its present area. This new territory includes the mountains to the west of Somes Sound, which divides Mount Desert Island into two nearly equal sections. The enlargement of the monument will also give it a mile of frontage on the sea, with excellent opportunities for the establishment of boat landings. Furthermore, the enlargement will bring into the monument the site of the famous French missionary colony of 1613, a most historic spot, with land connecting it directly with the mountains and with ample opportunity for wharfage.

During the year a mile and a half of level path in the Otter Creek Gorge was constructed. A new path was also constructed to the summit of Dry Mountain. Rock construction is mainly involved in this latter piece of work, which covers a distance of about a mile and a quarter; the height ascended is 1,200 feet.

During the year the State of Maine and the town of Bar Harbor have jointly expended approximately $12,500 on the principal road through the monument. Other important road construction completed during the year includes the important approach road on the Seal Harbor side of the monument, work that has cost in excess of $8,000. Road work initiated and partially completed includes new construction work on the Bar Harbor approach. No Federal funds were expended in any of these improvements.

Forest clearing in the Eliot and Beaverdam Pool woods as a means of preventing fires was undertaken and completed during the year.

Two rangers were employed during the summer to protect the forests, birds, and wild animals. These rangers are paid a very nominal salary by the Government. Contributions by the gentlemen who are interested in the promotion and development of the monument provided the bulk of the funds for this protective work.

A series of publications on the monument was issued during the year, list of which will be found on page 246. With the cooperation of the Boston & Maine Railroad an edition of 42,000 booklets on the Sieur de Monts Monument and the White Mountain National Forest was issued for free distribution to the public. These publications have stimulated a tremendous interest in the monument, and have had the effect of inducing much travel to the reservation.

This beautiful park is bound to grow in importance as a national playground, and its development should receive the early consideration of Congress.

MUIR WOODS NATIONAL MONUMENT, CAL.

Muir Woods National Monument, in California, on account of its close proximity to San Francisco was naturally visited by a large number of people. It is estimated that approximately 26,000 people visited the park during the year, of which number approximately 6,000 entered in automobiles. The monument is visited by the majority of those who ride to the summit of Mount Tamalpais on the Mount Tamalpais & Muir Woods Railroad, the crookedest railroad in the world. It is a delightful trip to leave San Francisco in the morning, go over to Sausalito on the ferryboat, thence to Mill Valley by electric train, and there take the sight-seeing train to the top of Mount Tamalpais, where a marvelous view of the Pacific Ocean, San Francisco Bay and all of the region surrounding the bay may be had. The return trip is made by gravity car to the Muir Woods, thence back to Mill Valley and San Francisco by train and ferryboat. Visitors to Mount Tamalpais and Muir Woods come from all over the United States; in fact, a very large majority of people who visit these places each year are from outside of the State of California.

The trees in the Muir Woods are sequoia sempervirens, a species of redwood that grows in the Coast Range Mountains of California; sequoia washingtoniana or gigantea grow in the Sierra Nevada and in no other place in the world. The grove was donated to the Nation by Hon. William Kent and Mrs. Kent in 1908.

During the year the fire lanes and trails of the Muir Woods Monument were cleared out and are now in excellent condition. The road within the monument, however, is badly in need of graveling; several small footbridges also are needed, and a system of signs for the information of travelers in the monument should be installed.

A special assistant has been assigned to aid the custodian in caring for the park on Sundays and holidays during the summer season.

RUINS IN NAVAJO MONUMENT, ARIZ., RESTORED.

In the Indian appropriation act of May 18, 1916, $3,000 was made available for the preservation and repair of the prehistoric pueblo ruins and cliff dwellings comprising the Navajo National Monument, Ariz., and Neil M. Judd of the United States National Museum was detailed by the Smithsonian Institution as field officer in charge of this work. Mr. Judd proceeded to the Navajo Indian

Reservation in March and directed his attention solely to the restoration of Betatakin (Hill-side House), a remarkable cliff village which was rapidly falling into hopeless ruin. Owing to extremely unseasonable weather conditions and to the difficulty of securing laborers or even sufficient provisions for the small force engaged, the repair of this single large ruin was not completed before the appropriation lapsed, a few rooms being left in a fallen state. The rebuilt portion of the pueblo, however, will afford a fairly correct and lasting impression of the original appearance of Betatakin and assist the visitor in picturing the daily life and activities of its picturesque builders.

During the work of restoration every effort was made to retain the aboriginal "atmosphere" of the place and to eliminate, as far as possible, all evidence of the white man's handiwork. Mud instead of cement was employed in reconstructing masonry walls; willows and leaves of the yucca plant were utilized in repairing walls of wattle construction. Shallow steps, pecked with stone hammers into the sloping floor of the cave and leading from one section of the ruin to another, were enlarged to furnish a safe footing for modern visitors. Ladders made from the trunks of cedar trees, with branches or notches for steps, and pole ladders, with rundles bound by willows and yucca-leaf withes, were placed at certain walls as a means of ready access to the housetops. Fallen roofs were replaced and retaining walls were rebuilt, but always with the materials an aborigine would have utilized in similar tasks.

A few weeks' additional work is yet needed before Betatakin is entirely ready for the many visitors, who will find both pleasure and inspiration among its abandoned rooms. Kitsiel (Broken-pottery House) and several lesser cliff villages near Betatakin should also be excavated and restored; Inscription House, a prehistoric dwelling included within the Navajo National Monument, but some distance from the other ruins, is one of the most important of the northern Arizona cliff houses and deserves especial consideration in future efforts at restoration. In this ancient pueblo is the unprotected inscription of an early Spanish explorer, an inscription made during the latter part of the seventeenth century, a hundred years before the Spaniards were supposed to have penetrated the desert west of the Hopi villages. That Inscription House should be speedily and properly restored is obvious to all students of our great Southwest and to all Americans who find pleasure in tracing the history and development of their country.

EL MORRO NATIONAL MONUMENT, N. MEX.

El Morro National Monument includes the historic El Morro Inscription Rock, approximately 40 miles from Thoreau, N. Mex., and 55 miles from Gallup, N. Mex. Both Thoreau and Gallup are on the Atchison, Topeka & Santa Fe line.

During the year arrangements were made with Mr. Evon Z. Vogt, of Ramah, N. Mex., to assume the custodianship of the monument and to supervise its improvement. Under his direction a substantial fence 1⅜ miles long has been built at the base of Inscription Rock for protection of the famous Spanish inscriptions against depredations; a fence for visitors' stock has also been constructed.

In order to secure an ample supply of water, the spring at the base of the rock has been cleared out and the water impounded. This improvement is a very important one because the monument is located in a semiarid region. The monument was enlarged by presidential proclamation of June 17, 1917, to include two quarter sections of land west of Inscription Rock. Within a canyon dividing the western formation there are several large communal houses built by the aboriginal inhabitants of the region.[1]

MONTEZUMA CASTLE NATIONAL MONUMENT, ARIZ.

This monument which embraces the splendid cliff dwelling known as Montezuma's Castle is built in the form of a crescent in a niche in the face of a vertical cliff 175 feet in height. The floor of this niche is approximately 80 feet above the base of the cliff. During the year the National Park Service entered into a contract with Mr. Alston D. Morse covering a general renovation of the Castle. Considerable progress has already been made in this work. New and substantial ladders have already been installed to render safe and convenient access to the ruin. Rubbish will be removed from the structure, the walls will be strengthened, and floors will be supported by posts and beams. These improvements will make the monument accessible to visitors. It is our purpose to appoint a custodian to care for the ruins and prevent active vandalism.

This monument is reached by automobile from Prescott on the Santa Fe system or else it can be reached from Jerome, Ariz., on a branch line of the Santa Fe, a town some 27 miles from the monument; Prescott is 54 miles distant.

CHACO CANYON NATIONAL MONUMENT, N. MEX.

Data on the work of excavation of ruins in the Chaco Canyon National Monument have not been received as yet. The exploration and excavation work that has been undertaken in this monument in the past has been under the auspices of museums and other institutions interested in the preservation of the structures of the early civilization of the Southwest. The Royal Ontario University of Toronto and the School of American Research at Santa Fe have made arrangements to conduct archaeological work in the monument, and a reconnaissance of the ruins has been made by Dr. E. L. Hewett, director of the School of American Research.

TUMACACORI AND GRAN QUIVIRA NATIONAL MONUMENTS.

The Tumacacori National Monument, in southern Arizona, includes the famous Tumacacori Mission, supposed to have been founded by Father Kino between 1687 and 1690. This mission and that of San Xavier del Bac, near Tucson, were Father Kino's two great missions. The latter is still in a splendid state of repair, but the former is in ruins, and unless steps are soon taken to protect its crumbling walls and tower it will be lost forever. Unfortunately the National Park Service can do nothing to improve the mission at the present time.

[1] See presidential proclamation, p. 228.

It lies within the Luis Maria Baca Float property, title to which was confirmed to claimants thereof by the Supreme Court of the United States on November 2, 1914. The Service is making efforts at the present time to secure the conveyance of the mission property to the Government under the monuments act. If this conveyance is made, efforts will be made to repair the old mission and provision will be made for its future protection.

Recently five trespassers on the Gran Quivira National Monument, New Mexico, were caught digging for relics in the ruins of the old mission. They were arrested and upon entering pleas of guilty to defacing the monument were fined and liberated. The fines imposed totaled $246.

PETRIFIED FOREST NATIONAL MONUMENT, ARIZ.

In the Petrified Forest National Monument an elaborate steel reinforcement was placed under the great petrified tree trunk that lies across a small canyon in the First Forest. This tree, which has long been known as the Natural Bridge, has been in danger of sinking into the canyon, and it was exceedingly fortunate that we had sufficient funds available this year to build a support under it that will permanently protect it. This monument lies directly in the path of transcontinental travel through the Southwest and is visited by many thousand tourists in the course of the year. Its most attractive sections are not as accessible as they should be and development by the construction of roads is very badly needed. An estimate for appropriations to build roads in the monument has just been submitted. Mr. Chester B. Campbell, of Adamana, Ariz., is custodian of the monument.

PAPAGO SAGUARO NATIONAL MONUMENT, ARIZ.

Lack of funds prevented the undertaking of any improvement work in the Papago Saguaro National Monument. This monument should be fenced in order to prevent the incursions of straying cattle.

The monument contains many species of cactus and other desert plants.

As I have already explained, it is located near Tempe, Ariz., but it is easily reached from Phoenix and other points in the Salt River Valley. Trips to it can be made in connection with the Apache Trail tour of the Southern Pacific Railway.

COLORADO NATIONAL MONUMENT, COLO.

The custodian of the Colorado National Monument, Mr. John Otto, reports that visitors to the monument during the year numbered approximately 3,500.

No Federal funds have been used in the improvement of the monument, but the custodian reports that much has been accomplished through the public-spirited efforts of the communities near the reservation. The county also made some improvements at the entrance to the monument. A large part of the reserved area has also been fenced with a view to making it available for use as a wild-animal preserve. Much of this work has been done by Custodian Otto himself. He has also kept the trails of the monument in an excellent state of repair.

Colorado National Monument is reached from Grand Junction. This city is on the main line of the Denver & Rio Grande Railroad. It includes in its boundaries many highly colored monoliths, splendid examples of the powerful effects of wind and water erosion. Some of these monoliths are over 400 feet high and 100 feet in diameter at the base.

DEVILS TOWER NATIONAL MONUMENT, WYO.

In the Devils Tower National Monument the authorities of Crook County, Wyo., built over 3 miles of road on a grade not exceeding 8 per cent to reach the base of the tower. Heretofore this great formation has not been accessible except to the pedestrian or to the horseback rider. The new road has a width of from 12 to 16 feet and is well constructed. It should, however, be improved and made a permanent highway. The Federal Government should participate in the improvement of this road. An estimate has been submitted to Congress for an appropriation to cover the cost of half of this improvement.

SHOSHONE CAVERN NATIONAL MONUMENT, WYO.

This cavern is situated in the upper portion of the north face of Cedar Mountain, near Cody, Wyo., on the opposite side of the Shoshone River from the main automobile road to Yellowstone National Park. Ascent to the cavern is very difficult, and because it is so far removed from the Yellowstone road it is not often reached by visitors.

A trail was located along the side of the canyon and the construction of the lower portion was completed last November. The upper and more difficult portion remains to be constructed before convenient access to the cavern can be had.

LEWIS AND CLARK CAVERN NATIONAL MONUMENT, MONT.

The entrances to the Lewis and Clark Cavern have been closed to the traveling public during the past two seasons, but it is hoped that it will be possible to place a custodian in charge of the monument next year and open the cavern to visitors.

Arrangements are also being made for the construction of a road to the main cavern entrance.

There are two entrances to the cavern, both 1,300 feet above the railroad. The climb to them at the present time is a very difficult feat to perform. When an automobile road is constructed, the ascent will be easy, and many motorists who travel between Yellowstone and Glacier National Parks will stop to see this interesting work of nature.

There are four marvelous caverns in the national monument system, two of them under the National Park Service and two under the jurisdiction of the Department of Agriculture. Jewel Cave, in South Dakota, and the Oregon Caves, in Josephine County, Oreg., are the two under the Department of Agriculture. Should jurisdiction of all of the monuments be transferred to the National Park

Service, it would be desirable to issue a publication describing and differentiating the natural features of all of these caverns and perhaps others, such as Mammoth Cave, Luray Cavern, etc.

SITKA NATIONAL MONUMENT, ALASKA.

No effort has been made to improve the condition of the totem poles in the Sitka National Monument during the past year. It will require approximately $1,000 to do the work necessary to safeguard these relics, and an estimate for an appropriation of this amount has been submitted to Congress. Roads in the monument are in very good condition.

CAPULIN MOUNTAIN NATIONAL MONUMENT, N. MEX.

This monument, containing the crater of an extinct volcano, is now approached by very good roads. Mrs. W. H. Jack, of Folsom, N. Mex., its custodian, reports that during the past year there has been an unusually large number of visitors. No estimates of their number, however, have been made.

NATURAL BRIDGES, RAINBOW BRIDGE, DINOSAUR, AND PINNACLES NATIONAL MONUMENTS.

There is nothing of importance to report with reference to the administration, protection, or improvement of the following monuments: Natural Bridges, Rainbow Bridge, and Dinosaur National Monuments in Utah, and the Pinnacles National Monument in California.

A report submitted by Mr. F. Stanley Hinrichs, Chief of Field Division, General Land Office, after a trip to the Natural Bridges and the Rainbow Bridge in the autumn of 1916, states that the monuments, including these great natural bridges, are still quite inaccessible.

Mr. E. M. Newman, the lecturer, visited Rainbow Bridge National Monument in connection with his 1917 tour of the national parks and monuments.

There has been considerable local travel to the Pinnacles Monument, in San Benito County, Cal., but all visitors had to camp out in the monument, as there are no hotel or camp accommodations therein. It is hardly time to proceed with the general development of this monument, because it is not easily accessible.

VERENDRYE NATIONAL MONUMENT, N. DAK.

The latest national monument to be created is the Verendrye, in North Dakota, the proclamation for which was signed by the President on June 29, 1917.[1] This monument reserves for public use and enjoyment a commanding butte locally called Crowhigh Mountain, which stands close up to the left bank of the Missouri River in northwestern North Dakota. This butte is important historically because it was used by Verendrye, the French explorer of the Northwest, and his party, who started from the north shore of Lake Superior, passing westward into the unknown regions of the Great Plains and Rocky Mountains about 1740. Verendrye was the first known white man who entered the territory now included within the State of North Dakota. The butte was used as an observation station by this explorer, who crossed the Missouri River at this point, going thence westward as far as the Rocky Mountains.

[1] The President's proclamation is on p. 229.

THE GRAND CANYON SHOULD BE A NATIONAL PARK.

The Grand Canyon National Monument deserves mention again as the most important national park project pending at the present time. Its early dedication for park purposes can not be too strongly urged. The spectacle of this magnificent region embracing one of the recognized natural wonders of the world standing outside of a park system that now includes the most sublime scenic features of the earth is almost ridiculous. The public, generally, understand that the canyon is in a national park, and the volume of requests for information regarding it that the service receives in the course of a year is enormous. It should receive its rightful status as soon as legislation to this end can be enacted.

Senate bill No. 390, Sixty-fifth Congress, providing for the establishment of the Grand Canyon National Park, was introduced by Senator Ashurst, of Arizona, in April, 1917, and is now pending in the Senate Committee on Public Lands. Similar bills (S. No. 8250 and H. R. No. 20447) were introduced in the Sixty-fourth Congress, but failed of passage.

SECRETARY LANE'S OPINION.

In your report on S. 8250 and H. R. 20447, the following statement and recommendation was submitted for the consideration of the Public Lands Committees:[1]

> The area proposed to be set aside and dedicated as a national park by this measure embraces approximately 996 square miles of public land now constituting part of the Kaibab and Tusayan National Forests, in northern Arizona. A large part of it also lies within the Grand Canyon Game Refuge, established by the act of June 29, 1906 (34 Stat., 607), and the Grand Canyon National Monument, set aside by presidential proclamation January 11, 1908, under the act of June 8, 1906 (34 Stat., 225), covers practically the entire area, thus constituting a third and paramount reservation of these lands.
>
> In the very nature of things, however, the Grand Canyon can not, as a section of two national forests, a game refuge, or a national monument, be properly developed for the public benefit, and it can not be effectively administered or adequately protected.
>
> While the south rim of the canyon has, to a small extent, been made available to the traveling public, and many thousands of tourists have thus had the opportunity of visiting certain of its scenic features, private enterprise alone, operating under extraordinary difficulties, has accomplished this development. I am informed that 106,000 tourists visited the south rim of the Grand Canyon during the calendar year 1915, but, due to lack of roads, trails, side-trip destinations, etc., this vast throng found little opportunity to obtain a full measure of enjoyment of the marvelous grandeur of this region.
>
> It seems to be universally acknowledged that the Grand Canyon is the most stupendous natural phenomenon in the world. Certainly it is the finest example of the power and eccentricity of water erosion, and as a spectacle of sublimity it has no peer.
>
> It would be futile to attempt to describe the Grand Canyon. However, a review of a few facts with relation to the canyon would be pertinent to a report of this character.

[1] Senate report No. 1082, Sixty-fourth Congress, second session.

The Colorado River, which flows through the gorge, drains a territory of 300,000 square miles, and it is 2,000 miles from the source of its principal tributary to its entrance into the Gulf of California. It is one of America's greatest rivers. It is proposed by this bill to establish a national park at the point in the river's course where it has worn a channel more than a mile deep. This enormous gulf measures occasionally 20 miles across the top.

The sides of the gorge are wonderfully shelved and terraced, and countless spires rise within the enormous chasm, sometimess almost to the rim's level. The walls and cliffs are carved into a million graceful and fantastic shapes, and the many colored strata of the rocks through which the river has shaped its course have made the canyon a lure for the foremost painters of American landscape.

* * * * * * *

It seems that the Grand Canyon, therefore, is entitled to the same status and to an equal degree of consideration by Congress as are enjoyed by Yellowstone, Yosemite, and the other great national parks which contain natural phenomena of the first order, and I heartily recommend immediate favorable action looking toward the enactment of this bill.

* * * * * * *

As I have already indicated, this region, undeveloped by the Federal Government, has been made accessible only to a small extent by private resources. Yet it has enjoyed the patronage of more tourists during recent seasons than any two of the largest members of the existing park system combined. It deserves the application of the same principles of administration that Congress has authorized the Department of the Interior to employ in the supervision and promotion of other scenic areas of similar importance. For this reason I hope that your committee will place no inhibition on the amount of public funds that the proper committees of the two Houses may recommend annually for appropriation without special authority of law, as has been done in the case of parks recently created. An inhibition of this character is entirely proper in the case of the establishment of national parks which are not enjoying a large tourist patronage or which it would not be advisable to immediately promote and improve, but such an inhibition would render the establishment of the Grand Canyon National Park to all intents and purposes a vain act, and would leave the reservation in practically its present status.

* * * * * * *

SECRETARY HOUSTON'S OPINION.

In reporting on the same measures, Secretary Houston said, among other things:

This department has always recognized that the Grand Canyon of the Colorado is one of the most stupendous scenic wonders of the world and is of first importance for the consideration of Congress in the establishment of national parks. This area should by all means be administered in connection with the other national parks and this department heartily approves of its establishment.[1]

Senate 390 was not taken up for consideration during the extra session that has just closed. No data on the travel to the Grand Canyon during the past season are available, nor have we any information as to improvements in the monument.

OTHER NATIONAL PARK PROJECTS.

Besides the measure providing for the establishment of the Grand Canyon National Park, bills are pending in Congress which provide for the creation of the National Park of the Cliff Cities in New Mexico, and the Mount Baker National Park in Washington. Both of these projects have had the attention of Congress in recent years and have had the support of the Interior Department.

[1] Senate report No. 1082, Sixty-fourth Congress, second session.

The department also reported favorably on the Sawtooth National Park project when it was pending in the Sixty-fourth Congress. A bill providing for the establishment of this park, which would include the chief scenic features of the Sawtooth Mountains in Idaho, will doubtless be reintroduced in Congress during the coming winter.

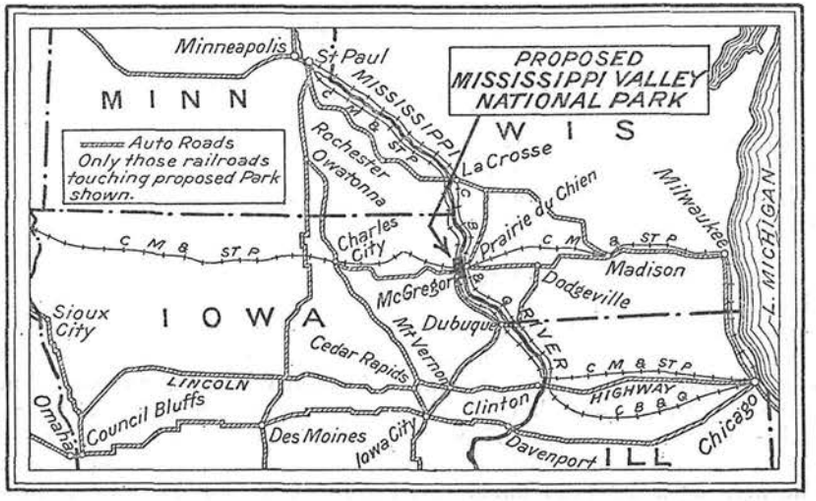
NEW NATIONAL PARK PROJECTS STUDIED.

Complying with the resolution of the United States Senate, dated September 7, 1916, Director Mather made a study of the proposed Sand Dunes National Park in Lake, Porter, and Laporte Counties, Ind. A hearing on the project was held in Chicago on October 30, 1916, and the dunes areas themselves were inspected early in November. Mr. Mather's complete report on the project was recently published. The Senate resolution required a report as to "the advisability of securing, by purchase or otherwise, all that portion of the counties of Lake, Laporte, and Porter, in the State of Indiana, bordering upon Lake Michigan and commonly known as the 'sand dunes,' with a view that such lands be created a national park." The department was also requested to furnish information as to the cost of acquiring the dunes and the probable cost of maintaining the area as a national park. Director Mather in his report states that the sand dunes of Lake and Laporte Counties are unimportant and not valuable for park purposes, but he states that the Porter County dunes possess national-park quality. A park in this county should include from 15 to 20 miles of the Lake Michigan beach. In order to include all of the scenic sand dunes in this vicinity the park should be approximately a mile wide. It is estimated that it would cost between $1,800,000 and $2,600,000 to purchase the sand-dunes land. As Congress has never purchased lands for the purpose of establishing national parks, no recommendation was made as to the advisability of establishing the Sand Dunes Park. Full data regarding the physical characteristics of the sand dunes have been submitted to Congress in compliance with the Senate resolution.

Investigation was also made last winter of the proposed Mississippi Valley National Park. This park project contemplates the purchase of lands near McGregor, Iowa, on the shore of the Mississippi River, and certain islands in the river. The investigation disclosed the fact that a national park of dignified proportions in this region should include land on both sides of the Mississippi River and the islands therein, between McGregor and Prairie du Chien, Wis. Part of the lands that might be included in a national park are now part of a Wisconsin State park. No estimate has been made of the cost of obtaining these lands. It is understood that areas of considerable size in the proposed park would be donated in the event that Congress should favorably consider the establishment of a national park.

A study of certain phases of the Mount Evans or Denver National Park project in the Rocky Mountains, a considerable distance west of Denver, was recently made. This study supplements the investigation made by officers of the General Land Office more than a year ago. Further consideration will be given to this project during the ensuing year. Considerable data relating to the proposed park have

already been submitted to Congress, and the results of further investigation will be transmitted to the Public Lands Committees for their information.



MAP SHOWING POSITION OF PROPOSED MISSISSIPPI VALLEY NATIONAL PARK, IOWA–WISCONSIN.

NATIONAL PARK LEGISLATION.

A summary of the legislation relating to the national parks enacted by Congress since the submission of last year's report is given below. The text of the various acts of Congress mentioned and, in the case of the sundry civil and deficiency appropriation acts, excerpts therefrom will be found in Appendix D, page 226. Practically all of these measures have been fully discussed in this report.

The act of February 14, 1917,[1] entitled "An act to add certain lands to the Rocky Mountain National Park, Colorado," increased the area of Rocky Mountain National Park by 25,265 acres. The total area of the park is now 254,327. See page 26.

The act of February 26, 1917,[2] entitled "An act to establish the Mount McKinley National Park in the Territory of Alaska," created a new park, 2,200 square miles in area. The natural features of this park are described on page 82.

The act of March 2, 1917,[3] entitled "An act to authorize the sale of certain lands at or near Belton, Mont., for hotel purposes," grants authority to the Secretary of the Interior to sell to the Glacier Park Hotel Co. a tract of land across the Flathead River from Glacier Park near the western gateway. This land is now occupied by the Belton Chalets and it is understood that ultimately a new hotel will be constructed on this site.

The act of March 3, 1917,[4] entitled "An act to authorize an exchange of lands with owners of private holdings within the Glacier National Park," provides for the exchange of timber or timber and lands along

[1] 39 Stat., 916. [2] 39 Stat., 938. [3] 39 Stat., 308. [4] 39 Stat., 1122.

the roads in certain scenic sections of the park for timber or timber and lands in other sections of Glacier Park or in the national forests of Montana. What is proposed to be accomplished under the authority of this act is outlined on page 48.

The act of April 17, 1917,[1] entitled "An act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1917, and prior fiscal years, and for other purposes," made funds available for the organization of the National Park Service, as authorized by the act of August 25, 1916.[2]

The act of June 12, 1917,[3] entitled "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1918, and for other purposes," appropriated $524,780 for the National Park Service and the administration, protection, and improvement of the various national parks, and $5,000 for the preservation, development, administration, and protection of the national monuments under the Department of the Interior. It also carried a total appropriation of $217,500 for road construction and improvement in Yellowstone and Crater Lake National Parks, to be expended, however, by the Secretary of War. See page 228. The sundry civil act also authorized the Secretary of the Interior to accept the lands in North Carolina, including Grandfather Mountain, which will be donated for park purposes. See page 83.

NEEDS OF THE NATIONAL PARK SERVICE.

The following is a brief summary of the urgent needs of the National Park Service:

(1) The inhibition on the appropriation of funds for the development of Rocky Mountain National Park contained in the organic act creating the park should be repealed. A discussion of this necessary legislation will be found on page 26.

(2) The War Department should be relieved at once of the duty of protecting and improving Yellowstone National Park; and complete control of the administration, protection, and improvement of this park should be centralized in the National Park Service, thus placing Yellowstone Park in precisely the same status as that enjoyed by the other members of the park system except, of course, Crater Lake. In the case of Crater Lake, the War Department has control of the construction and improvement of roads, but legislation designed to remedy the Yellowstone situation should transfer the control of the Crater Lake roads to this department. See discussion on pp. 32–33.

(3) The boundaries of Sequoia National Park should be extended to include the Kings and Kern River gorges and the crest of the Sierra Nevada, including Mount Whitney, as recommended on page 70.

(4) Part of the Jackson Hole region should be added to Yellowstone National Park. The Teton Mountains, Jackson Lake, and the headwaters of the Yellowstone River naturally belong to the park, and the areas embracing these natural features should be added at an early date.

[1] Public, No. 2, Sixty-fifth Congress.
[2] 39 Stat., 535.
[3] Public No. 21, Sixty-fifth Congress.

(5) The National Park system should be more nearly rounded out by the early addition of the Grand Canyon, now a national monument.

(6) Appropriations should be made for the continuation of road and trail improvements in the national parks, for the preservation and improvement of the national monuments, and for conducting, on a larger scale, the work of disseminating information regarding the scenic, scientific, and historic features of the national parks and monuments. The most important road projects are the Lake McDonald road in Glacier Park, the Carbon River road in Mount Rainier National Park, the extension of the Giant Forest road north of the Marble Fork River to meet the county road between Sequoia and General Grant National Parks now under construction, the completion of the new El Portal road in Yosemite Park, and the elimination of the Point Lookout road in Mesa Verde Park by the construction of a new cut-off highway ascending the mesa. New administration buildings are desperately needed in Glacier, Crater Lake, and Sequoia National Parks. The need of a new Government free bathhouse at Hot Springs Reservation has been mentioned so often that it needs no further reiteration.

(7) Appropriations should be made for assuming the administrative control and providing for the protection of Mount McKinley, Hawaii, and Lassen Volcanic National Parks.

IN CONCLUSION.

When the season of 1916 proved by its increased patronage on the exposition season of 1915 that our national parks need no world's fairs to lure the American people to their neighborhoods, it was clear that the movement begun here in Washington the year before to make known to America its own scenic grandeur had proved successful. Even more gratifying is the revelation of public sentiment made by the spectacular increase in national parks patronage during the season of 1917 over that of 1916.

Meantime, in the spring, our Nation had been plunged into the most terrible catastrophe of war this world has ever seen. It was confidently predicted by many that in these circumstances there would be no summer travel. The question, as I have explained, was even seriously asked by many whether the national parks would in this stress be opened by the Government.

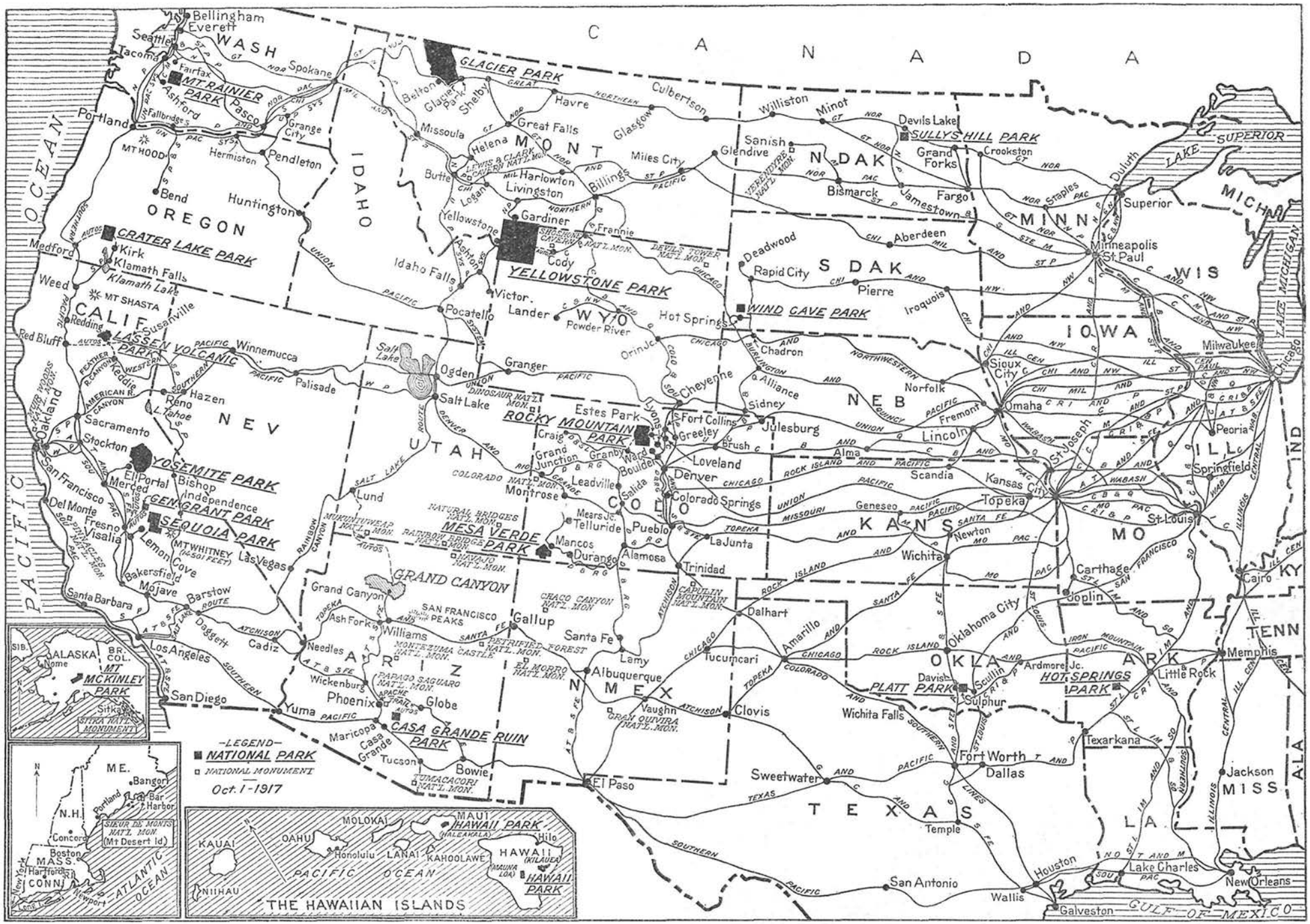
Half a year after the beginning of an actual state of war, however, notwithstanding the entire upsetting of our national habits, the raising of a mighty army of the flower of our young manhood and the intense concentration of the national gaze upon the military and economic situations of the world, we find the people of the whole country testifying in the most practical possible way to the potency of our national parks for rest and preparation against the ordeal of fire to come.

This magnificent demonstration proves again, as has been so abundantly shown so often before, the soundness and reality of the great mission of education, recreation, and health in which this Service is engaged.

Very respectfully,

HORACE M. ALBRIGHT,
Acting Director.

The SECRETARY OF THE INTERIOR.



SEVENTEEN NATIONAL PARKS CONTAINING 9,773 SQUARE MILES OR 6,254,568 ACRES. TWENTY-TWO NATIONAL MONUMENTS CONTAINING 143.4 SQUARE MILES OR 91,824 ACRES.

18494—17. (To face page 98.)

APPENDIX A.

THE NATIONAL PARKS AND MONUMENTS.

Map showing location of all national parks and monuments administered by National Park Service, Department of the Interior. See opposite page.

The national parks.

The national monuments administered by the National Park Service, Department of the Interior.

The national monuments administered by the Department of Agriculture.

The national monuments administered by the War Department.

THE NATIONAL PARKS.

Number, 17; total area, 9,773 square miles; chronologically in order of creation.

Name.	Location.	When established.	Statute reference.	Area (square miles).	Area (acres).	Private lands (acres).	Visitors, 1917.	Special characteristics.
Hot Springs Reservation.	Middle Arkansas.....	Apr. 20, 1832	{4 Stat., 505..... 21 Stat., 288.....}	1½	911.63	None.	[2] 135,000	{46 hot springs possessing curative properties—many hotels and boarding houses—20 bath houses under public control.
Yellowstone.....	Wyoming, Montana, and Idaho.	Mar. 1, 1872	17 Stat., 32, 33..	[1] 3,348	2,142,720	None.	35,400	More geysers than in all rest of world together—Boiling springs—Mud volcanoes—Petrified forests—Grand Canyon of the Yellowstone, remarkable for gorgeous coloring—Large lakes—Waterfalls—Vast wilderness inhabited by deer, elk, bison, moose, antelope, bear, mountain sheep, etc.—Greatest wild bird and animal preserve in world.
Casa Grande Ruin (kä'sä grän'dā).	Arizona.....	Mar. 2, 1889	25 Stat., 961.....	¾	480	None.	2,437	These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.
Sequoia (sē-kwoi'ä).....	Middle eastern California..	Sept. 25, 1890	26 Stat., 478, 650.	252	161,597	3,049.81	18,510	The Big Tree National Park—12,000 Sequoia trees over 10 feet in diameter, some 25 to 36 feet in diameter—Towering mountain ranges—Startling precipices.
Yosemite (yō-sĕm'ĭ-tē)...	.....do.....	Oct. 1, 1890	{26 Stat., 650..... 33 Stat., 702..... 34 Stat., 831.....}	1,125	719,622.4	19,827	34,510	{Valley of world-famed beauty—Lofty cliffs—Romantic vistas—Waterfalls of extraordinary height—3 groves of big trees—Large areas of snowy peaks—Waterwheel Falls.
General Grant.....	.....do.....	.....do.....	26 Stat., 650.....	4	2,536	160	17,390	Created to preserve the celebrated General Grant Tree, 35 feet in diameter—6 miles from Sequoia National Park.
Mount Rainier (rā-nēr')..	West central Washington..	Mar. 2, 1899	30 Stat., 993.....	324	207,360	18.2	35,568	Largest accessible single peak glacier system—28 glaciers, some of large size—48 square miles of glacier, 50 to 500 feet thick—Wonderful sub-alpine wild-flower fields.
Crater Lake.....	Southern Oregon.....	May 22, 1902	32 Stat., 202.....	249	159,360	2,458.11	11,645	Lake of extraordinary blue in crater of extinct volcano, no inlet, no outlet—Sides 1,000 feet high.
Wind Cave.....	South Dakota.....	Jan. 9, 1903	32 Stat., 765.....	16	10,522	160	16,742	Well known by reason of a cavern therein having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Platt.....	Southern Oklahoma.....	{July 1, 1902 Apr. 21, 1904}	32 Stat., 641, 655 . 33 Stat., 220.....}	1½	848.22	None.	[2] 35,000	{Many sulphur and other springs possessing medicinal value, under Government regulation.
Sullys Hill.....	North Dakota.....	Apr. 27, 1904	33 Stat., 322, 323, 2368.	1¼	780	None.	2,207	Small rugged hill containing prehistoric ruins—Practically a local park.
Mesa Verde (mā'sá vĕr'dā)	Southwestern Colorado....	June 29, 1906	34 Stat., 616.....	77	{42,376	880	2,223	{Most notable and best preserved prehistoric cliff dwellings in United States, if not in the world.
Boundary changed...	.....do.....	June 30, 1913	38 Stat., 82, 83, 84}		{48,966.4	993		
Glacier (glā'shĕr).....	Northwestern Montana....	May 11, 1910	36 Stat., 354.....	1,534	981,681	16,508.11	15,050	Rugged mountain region of unsurpassed Alpine character—250 glacier-fed lakes of romantic beauty—60 small glaciers—Peaks of unusual shape—Precipices thousands of feet deep—Almost sensational scenery of marked individuality.
Rocky Mountain.....	North middle Colorado....	Jan. 26, 1915	38 Stat., 798.....	358	229,062	[2] 3,745	[2] 117,186	{Heart of the Rockies—Snowy range, peaks 11,000 to 14,250 feet altitude—Remarkable records of glacial period.
Boundary changed...	.....do.....	Feb. 14, 1917	39 Stat., 916.....	397.4	254,327	[2] 20,693		
Hawaii (hä-wī'ō).....	Hawaiian Islands.....	Aug. 1, 1916	39 Stat., 432.....	118	75,295	[2] 41,000	[3]	3 separate areas: 2—Kilauea, continuously active for century, and Mauna Loa, altitude 13,675 (largest active volcano in world, erupting every decade), are on Hawaii; Haleakala, on Maui, 10,000 feet high, with tremendous rift in summit 8 miles across and 3,000 feet deep; contains many cones, gorgeous tropical forests, mahogany groves, and lava caves; erupted 200 years ago.
Lassen Volcanic (lăs'ĕn)..	Northern California.....	Aug. 9, 1916	39 Stat., 442.....	124	79,561.58	880	[2] 8,500	Only active volcano in United States proper—Lassen Peak, 10,465 feet in altitude—Cinder Cone, 6,879 feet—Hot springs—Mud geysers—Ice caves—Majestic canyons—Numerous lakes—Fine forests.
Mount McKinley.....	South central Alaska.....	Feb. 26, 1917	39 Stat., 938.....	2,200	1,408,000	None.	[3]	Highest mountain in North America (altitude 20,300 feet)—Rises higher above surrounding country than any other mountain in world.

[1] In Wyoming, 3,114 square miles; in Montana, 198 square miles; in Idaho, 36 square miles. [2] Estimated. [3] No record kept.

THE NATIONAL MONUMENTS.

Administered by the National Park Service, Department of the Interior.

[Number, 22; total area, 143.4 square miles; chronologically in order of creation.]

Name.	Location.	Date of creation.	Statute reference of proclamation.	Area (acres).	Special characteristics.
Devils Tower	Wyoming	Sept. 24, 1906	34 Stat., 3236	1,152	Remarkable natural rock tower, of volcanic origin, 1,200 feet in height.
Montezuma Castle	Arizona	Dec. 8, 1906	34 Stat., 3265	[1] 160	Prehistoric cliff-dwelling ruin of unusual size situated in a niche in face of a vertical cliff. Of scenic and ethnological interest.
El Morro	New Mexico	Dec. 8, 1906 June 18, 1917	34 Stat., 3264 40 Stat., Proc., 1377.	160 240	Enormous sandstone rock eroded in form of a castle, upon which inscriptions have been placed by early Spanish explorers. Contains cliff-dweller ruins. Of great historic, scenic, and ethnologic interest.
Petrified Forest	Arizona	Dec. 8, 1906 July 31, 1911	34 Stat., 3266 37 Stat., 1716	25,625	Abundance of petrified coniferous trees, one of which forms a small natural bridge. Is of great scientific interest.
Chaco Canyon (chä'kō)	New Mexico	Mar. 11, 1907	35 Stat., 2119	[1] 20,629	Numerous cliff-dweller ruins, including communal houses, in good condition, and but little excavated.
Muir Woods [2] (mūr)	California	Jan. 9, 1908	35 Stat., 2174	295	One of the most noted redwood groves in California, and was donated by Hon. William Kent, Member of Congress. Located 7 miles from San Francisco.
Pinnacles	do	Jan. 16, 1908	35 Stat., 2177	2,080	Many spirelike rock formations, 600 to 1,000 feet high, visible many miles; also numerous caves, and other formations.
Natural bridges	Utah	Apr. 16, 1908 Sept. 25, 1909 Feb. 11, 1916	35 Stat., 2183 36 Stat., 2502 39 Stat., Proc., 44.	120 [1] 2,740 [1] 2,740	3 natural bridges, among largest examples of their kind. Largest bridge is 222 feet high, 65 feet thick at top of arch; arch is 28 feet wide; span, 261 feet; height of span, 157 feet. Other two slightly smaller.
Lewis and Clark Cavern [2]	Montana	May 11, 1908 May 16, 1911	35 Stat., 2187 37 Stat., 1679	160 160	Immense limestone cavern of great scientific interest, magnificently decorated with stalactite formations. Now closed to public because of depredations by vandals.
Tumacacori (tū-mä-kä'kō-rē)	Arizona	Sept. 15, 1908	35 Stat., 2205	10	Ruin of Franciscan mission dating from sixteenth century, until recent years in fair preservation, but now rapidly disintegrating.
Navajo (năv'ä-hō)	do	Mar. 20, 1909 Mar. 14, 1912	36 Stat., 2491 37 Stat., 1733	[1] 600 360	Numerous pueblo, or cliff-dweller ruins, in good preservation.
Mukuntuweap (mŭk-ŭn-tŭ'-weap)	Utah	July 31, 1909	36 Stat., 2498	[1] 15,840	Magnificent gorge (Zion Canyon), depth from 800 to 2,000 feet, with precipitous walls. Of great beauty and scenic interest.
Shoshone Cavern (shō-shō'nē)	Wyoming	Sept. 21, 1909	36 Stat., 2501	210	Cavern of considerable extent, near Cody.
Gran Quivira (grän kē-vē'rä)	New Mexico	Nov. 1, 1909	36 Stat., 2503	[1] 160	One of the most important of earliest Spanish mission ruins in the Southwest. Monument also contains Pueblo ruins.
Sitka	Alaska	Mar. 23, 1910	36 Stat., 2601	[1] 57	Park of great natural beauty, and historic interest as scene of massacre of Russians by Indians. Contains 16 totem poles of best native workmanship.
Rainbow Bridge	Utah	May 30, 1910	36 Stat., 2703	160	Unique natural bridge of great scientific interest and symmetry. Height 309 feet above water, and span is 278 feet, in shape of rainbow.
Colorado	Colorado	May 24, 1911	37 Stat., 1681	13,883	Many lofty monoliths, and is wonderful example of erosion, and of great scenic beauty and interest.
Papago Saguaro (pä'pä-gō sä-gwä'rō).	Arizona	Jan. 31, 1914	38 Stat., 1991	2,050	Splendid collection of characteristic desert flora and numerous pictographs. Interesting rock formations.
Dinosaur (dī'nō-sôr)	Utah	Oct. 4, 1915	39 Stat., Proc., 32	80	Deposits of fossil remains of prehistoric animal life of great scientific interest.
Sieur de Monts [2] (sē-eûr dĕ mŏnt)	Maine	July 8, 1916	39 Stat., Proc., 65	[1] 5,000	Mountainous area adjacent to Bar Harbor which includes 10 mountains and several lakes. Is very wild and rugged. Most romantic and beautiful mingling of mountain and ocean scenery on Atlantic Coast.
Capulin Mountain (kăp'ū-lĭn)	New Mexico	Aug. 9, 1916	39 Stat., Proc., 72	681	Cinder cone of geologically recent formation.
Verendrye (vĕr-rŏn-drē')	North Dakota	June 29, 1917	40 Stat., Proc., 1380.	253.04	Includes Crowhigh Butte, peculiar mountain formation, from which Explorer Verendrye first beheld territory beyond Missouri River.

[1] Estimated.

[2] Donated to the United States.

THE NATIONAL MONUMENTS.

Administered by the Department of Agriculture.

[Number, 11; total area, 1,763 square miles; chronologically in order of creation.]

Name.	Location.	Date of creation.	Statute reference of proclamation.	Area (acres).	Special Characteristics.
Gila Cliff Dwellings (hē'lä)	New Mexico	Nov. 16, 1907	35 Stat., 2162	160	Numerous cliff-dweller ruins of much interest and in good preservation.
Tonto	Arizona	Dec. 19, 1907	35 Stat., 2168	[1] 640	Do.
Grand Canyon	do	Jan. 11, 1908	35 Stat., 2175	[1] 806,400	Includes the most wonderful portion of the Grand Canyon of the Colorado.
Jewel Cave	South Dakota	Feb. 7, 1908	35 Stat., 2180	[1] 1,280	Limestone cavern of much beauty and considerable extent, limits of which are as yet unknown.
Wheeler	Colorado	Dec. 7, 1908	35 Stat., 2214	300	Of much interest from geological standpoint as example of eccentric erosion and extinct volcanic action. Of much scenic beauty.
Mount Olympus	Washington	Mar. 2, 1909 Apr. 17, 1912 May 11, 1915	35 Stat., 2247 37 Stat., 1737 39 Stat., Proc., 6.	608,640 608,480 299,370	Contains many objects of great and unusual scientific interest, including many glaciers. Is summer range and breeding ground of the Olympic elk.
Oregon Caves	Oregon	July 12, 1909	36 Stat., 2497	480	Extensive caves in limestone formation of much beauty; magnitude not entirely ascertained.
Devil Postpile	California	July 6, 1911	37 Stat., 1715	800	Spectacular mass of hexagonal basaltic columns, like an immense pile of posts. Said to rank with famous Giant's Causeway in Ireland.
Walnut Canyon	Arizona	Nov. 30, 1915	39 Stat., Proc., 41	960	Contains cliff dwellings of much scientific and popular interest.
Bandelier (băn-dĕ-lēr')	New Mexico	Feb. 11, 1916	39 Stat., Proc., 44	22,075	Vast numbers of cliff-dweller ruins, with artificial caves, stone sculpture, and other relics of prehistoric life.
Old Kasaan (kä-sän')	Alaska	Oct. 25, 1916	39 Stat., Proc., 1351	38.3	Abandoned Indian village in which there are numerous remarkable totem poles and other objects of historical interest.

[1] Estimated.

THE NATIONAL MONUMENTS.

Administered by the War Department.

[Number, 2; total area, 6 acres; chronologically in order of creation.]

Name.	Location.	Date of creation.	Statute reference of proclamation.	Area (acres).	Special Characteristics.
Big Hole Battle Field [1]	Montana	June 23, 1910		5	Site of battlefield on which battle was fought Aug. 9, 1877, between a small force of United States troops and a much larger force of Nez Perce Indians, resulting in rout for the Indians.
Cabrillo (kä-brēl'yō)	California	Oct. 14, 1913	38 Stat., 1965	1	Of historic interest because of discovery of the territory now partly embraced in the State of California by Juan Rodriguez Cabrillo, who at this point first sighted land on Sept. 28, 1542.

[1] Set aside by Executive order.

APPENDIX B.

REPORTS OF SUPERVISORS OF THE NATIONAL PARKS.

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HOT SPRINGS RESERVATION.

Dr. Wm. P. Parks, Supervisor, Hot Springs, Ark.

GENERAL STATEMENT.

This is my third annual report since assuming charge of the reservation, and it is very pleasing indeed to be able to report a very substantial increase in the business of the bathhouses and number of visitors as compared with the previous year.

During this year there were sold 639,711 paid baths in the different pay bathhouses, which is a net gain of 95,340 over last year, the total last year having been 544,371. The total receipts of the several bathhouses this year were $302,515.06, and the total receipts last year $243,568.29, making a net gain of $58,946.77. During the month of March, this year, the the total receipts of the bathhouses were $47,450.53, and for the month of March, last year, $43,062.53, making a net gain of $4,388. The patronage of the bathhouses is larger in this month than in any other month of the year.

It is estimated that approximately 135,000 persons visited Hot Springs during the past fiscal year.

In addition to the paid baths noted above, there were also given 2,891 complimentary baths in the pay bathhouses, 101,255 baths at the Government free bathhouse, and 5,805 baths at the Levi Memorial bathhouse, making a total of 749,662 baths, an increase in the total number of baths this year over last year of 95,366.

It is believed that the popularity and patronage of this resort will increase year by year as the public generally becomes more acquainted with the results to be obtained here. The splendid plan now being pursued by the National Park Service in the matter of bringing the features of the national parks to the attention of the entire country will, I feel sure, add materially to the patronage here.

CITY OF HOT SPRINGS.

Since my last annual report there has been a marked change in the management of the city's affairs. Under a recent act of the Arkansas Legislature the city is now operated under the commission-city manager plan of government, there being a mayor and four commissioners, five in all, all of whom are substantial business men and familiar with the city's needs.

The commission elects a city manager, by whom all the business of the city is transacted, and in this manner all problems are handled on a business basis, which is generally believed to be far more preferable than the old plan of mayor and aldermen under which the city was formerly operated.

Under this new system special attention is being given to cleanliness and sanitation, and results are already perceptible. It is intended to promote a universal plan of beautification, which is not only desirable but very necessary, especially in a resort city catering to the visiting public for its patronage.

I am pleased to state that cordial relations exist between the present city administration and this office, with the result that each cooperates with the other in all matters tending to protect the visiting public.

ADMINISTRATION.

During the past year marked progress has been made with reference to the strict enforcement of the rules and regulations governing the Hot Springs Reservation, and it has been my purpose to require strict compliance as nearly as possible with all such rules. In this matter I have had hearty cooperation from all employees of the reservation, and they have rendered able and efficient service.

Our work and records are so systematized that there seems little opportunity to improve them, as they meet present requirements. I have recommended a revision of the rules and regulations which, if the service sees its way clear to adopt, will increase materially the present revenues of the reservation and at the same time add to its regulation.

Of the large number of visitors that apply to this office daily each and every one is accorded polite and courteous attention and their wants are attended to in such a manner as to make them feel welcome.

There is a thorough personal inspection made of each bathhouse receiving water from the reservation at least once during each month, and whenever defects are found the management is so informed and directed to correct them. In this connection it pleases me to state that I have had generally hearty cooperation from the bathhouse managements.

DRUMMING.

Under the head of "Drumming" in my report of last year I stated "I have some plans in view which if worked out successfully during the coming year will, I believe, deal a very hard blow to this nefarious evil."

Following up this plan, beginning last September there was inaugurated a crusade against the drumming doctors in which many of the antidrumming physicians took a prominent part by raising funds from all persons in sympathy with this movement and employing detectives and attorneys to secure evidence. Through this means and with the hearty cooperation of this office quantities of evidence were secured which resulted in prosecutions and indictments in the State courts.

Action was also taken by this office and evidence submitted to the department which resulted in striking the names of 14 physicians from the list of registered physicians filed in this office. Also, the guests of 17 hotels, rooming houses and boarding houses were denied the baths for a period of three months in each instance, charges of drumming having been sustained against the proprietors of these places. As a final result, it is extremely gratifying to me to now report that doctor drumming in Hot Springs is practically eliminated. In fact, it is the subject of common comment that Hot Springs is now freer from drumming than ever before in its history, and the laws, rules, and regulations are being more rigidly enforced and observed.

This result has not been accomplished without very much hard work, and the citizenship here generally feels grateful to the department for the substantial backing given in this movement for the protection of the visitors, as

it is undoubtedly the most effective work of this character that has ever been done in Hot Springs.

The personnel and standing of the physicians whose names appear on the resident registered list will compare favorably with those of any other city. Many of these physicians have national reputations and, I will venture to say, have no superiors when taken in connection with their particular lines of practice.

EMPLOYEES.

There are 30 regular employees engaged in the administration, maintenance, and protection of the reservation, all of whom were appointed from the State of Arkansas under civil service rules.

There have been no permanent changes in the personnel during the past fiscal year. However, Richard L. Lawrence, manager of the free bathhouse, and John W. St. Clair, train inspector, have been granted three months' leave without pay by the Service and are now training at the officers' training camp at Fort Logan H. Roots. During their absence the duties of the former are being handled by the head attendant at the free bathhouse, while Richard L. Gaffney, regular mounted policeman, has been temporarily appointed policeman and detailed as train inspector during the absence of Mr. St. Clair.

RECEIPTS AND DISBURSEMENTS.

The receipts and disbursements on account of the Hot Springs Reservation during the fiscal year ended June 30, 1917, were as follows:

Proceeds, sale of lots, special fund.

July 1, 1917, balance remaining to credit of fund of $82,518 derived from the sale of Government lots		$4,972.49

Protection and improvement, Hot Springs Reservation, indefinite (revenue fund).

July 1, 1916, balance to credit of revenue fund		$60,691.84
Receipts, July 1, 1916, to June 30, 1917, inclusive:		
Water rents	$27,975.00	
Ground rents[1]	7,600.00	
Sale of bath attendants' badges	17.60	
Repay of G. W. Evans, chief disbursing clerk, of amount disallowed in his accounts for telegraph service	.25	
Repay of W. P. Parks, special disbursing officer, of amount disallowed in his accounts for September, 1916, quarter, by Auditor for Interior Department, for ice furnished at official residence, paid in quarter ended March 31, 1917	18.90	
Total receipts		35,611.75
Total available		96,303.59
Disbursements:		
Salaries of supervisor and reservation employees	$26,557.50	
Improvements, repairs, incidentals, and miscellaneous supplies—		
Paid by supervisor	499.45	
Vouchers approved by supervisor and forwarded to department for payment (including $60, traveling expenses of supervisor)	2,692.66	
Expended by supervisor	29,749.61	
Additional expended by the department	1,553.37	
Total disbursements		31,302.98
Available balance, July 1, 1917		65,000.61

[1] No ground rent collected for Arlington Hotel for quarter ended June 30, 1917.

IMPROVEMENTS AND MAINTENANCE.

During the past year I have avoided entering upon any new or extensive improvements, for the reason that it was deemed advisable to wait until after a fixed plan of improvement shall have been prepared. Several improvements I have had in view were abandoned for this reason.

There was, however, constructed an addition to the pump house adjoining the supervisor's office on the north. It has been practically reconstructed on a substantial and practical basis in accordance with a plan prepared by Mr. James F. Gill, of the department. This construction is of brick with an ornamental front, with concrete floors and concrete bases provided for each pump and motor. It is commodious, making all pumps now easy of access, and room yet remains for the installation of at least two more pumps. The outside walls have been painted white to correspond with the supervisor's office building.

The reservation has been kept up to a high standard of condition. Much work has been done in the maintenance of roads, and approximately 460 cubic yards of gravel have been hauled and placed upon the roads.

Much time has been expended in the care of lawns, flowers, shrubbery, etc., all of which has redounded to the beautification of the reservation. The hedges have been kept neatly trimmed, trees pruned, and other minor matters carefully looked after. Old-time visitors to Hot Springs have commented that the reservation front now presents a more pleasing appearance than ever before. In fact, it has been stated that there is no more beautiful place in the United States than the reservation front.

The regular routine work required to maintain the reservation in its present state consumes practically all of the time of the regular laborers.

GOVERNMENT FREE BATHHOUSE.

The Government free bathhouse has been operated during the past year for the indigent in accordance with the acts of Congress of December 16, 1878, and March 2, 1911, with the following results:

Total applications for free baths	5,356
Number refused	210
Tickets issued to—	
White males	2,915
White females	387
Colored males	1,129
Colored females	715
Total tickets issued on original applications	5,146
Tickets reissued to—	
White males	1,572
White females	220
Colored males	551
Colored females	143
Total tickets reissued	2,486
Total tickets to—	
White males	4,487
White females	607
Colored males	1,680
Colored females	858
Total tickets, including reissues	7,632
Baths given to—	
White males	59,933
White females	8,305
Colored males	21,883
Colored females	11,134
Total number baths given	101,255

Average number of baths given daily, 330+.

From the foregoing table it is noted that the decrease from last year in the number of baths given is 2,143. During the past year care has been exercised to secure strict compliance with the act of Congress which prohibits from bathing in the Government free bathhouse any person who is able to pay for the baths.

This establishment is of great benefit to afflicted indigent persons who come to this resort for relief, and has proved to be a great boon to suffering humanity.

As has been reported to the department from time to time, the condition of the free bathhouse has reached a stage where it is absolutely necessary that some provision be made in the near future for its complete reconstruction or for the building of a new bathhouse in its entirety. It is not necessary that such a bathhouse should be elaborate, but it should be substantial, and every provision should be made for complete and thorough sanitation and scientific ventilation. It should include modern quarters in the second story for the operation of a free clinic for persons unable to pay for professional services. I trust that ways and means may soon be provided which will enable the service to consummate this very necessary improvement.

FREE CLINIC.

The clinic which is operated by a corps of registered physicians in the rooms over the Government free bathhouse has been continued during the fiscal year ended June 30, 1917. The physicians engaged in this work give a portion of their time between the hours of 1 and 3 p. m. each day, except Sundays and holidays, in the treatment of various persons who are unable to secure funds with which to pay for treatment.

The diseases most numerous which have been presented at this clinic for treatment during the year are as follows: Rheumatism, gonococcal, and from other causes; malarial troubles; gonorrhea, acute, subacute, and chronic; cystitis; prostatitis; urethral stricture; bubo, inguinal; epididymitis, gon.; chancroid; chancre; balanitis; herpes preputialis; phimosis; syphilis, all stages and manifestations; venereal warts; urethritis, specific and nonspecific; pyelitis; arthritis; arthritis deformans; pellagra; neuritis; hypoacidity; sciatica; nephritis; multiple sclerosis; arthralgia; neurasthenia; tabes dorsalis (locomotor ataxia); paresis (incipient); and many cases of eczema and other skin diseases. Myelitis and other diseases were few in number. In addition to the above there were given in all approximately 200 Wasserman tests for purposes of diagnostic confirmation.

A report from the clinic shows that in all there were treated during the year 364 patients, 351 of which have either been dismissed or discontinued treatment, with 13 patients remaining on hand July 1, 1917. These 351 patients were from 34 different States in the Union. In the cases of the 351 patients dismissed or discontinuing treatment, the following results are reported by the physicians of the clinic:

No results, due to insufficient treatment	88
Slight improvement	24
Much improvement	110
Cured	129
Total	351

The work done in this clinic has resulted in much good to indigent persons who otherwise probably would not be able to secure medical treatment.

Before satisfactory results can be obtained in their entirety it will be necessary to have a modern and up-to-date clinic equipped with the latest modern appliances throughout, which it is believed should be provided for in connection with the proposed new Government free bathhouse. Practically all of those availing themselves of the advantages of this clinic are patrons of the Government free bathhouse and without means to pay for either baths or treatment.

When new and modern clinical facilties shall have been established I have in view a practical and economical plan for its operation in a systematic manner which contemplates the keeping of a complete set of records that observation and treatment shall have continuity for those patients who return from year to year, as many of them do.

PAY BATHHOUSES.

There are at the present time 19 pay bathhouses in Hot Springs receiving hot water from the Hot Springs Reservation, with the following rates for baths, fixed in each instance by the Secretary of the Interior, in effect therein:

Bathhouse.	Single bath.	Course of 21 baths.	Bathhouse.	Single bath.	Course of 21 baths.
Alhambra	$0.40	$7.00	Maurice	$0.60	$11.00
Arlington	.65	12.00	Moody	.50	9.00
Buckstaff	.60	11.00	Ozark	.40	7.00
Eastman	.55	10.00	Ozark Sanatorium	.45	8.00
Fordyce	.65	12.00	Pythian (colored)	.25	4.00
Hale	.50	9.00	Rector	.45	8.00
Imperial	.55	10.00	Rockafellow	.45	8.00
Lamar	.45	8.00	St. Joseph's Infirmary	.50	9.00
Magnesia	.40	7.00	Superior	.50	9.00
Majestic	.55	10.00			

In addition to the above there is a uniform attendant's fee, also fixed by the Secretary of the Interior, of 15 cents for a single bath or $3 per course of 21 baths, which is collected by the bathhouse manager and properly accounted for to the attendant.

All bathhouses sell half tickets for 10 baths, and some of the bathhouses sell quarter tickets for 5 baths, at one-half and one-fourth, respectively, of the rates shown above for a full course of 21 baths.

There are at present 26 hot-water and ground leases in force, as shown in the following table:

Hot-water and ground leases.

Name of bathhouse, etc.	Lessee.	Tubs.	Date of lease.	Expiration.
Alhambra	Alhambra Bathhouse Co	18	Mar. 1, 1916	Feb. 28, 1919
Arlington [1]	Arlington Hotel Co	68	Mar. 21, 1914	Mar. 3, 1932
Buckstaff	Buckstaff Bathhouse Co	31	Jan. 1, 1912	Dec. 31, 1931
Eastman [1]	New York Hotel Co	64	May 13, 1912	May 12, 1932
Fordyce	S. W. Fordyce, jr., trustee	30	Jan. 1, 1915	Dec. 31, 1934
Hale	Mercantile Trust Co., trustee	25	....do....	Do.
Horseshoe [2]	D. Fellows Platt	30	Jan. 1, 1895	Dec. 31, 1909
Imperial	Chas. N. Rix	27	Jan. 1, 1912	Dec. 31, 1931
Lamar [3]	M. C. Tombler and G. H. Buckstaff	30	Jan. 1, 1897	Dec. 31, 1916
Levi Memorial	Leo N. Levi Memorial Hospital Association.	5	Nov. 1, 1914	Oct. 31, 1924
Magnesia [3]	Chas. B. Platt	30	Jan. 1, 1895	Dec. 31, 1909
Majestic [1]	Avenue Hotel Co	23	Jan. 1, 1913	Dec. 31, 1932
Maurice	Maurice Bath Co	29	Jan. 1, 1912	Dec. 31, 1931
Moody [1]	Nicholas M. Moody	16	July 1, 1910	June 30, 1920
Ozark [3]	W. S. Sorrells and F. B. Latta	26	Jan. 1, 1901	Dec. 31, 1913
Ozark Sanatorium	Ozark Sanatorium Co	10	Sept. 17, 1912	Sept. 16, 1922
Park [1 4]	Garland Hotel Co	47	May 13, 1912	May 12, 1932
Pythian (colored)	Knights of Pythias (colored)	10	Dec. 16, 1914	Dec. 15, 1924
Rector	Elias W. Rector estate	12	Apr. 16, 1914	Apr. 15, 1924
Rockafellow	Mahala J. Rockafellow	18	July 1, 1916	June 30, 1918
St. Joseph's Infirmary [1]	Sister Superior	10	Feb. 1, 1914	Jan. 31, 1924
Superior	Superior Bathhouse Co	20	Feb. 15, 1916	Feb. 14, 1936
Waverly [5]	New Waverly Hotel Co	20	Mar. 24, 1893	Mar. 23, 1913
Horse Pool [6 4]	Simon Cooper	2	Oct. 30, 1912	Oct. 30, 1917
Arlington Hotel, ground lease.	Arlington Hotel Co	.....	Mar. 21, 1914	Mar. 3, 1932
Hot Springs Mountain Observatory, ground lease.	Hot Springs Mountain Observatory Co	.....	Sept. 1, 1913	Sept. 1, 1923

[1] Water used in private bathrooms in portion of tubs leased.
[2] Closed Dec. 31, 1915.
[3] Tenants holding over.
[4] Destroyed by fire Sept. 5, 1913.
[5] Destroyed by fire Jan. 23, 1910.
[6] Water sufficient to supply 2 tubs.

While there have been no new bathhouses built during the present year, I feel that I am safe in saying that the houses now in operation have materially increased their efficiency. The bathing public is appreciative of the good service and courteous treatment, all of which redounds to the credit of the reservation.

In addition to the magnificent bathhouses which have already been constructed along Bathhouse Row the bathing facilities will soon be added to by the construction of entirely new and modern bathhouses on the sites now occupied by the Horse Shoe, Magnesia, Ozark, and Lamar bathhouses. The leases on all of these sites have long since expired, and plans and specifications for the rebuilding of all these houses are now before the Service for consideration, with the exception of the plans for the Lamar bathhouse, which are now in course of preparation, having, as I understand, been practically completed. These will be submitted in accordance with instructions received from the department before October 1, 1917.

When all of these bathhouses shall have been constructed it will complete Bathhouse Row as outlined by the department some six years ago.

By reference to the tables showing the receipts, expenditures, and net profits of all the bathhouses receiving water from the reservation, it will be pleasing to note that there has been a marked increase in the business. This fact is of course encouraging to the bathhouse owners and furnishes an incentive to rebuild on the sites now occupied by the old frame houses, even though the prices of building have been materially increased within the past two years. I seriously doubt if the prices of construction will be decreased for some time to come, and it is believed that the sooner these new houses for which plans have been submitted are constructed the better it will be not only for the public generally but for the lessees as well.

The following tables showing the business of the bathhouses for the past fiscal year have been compiled from the monthly and annual reports submitted to this office by the various lessees:

Total receipts, less redemptions, of bathhouses, by months, for the fiscal year ended June 30, 1917.

Bathhouse.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Alhambra	$723.30	$828.80	$453.40	$573.55	$693.25	$615.65	$1,142.00	$940.35	$1,185.10	$825.90	$869.45	$690.50	$9,541.25
Arlington	822.50	1,190.90	944.35	977.60	1,415.65	1,428.10	3,604.40	4,744.40	4,096.15	2,805.20	1,599.95	1,452.60	25,081.80
Buckstaff	1,370.10	1,683.35	1,306.80	1,206.55	1,367.10	1,534.50	3,757.55	4,297.30	4,594.95	2,673.90	2,068.60	1,742.05	27,602.75
Eastman							1,035.03	3,757.58	4,272.23	538.46			9,603.30
Fordyce	1,918.70	2,668.51	1,169.49	1,800.75	2,038.05	2,465.70	4,592.30	6,586.45	6,037.45	3,254.40	2,337.47	2,348.12	37,217.39
Hale	780.85	968.10	698.60	818.95	878.55	973.90	2,121.15	2,521.60	2,671.75	1,654.50	1,541.25	1,585.10	17,214.30
Imperial	1,265.95	1,024.00	591.35	736.55	946.70	927.55	1,854.40	2,179.95	2,812.25	1,330.40	1,047.40	1,116.20	15,832.70
Lamar	1,022.85	965.50	684.60	769.10	1,066.15	1,003.05	1,762.20	1,941.85	1,629.45	1,340.75	1,341.10	958.90	14,485.50
Magnesia	1,296.20	1,138.20	1,009.60	862.25	1,064.95	939.65	1,644.25	1,344.85	1,496.15	1,279.20	1,095.25	1,016.85	14,187.40
Majestic	845.70	951.20	594.95	722.70	872.65	804.95	2,564.75	2,593.85	2,368.75	1,527.85	1,154.75	845.70	15,847.80
Maurice	2,126.80	2,080.00	1,622.70	1,821.85	2,011.50	2,589.45	5,714.00	6,254.40	5,910.20	3,052.75	2,551.05	2,685.45	38,420.15
Moody	670.24	731.26	364.61	337.05	360.37	400.50	1,039.32	1,311.98	1,301.80	396.86	586.35	340.02	7,840.36
Ozark	1,308.35	1,458.75	923.70	1,459.05	1,356.70	1,575.85	2,514.65	1,897.50	2,321.05	1,905.05	1,376.80	1,433.55	19,531.00
Ozark Sanatorium	411.05	424.78	278.65	229.40	218.10	265.35	487.25	525.20	734.40	384.90	418.60	426.65	4,804.33
Pythian (colored)	266.10	396.85	218.15	189.45	194.95	213.90	484.65	395.70	583.65	550.30	361.10	231.35	4,086.15
Rector	422.90	579.55	341.95	315.40	455.65	475.55	684.90	807.15	878.65	432.80	377.20	435.00	6,206.70
Rockafellow	1,149.02	1,373.15	974.46	803.57	864.32	784.85	1,526.17	1,669.97	1,890.08	1,309.52	1,191.83	1,080.96	14,617.90
St. Joseph's Infirmary	237.50	246.78	156.27	179.78	221.07	317.14	422.00	625.07	626.97	468.00	319.10	293.10	4,112.78
Superior	1,430.15	1,105.60	708.40	680.25	823.95	910.65	1,932.20	2,195.15	2,039.50	1,623.40	1,438.90	1,393.35	16,281.50
Total	18,068.26	19,815.28	13,042.03	14,483.80	16,849.66	18,226.29	38,883.17	46,590.30	47,450.53	27,354.14	21,676.15	20,075.45	302,515.06

Business of bathhouses for the fiscal year ended June 30, 1917.

Bathhouse.	Whole tickets.	Half tickets.	Quarter tickets.	Single tickets.	Total baths sold.	Baths redeemed.	Net paid baths.	Complimentary baths.	Paid for redeemed baths.	Total bath receipts less redemptions.	Receipts from massage, etc.	Total receipts.	Total expenditures.	Net profits.	Net loss.
Alhambra	1,066	645	120	1,500	30,936	3,145	27,791	126	$1,100.75	$9,428.75	$112.50	$9,541.25	$8,849.95	$691.30	.....
Arlington	1,417	1,527	.....	2,363	47,390	8,402	38,988	82	5,020.15	22,681.80	2,400.00	25,081.80	11,060.00	14,021.80	.....
Buckstaff	1,675	1,296	831	2,440	54,730	5,124	49,606	416	3,057.60	26,244.65	1,358.10	27,602.75	20,009.18	7,593.57	.....
Eastman	446	1,110	.....	1,197	21,663	2,795	18,868	.....	1,365.05	9,303.30	300.00	9,603.30	4,450.00	5,153.30	.....
Fordyce	2,089	1,154	909	3,433	63,387	9,030	54,357	220	5,418.37	31,532.08	5,685.31	37,217.39	17,431.17	19,786.22	.....
Hale	1,344	1,290	.....	1,875	42,999	4,497	38,502	3	2,023.15	16,815.35	398.95	17,214.30	12,516.74	4,697.56	.....
Imperial	1,112	890	386	1,042	35,224	3,480	31,744	606	1,740.00	15,368.10	464.60	15,832.70	11,633.27	4,199.43	.....
Lamar	1,166	1,192	521	1,202	40,213	4,148	36,065	86	1,659.05	14,019.85	465.65	14,485.50	8,448.75	6,036.75	.....
Magnesia	1,653	1,039	249	1,749	48,097	6,719	41,378	99	2,351.65	13,991.20	196.20	14,187.40	7,650.20	6,537.20	.....
Majestic	1,420	841	.....	1,338	39,568	7,478	32,090	28	3,593.10	15,547.80	300.00	15,847.80	10,536.91	5,310.89	.....
Maurice	2,591	1,439	1,013	1,548	75,414	8,707	66,707	42	4,788.85	35,341.20	3,078.95	38,420.15	23,280.56	15,139.59	.....
Moody	687	536	.....	1,032	20,819	3,026	17,793	.....	1,270.64	7,840.36	.....	7,840.36	4,250.90	3,589.46	.....
Ozark	2,177	1,585	872	2,440	68,367	10,737	57,630	447	3,757.50	19,531.00	.....	19,531.00	8,912.80	10,618.20	.....
Ozark Sanatorium	428	438	.....	798	14,166	1,866	12,300	.....	746.40	4,776.70	27.63	4,804.33	3,703.60	1,100.73	.....
Pythian (colored)	622	491	135	884	19,531	1,949	17,582	.....	348.05	3,106.95	979.20	4,086.15	5,140.00	.....	$1,053.85
Rector	581	388	285	725	18,231	2,217	16,014	189	887.05	6,204.20	2.50	6,206.70	4,716.85	1,489.85	.....
Rockafellow	1,288	1,114	.....	1,090	39,278	3,508	35,770	9	1,433.35	13,817.15	800.75	14,617.90	10,214.55	4,403.35	.....
St. Joseph's Infirmary	408	170	.....	53	10,321	815	9,506	93	350.72	4,112.78	.....	4,112.78	2,193.20	1,919.58	.....
Superior	1,320	957	559	1,251	41,336	4,316	37,020	445	1,927.25	16,020.50	261.00	16,281.50	12,247.32	4,034.18	.....
Total	23,490	18,102	5,880	27,960	731,670	91,959	639,711	2,891	42,838.68	285,683.72	16,831.34	302,515.06	187,245.95	116,322.96	1,053.85

Fees received by bath attendants in the bathhouses for the fiscal year ended June 30, 1917

Bathhouse.	Gross amount.	Redemptions.	Net amount.
Alhambra	$4,480.50	$471.75	$4,008.75
Arlington	6,895.95	1,154.50	5,741.45
Buckstaff	7,958.25	768.60	7,189.65
Eastman	3,182.55	419.25	2,763.30
Fordyce	9,268.35	1,348.20	7,920.15
Hale	6,248.25	674.55	5,573.70
Imperial	5,116.80	522.00	4,594.80
Lamar	5,857.05	622.20	5,234.85
Magnesia	6,966.60	1,007.85	5,958.75
Majestic	5,722.20	1,084.30	4,637.90
Maurice	10,923.45	1,306.05	9,617.40
Moody	3,019.80	453.90	2,565.90
Ozark	9,928.50	1,610.55	8,317.95
Ozark Sanatorium	2,056.20	279.90	1,776.30
Pythian (colored)	2,836.35	292.35	2,544.00
Rector	2,647.50	332.55	2,314.95
Rockafellow	5,698.50	537.45	5,161.05
St. Joseph's Infirmary	1,486.95	122.25	1,364.70
Superior	6,002.40	648.45	5,353.95
Total	106,296.15	13,656.65	92,639.50

RECOMMENDATIONS.

In accordance with my recommendation last year, the sum of $10,000 from the revenues of the reservation was authorized by Congress in the sundry civil act approved June 12, 1917, to be expended under the direction of the Secretary of the Interior "for the employment of a landscape engineer and such other expenses as may be required, for the preparation of a practical and comprehensive plan, together with an accurate estimate of the cost thereof, for improving the Hot Springs Reservation."

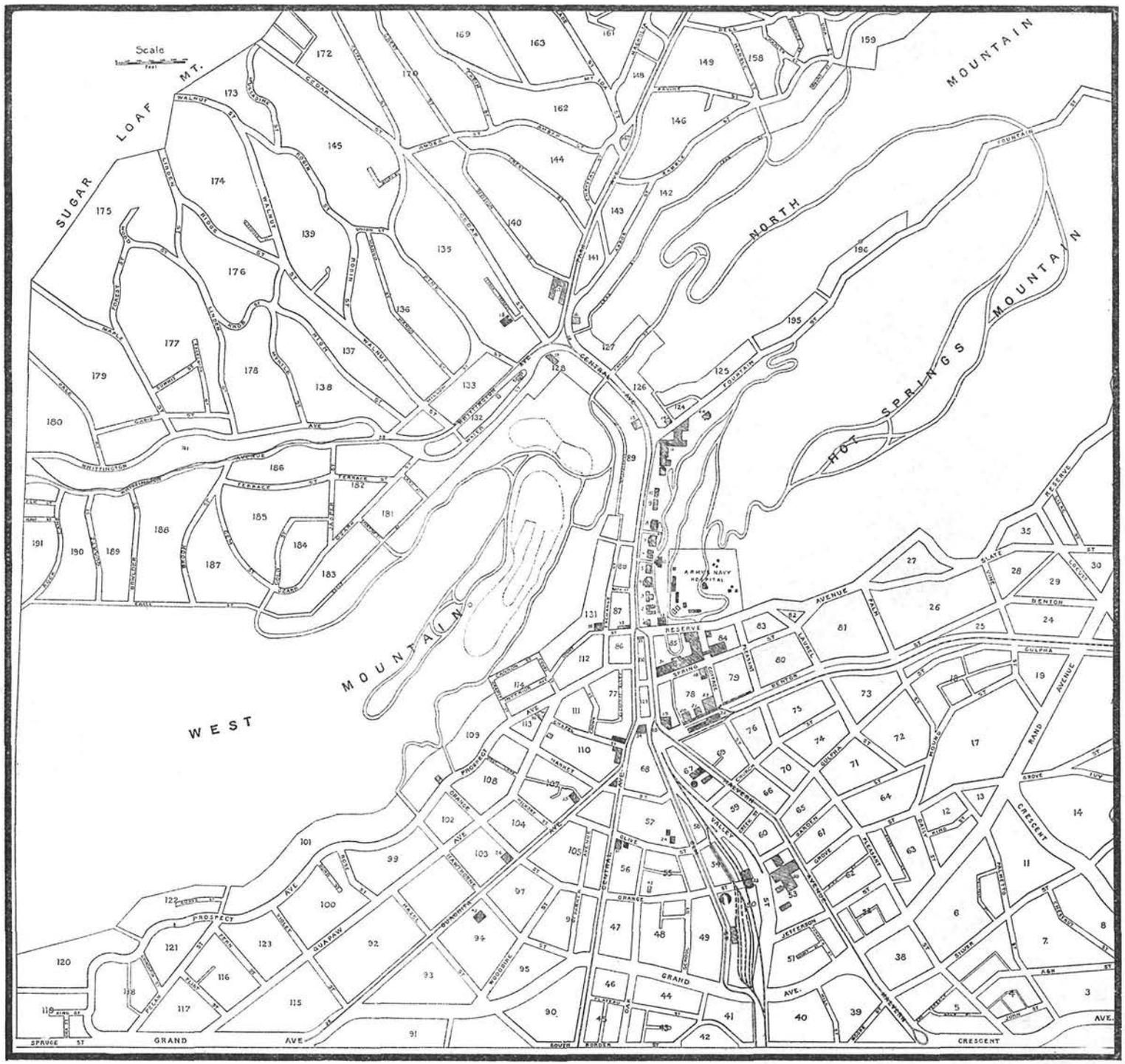
Under this appropriation the firm of Mann & Stern, architects, of Little Rock, Ark., have been employed to perform this work, and they have entered upon the undertaking. Mr. Mann has been furnished with necessary data and plans from the files of this office, and every assistance possible is being rendered to facilitate the work.

It is believed that all of the improvements recommended in my last report should be included in the new plan, namely, the construction of a roadway at least 30 feet wide and 2½ miles in length through the "gorge" at the east end of Hot Springs and North Mountains; the paving of Fountain Street from Central Avenue to boundary monument No. 36, and Reserve Avenue from Central Avenue to boundary monument No. 26, this work to be done in such a manner as to provide that the property owners on the opposite side of these streets from the reservation bear their just share of the expense; the reconstruction of the Government free bathhouse; the construction of a new greenhouse; the construction of a storm sewer and surface drainage system in Hot Springs to care for the drainage from the reservation; and the construction of a sanitary sewer system in Hot Springs to care for the sewage from the reservation.

It is also believed that this plan should include the construction of a new main entrance to the Hot Springs Mountain Reservation from the promenade in front of Bathhouse Row, one that would be in keeping with other contemplated improvements. The present main entrance and band stand has been adequate until the present time, but is not now considered in keeping with other modern improvements. A new main entrance should be planned and constructed on an elaborate and extensive scale, and should have in connection a band pavilion of architectural design to correspond, in order to provide band music as a permanent feature of entertainment.

Also, it seems that the plan should include a magnificent drinking pavilion to be constructed on the reservation front, the architectural design and construction of which should make it a leading feature of this resort.

It will also be necessary to include in this plan modern comfort stations located at such points on the reservation as may be deemed advantageous for this purpose.



Map of a Portion of Hot Springs.

LEGEND.

The numbers in this list refer to the smaller numbers on the map; the larger numbers on the map are the numbers of the squares.

1. Superintendent's office.
2. Lamar bathhouse.
3. Buckstaff baths.
4. Ozark bathhouse.
5. Magnesia bathhouse.
6. Horse Shoe bathhouse.
7. Palace bathhouse.
8. Maurice bathhouse.
9. Hale bathhouse.
10. Superior bathhouse.
11. Arlington Hotel and baths.
12. Government free bathhouse.
13. Imperial bathhouse.
14. Hot Springs bathhouse and hotel.
15. Rector bathhouse and Waukesha Hotel.
16. Rockafellow bathhouse and hotel.
17. Majestic Hotel and baths.
18. St. Joseph Infirmary.
19. Great Northern Hotel and baths.
20. Post office.
21. Business Men's League.
22. Rock Island Station.
23. Iron Mountain Station.
24. Ozark Sanitarium.
25. Alhambra bathhouse.
26. Moody Hotel and baths.
27. City Hall and Auditorium Theater.
28. ═══ Electric street car line.
29. Main entrance to reservation.
30. Park Hotel and baths.
31. Eastman Hotel and baths.
32. Arkansas National Bank.
33. Security Bank.
34. Citizens National Bank.
35. Elks' Home and Masonic Temple.
36. First Baptist Church.
37. First Methodist Church.
38. Episcopal Church.
39. Catholic Church.
40. First Presbyterian Church.
41. Whittington Lake Park.
42. High-school building.
43. County courthouse.
44. Superintendent's official residence.

North, West, and Hot Springs Mountains and Whittington Lake Park form the permanent Hot Springs Reservation, owned and operated by the Government.

18494—17. (To face page 116.)

It is also recommended that, if consistent, the rules and regulations governing the Hot Springs Reservation be revised in accordance with my letter of May 7, 1917. If this can be accomplished it will provide a material increase in the revenues of the reservation.

CONCLUSION.

After a close study for the past three years of conditions pertaining to the Hot Springs Reservation, I feel sanguine that its standing throughout the country as a health-pleasure resort is firmly established. Each succeeding year has shown improvement, and the interest now taken by the National Park Service in promulgating circulars and literature will place its meritorious features before the public in such a manner as will impress upon their minds its true merit.

The efficacy of the waters can not now be denied and I feel assured, in view of the plans now being perfected for its improvement, that the next few years will bring about extensive improvement features which will greatly add to the general attractiveness and beauty of the park.

YELLOWSTONE NATIONAL PARK.

CHESTER A. LINDSLEY, Acting Supervisor, Yellowstone Park, Wyo.

GENERAL STATEMENT.

The Yellowstone National Park was set aside by act of Congress approved March 1, 1872 (secs. 2474 and 2475, R. S.; 17 Stat., 32), as a pleasure ground for the benefit and enjoyment of the people and placed under the control of the Secretary of the Interior. It is situated principally in northwestern Wyoming but laps over a little more than 2 miles into Montana on the north and almost 2 miles into Montana and Idaho on the west. Its dimensions are about 62 miles north and south and about 54 miles east and west, giving an area of about 3,348 square miles, or 2,142,720 acres. Its altitude is 6,000 to 11,000 feet.

The park was governed by civilian superintendents, assisted by a few scouts, from the time it was set aside until August 10, 1886, when troops of United States Cavalry were detailed to police it, the commanding officer acting as superintendent under direct orders of the Secretary of the Interior. On October 16, 1916, the troops were withdrawn from the park, and a civilian supervisor, with a corps of 25 rangers, for patrol and protection work, and a few civilian employees for other duties, were appointed by the Secretary of the Interior to replace them. Under recent legislation by Congress, troops were returned to the park on June 26, 1917. This action was necessary on account of a clause contained in the sundry civil appropriation act of June 12, 1917 (Public, No. 21, 65th Congress),[1] making appropriations for the park for the fiscal year 1918. By virtue of this law, the park supervisor was relieved of so much of the park duties as pertain to "protection."

Under orders from the War Department, the First Squadron of Seventh Cavalry, United States Army, under the command of Lieut. Col. E. M. Leary, took station in the park on June 26, 1917, and has since been responsible for the police and protection of the park. By mutual agreement the post of Fort Yellowstone was reoccupied by the troops, but the National Park Service has retained the maintenance and control of the telephone lines, the water and electric-light systems at Mammoth Hot Springs, and service from these is furnished without charge to other departments of the Government located in the park. Since the post had been abandoned, the troops arrived equipped only for field duty, and would have been in but poor shape for park duties had it not been for the fact that this department had on hand a considerable amount of property necessary for use in the buildings in the post of Fort Yellowstone and at the outpost stations (15 in number). They were also, and still are, unprovided with sufficient transportation to keep the outposts supplied, and some of the least important ones will have to be abandoned for the winter season.

Park headquarters are located at Mammoth Hot Springs, 5 miles inside the park line from the northern entrance. A telephone system connects headquarters with the various outposts. A civilian force is maintained by the National Park Service, sufficient to carry on the necessary work of park administration, including the office of the park supervisor, maintenance and care of the tame buffalo and other animals in the park, maintenance of telephone lines, water and light systems, sanitation, fire lanes, and such buildings as are necessary in connection therewith.

[1] See page 226. Excerpt from sundry civil act.

The maintenance and construction of roads, bridges, and improvements in the park is carried on by special appropriation under the War Department, the work being locally in charge of an officer of the Engineer Department of the Army, who reports directly to the Chief of Engineers. There are 278.8 miles of main road and 24.75 miles of secondary road in the park, and 106.5 miles of main road is maintained by the same department in the forest reserves adjoining the park.

TRAVEL.

While automobiles were admitted to the park on August 1, 1915, they were not in general use as a method of transportation by the regular companies during the seasons of 1915 and 1916, although many private cars passed through, and they were quite generally used by concessioners and different branches of the Government operating in the park, in connection with the handling of their business. But beginning with the season 1917, practically all of the transportation of tourists in the park was consolidated under one company, which was given authority to use automobiles for this purpose. As a substitute for the antiquated coaches and other horse-drawn vehicles formerly used for this business, the automobiles have proven a grand success.

The regular tourist season was fixed from June 20 to September 15, and while it opened on schedule time, from the north and west entrances it was impossible to make the trip over the Continental Divide between Upper Basin and the Lake Outlet, via the Thumb of the Lake, on account of the very late spring following a winter of unprecedented rigor accompanied by deep snows. The appropriation act providing funds for the maintenance of park roads specifically prohibits the use of the money for clearing the roads of snow, so in case of a late spring the burden of opening the roads falls upon the transportation company. The Yellowstone Park Transportation Co. exerted every reasonable effort to clear the roads of snow in time for the opening of the season, and expended quite a large sum in the work; but regardless of this fact, the snow on the road between Upper Basin and Lake Outlet was not shoveled out so a vehicle could pass over it until June 23, and it took until the 26th to repair the bridges so that the regular travel could be routed that way. Until that time it was necessary for tourists to go from Upper Basin to Canyon and Lake via Norris. The eastern entrance was not opened for travel until July 9, but could have been opened several days sooner had the bridge across Pelican Creek been repaired so the snow-shoveling crew could have gotten through to shovel out the divide. Dunraven Pass was opened on July 9, and regular travel was routed that way on July 10. Much heavy snow shoveling was done by the transportation company between Norris and Canyon, and Canyon and Lake, in order to get the road opened so the main points of interest could be reached by June 20. One of the most interesting features of the park trip up to the middle of July was the big snowdrifts through which the automobiles passed in several places on the park trip. In order that they might take their patrons to the points of interest advertised in their schedules, the transportation company, on June 25, made some slight repairs to the side roads leading to the Mammoth Hot Springs formations and to the pasture where the tame buffalo are kept for exhibition to tourists.

Tourists who visited the park before it was possible for them to be taken over all of the regular route showed disappointment in some cases, but for the most part they appreciated the reasons after seeing the snow banks, and were satisfied that the conditions were unavoidable.

The aggregate number of persons making the park trips during the season of 1917 was as follows:

Yellowstone Park Transportation Co.:		
Entering via northern entrance	5,774	
Entering via western entrance	5,635	
Entering via eastern entrance	1,874	
		13,283
With other licensees of personally conducted camping parties		67

Making park trips with private transportation:		
With automobiles, paid and complimentary	19,832	
With automobiles, second trip	1,436	
	21,268	
With other private transportation, as "private camping parties"	647	
		21,915
Miscellaneous short trips		135
Grand total		35,400

The Yellowstone Park Hotel Co. reports that 131,156 meals and 42,061 lodgings were served at the hotels in the park during the season, as follows:

Hotels.	Total full-paid meals.	Total full-paid lodgings.
Mammoth	29,681	10,024
Old Faithful	39,109	11,019
Lake	20,992	8,670
Canyon	41,374	12,348
Total	131,156	42,061

The Yellowstone Park Camping Co. reports that 98,428 meals and 34,878 lodgings were served at the camps in the park during the season.

Travel by different entrances.

From the north, via Gardiner, Mont	13,419
From the west, via Yellowstone, Mont	14,690
From the east, via Cody, Wyo	6,666
From the south, via Jackson, Wyo	356
From the northeast, via Cooke, Mont	269
Total	35,400

Private automobile travel.

	Automobiles.	Tourists.
Entering via northern entrance	1,994	7,379
Entering via western entrance	2,258	8,631
Entering via eastern entrance	1,304	4,727
Entering via southern entrance	98	328
Entering via northeastern entrance	49	203
Total	5,703	21,268

A fee of $7.50 was charged for tickets of passage, which were good for the entire season. Complimentary tickets were issued to officials of adjoining States or counties, and to officials of the Federal Government, visiting the park officially.

AUTOMOBILE TRAVEL BY STATES.

A statement showing the automobile travel, by States, in Yellowstone National Park, for the season of 1917 follows:

Travel in Yellowstone National Park, by States, for the season of 1917.

State.	North entrance.		West entrance.		East entrance.		South entrance.		Totals.
	Private.	Yellowstone Park Transportation Co.	Private.	Yellowstone Park Transportation Co.	Private.	Yellowstone Park Transportation Co.	Private.	Yellowstone Park Transportation Co.	
Alabama		4	7	14	6	10			41
Arkansas	9	14		5	15	26			69
Arizona		4	29	20	20				73
California	186	182	357	392	92	21	15		1,245
Colorado	55	38	89	66	334	72	15		669
Connecticut	5	47		31		9			92
Dist. of Columbia		17		23		3			43
Delaware		5		3					8
Florida	12	2		19	5	3			41
Georgia		13	5	26		2			46
Idaho	148	16	2,622	133	18	3	33		2,973
Illinois	85	609	35	341	132	200			1,402
Indiana	20	111	18	79	26	36			290
Iowa	188	225	45	173	207	106			944
Kansas	62	63	82	132	290	52			681
Kentucky		32		46	8	19			105
Louisiana		17		21		2			40
Maine		7		4		2			13
Maryland		16		11		5			32
Massachusetts	10	97	2	73	8	20			210
Michigan	27	38	16	63	30	30			204
Minnesota	208	225	8	21	33	21			516
Mississippi		6		5	6	8			25
Missouri	54	85	38	129	132	168	3		609
Montana	4,622	429	2,031	16	501	25	2		7,626
Nebraska	109	80	81	137	349	139	19		914
Nevada		1	52	17			4		74
New Hampshire		6		8		4			18
New Jersey	6	74	5	86	7	25			203
New Mexico	2	3		11	21				37
New York	24	360	6	333	9	111			843
North Carolina		6		2		1			9
North Dakota	346	212	10	6	47	2			623
Ohio	47	237	4	191	53	94			626
Oklahoma	67	40	62	44	242	52	5		512
Oregon	57	74	329	31	23	8	3		525
Pennsylvania	21	109	11	197	36	73			447
Rhode Island	3	6	5	5		1			20
South Carolina		5		5					10
South Dakota	144	44	5	16	113	25	10		357
Tennessee		34		23	4	14			75
Texas	28	70	49	140	146	49			482
Utah	8	15	1,545	199	24		34		1,825
Virginia	3	23	6	7		9			48
Vermont			7	2					9
Washington	408	154	266	19	56	2			905
West Virginia	4	23		24	8				59
Wisconsin	81	253	7	55	20	20			436
Wyoming	214	18	84	12	1,174	67	55		1,624
Countries.									
Australia		1		1					2
Canada	75	33	34	18	4	1			165
China		4							4
Cuba		4							4
Denmark				2					2
England		1		1		2			4
France		2		2					4
Hawaii		2	8	7					17
Holland		13		4					17
India		2							2
Japan		3		2					5
Java				16					16
Mexico		4		1	2				7
Philippine Islands		4							4
Russia		2		1					3
Sumatra				1					1
Sweden				1					1
Switzerland		1							1
South America		2		2					4
Total	7,338	4,227	7,960	3,475	4,201	1,542	198		28,941
Unclassified									6,459

NOTE.—It was impossible to get the addresses of several of the large parties carri
Park Transportation Co., and many of the smaller parties were omitted.

In addition to the transportation furnished by the regular company, movable-camp licenses were issued during the season covering a total of 9 wagons and 56 saddle horses.

COMMENTS ON THE AUTOMOBILE TRAVEL.

As will be noted by the above travel report, about three-fifths of the total travel to the park came in private automobiles. The schedules, which previously have had to be very strict to protect horse-drawn vehicles, were made as liberal as possible, safety considered. The regular park tour was made to include the trip from Canyon to Mammoth through Dunraven Pass instead of returning to Mammoth via Norris, as heretofore, and automobiles were required to travel around the loop in the direction opposite to that followed by the hands of a clock. On the approaches, and on the loop, at times when but little traffic would be encountered, they were permitted to travel in either direction. The cars of the regular transportation company ran as nearly as practicable on schedule. For the most part, the trips between points of interest were made before noon, leaving the afternoons for sight-seeing. The lunch stations of the hotels and camps, heretofore made necessary on account of some of the long drives between stations, were eliminated, as it is now possible to reach the main hotels or camps before noon. Many of those who traveled in their own cars stopped at the hotels and camps, and others carried with them their own camping outfits and made use of the shelters and conveniences provided for them at various points.

Special permits for operating automobiles to take care of the necessary traffic between Gardiner and Cooke, Mont., through the park, were given as follows: Nels E. Soderholm, for operating one 2-ton truck; Robert I. McKay, for operating one truck and one touring car; Frank Lind, in connection with mail contract, one automobile.

Motor cars and trucks have been in general use in the park by concessioners and different branches of the Government, in connection with all necessary business.

CONCESSIONS.

In January, 1917, the National Park Service effected a complete reorganization of the hotel, permanent camp, and transportation concessions in the park, and new contracts were made, practically on a profit-sharing basis with the Government. Under the new contracts, a close supervision of the business of the concessioners is maintained.

The Yellowstone Park Hotel Co. operates all of the hotels in the park, as heretofore, but under a new contract on terms which give the National Park Service authority to regulate the business. The management of the hotels was greatly improved and the service was excellent. The substituting of automobile transportation for the stages in use last year did away with the necessity for maintaining lunch stations at Norris and Thumb, and the Fountain Hotel was also abandoned, leaving but four hotels, namely, at Mammoth Hot Springs, Upper Basin, Lake, and Canyon.

The two systems of permanent camps were combined into one called the Yellowstone Park Camping Co., and the general transportation privilege was withdrawn and the whole transportation business vested in one company. The camps, however, are still permitted to furnish saddle horses and surreys for short trips from camps for their patrons. This combination of interests, together with the new and more rapid method of transportation employed, permitted the abandonment of 10 permanent camp sites—at Swan Lake, two at Gibbon Junction, Willow Park, Nez Perce Creek, Upper Geyser Basin, Thumb, Lake Outlet, Canyon, and Tower Falls. A new camp was constructed at Mammoth Hot Springs to replace the two that were abandoned at Willow Park and Swan Lake, and old sites were retained at the western entrance, Upper Geyser Basin, Lake Outlet, Grand Canyon, and Tower Falls, making a total of 6 permanent camps in all to take the place of 15 heretofore maintained. Much improvement work has been done on the camps that were retained on plans approved by the National Park Service. Expansion to accommodate the travel heretofore taken care of by two systems of permanent camps was necessary at the principal points of interest, namely, Mammoth, Upper Basin, Lake, and Canyon. The work of consolidation, reconstruction, and expansion has been going on ever since the ground was cleared from snow, and there is still much to do. Good progress has been made, however, taking into consideration the fact that labor has been difficult to obtain. The service at the camps was excellent; they were well patronized by parties traveling in private automobiles as well as by regular travel, and complaints were few. The camp at Grand Canyon is particularly well located, in the center of the interesting features of the canyon. It has been crowded during the entire season and has proven to be one of the most popular stopping places in the park. The work of improving these camps by installing electric lights, excellent running water, amusement rooms, and other comforts and conveniences is still in progress, and they will eventually be models in their line.

The transportation lines in the park were consolidated into one company, the Yellowstone Park Transportation Co., which was authorized to use automobiles in place of the horse-drawn surreys and Concord coaches formerly in use. One hundred 10-passenger and sixteen 7-passenger automobiles of a specially comfortable type were purchased by this company for the park work. The change from horse-drawn to motor-propelled vehicles has been satisfactory in every respect. From a point of comfort there is no comparison, and a vast amount of time is saved in traveling, which is utilized by the tourist in sight-seeing. For the first time the schedules are so arranged that travelers may leave the park by any route they prefer, regardless of the route by which they enter, without additional charge for stage fare, and considerably more distance is covered in making the regular trips than heretofore. The company maintained a daily service through to Cody, Wyo., 55 miles outside of the park, and provided for tourists desiring to go to Jackson Hole, south of the park. In addition to furnishing transportation to park travelers, the transportation company has also established garage and automobile repair facilities in the park for the benefit of parties traveling in their own cars. One of the barns at Mammoth Hot Springs has been remodeled into a garage 50 by 200 feet in size, a garage of the same size has been built at Upper Geyser Basin, and others are to be built as soon as possible at Lake, Canyon, and Yellowstone.

With the advent of the automobile transportation, the necessity for providing water transportation between Thumb and the Lake Outlet for regular tourists, which formerly saved time and was restful after a long stage ride, ceased to exist, and the Yellowstone Park Boat Co. confined its operations during the past season to short excursions from the Lake Outlet, for fishing, picnic parties, etc. One of the 45-foot motor boats and the small gasoline and row boats were all that were required. The boat company's store at the Lake Outlet was sublet to Mr. C. A. Hamilton, who ran it as a branch of his main general store at Upper Geyser Basin.

Mr. George Whittaker was permitted to establish a branch store at Grand Canyon, using for the purpose some old log buildings near Canyon Junction, formerly used by the Holm Transportation Co. This was done as an experiment in connection with his general store at Mammoth Hot Springs. The results justify making it permanent.

Mr. J. E. Haynes, who holds a concession in the park for manufacture and sale of photographs, etc., operated his picture shop at Upper Geyser Basin and also had stands in the principal hotels and camps. During the latter part of the season he established a picture shop at Tower Falls as an experiment. This is located at a very interesting point, and as he has agreed to furnish a free information bureau in connection with his picture shop, this combination is desirable, for there is no other source of information at this remarkably interesting point.

The bathhouse operated at Upper Geyser Basin under the concession of Francis F. Brothers was fairly well patronized during the season. The baths were used by 4,852 persons, of whom 3,171 were tourists and 981 were park employees.

The Park Curio Shop, operated at Mammoth Hot Springs by Mesdames A. K. Pryor and Elizabeth Trischman, did an excellent business.

A special permit was issued to Dr. H. O. Reik, of Baltimore, Md., to give lectures illustrated by natural colored lantern slides. He gave a few lectures at the Lake Outlet as an experiment, and while the lectures and slides were excellent in every way they failed to attract sufficient interest to make it a financial success, and they were discontinued.

A special permit was issued to Jay Wilcox and Jim Parker, of Gardiner, Mont., to cultivate a tract of 1 acre of land in the park, about 2 miles up the Yellowstone River from the north entrance, for the purpose of raising potatoes.

The land was new and had never been plowed. The crop has not yet been harvested.

The season's travel proved much better than was anticipated when it opened. The concessioners showed a splendid spirit of cooperation and strove to make the service better than it had ever been before. Complaints were not numerous, and when they were made the source of complaint was promptly removed, if possible to do so. The travel by private automobiles is increasing noticeably, and a large percentage of those so traveling put up at the hotels and permanent camps. Those desiring to furnish their own accommodations in camp are given every encouragement and possible facility for making themselves comfortable and are given to understand that they are entirely welcome. Every effort is made to cultivate the feeling among visitors that the national parks belong to the American people, that those in authority are the servants of the public, and that the parks are run for their benefit and not in the interests of the concessioners as has often been claimed.

STREAM GAUGING.

This work in the park is under the direction of the district engineer of the water-resources branch of the United States Geological Survey, whose headquarters are at Boise, Idaho, who has furnished the following report on the work for the year:

The installation of a water-stage recorder and of cable-measuring equipment at the gauging stations on Yellowstone River begun during September, 1916, was completed during the following month. This station is situated about one-quarter mile above the Upper Falls of the Yellowstone, and is readily accessible to tourists. On this account a special attempt was made to give the gauge house an attractive appearance; windows were placed in all four sides and a substantial platform, with rustic railing and two benches, was constructed around the house.

Cable-measuring equipment was also installed at the gauging stations on Snake and Madison Rivers during the summer of 1917.

The station on Gibbon River was discontinued at the close of the 1916 tourist season because of inability to longer secure frequent gauge readings. The other three stations, mentioned in previous reports, are still being maintained, and with the equipment installed during the past year dependable data should be obtained for practically all stages of flow.

It is hoped that funds will be provided in the near future with which to install a water-stage recorder at the Snake River station, and also to equip and maintain a station on Fall River, in the southwest corner of the park, the latter being of special importance because of possibilities for storage for irrigation use.

Most of the construction work above outlined was made possible through the allotment of $1,000 from Yellowstone Park funds for the fiscal year ending June 30, 1917. Unfortunately, however, no funds are available from this source for the continuation of this work during the present fiscal year. A small sum has been set aside by the Geological Survey, but this is inadequate for the needs of the work, and unless materially supplemented from other sources will prevent any further construction or expansion.

Detailed descriptions of the gauging stations, together with summaries of current meter measurements, and gauge height and discharge data for each, will be furnished in the annual Water-Supply Papers of the United States Geological Survey, Parts VI and XII, respectively, for Missouri and Snake River drainage areas.

ROADS.

The road work in the park has been taken care of in a very commendable manner since July 15 by Capt. John W. N. Schulz, Corps of Engineers, United States Army. As with other departments of the Government, concessioners, and others, who have much to do with the employment of labor, the scarcity of competent male help, due to the selective draft and the general prosperity of the country, rendered it more difficult and expensive to do this work than heretofore. Capt. Schulz has kindly given me the following notes on the work accomplished by his department during the past year.

The sundry civil act of June 12, 1917, appropriated money as follows for road work in Yellowstone National Park and the adjacent forest reserves on the east and south:

"Yellowstone National Park: For maintenance and repair of improvements, $147,500, including not to exceed $5,000 for maintenance of the road in the forest reserve leading out of the park from the east boundary, and not to exceed $7,500 for maintenance of the road in the forest reserve leading out of the park from the south boundary, and including not exceeding $3,000 for purchase, operation, maintenance, and repair of motor-driven and horse-drawn passenger-carrying vehicles to be used for inspection of roads and road work, to be expended by and under the direction of the Secretary of War: *Provided*, That no portion of this appropriation shall be expended for the removal of snow from any of the roads for the purpose of opening them in advance of the time when they will be cleared by seasonal changes.

"For resurfacing and for finishing the belt line with oil macadam, $20,000."

In addition there remained available on October 1, 1916, about $69,000 of the $197,200 appropriated by the sundry civil bill of July 1, 1916 (p. 30 report of Superintendent of National Parks, 1916), for maintenance and repairs in the park and forest reserves, and for widening, surfacing, and otherwise improving the west, south, and east entrance roads, including the road in the east forest reserve.

Owing to the very early snows and cold weather in the fall of 1916 and to the very late spring of 1917, following the worst winter existing within the records of the Weather Bureau, which cover a period of some 29 years, it was impossible to complete the work of improving the three entrance roads inside the park during the fiscal year 1917, as was contemplated. An amount of $9,415.61 of the funds appropriated especially for the entrance roads inside the park therefore remained unobligated on June 30, 1917; and, in the natural course of events, will have to be returnnd to the Treasury. This money is very badly needed for the purpose for which appropriated, the original amount having been barely enough to do reasonably well the work proposed; and it is hoped that the remainder reverting to the Treasury will be reappropriated in the appropriation act for the fiscal year 1919, plus an amount of 33⅓ per cent additional to cover the very material increase in the cost of all elements entering into the work since the time when the original estimate for the improvement of the three approach roads was made.

The work during the present year included general repair and maintenance of the entire road system, including the belt line, the north, west, south, and east approaches, both in the park and in the forest reserves on the east and south, and the Cooke City road; widening and improving the west, south, and east approaches, including the east forest reserve; sprinkling approximately 99 miles of the belt line and the north and west approach roads; repair and construction of bridges; construction of concrete, wood, and galvanized-iron culverts; reshaping and ditching roads; alterations, repair, and construction of landing platforms and board walks at points of interest; and maintenance of trees, shrubs, vines and lawns.

In the following summary the work will be divided into that done on the belt line, the north approach, the west approach, the south approach, the east approach, and the Cooke City road.

BELT LINE.—*Spring repairs.*—The repair work done during the present spring consisted almost entirely of emergency work, most of which was urgently needed to keep the road system open at critical points. The winter of 1916–17 was one of the severest within the memory of the older inhabitants of the park. The official Weather Bureau records at Mammoth Hot Springs, the headquarters of the park and practically the only point in the park which is accessible to the outside world in the winter, show that for two whole months the temperature at that place was not once as high as the melting point, 32° F. As late as May 1 there was an average depth of snow on the main road system of 35 to 40 inches, and the melting of snow in the interior of the park did not occur to any large extent until almost June. The melting of snow during the month of June throughout the portions of the park adjacent to the belt line was very great, the snow belt receding from the vicinity of the Golden Gate, 3½ miles from Mammoth Springs, so that at the end of the month practically all the belt line was free of snow, with the exception of a few drifts on the Continental Divide Road and the remains of one very heavy drift on the Canyon-to-Lake Road. At the end of June the south approach, the east approach, and the Dunraven Pass and Mount Washburn Roads were still blocked by snow.

The melting of snow caused practically all streams to be flooded, sometimes beyond their banks, in many cases requiring prompt and energetic action to

keep the roads open to traffic and to prevent serious damage to the roads. Numerous small breaks and bad mudholes in the roads did occur, but were promptly repaired as the snow belt receded. Small crews were organized as necessary to cope with these situations, and also with the very serious conditions of the roads in the localities where auto and truck traffic began just as soon as the snowdrifts had been cut through. Many minor breaks occurred in the road system, due to the incapacity of the small culverts to care for the unprecedented amount of water from the melting snows. All of these breaks were either temporarily bridged over or refilled, with practically no interruption to traffic.

The wear and tear on the roads caused by the automobile and truck traffic while the roads were still covered by or still wet from the winter's snow, the depth of which and the late melting of which were almost unprecedented, caused a very heavy demand on the resources of the Engineer Department to cope with the situation. So many points on the road system were in serious danger of being closed entirely to traffic that practically all energies had to be devoted to critical points where work was absolutely necessary to keep the road from being seriously damaged or to keep the road open to traffic. Many minor evils in the roads, such as chuck holes and ruts, had to be temporarily omitted from consideration, leaving all polishing work to be done during the month of July. Even the more serious and critical work, in the case of the roads which on July 1 were still closed by snow, had to be held over until the new fiscal year.

General road repairs.—During the early portion of July the small emergency crews which had been organized for spring repair work in June were expanded into larger flying-grader crews, and several additional crews of this nature were organized. The flying-grader work done during the present season has necessarily been much heavier in its nature, and more expensive per mile than any attempted in previous seasons. This is due to the terrific wear and tear on the roads by the heavy automobile traffic, and the fact that automobiles are much more demanding of a perfect road than were the horse-drawn vehicles formerly used in the park. In this connection it is deemed proper to state—inasmuch as the main belt line system was the subject of some criticism during the early part of the tourist season on the part of tourists passing through the park and others—that the improvement of the belt line in order to make the same suitable for automobile traffic, as recommended by the Engineer Department in Senate Document No. 871, Sixty-second Congress, second session, in 1912, has never yet been carried into effect, the Congress not having seen fit to appropriate any portion of the funds recommended for the belt line in that report until June 12, 1917, the sundry civil bill of which date provided sufficient funds for improving approximately 1½ miles of the belt line during the fiscal year ending June 30, 1918.

The progress of the flying-grader crews around the belt line was a great deal slower than in previous years, due to the very heavy work required, so that certain portions of the belt-line system were not reached until late in the tourist season, notwithstanding the fact that there have been more than twice as many crews engaged in this class of work the past season as in the past two years. The work done by these crews consisted of recrowning the roads, removing ruts, repairing chuck holes, refilling and leveling up over culverts where old fills had sunken in, leveling up approaches to bridges so as to eradicate sudden drops either in going onto or off of bridges, repairing minor or dangerous breaks in retaining or guard walls, repairing dangerous breaks in road shoulders and dangerous flooring in bridges, repairing broken-down culverts or replacing same, cleaning out ditches and culverts which had become clogged, and removing rocks and bowlders from the roads. The work was made more difficult due to the extremely dry weather. While in all cases the roads were improved by the work done, except that they were sometimes made extremely dusty at the immediate time the work was being done, yet it does not take many days after the passage of such a crew over a section of road before old chuck holes recur or new ones are formed by the heavy automobile traffic.

To assist in maintaining the roads during the tourist season each sprinkler crew was equipped with a split-log drag, and whenever rainy weather—which was more rare during the season of 1917 even than during the preceding season of 1916—gave an opportunity for so doing, these drags were used to reshape and smooth out the ruts in the roads. This process is very necessary and would have been more efficacious had there been more rain than was the case during the season just closed.

During the season of 1917 there was also established a system of patrol maintenance over about 24 miles of the road system, where especially needed because of unusually heavy traffic, the work consisting principally of dragging the road and of filling in chuck holes. Where reliable men can be obtained the expense incurred in this class of work is well repaid in the improvement of the road. The dragging was done immediately after the roads were sprinkled, while the road surface was still in the best condition as to moistness.

Sprinkling and dragging.—During the tourist season of 1917 approximately 99 miles of road was sprinkled, covering practically the same stretches of road as the previous season, with the exception of the road between Norris and Canyon. Owing to the extremely dry weather, it appeared during about the first 20 days of July that the sprinkling system would be unable to sufficiently cope with the extreme dustiness of the roads, but a rain on July 22 helped out materially in this respect, and after that time the sprinkling was very effective.

As practically all tourist traffic from Canyon to Mammoth Springs now travels by way of the Dunraven Pass and Tower Falls road, instead of by Norris, the sprinkling of the Canyon-Norris road was not attempted during the season just closed. Attempts to sprinkle this section of the road in previous seasons were never entirely successful, as for more than half the distance dependence had to be placed on wells for securing the water supply, and these wells have always gone dry during the latter part of the sprinkling season. Due to the inefficiency of this particular sprinkling, and to the fact that comparatively little tourist travel now passes over this road, it was thought best not to undergo the expense of sprinkling it.

As already stated under "General road repairs," all sprinkler crews were equipped with split-log drags, which were used for the purpose of reshaping and smoothing out the roads whenever rainy weather—which was rare—gave an opportunity for doing so.

Firehole realignment.—This realignment, which will replace 1½ miles of the road leading from Madison Junction to the Firehole Cascades, was begun in June, 1915, and completed for a distance of about 4,700 feet during the seasons of 1915 and 1916. During the year ending September 30, 1917, about 1,000 additional feet of road has been practically completed, making a total of about 5,700 feet; and partial work has been done over an additional distance of about 800 feet. It was hoped that this realignment, the total length of which is about 7,700 feet, would be completed during the present season, but due to the vastly increased costs of all the elements entering into the work it will not be possible now to complete the work with this year's appropriation. The completion of this project will therefore have to remain over until the next working season.

Resurfacing belt line and finishing with oil macadam.—During the summer just closed work has been begun on the project of resurfacing the main belt line and finishing it with oil macadam, under a special appropriation of $20,000 for beginning that work. To the present date approximately three-fourths mile of road between Norris and Mammoth Hot Springs, 2¾ miles from Norris, has been widened, straightened, and regraded so as to prepare a proper subgrade for the resurfacing work to be done, and about one-half mile of rock base has been laid and rolled preparatory to receiving the oil finish.

It is hoped that in future years, at least after the termination of the present war, larger amounts of money will be appropriated for this work, so that the improvement of the belt line can be carried on at a rate of about 15 miles per year, permitting the completion of the project in about 10 years.

Oil-macadam finishing is the only practicable way for handling the dust nuisance in the park. In some portions of the park where water is scarce or altogether missing sprinkling is impracticable, and even in some places where the roads are sprinkled the sprinkling amounts only to an amelioration and not a cure of the dust nuisance.

The rock base laid during the present summer has been for the most part 16 feet wide and 7 inches in depth before rolling. Owing to the high cost of the work, on account of the large increase in all construction costs and on account of the long haul, it has been found necessary to reduce these dimensions at present to 14 feet and to 6 inches, respectively, for the work now being done.

Bridges and culverts.—In line with the policy adopted several years ago of reconstructing in permanent material the bridges and culverts on the main belt line, there were built during the year ending September 30, 1917, reinforced concrete culverts on the main belt-line road, as follows:

One culvert 4 by 2¼ by 84 feet, at mile 1.05 from the Lake Hotel toward the Thumb, to replace a high wooden bridge; approximately 3,700 cubic-yard fill completed and placed in commission.

One culvert 4 by 2¼ by 84 feet, at mile 9.5 from the Lake Hotel toward the Thumb, to replace a high wooden bridge; approximately 4,000 cubic-yard fill completed and placed in commission.

One culvert 4 by 2¼ by 30 feet, opposite the fish hatchery, mile 0.25 from the Lake Hotel toward the Thumb; 90 cubic yard fill completed and placed in commission.

One culvert 4 by 2¼ by 30 feet, opposite the Lake Soldier Station, mile 0.5 from Lake Hotel toward Canyon; placed in commission.

One culvert 4 by 2¼ by 42 feet, over Cascade Creek, mile 3.6 from Canyon toward Tower Falls, to replace a high wooden bridge; 1,600 cubic yard fill practically completed and placed in commission.

One culvert 4 by 2¼ by 42 feet, mile 4.55 from Canyon toward Tower Falls; 600 cubic yard fill practically completed and placed in commission.

One culvert 4 by 2¼ by 30 feet, mile 4.9 from Canyon toward Tower Falls; 500 cubic yard fill partially completed.

One culvert 4 feet by 1 foot 7 inches by 18 feet, mile 5.3 from Canyon toward Tower Falls; 50 cubic yard fill completed and placed in commission.

One culvert 4 by 2¼ by 24 feet, mile 5.35 from Canyon toward Tower Falls; 100 cubic yard fill partially completed.

The following culverts have been constructed (generally to replace high wooden bridges) on the Dunraven Pass road, but have not yet been back filled:

One culvert 4 by 2¼ by 42 feet, mile 7.7 from Canyon toward Tower Falls.

One culvert 4 by 2¼ by 30 feet, mile 7.8 from Canyon toward Tower Falls.

One culvert 4 by 2¼ by 42 feet, mile 8.3 from Canyon toward Tower Falls.

One culvert 4 feet by 1 foot 7 inches by 48 feet, mile 8.35 from Canyon toward Tower Falls.

One culvert 4 feet by 1 foot 7 inches by 54 feet, mile 8.4 from Canyon toward Tower Falls.

One culvert 4 by 2¼ by 54 feet, mile 8.8 from Canyon toward Tower Falls.

One culvert 4 by 2¼ by 42 feet, mile 8.9 from Canyon toward Tower Falls.

The following work of back filling culverts constructed in previous years was done the past year and the culverts have been placed in commission:

One 160 cubic yard fill over an 8 by 4 by 21 foot reinforced concrete slab culvert built in 1916, mile 1.5 from the Thumb toward the Lake.

One 75 cubic yard fill over an approximately 6-foot span reinforced concrete culvert built in 1915, mile 1.75 from the Thumb toward the Lake.

One 350 cubic yard fill over a twin galvanized-iron culvert, 24 inch diameter each, 44 feet long, built in 1916, mile 2.5 from the Thumb toward the Lake.

One 250 cubic yard fill over an 8 by 8 by 20 foot reinforced concrete slab culvert over Antelope Creek, built in 1916, mile 10.2 from the Lake Hotel toward the Canyon.

One 250 cubic yard fill over the 8 by 10 by 20 foot reinforced concrete slab culvert, built in 1916, over Trout Creek, mile 10.5 from the Lake Hotel toward the Canyon.

One 600 cubic yard fill over an 8 by 10 by 20 foot reinforced concrete slab culvert, built in 1916, over Alum Creek, mile 13 from the Lake Hotel toward the Canyon.

There were also installed some galvanized-iron culverts at various points on the belt line in connection with the flying-grader work described heretofore. In addition, a number of culverts and minor wooden bridges were repaired, strengthened, or reconstructed. The steel bridge over Obsidian Creek, mile 7.5 from Mammoth Hot Springs toward Norris, and the wooden truss bridge over the Firehole River, mile 0.5 from the Upper Basin toward the Thumb, were refloored with plank.

NORTH APPROACH.—On the north approach road, extending from the northern entrance at Gardiner, Mont., to the belt line at Mammoth Hot Springs, general maintenance and repair work was done, as on the belt line road itself, and the first 3½ miles from Mammoth Hot Springs toward Gardiner was sprinkled. The other mile and a half of the road had been treated with a light oil and sand finish in the spring of 1915 and did not require sprinkling during the season just closed.

Gardiner slide.—The Gardiner slide, located on the north approach road about 2 miles from the northern entrance to the park, which has given considerable trouble for a number of years, has become rapidly worse during the year just closed, both in the extent of territory which it covers and in the rate or velocity of the gradual sliding. A very large amount of work has had to be done on this slide during the fall of 1916 and during the present spring to keep the road open; and the expense involved in this work is becoming so great as to make urgent a realignment of this road, in the early future, with a view to eliminating the troubles caused the present road by the slide.

WEST APPROACH.—On the west approach road, which extends from the western entrance at Yellowstone, Mont., to the belt line at Madison Junction, a distance of 13½ miles, maintenance work similar to that on the belt line, including the sprinkling of the 4 miles nearest to Madison Junction, was done. In addition, the work of improving the road to make it suitable for animal-drawn and motor-propelled vehicles was prosecuted as vigorously as possible until the close of the fiscal year on June 30, when the appropriation expired by limitation and the balance of unobligated funds reverted automatically to the Treasury. As heretofore stated, the very early winter in the fall of 1916 and the late spring of the present year made it impossible to do all the work projected before the end of the fiscal year.

The improvement work accomplished during the year was the construction of a crushed rock base 5 inches deep and 10 feet wide, ready to be given an oil finish, over a distance of 2 miles, reaching a point about 9½ miles from the west entrance at Yellowstone. An oil finish was applied over the 2 miles mentioned, and also over the 2½ miles (from the 5 to the 7½ mile points from Yellowstone) of base laid in the season of 1916.

The narrowing of the oil macadam from 18 to 10 feet was made because the experience prior to the present season showed that practically all traffic on the first 5 miles of the west approach, during 1915 and 1916, was concentrated on the 10-foot strip; and the expense of the greater width in further construction on the west approach, at least for the time being, was not considered justified. The experience the present season, however, has been different, due to the almost complete change the present season from horse-drawn to motor-propelled vehicles. The tendency of automobile travel is to spread more over the width of the road, instead of remaining in a single track, as is the case with team travel, so that with the narrower width the traffic often extends beyond the sides of the paved strip, resulting in considerable ravelling which would not occur with a wider surface. For this reason it is considered necessary for future work, whenever funds permit, to increase the width of the surfaced road to 14 feet, or if possible to 16 feet.

SOUTH APPROACH IN THE PARK.—In addition to general repairs such as were made on the belt line, the work of widening and improving the south approach for combined horse-drawn and automobile traffic, as specially appropriated for by Congress, was continued as late in the fall of 1916 as weather conditions would permit. No work was possible on this section during the present spring, as the road was closed by snow until about the middle of July. At this time the widening and improving of the road is completed except for about 2 miles of road (the 14 to the 16 mile points south of the Thumb). The work will not be completed until the funds therefor are reappropriated by Congress, the funds available during the fiscal year 1917 having expired by limitation on June 30, 1917.

SOUTH APPROACH IN THE FOREST RESERVE—*Snake River bridge.*—In the fall of 1916 the wooden approaches to the 100-foot span steel bridge over the Snake River, 2¾ miles south of the park boundary were constructed, and the bridge was put into service. The concrete piers and the steel bridge itself, together with the reinforced concrete floor, were constructed in the seasons of 1915 and 1916. Owing to the dangerous condition of the old wooden bridge over the Snake River, it was very urgent that the new bridge be placed in commission at the very earliest possible moment.

Pilgrim Creek bridge.—During the present summer work has been begun on the construction of a 300-foot span log bridge over Pilgrim Creek, about 5 miles north of Moran. The Pilgrim Creek crossing is considered the weakest point at present in the entire stretch of road from the south boundary to Moran. It has been in the past crossed by fording, but during the high waters of spring the fording of Pilgrim Creek has always been a very doubtful proceeding; and early in the present season several automobiles were stuck in attempting the crossing. The completion of the bridge will go far toward assuring access to the Jackson Lake country and to Moran, which opens up as a side trip from the park to the Teton Mountains—usually considered the most beautiful mountains in America. The work of constructing the bridge is at this time approximately 65 per cent complete.

Jackson Reservoir improvement.—During the present summer work was begun on the improvement of a stretch of road extending from about the 10½ to the 14½ mile points south of the park boundary, under a special allotment by the Reclamation Service, as the work is made necessary because of the flooding out of the original road at this section by the raising of the Jackson Lake Reservoir. In doing this work the heavy grading is done very economically by a power grader purchased in 1916, drawn by a 75-horsepower caterpillar tractor purchased the present season, which machinery is giving very good satisfaction in this work. At this time the improvement is approximately 75 per cent complete, 14,000 feet at the northern end of the improvement having now been constructed out of a total length of about 19,000 feet. This work has consisted, for the most part, of cutting down grades and eliminating sharp curves on the road which was built several years ago by the Reclamation Service to replace the drowned-out portion of the original road; but the present work has also included considerable galvanized-iron culvert installation and log-bridge construction. Log bridges and culverts were constructed as follows—three of 4-foot span, three of 8-foot span, and one of 12-foot span. In addition, on account of eliminating sharp curves, it was necessary to considerably extend two 4-foot span log culverts, one 8-foot span log culvert, and one 12-foot span log bridge. Galvanized-iron culverts have been installed on the improvement as follows—one 12-inch culvert 30 feet long, two 18-inch culverts (one 30 feet and one 36 feet long), two 24-inch culverts (one 30 feet and one 36 feet long).

General repairs.—In addition to the improvement work above noted general repairs were made to the first 10 miles of road south of the park boundary, including considerable cutting down of excessive grades about 5 and 6 miles south of the park boundary. Minor bridge repairs were also made at other points of the road between the south boundary and Moran, where especially needed.

EAST APPROACH IN THE PARK—*General repairs.*—General repairs were made where necessary throughout the entire 26 miles of the east approach inside the park. Owing to the very late spring and to the heavy snows of the winter, this road was not open to traffic until July 8.

Bridges and culverts.—The bridge over Pelican Creek, which was partially refloored in 1916, was redecked with poles during the early part of the present season, as no lumber was available at the time for this work, which was very urgently needed. Extensive repairs were also made to the east approach of this bridge. Other smaller bridges and culverts received repairs, in addition to which a number of galvanized-iron culverts were newly installed; and considerable repairs were made to the approaches of the important Yellowstone River bridge.

Widening and grading.—The work of widening and improving the east road in the park to make it safe and suitable for animal-drawn and motor-propelled vehicles, under the special appropriation for this purpose, was continued as late in the fall of 1916 as weather conditions would permit. Unfortunately, the road was still closed by snow during the present season until July 8, so that the work could not be completed the present spring as was intended. The improvement has now been brought to completion on all except about 3 miles of the road (between the 9½ and the 12½ mile points east of the Lake Junction), and this portion has been partially widened and improved. The reappropriation has been requested of the balance of funds which remained unobligated at the end of the fiscal year for the widening and improving of this road.

EAST APPROACH IN THE FOREST RESERVE—*Bridges.*—The three bridges of 100-foot span each, over the North Fork of the Shoshone River at Pahaska, 2¼ miles east of the park boundary; over the North Fork of the Shoshone River, 21½ miles east of the park boundary; and over the Elk Fork of the Shoshone River, 23 miles east of the park boundary, which were begun in 1915, were completed in the year just closed and were all put in service. These bridges were badly needed, as the old wooden bridges which they replaced were in very poor shape.

The work during the year consisted of constructing the reinforced concrete floor for the Pahaska bridge, painting the steelwork, and razing the old wooden bridge; of erecting and painting the steelwork for the North Fork bridge, 21½ miles from the park boundary, and constructing the reinforced concrete floor and approaches for the same; and of painting the steelwork and constructing the earth approaches of the Elk Fork bridge, the approaches of which will require some further improvement work in the future. There were also constructed two 30-foot span steel I-beam bridges with concrete abutments and reinforced concrete floors, over Clearwater Creek, about 19 miles from the park boundary, and over Grinnell Creek, about 4 miles from the park boundary. In addition, the remaining wooden bridges in the forest reserve were repaired and strengthened as necessary.

Realignment.—A 1,056-foot realignment was constructed about 4¼ miles east of the park boundary, made necessary by the encroachment of the North Fork of the Shoshone River.

General repairs.—Due to the very high water existing during June, it was necessary throughout that month to maintain a small crew in the east forest reserve (at that time cut off from the park proper by deep snow on the east approach road inside the park) to patrol the road and to prevent damage, where necessary, to bridges and bridge approaches, thus enabling the traffic on this portion of the road to go on uninterrupted. Among other work this crew constructed a diversion dam necessary to protect the east approach of the new 100-foot span steel bridge over the Elk Fork, about 23 miles from the park boundary, from washout due to the high water. During the fall of 1916 there was constructed a crib revetment 330 feet long, about 13⅛ miles from the park boundary, to protect the approach named from encroachment by the river.

During the summer just closed general repairs by a flying grader crew were made throughout the length of the road in the east forest reserve, and this road was placed in excellent condition.

COOKE CITY ROAD—*General repairs.*—General repairs were made throughout the length of the northeast or Cooke City road, extending from Tower Falls Soldier Station to the northeast boundary of the park, including minor repairs to bridges and culverts where needed. More extensive repairs were made to the log bridge constructed by the Buffalo-Montana mining interests in 1915, over Pebble Creek, about 19½ miles from the Tower Falls Soldier Station. This bridge was repaired in the spring of 1916 by the same interests that built it, but during the high water of the spring just passed the center pier and the west abutment were undermined, and the necessary repairs to this bridge were made during the present summer by the Engineer Department.

Work by Robert I. McKay.—The work done by Mr. Robert I. McKay and associates, of the Buffalo-Montana Mining Co., who have mining interests at Cooke City, Mont., about 4 miles outside the northeast boundary, consisted of minor spring repairs made during the month of June. Mr. McKay and associates are interested in the upkeep and improvement of the road for the benefit of their motor trucks and trailers, for the operation of which between Cooke City and Gardiner, Mont., for the hauling of ore, Mr. McKay has a permit from the Interior Department.

FISH.

The United States Fish Commission maintains a branch fish hatchery on the shores of Yellowstone Lake in the park during the summer season. The main buildings are situated near the Lake Hotel, and the operations are of daily interest to travelers. The work consists of collecting the eggs of the black-spotted trout (Salmo Clarkii) from the native fish in Yellowstone Lake and its tributaries, developing and shipping them for planting in waters where needed. By this careful propagation many more of the eggs are saved than could be if nature were allowed to take its course, as they are protected from their natural enemies. The same variety of fish are so plentiful in a small lake near Soda Butte, in the northeast corner of the park, that it has been found profitable to gather them there also. This work has been done under the direction of Mr. W. T. Thompson, superintendent of United States hatchery at Bozeman, Mont., who informs me that the harvest was very satisfactory during the past season, especially in view of the abnormal conditions which prevailed on account of heavy winter snowfall followed by a late spring; the hot weather then coming abruptly, causing high water in the streams where the fish are taken. For some reason the small streams from Thumb to the Lake Hotel were not productive, so the streams on the east side of the lake had to carry the entire burden, except those taken at Soda Butte. Collections of eggs commenced about 10 days later than usual. The operations at Soda Butte were conducted on a small scale only, but in a few days 608,000 eggs were taken. These results seem to warrant making arrangements for work on a larger and more permanent scale next season. Mr. Thompson reports the following results of the work of his department in the park during the season of 1917:

Spawn taken during the season.

Soda Butte Lake	608,000
Clear Creek	4,455,000
Cub Creek	2,430,000
Columbine Creek	360,000
Miscellaneous sources	187,000
Total harvest	8,040,000

Fry planted season of 1917 from lake hatchery.

		Fry.	Eggs.
Aug. 16	Pelican Creek		14,000
16	Bridge Creek		7,000
17	Hatchery Creek		3,500
18	Bridge Creek	10,000	
25	Pelican Creek	32,000	
25	Sylvan Lake	40,000	
26	Pelican Creek	120,000	
26	Bridge Bay	110,000	
27	Clear Creek	110,000	
27	Yellowstone River	90,000	
27	Cub Creek	100,000	
28	Indian Creek	100,000	
28	Bridge Creek	70,000	
29	Yellowstone Lake	100,000	
30	Columbine Creek	80,000	
30	Clear Creek (Upper)	70,000	
30	Clear Creek (Lower)	90,000	
31	Arnica Creek	100,000	
Sept. 3	Cub Creek	75,000	
5	Lewis Lake	100,000	
5	Lamar Creek	60,000	
5	Blacktail Deer Creek	35,000	
5	Lava Creek	35,000	
7	....do	15,000	
9	De Lacy Creek (Shoshone)	100,000	
9	Pelican Creek	30,000	
7	Yellowstone River	45,000	
9	Hatchery Creek	40,000	
9	Yellowstone Lake	16,000	
Aug. 10	Hatchery Creek		17,500
11	Natural Bridge Creek		40,000
11	Arnica Creek		40,000
11	Thumb Creek		80,000
	Total planted	1,773,000	202,000

In addition to the plantings of black-spotted trout the Bozeman Hatchery furnished fry of the eastern brook trout (*Salvelinus fontanalis*) for planting in park waters as follows: On July 24, 4,200 in Obsidian Creek and 4,200 in Glen Creek. On July 25, 9,000 in Glen Creek.

Through a determination to make the national parks more popular as playgrounds of the people, where amusements can be found in addition to the scenery, the question has arisen of developing the fishing in such a manner that travelers so inclined can find good fishing not too far removed from the roads. As a beginning in this direction the custom of permitting the catching in certain waters of more than the 20 fish in one day by one person, as allowed by the regulations, has been discontinued. In all matters pertaining to the development of this feature valuable assistance and advice have been rendered by the United States Fish Commission. Through the efforts of the Fish Commission officials scientific experiments were conducted in the park during the past season by Dr. Henry Baldwin Ward, head of the department of biology at the University of Illinois, and formerly the president of the American Fisheries Society, regarding the parasitic enemies of the trout in Yellowstone Lake, and the feasibility of furnishing additional food supply through the introduction of suitable minnows and other fish foods was also considered. While his report in detail has not been received, it is believed that his experiments will prove of great value and will assist later in forming a broad and comprehensive scheme for future handling of the fish in the park.

The confining of fishing to the strict letter of the regulations has not been disappointing in its results, as its effects have already been noticed in the additional interest in fishing manifested by travelers; and it has not proven as much of a disappointment to hotels and camps as was expected, for the reason that tourists have taken an unusual interest in fishing and have caught many fish that have been used on the tables.

WILD ANIMALS.

On account of the unusual severity of the past winter, which was declared by all old-timers to be the worst and longest on record, much special attention had to be given to the needs of the elk, deer, mountain sheep, and antelope. In addition to the hay raised on the alfalfa field near the northern entrance, about 112 tons were purchased for feeding these animals, making a total of about 212 tons fed during the winter, which was much more that has usually been required. The elk left the park in large numbers, seeking a lower altitude away from the deep snows, and most of the antelope insisted on remaining all winter at Electric, 2 or 3 miles north of the park line. Notwithstanding the feeding the loss was considerable, but not much if any greater than it was among the domestic animals owned by farmers in Montana. The reports as to the numbers of wild animals that died were often greatly exaggerated.

ANTELOPE.

Due to the presence of large numbers of elk that were driven down by severe weather, and to the deep snows in the park, it was found practically impossible to keep the herd of antelope inside of the park. At first it was feared that they would go on down the valley of the Yellowstone River and might never find their way back, but they seemed perfectly contented when they got beyond the point where elk were numerous and where there was not much snow, and remained during the winter and late in the spring, at Electric, Mont., 1 to 3 miles outside of the park. Through the cooperation of the State game authorities they were well cared for and fed at this point and came through the winter in as good condition as the csircumstances warranted. Most of the antelope, which winter near the northern entrance, go back into the interior of the park for the summer, but a few of them remain in the vicinity of Gardiner, where they are seen daily and present a very interesting feature to travelers.

DEER.

Mule deer are quite numerous and they, as well as the white-tailed variety, are very tame, especially in winter.

ELK.

The elk, or wapiti, are very numerous in and about the park, and, as they increase rapidly and overflow into the adjoining States, they are easily killed during the open season, and their meat affords a valuable addition to the larders of many in the vicinity. An additional asset to the adjoining States is found in the fact that hunters come long distances in the fall and spend considerable sums of money for nonresident hunting licenses, guides' wages, and for other expenses incident to hunting trips. No attempt is made to discourage legitimate hunting during the open season, but careful cooperation during the closed season between the game wardens representing the States and the park and Forest Service officials representing the Federal Government has resulted during the past year in reducing the poaching to a minimum. Practically all of that part of the northern herd of elk known as the Gallatin herd wintered outside of the park last winter, on the west Gallatin River and tributaries. Several thousand of the main part of the northern herd were also driven out of the park by deep snows and wintered in the mountains down the Yellowstone Valley from Gardiner. Ordinarily, most of these would return to the park in summer, but the spring was so backward that the calves began to appear before they left the lower country, and I have been told that many of them summered outside of the park.

Like domestic stock and other game, the elk suffered during the long and severe winter, and the loss was quite heavy. Such relief was afforded as was practicable, but the amount of hay procurable was wholly inadequate to the actual needs.

Under authority of the National Park Service, shipments of live elk were made during the winter of 1916–17, as follows:

California (San Francisco)	2
Canada	63
Colorado (allotted to Department of Agriculture)	50
Idaho	50
Missouri (allotted from Wyoming)	40
Montana	6
North Carolina (allotted to Department of Agriculture)	25
North Dakota (allotted to Department of Agriculture)	15
South Dakota	50
Virginia	151
Washington, D. C	4
Wisconsin	40
Total	496

The following memorandum shows the total number of elk shipped from the park since the fall of 1911:

Destination of shipment.	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	Total.
Alabama					50		50
Arizona		80					80
California		50				2	52
Canada [1]						63	63
Colorado		25	31	50	50		156
Georgia					2		2
Idaho				50	50	50	150
Louisiana					40		40
Massachusetts		4					4
Michigan				25			25
Minnesota				32	2		34
Missouri				3		[2] 40	43
Montana	31		30	50	50	6	167
New Mexico				50			50
New York				8	50		58
North Dakota			2		4		6
Ohio			3				3
Oregon			6				6
Pennsylvania		50			100		150
South Carolina				2			2
South Dakota		3	2	50		50	105
Texas					20		20
Utah		25		25	50		100
Virginia		25				151	176
Washington	106	201	25		50		382
Washington, D. C						4	4
West Virginia		50					50
Wisconsin				30		40	70
Wyoming		25					25
Total	137	538	99	375	518	406	2,073
Department of Agriculture:							
Colorado					50	50	100
Montana					25		25
North Carolina						25	25
North Dakota						15	15
South Dakota					25		25
Grand total	137	538	99	375	618	496	2,263

[1] Shipped to Rocky Mountain Park, Banff, Canada. [2] Allotted from Wyoming.

ELK CENSUS.

Arrangements were made early in March to make a complete census of the northern herd of elk, the work to be done jointly by the National Park Service and the Forest Service of the Department of Agriculture. Due to the extreme depth of the snow and the lateness of the spring, this work had to be

postponed from time to time until it was finally May 22 before the actual work of counting the main part of the herd was begun. That part of the herd ranging on Madison River was counted March 19 to April 10, and those on the Gallatin River, northwest of the park, April 11 to 22—all on snowshoes. The work was finished on June 9. It was agreed by those participating in the counts that the results were as accurate as could be procured under the conditions that governed, and the count was accepted as official. The figures as reported showed as follows:

Herd.	Live elk.	Dead elk.	Killed by hunters.	Shipped by Federal Government.	Shipped by State.	Total.
Gardiner	17,422	3,069	100	496	68	21,155
Gallatin	1,670	256	400	.....	.....	2,326
Madison	253	4	7	.....	.....	264
Total	19,345	3,329	507	496	68	23,745

Reports received during the summer indicate that the elk that survived the hard winter are all in excellent condition, and that there is at least an average number of young calves in the herds.

Plans should be made for the handling of the large herds of elk in and about the park to the best possible advantage, so that reasonable benefits may be derived from them by shipping them alive to restock old ranges, and permitting a reasonable amount of hunting in the country adjoining the park. Such plans should contemplate raising a sufficient amount of hay to be used only in hard winters, to insure the herds against severe losses. There are several places in the park, mostly in the northern part, where the elk naturally spend the winter, where hay can be raised to a good advantage and at a minimum cost. The small field now in alfalfa, located near Gardiner, Mont., does not always furnish sufficient hay for the antelope, deer, and mountain sheep, which are much less numerous than are the elk.

MOOSE.

Moose are frequently seen in the park in small numbers. They are protected by the game laws of the adjoining States and are apparently thriving.

BUFFALO.

Wild herd.—Sixty-seven wild buffalo were counted in May, in the Pelican Valley, of which seven were calves. One dead bull—a large one that had been snowed under; one dead calf, evidently killed by coyotes or wolves, and one dead calf that had evidently been drowned while crossing a stream were also found.

Tame herd.—The tame herd now consists of 330 animals, namely, 139 males and 131 females, of ages from 1 to 21 years, and 60 calves born during the past summer, sex undetermined.

The number on hand October 1, 1916, was 146 males and 130 females, total 276. Three calves were born during the fall of 1916, after October 1.

During the year nine have been disposed of as follows: One 5-year-old cow died in December, from no apparent cause, except weakness. One bull was drowned, and a yearling bull was found dead in July. One 2-year-old bull and two 3-year-old bulls were found dead in August, probably gored to death by older bulls. One 3-year-old bull and two 4-year-old bulls were shipped to the State of Wyoming on September 26.

Specimens are furnished to the National Museum from those that die, when it is practicable to do so, but in many cases the carcasses are not found before they are spoiled by decay or so badly torn by coyotes as to be worthless.

It is of the utmost importance that some provision be made to dispose of the surplus bulls in this herd. They have become so numerous and there are so many of them that are old and vicious that they are unmanageable, often dangerous to life, and the unnecessary number of bulls is a great detriment to the herd from every standpoint. A few are disposed of annually by donat-

ing them to city parks, zoos, etc., but the expense of crating and shipping them has to be borne by the recipients, and as this is considerable we have not been successful in giving many away. Fifteen are usually brought in to Mammoth Hot Springs from the main herd on Lamar River for a summer show herd. Attempts have been made to drive them back to the range of the wild herd, but they have been fed and ranged so long on the Lamar River and vicinity that they return to that range as fast as they can be driven away. The raising of bison has been so successful among the various herds now maintained in the United States and Canada that they are no longer hard to obtain, and I am of the opinion that the solution of the problem of disposing of the surplus males will eventually be to market them for meat.

Over 200 tons of hay have been harvested for feeding the buffalo during the coming winter. This is not sufficient and will have to be very carefully handled to make it do. It was necessary to begin feeding hay on January 2 last winter. Over a hundred acres of fine meadow land, about 3 miles south from the present buffalo farm, on Lamar River, have been plowed and are now being prepared for seeding to winter rye to be cut next summer to supplement the hay crop, and more of this work will be done if funds available will permit The land that is being plowed will eventually be seeded to grass, to be cut for hay.

BEARS.

Black and cinnamon bears (Ursus americanus Pallas) are quite numerous in the park. Grizzly or silvertip bears (Ursus horribilis Ord) are common, but not so plentiful as are the blacks. Both are seen daily by tourists and afford them a great amount of pleasure. The black bears hang around the hotels and camps almost constantly, where they are often fed from the hand by people who do not realize that they are taking desperate chances of being injured by playing with fierce wild animals at close quarters. Efforts are made to prevent such feeding, but they are successful only when the full cooperation is had from the hotel or camp help, which is not always the case. In many cases the help, and sometimes even the guards, participate in feeding and playing with the bears. Almost invariably bears so treated eventually become dangerous and have to be killed. Sixteen have been killed during the past season. Several requests for bears to be captured and shipped to zoos are on file, and have been approved by the Service, but thus far it has been impracticable to procure the services of anyone to capture them, as labor is very scarce.

COYOTES AND WOLVES.

During the past winter two rangers devoted the most of their time to hunting and trapping coyotes and wolves, and they, with others who killed them occasionally when opportunity offered in connection with their other work, succeeded in destroying about 100 coyotes and 4 wolves. It is necessary to keep this work up year after year, as it is not practicable to kill all of them, and they increase rapidly and are a constant menace to the other wild game.

MOUNTAIN LIONS.

Mountain lions are known to exist in considerable numbers in the park and to be quite destructive to other game animals, but they are seldom seen, as they are wary in their habits, and can not be hunted successfully except with trained dogs.

MOUNTAIN SHEEP.

The mountain sheep did not seem to be so much affected by the severe winter as did most of the other animals. The little band that winters in Gardiner Canyon was found to be afflicted with a form of scab, very similar, if not identical, with the ordinary kind found on domestic sheep. This particular band of mountain sheep has doubtless been afflicted with scab for many years, and it probably results in the death of a few of them. Experiments to determine its character and possible cure were made last winter, as described in another section of this report.

Many other kinds of wild animals, such as beavers, porcupines, rabbits, lynx, bobcats, foxes, otter, martin, mink, weasels, gophers, conies, skunks, badgers, squirrels, chipmunks, woodchucks, muskrats, etc., are found in the park.

Beavers are quite numerous in many streams, and their work, which is seen close to the road in many places, is of great interest to tourists. Five beavers were captured and shipped to the city of San Antonio, Tex., on April 14, and two more were shipped to the same place on May 8 to take the place of two that died. Five were captured and shipped to the State of South Dakota on June 7.

DISEASES OF ANIMALS.

During the early part of the summer, a veterinarian of the Department of Agriculture, Bureau of Animal Industry, from the office in Bismarck, N. Dak., was present in the park and made experiments relative to diseases of wild animals, particularly of the mountain sheep in Gardiner River Valley, which were found to be infested with common sheep scab. The mountain sheep captured for his experiments all died of hemorrhagic septicemia, which has appeared occasionally among the wild animals of the park. He also tested all horses in use in the park for glanders. No disease was found to exist in the large herds of elk.

BIRDS.

To lovers of nature the bird life in the park is one of its most interesting features. One hundred and ninety-four varieties of birds have been noted, and while most of them are summer residents only and migrate in the fall, there are quite a number that remain in the park the year around.

PROTECTION OF GAME.

With many miles of the park lines protected by game preserves of the adjoining States, and with splendid cooperation on the part of the game wardens and Forest Service officials, the opportunities for poaching were reduced to a minimum. But one arrest was made for poaching, this being in the case of two men who, through ignorance of the country, followed a deer trail into the park and were arrested before they had overtaken the deer. They paid their fines and said they were very glad they had been arrested before they had shot at anything. The antelope and elk that strayed outside of the park on account of the severe winter weather were protected until late in the spring by park rangers, forest rangers, and State employees, and poaching among them was not common. Supplies were placed out at 19 snowshoe cabins and stations that were not regularly garrisoned and used by rangers making snowshoe trips during the winter in connection with the protection of game.

VIOLATIONS OF LAW.

Violations of law have not been common. During the past summer in a few instances formations have been marred by scratching names, etc., on them, and in many cases camp fires have not been extinguished, but with motor transportation, which is used by the large majority of tourists, it is difficult to apprehend the offenders, as they break camp and get away many miles before the offense is discovered. Many small camp fires have been extinguished by patrols and park employees after the camping parties have left them. If offenders of this sort are to be captured, a few motorcycles are essential for road patrols.

SANITATION.

Frequent inspection of hotels and permanent camps were made throughout the tourist season, and twice during the season they were visited by an inspector of the department who is an expert on the question of handling food supplies. In addition to his inspections, he was able to make suggestions to the permanent camping company in regard to the arrangement and sanitation of the kitchens in connection with the new permanent camps, which were of much value, both from the point of cleanliness and the convenience in handling foods.

The meats used in the park were inspected before and after slaughter by an expert furnished for the purpose by the Department of Agriculture. The fresh meat used in the park was slaughtered outside and brought in on motor trucks, instead of being slaughtered inside, as has heretofore been the custom; and the cattle and sheep used for this purpose were not grazed in the park.

The four special sanitary camps constructed last year for convenience of parties traveling in their private automobiles and desiring to camp out were maintained during the season, and were well patronized. A supply of firewood was kept convenient to each of them, the grounds were policed, and the earth closets here and at other points were cared for. For this work a light motor truck was purchased, to replace the team and wagon heretofore hired for the purpose. The work can be done much more efficiently with the truck, as the camps can be visited more frequently, with but little, if any, greater expense.

FOREST FIRES.

While many camp fires were abandoned without having been extinguished, they were usually located close to the road, where they were discovered and extinguished by patrols or park employees before they had time to get into the forest. On July 31 a small forest fire broke out close to the main road 12 miles inside of the park from the western entrance. First reports indicated that it could not be controlled by the members of the detachment stationed at Riverside Station, 8 miles away, and the commanding officer detailed 40 troopers from Fort Yellowstone, commanded by a commissioned officer, to fight it. The Yellowstone Park Transportation Co. voluntarily turned out four of their 10-passenger automobiles to take the men to the scene of the fire, and they reported at Fort Yellowstone 10 minutes after they had been notified of the urgent needs. But the fire proved not so bad as first reported, and by the time the troopers reached it those from Riverside Station had it under control. Ten men were left at the scene over night, to make sure that the fire did not break out again. Investigation of the cause indicated beyond a doubt that it had broken out from a camp fire of a tourist, and it was evident that when he found he could not control it, instead of giving the alarm and asking for assistance he had fled precipitately, leaving part of his camp equipment on the ground. Efforts to locate the guilty party were unsuccessful.

A small fire was discovered on the north end of Mount Everts on August 7, but was extinguished without difficulty by a small detachment of soldiers from Fort Yellowstone. It was probably set by lightning.

On August 10 it was reported that a large fire was burning on Nez Perce Creek, about 2½ miles above Fountain Soldier Station. The detachment on duty at Fountain Station, assisted by members of a small road crew in the vicinity, did good work holding it until the arrival of a large detachment of troopers commanded by several commissioned officers, sent from Fort Yellowstone and from such stations where they could be spared. In this case the transportation company turned out seven 10-passenger automobiles to take the troops to the fire and bring them back. It was reported out on August 11, and the troops were withdrawn. The area burned over by this fire consisted of a strip about half a mile long and 600 feet wide in the widest part—total area burned, 16 to 18 acres. It was in jack pines, too far from the road to be noticed, and the damage was immaterial. The chief scout, whom I sent out on August 14 to make a report on this fire, found it still burning in places, and so reported to the noncommissioned officer in charge of Fountain Station, who immediately sent members of his detachment to thoroughly extinguish it and watch it until danger of its breaking out again should be past. The cause of this fire is not known, but it followed quite a severe local thunderstorm, and it is my opinion that it was set by lightning.

On the same date another smaller fire was reported about 2 miles west from Madison Junction, across Madison River from the west entrance road. This was extinguished by a small detachment of soldiers from Riverside Station and a small road crew which happened to be working in that vicinity.

The season was very dry, and it was fortunate that no more serious forest fires occurred. In the two or three instances where they threatened to spread to large proportions, the quick action by the few station men in the vicinity, assisted by members of the road camps, and the assistance of the transportation company in getting the troops to the scene without delay, was probably responsible for preventing serious and extensive forest fires.

IMPROVEMENTS.

Two crews of men have been employed during the entire working season in rebuilding the telephone lines in the park. It was the intention to reconstruct the whole system, but labor is so scarce that linemen could not be procured to handle more work than could be accomplished by two crews. To October 1 they have succeeded in rebuilding 17 miles of the lines from Lake to east entrance; 17½ miles from Thumb to south entrance; 2 miles from headquarters to Norris. Lines have been repaired as follows: Nine miles from Lake to east entrance; 4 miles Thumb to south entrance; 6 miles headquarters to Norris. These crews are still at work, and will be continued as late this fall as weather will permit. It is contemplated getting the greater portion of the telephone lines rebuilt this fall, or next spring before the opening of the tourist season, and constructing new line to connect Crevice Station with headquarters.

Fire lanes have been constructed and repaired since July 1, as follows:

Riverside-Willow Park fire lane from Willow Park to Riverside, 26 miles, cleared out and repaired.

Summit Lake fire lane from west boundary to Biscuit Basin, 16 miles, cleared out and repaired.

West boundary fire lane from Yellowstone, Mont., south to junction with Summit Lake fire lane, 18 miles, cleared out and repaired.

Lake of the Woods fire lane from Beaver Lake to Norris, 8 miles, an old road cleared out and rebuilt as a fire lane.

Grebe Lake fire lane opened up and built new from Virginia Meadows to Chittenden road, near Canyon Hotel, 12 miles.

East Yellowstone fire lane, built new from Chittenden Bridge at Canyon, south to Yellowstone Lake outlet, 14 miles.

Mesa fire lane from Gibbon Canyon to Loop road near Lower Geyser Basin, an old road, cleared out and rebuilt as a fire lane, 8 miles.

Fairy Falls fire lane, from Fountain Soldier Station to Fairy Falls, relocated and rebuilt, 6 miles.

Sepulcher Mountain fire lane, built new from Mammoth to top of Sepulcher Mountain and return to Sportsman Lake fire lane, 7 miles.

Fire lane to river's edge below Lower Falls of the Yellowstone, relocated and rebuilt, one-half mile.

Shoshone Lake fire lane, from Lone Star Geyser to Shoshone Geyser Basin and on to Sheridan fire lane at outlet of Shoshone Lake, repaired, shortened, and rebuilt, 20 miles.

Sheridan fire lane, from loop road at DeLacy Creek to Lewis Lake, rebuilt, 14 miles.

Blacktail Range fire lane, from Grebe Lake fire lane at Cascade Lake to Petrified Trees, via the Blacktail Deer range, built new 21 miles.

Lamar-Mary Bay fire lane, from Mary Bay, Yellowstone Lake, to mouth of Soda Butte Creek, repaired and relocated, 48 miles.

Amethyst Mountain fire lane, from mouth of Soda Butte Creek to top of Amethyst Mountain, built new, 6 miles.

Little Firehole fire lane, from end of Fairy Falls fire lane to Biscuit Basin via Little Firehole River and Mystic Falls, built new, 11 miles.

Fire lane along east rim of the canyon from Chittenden Bridge to Artists Point, built new, 2 miles.

Fire lane from loop road to brink of Lower Falls of the Yellowstone River, repaired, 1 mile.

Old Canyon fire lane, repaired for 10 miles from Glacier Boulder at Canyon toward Tower Falls.

Lake Shore fire lane, from loop road 5 miles north of West Thumb to Bridge Bay, an old road cleared out and rebuilt as a fire lane, 11 miles.

Sportsman Lake fire lane from Snow Pass to Gallatin Soldier Station, cleared out and repaired, 19 miles.

Fawn Pass fire lane, from Snow Pass to Gallatin Soldier Station, via Fawn Pass, cleared out and repaired, 24 miles.

Fire lane, from brink of canyon to edge Yellowstone River, between the Upper and Lower Falls of the Yellowstone, one-half mile, new.

Old wagon road, from Canyon Hotel southwest to loop road to Norris, 3 miles west of Canyon Junction, rebuilt as a fire lane, 3 miles.

Fire lane connecting Little Firehole fire lane at Little Firehole Meadows to Summit Lake fire lane 2 miles northeast of summit Lake, built new, 4 miles.

Mallard Lake fire lane, from loop road 1 mile south of Upper Geyser Basin to Mallard Lake and return to loop road 4 miles south of Upper Geyser Basin, built new, 8 miles.

Seven-Mile Hole fire lane from Old Canyon fire lane to edge of Yellowstone River, 3 miles, repaired and rebuilt.



MAP OF YELLOWSTONE NATIONAL PARK.

⊕ Denotes Ranger Station ← Direction of Travel

Distances given are between main points by road.

Specimen Ridge fire lane, from top of Amethyst Mountain to Cooke City road near Junction Butte, built new, 12 miles.

Obsidian Creek fire lane, from Riverside-Willow Park fire lane to loop road at Crystal Spring, built new, 2 miles.

In construction of these fire lanes they have been located, when practicable, in such a manner that they may be utilized, in part at least as a portion of a complete system of trails to be built later through the park. A special study of such a trail system has been made for future consideration.

More than a hundred acres of land have been plowed and is now being harrowed and seeded to winter rye to be cut next summer for hay for the tame buffalo on Lamar River near Specimen Ridge. This land has never been plowed before, and will require considerable work, and probably one more plowing next year before it will be smooth enough for a good meadow. Ditches must also be built to irrigate it. It is contemplated plowing another hundred acres for raising hay for game, and constructing the ditches for irrigating, before next season.

NATURAL PHENOMENA.

Many changes have been noted during the past year in the terraces at Mammoth Hot Springs, and due to these changes which are very noticeable, many believe that they are gradually disappearing. But this can only be determined by making a careful study of them as a whole, and not on the condition of any one terrace, as it is well known that when one of them appears to partially die out, others are frequently more active. Early in the present year, the two big springs appeared to be much less active than usual, but careful examination disclosed the fact that there were two slight cracks across the bowl of the most southerly one, and one across the other, and as an unusual quantity of water was coming from some small hot springs several hundred feet below the foot of the terrace, it was only logical to suppose that much of the water from the big springs that usually overflows in all directions, was leaking through the bottom and finding other channels of outlet, through the formations. Within a few weeks the condition was improved, and at the present time it appears that the usual amount of water is coming from these two springs, although it is flowing out mostly in one direction—toward Pulpit Terraces—leaving the greater part of the big terraces close to the main road dry and lacking in their usual beauty. Angel Terrace is more active and beautiful than ever known before.

Many changes are noted in Norris Basin, but they are of such frequent occurrence as hardly to be necessary of record. A small geyser broke out in the green timber about 200 hundred feet from the road, opposite to the Black Growler, last spring. At first it played frequently, 30 to 50 feet high, but has recently played only at irregular intervals, and eventually will probably stop entirely, as has usually been the case with the geysers that break out frequently in that basin.

ACCIDENTS.

No serious accidents occurred in connection with the handling of tourist traffic in the park during the season. With so large a number of travelers who are strangers to the park and to mountain driving it would have been marvelous if there had not been some careless driving. A few narrow escapes were recorded, and doubtless many more happened that were not recorded, but none of them resulted seriously.

On August 7, Mr. John W. Havekost, of Coleridge, Nebr., while standing near the edge of the Yellowstone River in the Grand Canyon below the Lower Falls, was struck on the head by a small piece of falling rock from a slide from the canyon walls, and so severely injured that he died at the hospital at Fort Yellowstone on the following day. The accident was unavoidable, and due to the fault of no one. Many people climb down into the canyon where he was injured during the summer, although they know that there is some danger in so doing and danger signs are posted.

RECOMMENDATIONS.

The administration, protection, and improvement of Yellowstone National Park should all be under one head. Since provisions have been made by Congress for a National Park Service to administer all of the national parks as a whole, it seems inconsistent that affairs should be so arranged that the local control should be vested in three heads. Unquestionably, a combination of the three under one head would result in greater economy and efficiency.

The introduction or sale of intoxicating liquor and gambling in the park should be prohibited. With the present tendency of the Government to conserve the energies and resources of the country, it seems only reasonable to encourage thrift and economy by preventing, if possible, the wasting of money on things that are unnecessary, objectionable to many, very often detrimental, and not permitted at all in many of our States.

YOSEMITE NATIONAL PARK.

W. B. Lewis, Supervisor, Yosemite, Cal.

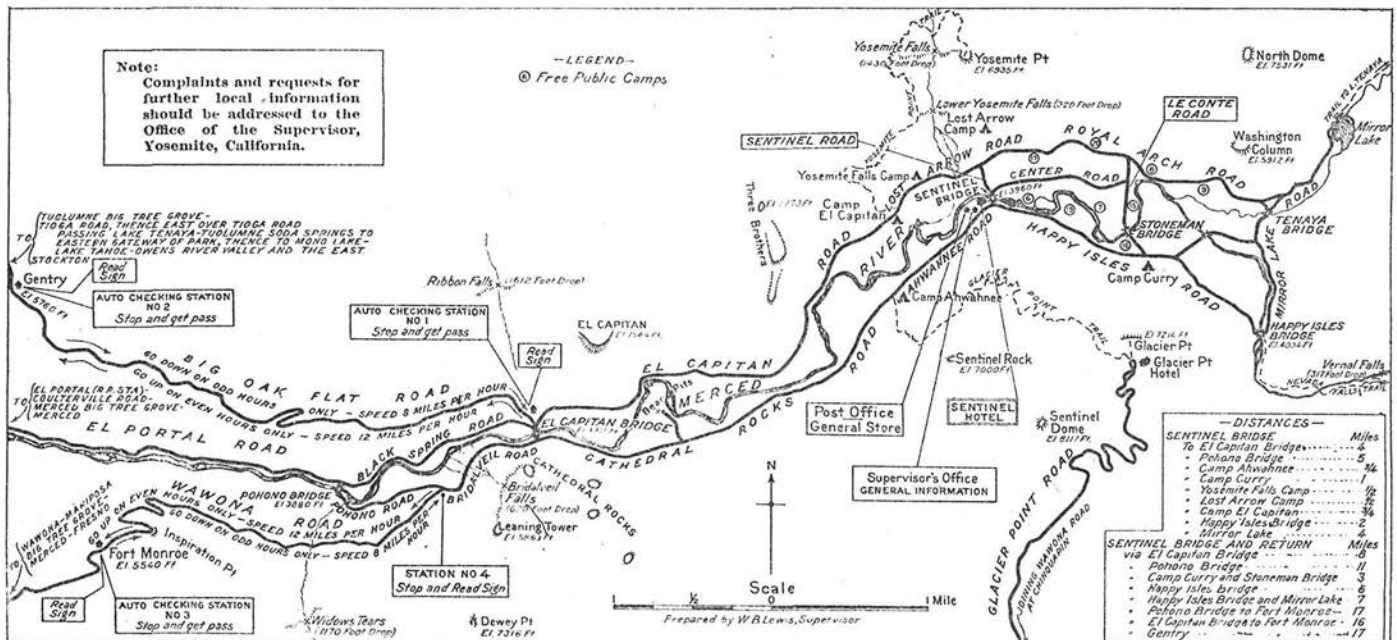
GENERAL STATEMENT.

The Yosemite National Park, when created by the act of October 1, 1890 (26 Stat., 650), was situated in Tuolumne, Mariposa, Madera, and Mono Counties, Cal., and covered an area of about 1,512 square miles, being 36 miles wide by about 40 miles long. Under the act approved February 7, 1905, entitled "An act to exclude from the Yosemite National Park, Cal., certain lands therein described and to attach and include the said lands in the Sierra Forest Reserve," 542.88 square miles were excluded and 113.62 square miles were added to the park, making a net reduction in area of 429.26 square miles, so that the area, after the passage of the above act, was 1,082.74 square miles, the park being situated in Tuolumne, Mariposa, and Madera Counties. By act of June 11, 1906, entitled "Joint resolution accepting the recession by the State of California of the Yosemite Valley grant and the Mariposa Big Tree Grove, and including the same, together with fractional sections 5 and 6, township 5 south, range 22 east, Mount Diablo meridian, California, within the metes and bounds of the Yosemite National Park, and changing the boundaries thereof," there were added to the park the Yosemite Valley, 48.60 square miles; Mariposa Big Tree Grove, 4 square miles; and a strip lying between the latter and the park proper, 2.13 square miles; and deducted by the change in the southwestern boundary, 13.06 square miles; making a net addition to the area of 41.67 square miles. The present area of the park is 1,124.41 square miles.

ROADS.

During the fiscal year 1917 the service maintained approximately 104 miles of road as follows: Floor of Yosemite Valley, 22 miles; El Portal road, 8 miles; Big Oak Flat road, 13 miles; Wawona road, 4 miles; roads in Mariposa Grove of Big Trees, 10 miles; and Tioga road, 47 miles. As indicated in former reports, all of these roads, with the exception of a few miles on the floor of Yosemite Valley, are dirt roads which were originally built as wagon roads and which have been gradually improved until reasonably safe for automobile travel. All of these roads, however, are built on heavy grades and with sharp, dangerous curves, and the roadbeds themselves vary from 10 to 15 feet in width. The result is that automobiles, especially those of lighter construction, travel these roads only with considerable difficulty and with a considerable element of danger. That these conditions exist is unfortunate and every effort should be made to take up the work of their improvement in order that automobilists may travel these roads with safety and with greater degree of ease and comfort. Grades should be reduced wherever possible to a maximum of 6 to 8 per cent. Sharp curves should be eliminated and the roadbeds widened to not less than 16 feet. In addition, and in order to decrease the heavy expense of opening and repairing the roads in the spring, they should be thoroughly ditched and drained and sufficient culverts installed to prevent washouts.

The roads on the floor of the valley between the village and Pohono bridge have been widened and grades reduced where necessary, and an additional 4 miles have been graveled to a width of 16 feet. This brings the total amount of roads on the floor of the valley that are now in fairly good condition, surfaced with either gravel or macadam, to about 9 miles. There still remain some 13 miles of road to be improved. Funds have been made available for this work and it will be completed during the coming year.



AUTOMOBILE GUIDE MAP SHOWING ROADS IN THE YOSEMITE VALLEY, YOSEMITE NATIONAL PARK.

It is also proposed during the coming autumn to experiment with oil on a small portion of these roads. If the experiment proves satisfactory it will be recommended that this method of treatment be extended to all of the roads on the floor of the valley, thereby eliminating the expensive and present unsatisfactory method of sprinkling with water.

In September, 1916, under specific appropriation by Congress, work was begun on the reconstruction of the El Portal road, between Pohono bridge and the western park line, a distance of 8 miles. The grading of approximately 1 mile of this road was completed during the year. When completed the road will have not more than 20 feet clear driveway, surfaced with oil-bound macadam and will have grades not exceeding 6.4 per cent. Too much importance can not be attached to the necessity for the completion of this work, as at present the traffic on this road in passengers and freight probably exceeds that on all the other roads of the park combined. That this traffic will increase manyfold with the completion of the State highway from Mariposa to El Portal and the park boundary is unquestionable, as the completion of that link connecting the State highway of the San Joaquin Valley directly with the park by a surfaced highway of low grades and low altitude and passable at all seasons of the year, will place Yosemite Valley within four hours by automobile from Merced. Thousands of automobilists who at this time fear to attempt the steep grades of the other roads entering the park are certain to take advantage of the opportunity offered by the new highway for frequent visits to the park. An appropriation of $75,000 became available on July 1, 1917, for the continuation of this work. This will complete another 5 miles of the grading, and it is considered very essential that funds be made available for its further continuation and final completion.

TRAILS.

Of approximately 650 miles of trails within the park but little work has been done during the past year on any of those lying without the Yosemite Valley. The so-called ledge trails extending from the floor of the valley to and around its rim and of which there are some 37 miles get, of course, the large bulk of the travel during the tourist season. As it is essential that these trails be kept in good condition practically all of the funds that have heretofore been available for improvement and maintenance of trails have been applied to these. It is urged that consideration be given to the improvement of the trunk-line trails lying without the Yosemite Valley not only for the convenience of the relatively small travel over them into the back country, but also in order that there may be an incentive for a decided increase in travel to these regions.

It is a well-known fact that for the best interest of the park as a whole disproportionate publicity has been given to the waterfalls and other features of Yosemite Valley with the result that travel to other portions of the park has been minimized. Although it is realized that Yosemite Valley itself will always be the most important feature of the park, both because of its accessibility and because of its many features of attraction for the recreationist, and as it is also realized that the bulk of moneys expended in development work in the park should be expended in and around Yosemite Valley where it will be of the most good to the most people, it is, however, important that a certain amount of development work be done in the outlying portions in order to attract visitors and thereby make known to the public something more of the opportunities for campers and outdoor people in those areas.

During the past year a trail was built from the White Cascades down the Tuolumne River to a point near the top of the first Water Wheel Fall. This has resulted in a large increase in the number of visitors to the Water Wheel Falls during the past year. In order, however, to completely accomplish the object for which this trail was started, namely, that of reaching all of the Water Wheel Falls, it is necessary that the trail be continued some 2 miles down the canyon to Return Creek, a tributary of the Tuolumne River. With this trail completed the Water Wheel Falls country would be easily accessible by horseback and the trail would be extended to a point from where at some future time, should travel warrant it, it could be extended down the entire Tuolumne Canyon to Hetch Hetchy. This latter proposition is not one for consideration at this time, but should be given consideration in connection with plans for the future development of the trail system.

On July 1, 1917, funds were made available for the construction of a new trail, some 8 miles in length, between the McClure Fork of the Merced River and Tuolumne Pass, by way of Babcock and Emeric Lakes. The completion of this trail will shorten the distance between Merced Lake and the Tuolumne Soda Springs by some 3 or 4 miles and will eliminate that portion of the present trail which passes over Vogelsang Pass and which, because of its high elevation, is late to open, dangerous, and extremely hard to maintain in a passable condition.

BRIDGES.

As was noted in my report of last year, the question of bridges on the floor of Yosemite Valley is an important one. I stated at that time that there was but one bridge that had a safe loading capacity of more than 6 tons. Aside from the Sentinel, El Capitan, and Pohono bridges, all the bridges are wooden structures, varying from 60 to 80 feet in span, built of native hewn timbers. All of these wooden bridges have been in use from five to eight years and will unquestionably have to be replaced within the next year or two. In fact, during the past winter one of these bridges, the Clark bridge, collapsed, and it was necessary to practically rebuild the entire structure. All of these bridges, being of short span, could be constructed of reinforced concrete at comparatively low cost and would be practically permanent structures. This matter should be given serious consideration and all possible efforts should be made to secure funds within the near future for their construction.

Of course the most important of all the bridge structures and the one that it is becoming more and more essential to have replaced is the Sentinel bridge, near the Sentinel Hotel. More traffic by far passes over this bridge than any other, and its frail steel construction, now condemned for several years, is such that its failure may be looked for at any time. An appropriation of $8,000 was made by Congress, available July 1, 1917, for the construction of a bridge to replace this structure. Its span of 105 feet and the necessity for constructing it with a roadway of not less than 20 feet in width, together with footways of not less than 4 feet on either side, make it apparent that the amount of money appropriated is wholly inadequate for any kind of a structure of the required dimensions. It has, therefore, been found necessary to give up the idea of constructing it until such time as sufficient funds may be made available for the construction of a suitable and satisfactory structure.

BUILDINGS.

Most of the buildings used by the service for housing its employees as well as for office quarters are buildings originally constructed by the War Department at a time when Yosemite Valley was a summer institution only. From time to time these buildings have been improved and repaired until at present all are in a comfortably habitable condition. The last of the cottages used by the employees was ceiled during the past year.

However, from the increased travel to the park and the additional development work that is going on, there has resulted, of course, a need for additional quarters. How these are to be supplied is a question for consideration, but it would appear most logical to construct them from material already owned by the Government and now in use by concessioners in their operations.

During the year for which this report is submitted, shops and barns were constructed, giving the park first-class facilities for the housing of stock and equipment and room for the carrying on of carpentry, plumbing, electrical, blacksmith work, etc. There remains to be constructed but one building for use as a machine shop, which should be gradually equipped as necessity arises and funds become available.

ELECTRICAL SYSTEM.

The power plant was operated 24 hours daily throughout the year with the exception of a 32-hour shutdown on February 24 and 25, 1917. This shutdown was made necessary by severe storms which almost completely wrecked the high-tension transmission lines. Up to their capacity, the two machines have given excellent service. The total capacity of the present plant is 115 kilowatts, which, upon completion of the Glacier Point Hotel, was insufficient for the requirements. It was necessary at that time to install an auxiliary plant. This consists of a 30-horsepower, 220-volt induction motor, directly connected to the 60-horsepower gasoline motor of a White Good Roads truck. I believe this installation is somewhat unique in the development of electric power, but it has worked very satisfactorily and has enabled us to give service, where without its use we would have been unable to do so.

The total output of the plant for the year was 342,992 kilowatt hours. This is an increase of 69 per cent over the output of the previous year. This shows the necessity for additional electric power facilities and is an argument in justification for the new power plant now under construction. In July, 1916, funds to the amount of $150,000 were made available for the construction of a new power plant in Yosemite Valley. The engineering supervision of this work was intrusted to Galloway & Markwart, civil engineers, of San Francisco, Cal. The plant was designed for a capacity of 2,000 kilowatts, and will consist of a diversion dam, located about 1 mile below the Pohono Bridge, on the Merced River; approximately 6,000 feet of 54-inch wood-stave flow-line pipe; and 700 feet of steel pressure pipe connected to two 1,000-kilowatt generators driven by hydraulic turbines. Construction work on this plant began in September, 1916, and was continued throughout the remainder of the fiscal year. Unforeseen conditions in the dam-site location resulted in changing from a low concrete dam to a log crib dam of much larger dimensions, which, together with the rapid increase in prices of hydroelectric machinery and practically all materials and supplies as well as labor, made it apparent that the appropriation of $150,000 would be insufficient for the completion of the plant. It was, therefore, necessary to submit an additional estimate of $60,000 for consideration by Congress. This appropriation was made available on July 1, 1917, and the work of installation was continued from that date. The new plant will probably be complete and in operation about February 1, 1918.

TELEPHONE SYSTEM.

The telephone system consists of a switchboard of 50 line capacity, 49 lines of which are in use, and 154 miles of telephone line, some 50 miles of which are metallic circuits of No. 9 wire. The remaining circuits are grounded lines built of No. 9, No. 12, or No. 14 wire. As fast as funds are available, the No. 12 and No. 14 wires are being removed and replaced by No. 9 wire, as the former are too light for satisfactory service and are very expensive to maintain. A maximum of 108 telephones have been connected to this system.

Plans have been completed and funds made available for the installation of an additional 100-line switchboard and for the construction of some 25 miles of metallic No. 9 iron wire circuits. Plans have also been approved for the connection of long-distance telephone service to the park switchboard, thus making it possible to get direct long-distance telephone communication from any telephone in the park. This is a convenience that has been greatly in demand and will furnish a service which is of the greatest value, not only in the administration of the park but to the concessioners and visitors to the park.

WATER SUPPLY.

As indicated in my last year's report, the present water supply is wholly inadequate during the months of August and September, which is the season of low water. During those months it is accordingly necessary to turn river water into the mains. This is unsatisfactory, both because of the poor quality of the river water and because of breakage of plumbing fixtures resulting from the additional pressure, and the clogging of pipes and fixtures from the sand carried into the mains in the river water. Careful study of the water supply during the past season reveals the fact that only a compartively small percentage of the available water is being collected in the springs. The original location of the springs and the headworks were dependent, first, upon the water supply; and, second, upon difference in elevation between source of supply and the point supplied. In order to insure sufficient pressure to induce a sufficient flow in the mains at the village for domestic use, it was necessary to collect the water at a point which has been found to be so high that during the dry months, with the attending low-water plane, an insufficient supply is collected.

It is proposed during the coming year to dig a well some 30 or 40 feet below the present headworks for the purpose of collecting additional water

which will be pumped by electric power into the present reservoirs. In this way it is certain that a sufficient supply can be obtained for all necessary uses. A further development can be made which will entirely eliminate the necessity of turning in the river water even for the additional pressure necessary in case of fire, by installing a storage tank at an elevation high enough above the present reservoirs to insure a sufficient pressure in the mains at the village and other points for fire protection. This tank may be filled by pumping from the lower well and so arranged with a system of electrically operated valves that the higher pressure can be turned into the mains in cases of emergency from a central point, such as the telephone central. This is a matter that should be given consideration as soon in the future as funds may be made available for such work.

SANITATION.

Practically no change has been made during the past year in the method of handling the sanitation and sewage disposal situation from that used during some years past. The question of sewage disposal is an important one and as soon as plans for relocation of the village and other contemplated changes in the matter of accommodations for tourist travel have been perfected and are in process of installation, this matter should be taken up with vigor and sufficient funds appropriated to insure the installation of a complete, modern, and up-to-date sewage disposal unit. At that time all public camps, as well as all hotel camps, should be supplied with flush toilets, and a plant should be installed to take care of the proper burning and disposal of all garbage.

MEDICAL SERVICE.

During the past year a cottage was built for occupation by the resident physician and his family, thus allowing the utilization of that portion of the hospital building, heretofore used as quarters, for hospital purposes. A ward was installed containing four beds, which brings the hospital to a capacity of 10 patients. By the utilization of this additional space, together with other minor repairs made to the building, the medical service is now in a position to give reasonably good service, and the available space for hospital treatment should be sufficient for at least a few years.

During the period July 1, 1916, to June 30, 1917, 78 patients were treated in the hospital. The average period of hospital treatment per patient was about seven days. In addition to the above, 1,561 office treatments were given and 518 outside calls were made.

ACCIDENTS AND DEATHS.

Three deaths occurred in the park during the year, all of which were attributed to natural causes and not to accidents.

On July 27, 1916, Charles H. Stegman, age 79, a guest of Yosemite Falls Camp, died suddenly of heart failure in the Camp.

On August 19, 1916, Andrew Alguire, a laborer living in public camp No. 6, died after a period of some two or three weeks of serious illness of tuberculosis. The resident physician had been in attendance during all of this time, but before being called to his attention the patient had reached the last stages of the disease and hopes for his recovery were given up.

On June 27, 1917, Paul Salvador Segale, age 66, after an illness of a week, died from cancer of the stomach. Mr Segale had been in the employ of the Government for many years, during much of which time he had been assigned to the construction of trails. His ability along the lines of trail construction and his long experience in that class of work makes his loss a material one to the park.

In each of the above cases the bodies were removed from the park for burial.

No accident of serious consequence occurred during the year. Three automobile accidents, however, occurred, any one of which might have been serious or even fatal, but fortunately such was not the case.

On July 9, 1916, a jitney bus, operated by the Desmond Park Service Co. on the floor of the valley, through careless driving was overturned on the Happy Isles road, between the village and Camp Curry. The bus contained five passengers, none of whom was seriously injured.

On July 25, 1916, Miss Esther Woodroff, camping with her parents in camp No. 16, through inexperience in the shifting of gears, backed her car over a 10-foot bank into the Merced River. Although the car was completely overturned, Miss Woodroff was able to extricate herself from beneath the car and was not injured.

On July 30, 1916, a Winton car driven by Mr. Urierer was overturned on the Big Oak Flat grade. Mrs. Urierer sustained a broken rib and was treated in the Yosemite hospital. No explanation was ever assigned by Mr. Urierer for this accident. He seemed to be unable to realize why or how he came to drive the car off the grade.

A number of minor accidents were reported throughout the year, most of which were sustained in the performance of their duties by laborers either of the park or of the various concessioners.

FIRES.

Twenty-one fires were reported during the year, all but three of which came under the head of forest fires. Most of them were small and were discovered and brought under control before any damage had been done. The exceptions to the rule was a fire in August, 1916, which started between Crane Flat and the Merced Grove of Big Trees. In this case two rangers with the help of eight laborers succeeded in controlling the fire only after some 50 acres had been burned over. This fire was caused by neglect by the insect-control party operating on the lands of the Yosemite Lumber Co. within the park. In June, 1917, a fire of some note originating outside of the park in the Merced Canyon, some 6 or 7 miles below El Portal, was allowed to spread until it reached to within a few hundred feet of the hotel at El Portal. Rangers and others were sent from the valley and took charge of the fire, which was nearing the park boundary, and in a short time had it well under control. This fire had been burning for some five or six days and apparently no effort had been made by anyone to control it, with the result that it rapidly spread until it approached the park boundary from El Portal northward to a point in the vicinity of McCauley's ranch, on the Davis cut-off road. Quick action was necessary in the vicinity of the park boundary, because if it had gotten out of control undoubtedly it would have reached the heavily timbered section in the Crane Creek area, with disastrous results to a large area of the park timber.

The remainder of the forest fires, as stated above, were unimportant and were caused, as a general rule, by carelessness of campers or of individuals in throwing away lighted cigarettes or cigars or matches. These things are generally thoughtlessly done and it is almost, without exception, impossible to fix the blame.

In November, 1916, a fire started in Boysen's studio, probably from a defective stovepipe. As the fire had a considerable start before being discovered, it was brought under control with considerable difficulty, and then only at a material loss to the studio. Fortunately, however, it was possible to remove practically all of the furniture and photographic equipment and to confine the loss to the building itself.

In June, 1917, the portable buildings used for offices, dining room, and kitchen of the El Capitan Camp were burned to the ground. The fire was caused by a defective burner in the kitchen oil range, and within 20 minutes from discovery the buildings were completely consumed. A week later a fire was discovered on the roof of the Sentinel Hotel, due probably to sparks from the chimney. This was put out at once with little damage.

CLEARING OF THICKETS AND UNDERBRUSH.

The existence of thickets and dense growths of underbrush in certain timbered areas on the floor of Yosemite Valley and in the big tree groves, and the slashings left on the cut-over lands adjacent to the park timberlands along the Wawona road and along the west and south boundaries of the Mariposa Grove of Big Trees, constitute a menace of large proportion in the consideration of fire protection. Fires originating in such thickets or slashings and with a favorable wind may become quickly uncontrollable and large areas are apt to be burned over before fires can be brought under control.

While such work is carried on to some extent in connection with the cutting of wood on the floor of the valley and the cutting of shakes in and around the Mariposa Grove of Big Trees, the importance of the work is such as to warrant a much greater effort. It must be borne in mind that the proper handling of

this work would be expensive, as to clear the lands properly will cost from $20 to $25 per acre, and as there are several thousand acres where these conditions prevail, the ultimate expense will be large. Rather than attempt this work with the idea of an early conclusion and a heavy initial expense, it is suggested that the work be done gradually under relatively small allotments.

INSECT CONTROL.

The work of protection of park forests against depredations by the various species of forest beetles was prosecuted throughout the entire year and with exceptionally satisfactory results. The work was carried on cooperatively with the Bureau of Entomology of the Department of Agriculture, who assigned a forest entomologist to supervise the work. The result is that the yellow and sugar pine areas in the southern and western part of the park have been almost entirely freed from infestation and have now reached the stage where it is likely that no great amount of work will be necessary in the future. A close supervision of the forests, with the occasional cutting of a tree here and there at the proper time, will keep these areas in first-class condition.

In the lodge-pole districts in the vicinity of Lake Tenaya and the Cathedral Creek Basin a more serious condition exists. Before the importance of this work was realized, a considerable proportion of the lodge pole had already been destroyed, and in spite of the considerable amount of work that has been done in these areas it has not been possible to eliminate the danger of further destruction. During the past year nearly 300 trees were treated in this area, but it is still a question whether or not it will be possible to preserve the present living stand, which has become so weakened by constant beetle attacks that the trees no longer seem to be able to offer sufficient resistance, and it may be necessary to continue the work with the idea in view of localizing the attacks and allowing the present stand to be entirely depleted. In other words, it may be necessary to sacrifice what is left of the living stand in these areas in order to protect surrounding areas.

TIMBER OPERATIONS.

Timber operations on private and Government lands within the park have been continued throughout the past year by the city and county of San Francisco, in their development of the Hetch Hetchy project, and by the Yosemite Lumber Co., operating in the southern portion of the park.

The city and county of San Francisco operated their mill throughout the greater part of the year on their Canyon ranch property, located in section 32, township 1 north, range 20 east, Mount Diablo meridian. This operation employed an average of about 40 men per month, and sawed 2,064,085 feet b. m. of lumber. Of this amount, 461,363 feet b. m. was cut from Government lands involved in the exchange between the Government and the city and county of San Francisco, whereby the Government acquires title from the city to 320 acres of land and timber located in sections 5 and 6, township 1 south, range 2 east, Mount Diablo meridian, in exchange for 4,000,000 feet b. m. of lumber located near and contiguous to the Canyon ranch operation.

The operations of the Yosemite Lumber Co. within the park were confined to townships 3 and 4 south, ranges 20 and 21 east, Mount Diablo meridian. This company employed an average of about 225 men per month during their logging season, operated 10 donkey engines, and hauled to 5 landings. Logs were transported over their own railroad to El Portal, thence by Yosemite Valley Railroad to their mill at Merced Falls. The company cut and shipped to their mill 32,727,645 feet b. m. of logs, which was cut from about 882 acres of land, of which approximately 839 acres lie within the boundaries of the Yosemite National Park. Of the park lands 160 acres were cut under restriction, whereby seed trees were left standing and all slashings, débris, etc., will be piled and burned.

In all of these operations the Government interests have been represented on the ground by a special park ranger assigned to that particular work.

PATENTED LANDS.

During the past year an important step has been taken toward acquisition by the Government of privately owned lands within the park. During the year exchanges of land and timber were effected with the Yosemite Lumber Co. by which the Government acquires title to nearly 7,000 acres of land and 150 acres of timber only. Of this total amount, 790 acres include the timber and were acquired for purposes of protecting roads within the park. The remaining lands are either cut-over lands or lands upon which reservation of the timber has been made. In addition to this, an exchange was effected with the city and county of San Francisco whereby the Government acquires title to 360 acres of land in the vicinity of Hog ranch. In each case, in return for such titles, the Government has granted timber rights on lands in localities where the loss of the timber will not in any way affect the scenic feature of the park. By these two exchanges the Government has acquired nearly 40 per cent of the privately owned lands in the park. Privately owned lands in the park still exist to the extent of about 11,000 acres, but in view of the fact that the Government has no accessible timber which could be disposed of without affecting the scenic features of the park, it will be impossible to acquire further private holdings by this method of exchange. The problem, therefore, of securing funds for the purchase of such lands is one that should be given consideration and attention.

RANGER SERVICE.

During the year the ranger force consisted of one chief park ranger, one assistant chief park ranger, one special park ranger in charge of maintenance of roads, trails, etc., one special park ranger in charge of timber cutting and in connection with operations of the Yosemite Lumber Co. and the city and county of San Francisco, and four regular park rangers. Twenty additional temporary rangers were employed during the months of heavy travel, most of whom were engaged as automobile checkers on the various roads of the park and in traffic and general patrol on the floor of Yosemite Valley.

The policy followed in this park with regard to the police work of the ranger force has been to educate the public rather than to restrict. It has been the effort to imbue rangers with the idea of making as few arrests as possible instead of as many as possible, and of this office to impose as few penalties as possible. It has been the policy to explain to offenders the reason for the regulations and the advisability and necessity for compliance on the part of visitors. In this way, I believe, in many instances, not only have offenders been convinced that the regulations have been made for the good of all, but they have afterwards been instrumental in bringing to the attention of others the advisability of complying with the spirit of the regulations.

The manner in which the ranger force, almost without exception, has entered into the spirit of this policy has been very gratifying. Their work has been difficult, necessitating constant vigilance, and the judgment that has been displayed by them in distinguishing between minor and serious offenses tends to show that the park is fortunate in having been able to obtain the type of men who have represented the ranger service.

INFORMATION BUREAU.

The bureau of information was continued in operation in charge of one of the park rangers during the months of July to October, 1916, and May to June, inclusive, 1917. Park maps and literature pertaining to all national parks are kept here for distribution and sale, and folders and all classes of advertising literature of the various concessioners operating in the park are available for distribution to the public. The registration of campers is also handled at the bureau, and its importance and convenience to the public is attested by the large number of inquiries received. Every effort is made to give strictly impartial information to all inquiries, and because of the ability to get this impartial information it is quite apparent that the public appreciates the bureau's existence.

Lost and found articles are reported to this bureau, where efforts are made to locate lost articles and return them to the rightful owners. Articles to the value of $551 were returned to owners during the past year.

AUTOMOBILES.

Automobiles were admitted to the park during the season of 1917 upon payment of a fee of $5, for which the payee received a permit entitling him to the use of any or all roads within the park and to go and come at will. It will be recalled that during the season of 1916 two forms of permits were issued, one for $5 entitling the holder to a single trip over the roads within the park, and one for $8 entitling the holder to season privilege. As comparatively few people took advantage of the season permit it was recommended that the sea-

son charge of $8 be eliminated and that only one form of permit be issued, which would be considered as a season ticket at a price of $5. This recommendation was approved, and I think the lower price and the additional privileges given with it has had a considerable effect in augmenting the automobile travel during the 1917 season. In spite of the fact that at the beginning of the month of October, 1916, heavy snow blocked the higher roads completely, thus entirely stopping automobile travel to the park for the remainder of that year, and in spite of the late season in the spring of 1917, due to the exceptionally heavy snowfalls in the region, the automobile travel for the period October 1, 1916 to and inclusive of September 30, 1917, shows a very marked increase over that of a corresponding period of the previous year. Three things may be held responsible for the great increase in motor travel—first, the lowering of the rate by the service to $5 for season permit; second, the removal of toll on the Wawona road; and third, the modification of the automobile regulations. By this modification of regulations the motorists were given considerable more liberty than was the case during the previous year, as practically all restrictions were removed with the exception of the adherence of one-way travel on the Wawona and Big Oak Flat grades leading out of the valley. Although this control of traffic on these grades represents somewhat of an inconvenience to the motoring public, the many favorable comments on the scheme, together with the lack of adverse criticism, makes it apparent that the automobilists appreciate the fact that such a regulation is necessary and that it is made for the safety of the traveler. Furthermore, until such time as funds become available for the widening and general improvement of these grades, it is believed that the restriction should remain in force.

The following tables give a comparison of automobile travel for the seasons of 1916 and 1917:

Entrance.	Road.	Automobiles.	People.
SEASON 1916.			
Alder Creek	Wawona	2,370	8,522
Crane Flat	Big Oak Flat	553	1,990
Merced Grove	Coulterville	426	1,524
Aspen Valley	Tioga	106	382
Tioga Pass	do	578	2,075
El Portal	El Portal	6	21
Hog Ranch	Hetch Hetchy	4	13
Total		4,043	14,527
SEASON 1917.			
Alder Creek	Wawona	3,604	12,647
Crane Flat	Big Oak Flat	1,394	4,911
Merced Grove	Coulterville	62	232
Aspen Valley	Tioga	559	1,691
Tioga Pass	do	883	2,915
El Portal	El Portal	17	55
Yosemite	Various	2	5
Total		6,521	22,456
Increase over 1916		2,478	7,929

Because of construction work in connection with railroad, automobile travel was not allowed over the Hetch Hetchy road except under permit from the city and county of San Francisco, and then only for cars entering on business in connection with the Hetch Hetchy work or in connection with park work. Hence this travel does not appear in the 1917 statistics.

MOTORCYCLES.

To date motorcycles have not been permitted in the park. I am not sure that there are any real grounds for the Service to rule against them, but I am inclined to think that the principal reason for not allowing them to enter the park is due to the prejudice that has been developed against them by persons not familiar with the manipulation of the motorcycle. I believe the prejudice has no more grounds than the prejudice that former park officials held against the coming of the automobile. The principal argument that I can see against the motorcycle is that they make a considerable amount of unnecessary noise

by the continued use of the cut-out. As to their use on the high mountain roads, I think they are no more dangerous than the automobile, and if allowed to enter it seems to me the motorcyclist himself would be the only one endangered. I believe it would in no way increase the danger to automobile travel on the mountain roads. So far as the roads on the floor of the valley are concerned, there is, of course, no more danger than on the State highway. I would recommend that motorcyclists be allowed the same privileges as automobilists and be permitted to enter subject to similar restrictions and regulations.

VISITORS.

Visitors to the park during the period October 1, 1916, to September 30, 1917, reached a total of 34,510. The fact that the majority entered the park in private automobiles, and the further fact that the number of people so entering was far in excess of the number traveling by this method during the previous year, is evidence that it is this class of travel that must be given the bulk of consideration in future park development work, both on the part of the Government and the concessioners operating within the park. Roads and public parking places must be given special consideration by the Service; and garage facilities and hotel and camp accommodations which appeal to this class of travel must be maintained by the concessioners.

The following table shows the comparative numbers of people entering by the various means of transportation for the seasons of 1916 and 1917:

	1916	1917
Visitors entering park in private cars	14,527	22,456
Visitors entering by autostage lines other than via El Portal	3,032	2,603
Visitors entering via Yosemite Valley R. R. and El Portal road	14,251	8,612
Visitors entering by wagon, horseback, and on foot	1,580	839
Total	33,390	34,510

The total number of automobile visitors utilizing the free public camps during the season of 1917 was 10,598. This compares with 4,038 for the season of 1916.

Concessions.

Name.	For what granted.	Expiration.	Annual rental.
LEASES.			
Pacific Telephone & Telegraph Co.	Telephone and telegraph lines	Indeterminate.	$100.
Big Trees Auto Stage Co	Automobile stage line	Dec. 31, 1918	4 per cent gross revenues; $1,000 minimum.
(A.) D. J. Desmond Commissary Co.	Hotels, chalets, inns, camps	Dec. 9, 1935	25 per cent net profits first 5 years; 50 per cent net profits thereafter.
(B.) D. J. Desmond Commissary Co.	Transportation	do	
(C.) D. J. Desmond Commissary Co.	General merchandise store and dairy.	Dec. 9, 1925	
D. J. Desmond Commissary Co.	Modifying leases A, B, and C		
Curry Camping Co	Public camp	Dec. 31, 1921	4 per cent gross revenues; $2,000 minimum.
Yosemite Stage & Turnpike Co.	Automobile stage line	Dec. 31, 1932	$100 per year first 5 years; profit sharing thereafter.
PERMITS.			
Dr. Frank P. Ashworth	Dentist	Dec. 31, 1917	None.
D. J. Foley	Studio	Oct. 31, 1917	4 per cent gross revenues; $400 minimum.
Chris Jorgensen	do	Dec. 31, 1917	$200.
Mrs. John Degnan	Delicatessen and bakery	Oct. 31, 1917	$125.
E. N. Baxter	Curios	do	$75.
Geo. Fiske	Studio	Dec. 31, 1917	$20.
J. T. Boysen	do	do	4 per cent gross revenues; $400 minimum.
H. C. Best	do	do	Do.
A. C. Pillsbury	do	do	Do.
Dr. J. S. Brooks	Hospital	Apr. 30, 1918	None.

Lease, special-use, and water-power permits under act of Feb. 7, 1905, segregating lands from Yosemite National Park and placing same in Sierra and Stanislaus National Forests.

Period of concession.	Name of concessioner and privilege granted.	Compensation exacted.
Indeterminate period.	Yosemite Valley R. R. Co. Lease dated Sept. 5, 1905, grants to company right to construct and operate electric railway along Merced River to park boundary. Rate may be readjusted and fixed by President of United States after expiration of first 3 years under lease.	[1] $1,000
Do.....	Yosemite Valley R. R. Co. Special-use permit issued by Forest Service, approved Feb. 7, 1908, by S. J. Flintham, acting forest supervisor, authorizes construction of diverting dam, pipe line, and water tank for conveying water from a spring and storing in tank for use in operating company's electric road. All timber cut to be paid for under timber-settlement regulations of Forest Service.	
Do.....	City and county of San Francisco, Cal. (transferees of Sierra Ditch & Water Co.). Right of way for reservoir site (known as Cherry Valley Reservoir site), comprising 630 acres of land in the Stanislaus National Forest, under lease granted July 30, 1908, to Sierra Ditch & Water Co. All timber cut to be paid for at stipulated rates from $1.50 to $5 per thousand feet, according to kind of timber cut.	[1] 945
Do.....	Yosemite Lumber Co. Special-use permit, approved by district forester, Forest Service, June 27, 1911, for right to construct logging railroad and inclined tramway in Sierra National Forest, for removal of timber adjacent to company's road. All timber used to be paid for at rate to be fixed by forest supervisor, Sierra National Forest, which shall correspond with prevailing stumpage rates charged on said national forest when timber is cut. Stipulations signed by company June 20, 1911, and approved June 27, 1911, by District Forester F. E. Olmstead, accompanying the permit, require annual payment (outside of charge for live and dead timber, standing and down, cut, damaged, killed, or destroyed along right of way, title to which at time of cutting is in United States) of $1,200 on demand therefor being made by the Secretary of the Interior.	[1] 1,200 [2]
Do.....	Yosemite Lumber Co. Special-use permit, approved Nov. 22, 1911, by E. G. Dudley, acting forest supervisor, Sierra National Forest (Forest Service), authorizes construction and operation of telephone line along inclined tramway and logging railroad in Sierra National Forest.	
Do.....	Yosemite Lumber Co. Special-use permit, approved Nov. 22, 1911, by E. G. Dudley, acting forest supervisor, Sierra National Forest (Forest Service), covers right of way for and authorizes construction and operation of pipe line about one-half mile long from spring on lands segregated from park (in Sierra National Forest) for purpose of piping water from company's inclined tramway and logging railroad to supply boilers of steam-hoisting plant, etc.	[3] 10
50 years [4].....	Merced River Electric Co. (project "A"), final water-power permit granted by Agriculture Department (Forest Service) Apr. 11, 1911, running for 50 years, unless sooner revoked by that department, for right of way for diverting dam and power conduit in Stanislaus National Forest. Annual charge over lands segregated from park based on 1,460 horsepower, at 10 cents per horsepower for first year, with increase of 10 cents per horsepower each succeeding year until maximum charge of $1 per horsepower is reached, annual charge thereafter being at latter rate. Stipulations signed by officers of company Mar. 21, 1911 (and accompanying above permit), provided that payment upon above basis should be made annually in advance from Jan. 1, 1912, permit, however, being approved Apr. 11, 1911, and first payment, $146, being made June 7, 1911; this payment was applied on 1911 calendar year. Amount due for fourth year, 1914, 1,460 horsepower, at 40 cents; horsepower capacity subject to readjustment after expiration tenth year.	584

[1] Per annum, on demand of Secretary of Interior.
[2] Value of all timber cut and paid for on right of way (payment of $406.56 made May 3, 1912, and $334.56 made Oct. 3, 1912), $741.12.
[3] Per annum, in advance.
[4] Unless sooner revoked by Department of Agriculture.

EXCERPT FROM ACT OF CONGRESS APPROVED DECEMBER 19, 1913, GRANTING TO THE CITY AND COUNTY OF SAN FRANCISCO CERTAIN RIGHTS OF WAY IN, OVER, AND THROUGH CERTAIN PUBLIC LANDS IN THE YOSEMITE NATIONAL PARK AND STANISLAUS NATIONAL FOREST ADJACENT THERETO.

Section 7 of the above act provides that for and in consideration of the grant by the United States as provided for in this act, the said grantee shall assign free of cost to the United States all roads and trails built under the provisions hereof; and further, after the expiration of 5 years from the passage of this act the grantee shall pay to the United States the sum of $15,000 annually, for a period of 10 years, beginning with the expiration of the 5-year period before mentioned, and for the next 10 years following $20,000 annually, and for the remainder of the term of the grant shall, unless in the discretion of

Congress the annual charge shall be increased or diminished, pay the sum of $30,000 annually, said sums to be paid on the 1st day of July of each year. Until otherwise provided by Congress, said sums shall be kept in a separate fund by the United States, to be applied to the building and maintenance of roads and trails and other improvements in Yosemite National Park and other national parks in the State of California. The Secretary of the Interior shall designate the uses to be made of sums paid under the provisions of this section under the conditions specified herein.

Section 4 of the act provides that no timber shall be taken, cut, or destroyed within Yosemite Park or Stanislaus Forest except as such may be actually necessary to construct, repair, and operate its reservoirs, dams, power plants, water-power and electric works, and other structures mentioned in the act, but that no timber shall be cut or removed from lands outside of the right of way until designated by Secretary of Interior or Secretary of Agriculture, and the grantee shall pay the full value of all timber and wood cut, injured, or destroyed on or adjacent to any of the rights of way and lands, as required by either of said officers: *Provided*, That no timber shall be cut by the grantee in Yosemite Park except from land to be submerged or which constitutes an actual obstruction to the right or rights of way or to any road or trail provided for in the act.

FISH AND WILD ANIMALS.

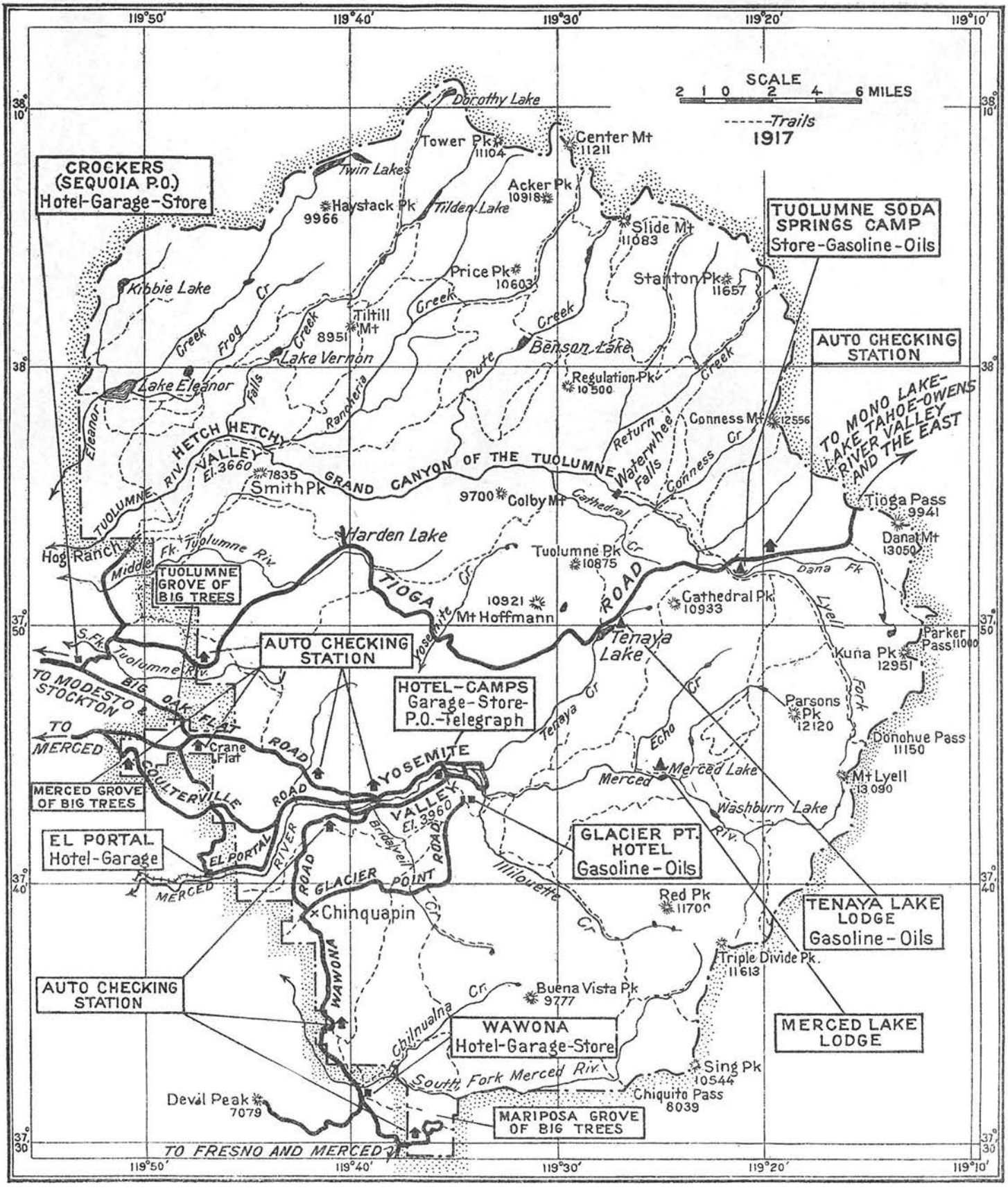
The effort begun in the season of 1916 to enforce the park regulations with regard to fishing was continued through the season of 1917. Very few violations have been reported, and in almost all of these cases it has been apparent that the infractions occurred not through malicious intent but rather as a result of ignorance of the fishing limit.

During the season of 1917, 120,000 small fry, furnished by the State fish and game commission, were planted within the park boundaries. Fifty thousand of these were planted in Yosemite Valley in the Merced River and its tributaries, and the remaining 70,000 in the various watercourses along the Tioga road. The number of people fishing, and consequently the number of fish being caught, is increasing rapidly from year to year, and in order that the sport may be maintained it will be necessary to continue the planting or transplanting of fish year by year. In the back country, to where it is particularly difficult to transport the small fry, the work of catching and transplanting matured fish has been continued. As a result many of the small lakes in the high country, which heretofore have contained no fish, are being stocked and within the course of another two or three years will afford excellent fishing.

The State law requiring fishermen to hold fishing licenses has been continued in force by the State fish and game officials, as in 1916. Fishing licenses have been on sale at all of the camps, hotels, and in the store in Yosemite village.

Comparatively little difficulty has been encountered from poaching within the park, although it is certain that the practice of hunting deer along the park boundary, both in and out of season, is more or less in vogue. The most serious menace to the preservation of deer and other game within the park is the hunting that takes place along the park boundary during the autumn months, when the deer are first driven from the high country by the early snows. Attention was called to this in my last report, and it was suggested that the problem might be solved by the creation of a neutral zone or game preserve, where hunting would be prohibited at all times of the year, along the southern and western boundaries of the park. In this way deer which are protected throughout the summer months within the park and become tame would have a place to feed during the winter months where they would be equally well protected. The condition at present is that the deer become tame through protection within the park, and upon leaving the park in the early autumn fall an easy prey to the hunters, it not being a difficult matter to kill deer from horseback or from automobile along the roads without the park boundaries. It is to be noted that a bill for the creating of such a zone was presented to the State for consideration during the winter of 1917, but was not given favorable consideration, on the ground that the fish and game commission did not feel justified in creating game preserves other than those already recommended. It is interesting to note, however, that some 16 game preserves, many of them of lesser importance than this proposed reserve, were created during the late session in various localities in the State.

Mountain lions, the greatest enemy of deer next to man, are, I believe, gradually decreasing in number. During the winter of 1917 some 25 lions were



AUTOMOBILE MAP OF THE YOSEMITE NATIONAL PARK.

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reported killed in and around the park. When it is considered that it is authentically claimed that each mountain lion accounts for the killing of at least one deer per week throughout the year, the importance of this work can be readily understood.

It is hoped that conditions during the coming winter will be such that it may be practicable to organize, under the direction of the ranger force, parties for the hunting of lions throughout the park. It is believed that this would be a move toward the complete elimination of the mountain lion from this section.

FIREARMS.

Firearms to the number of 1,794, of various classes, were handled by the ranger department during the year. Of these 1,236 were sealed at the park entrances, and 558 were taken up by the park rangers at various points and were later returned to their respective owners. The method of handling firearms was the same as that used through the latter part of the 1916 season. Firearms carried by automobile passengers are sealed at the park entrance and are allowed to remain in the possession of the owner. In this case the number of guns sealed is noted on the permit by the ranger issuing the permit and the seals are in turn broken by the ranger at point of exit. Those brought into the park by people on foot or horseback are taken up and turned into the supervisor's office, whence they are shipped to the owners at the latter's risk. Likewise, in cases where persons are found in the park with firearms which have not been sealed, such firearms are taken up and handled in the same manner. In the latter case, unless the owner can readily explain the reason for carrying unsealed firearms, additional penalties in the way of fines are imposed.

ARRESTS.

Nineteen arrests were made during the year on various charges. Most of these arrests were for apparently flagrant violations of the park regulations. In spite of this, in accordance with the policy of imposing as few penalties as possible, few serious penalties have been imposed. Penalties, where imposed, have taken the form of fines or ejectments from the park, as each individual case seemed to warrant.

GRAZING.

Shortly after the declaration of war in April, 1917, with its accompanying propaganda on the conservation of food supplies, the question of opening the park to grazing was taken up on a large scale. All possible influence was brought to bear by the stockmen operating in the regions around the park. Their arguments in favor of such action by the service were based upon the alleged shortage of feed in the foothills and their alleged patriotic desire to do all possible in assisting in carrying out the policy of conservation of food supplies. Although there was no objection on the part of this office to opening certain areas of the park during the period of emergency, it was evident, however, that upon neither of these principles was based the real reason for the insistence on the part of the stockmen that the park be opened; but, rather, it was evident that advantage was taken of the emergency to open up the question with the hope of getting a permanent footing on the park lands, feeling that the acquisition of permits for this year would strengthen the claim for similar privileges in years to come.

When, in 1891, the park was created, grazing was already established throughout the area without Government regulation or authorization. It took more than 20 years of constant effort to eliminate it, and it was only by the rigorous application of force and more or less arbitrary ruling by the Army that the task was accomplished, and in the end the park lost several hundred square miles of territory through the readjustment of its boundaries. Even then the fight was continued on a small scale, with the result that in 1913 permission was given to certain persons to allow cattle to graze upon the park lands when being driven from one private holding to another, or from the park boundary to private holdings. This privilege was given contingent upon action by Congress on certain bills pending at that time, the object of which was the purchase by the Government of private holdings within the park. Although this legislation was never passed, these individuals have assumed these privileges to be sufficient authorization for the continuation of grazing over some 40,000 acres of park lands in the western portion of the park up until the present time. It is very evident that none other than these few individuals have benefited by the use of these lands. It might also be pertinent to state that in any arrangement the service may make permitting grazing on this portion of the park these men and no one else will reap the benefit.

In view of the strong demands made the service saw fit to open certain portions of the park to grazing, and during the spring of 1917 permits were issued for the grazing of some 5,000 head of cattle. The bulk of the area upon which grazing was allowed lies in the western and northwestern portion of the park, north and south of the Tuolumne River. In addition to this a small area in the southeastern portion of the park was opened to grazing.

When this question comes up another year, as it undoubtedly will, I would suggest that grazing be allowed within the park on private lands only, and on these under fence. In case it should appear necessary to continue grazing of larger areas, because of the necessity of war conditions, I would suggest that the rate for this service be increased to not less than $5 per head, in order that the Government may get its share of the benefit rather than to allow practically all to go to the few individuals holding permits, as is the case under the present arrangement, whereby the Government charges the sum of 50 cents per head per season.

SEQUOIA AND GENERAL GRANT NATIONAL PARKS.

WALTER FRY, Supervisor, Three Rivers, Cal.

GENERAL STATEMENT.

The Sequoia National Park, set aside by act of September 25, 1890 (26 Stat., 478), and act of October 1, 1890 (26 Stat., 650), is located in Tulare County, Cal. It has an area of 161,597 acres and ranges in altitude from 1,100 to 11,900 feet. The General Grant National Park, set aside by act of October 1, 1890 (26 Stat., 650), is located one-half in Tulare County and one-half in Fresno County, Cal. It has an area of 2,536 acres and ranges in altitude from 5,250 to 7,631 feet. The Sequoia National Park derives its name and much of its interest from the presence of many large groves of "big trees" (Sequoia washingtoniana), and the General Grant National Park was thus named by reason of the "General Grant tree," so widely known for its size and beauty. Both of these parks are situated on the western slope of the Sierra Nevada and contain an aggregation of the most magnificent mountain scenery to be found on the continent. The magnificent forests within their borders contain the greatest groves of the oldest and largest trees in the world.

GENERAL CONDITIONS.

The rainfall and snowfall during the winter of 1916–17 were about normal, but, owing to prevailing cold weather during the spring months, thus preventing the usual rapid melting of snow in the higher elevations, not until July 10 was travel accomplished above the 6,500-foot level. Repair and improvement work was commenced on roads, trails, and telephone lines on April 1 and completed by June 30. The tourist camps, stores, hotels, etc., were opened for the accommodation of the public, and transportation service started on June 1, but not until June 8 did visitors enter the park in large numbers.

IMPROVEMENT AND REPAIRS.

Sequoia Park.—A new five-room one-story frame building, commodious and attractive in appearance, for use as a ranger's dwelling and auto checking station, has been constructed at Cedar Creek on the Giant Forest road at the western park entrance.

A new camp ground has been established at Cedar Creek for the benefit of those individuals who for any reason are unable to make the trip into the Giant Forest in one day. The work was accomplished by excavating the bluff on the upper side of the road and making a fill on the lower side. There is ample room in this camp for the accommodation of 40 automobiles at one time without obstruction of the road. A water system has been developed for this camp by means of a concrete reservoir around a spring, and the water is conveyed to the camp grounds by means of a pipe line 300 feet in length with six outlet hydrants embedded in cement.

A wooden stairway and iron handrailing 346 feet in length has been constructed to the top of Moro Rock, whereby persons can now ascend to the top of the rock with safety and obtain an unobstructed view of the most gorgeous mountain scenery of the park.

Twenty-five acres of additional camp ground has been cleared in the Giant Forest tourist camp as the means of providing sufficient camping space for the park visitors. This camp now comprises an area of approximately 100 acres, all midst the great Sequoia grove.

The water-pipe system in the Giant Forest tourist camp has been extended 5,000 feet in length in order to supply 40 acres of additional camp ground, and the entire camp area now has a bountiful supply of pure mountain spring water.

Twenty-seven miles of the Giant Forest road were graded and right of way cleared of fallen timber, rocks, and landslides.

Seventy-five miles of South Fork, Cold Spring, Tar Gap, Colony Mill, Hospital, and Middle Fork trails were repaired and all evidence of landslides, fallen timber, and washouts was removed.

Ninety-five miles of telephone lines were repaired by righting the telephone poles and splicing the broken wires.

The Atwell Mill ranger's cabin has been provided with new shingle roofing, underpinning, and inside ceiling. The exterior of the cabin was painted.

The four buildings at Wolverton, the roofs of which were crushed by heavy snow, have been repaired.

Construction work is now under way on the extension of the Giant Forest road from its present terminus at Wolverton to the Marble Fork River.

Other important projects, including the fencing of horse pastures for use by tourist stock and the clearing up of the Sequoia groves will be finished by the close of the season.

General Grant Park.—All of the park roads were repaired and are now in good condition.

Work is now being prosecuted on the extension of the water system through the tourist camp grounds and in clearing up the Sequoia grove.

VISITORS.

The past season has witnessed the greatest influx of visitors to the Sequoia and General Grant National Parks since their establishment, and they all seemed to enjoy the parks thoroughly. Many campers and others spent their entire summer vacations in the parks; many gathered for social purposes, for educational discussions, for entertainment of one kind or another, and others for their intense love for the mountains and passion for the splendors of nature and out-of-door life.

TRAVEL.

Travel started into the park on the Elk Park road March 1, on the Giant Forest road May 25, and on the Mineral King road and the General Grant Park roads June 1.

Travel by different entrances, Sequoia National Park.

Giant Forest road	5,110
Elk Park road	6,623
Mineral King road	3,450
Trails, all sources	3,325
Total	18,510

Means of transportation to Sequoia National Park.

Sequoia National Park Transportation Co	280
Automobiles	14,008
Wagons	703
Mounted on horse	2,826
Afoot	693
Total	18,510

Automobiles to Sequoia National Park.

Giant Forest road	944
Elk Park road	894
Mineral King road	496
Total	2,334

Travel by different entrances, General Grant National Park.

Stephens Grade road	13,800
Millwood road	2,074
Lake road	1,226
Trails, all sources	290
Total	17,390

Means of transportation to General Grant National Park.

Kings River-Hume Auto Service Co	1,215
Automobiles	13,890
Motorcycles	56
Wagon	960
Mounted on horse	642
Afoot	627
Total	17,390

Automobiles to General Grant National Park.

Stephens Grade—North road	2,010
Millwood road	148
Total	2,158

PARK RANGERS.

The present park ranger corps for the Sequoia National Park consists of 2 assistant chief park rangers, 1 first-class park ranger, and 8 additional temporary park rangers during the summer months, and for the General Grant National Park 1 chief park ranger is employed throughout the year, and 1 temporary park ranger is employed during the summer season. Also 1 clerk-stenographer is employed during the summer season.

ROADS.

Sequoia Park.—At no time since the creation of the Sequoia National Park has so much been done by the county of Tulare looking to the establishment of a comprehensive and permanent plan of road improvements leading into the Sequoia National Park as has been accomplished in the last eight months.

As the result of a bond election held on March 7, 1917, the county voted bonds, in amount $2,300,000, for the purpose of constructing a series of concrete-paved highways. One of the highways it is proposed to pave is that lying between Visalia and Three Rivers, a distance of 30 miles. As this road intersects the various park roads at Three Rivers, and is the only outlet to the valley below, its improvement will materially benefit all park traffic. Construction work on this stretch of highway is now under way, and no doubt much of the road will be completed in time for the park traffic next season.

The county has also reconstructed 5 of the 12 miles of that portion of the Giant Forest road lying west of the park between Three Rivers and the western park entrance, and is contemplating the reconstruction of the remaining 7 miles in the very near future; thus a splendid county road leading to the Giant Forest road in the park is assured. The county has also built, during the past season, about 5 miles of new road which constitutes a connecting link in the projected road between the Sequoia and General Grant National Parks. This county road will be extended to the park boundary at Clover Creek, where

it will connect with the Giant Forest road extension, thus joining by an automobile highway the two parks and the Kings River region.

That portion of the Giant Forest road within the park, 29 miles in length, was put in excellent condition for travel early in the spring, and has remained in fairly good condition throughout the season. It has required no additional attention. The Elk Park road, of which there are 10 miles within the park, was repaired by the Mount Whitney Power & Electric Co. early in the season and remained in fairly good condition thereafter. The 11 miles of Mineral King road within the park has been kept up by the county of Tulare, but, owing to the bad location of certain portions of this road and its rough condition, automobile travel thereover was difficult.

General Grant Park.—The 13½ miles of road within the park have stood the travel remarkably well, taking into consideration the enormous traffic they have borne throughout the season.

TRAILS.

There are 242½ miles of trails in the Sequoia National Park, all of which are in good condition, other than about 8 miles of the South Fork, 3 miles of the Tar Gap, and 4 miles of the Little Kern River trails. These trails should have their location changed in many places to better grades and the objectionable rocks therein cleared away.

There are 10 miles of trails within the General Grant National Park, practically all of which are in good condition.

TELEPHONE SYSTEM.

There are 98 miles of telephone lines in the Sequoia National Park system, 68 miles of which is an aerial-circuit system and 30 miles a ground-return system. The latter mentioned should be transformed to an aerial system in the interest of good service.

GRAZING.

Permits were issued to graze 1,305 head of cattle in the Sequoia National Park.

The grazing proposition the season throughout has proven very satisfactory to both stockmen and the park officials. Feed was excellent, and those parties holding permits kept their stock well within the confines of the areas assigned to them. The men and their herdsmen also rendered valuable assistance in fighting forest fires, which threatened serious damage to the park timber at intervals throughout the season.

INSECT CONTROL.

A survey was made of the pine-timber belt of Sequoia and General Grant National Parks during the months of July and August, 1917, to determine the amount of insect infestation, prepare a working plan for its control, and make an estimate of the cost of control.

The survey was conducted under the supervision of the Bureau of Entomology, represented by John Miller, assistant forest entomologist, and in cooperation with the Forest Service, represented by Ralph Hopping, forest examiner.

This office has not yet been furnished with a report as to the findings of the survey, but it is evident that small areas of both sugar-pine and yellow-pine timber in certain localities have recently been attacked by insects, and measures should be provided looking to a speedy extermination of the infestation.

WILD ANIMALS.

Deer and bear are very plentiful. A few elk and wild turkeys have been sighted along the Middle Fork and Marble Fork of the Kaweah River. Grouse, wild pigeons, and rabbits are abundant, but quail are not so numerous as of previous years. During the two winters last past severe weather drove the quail to lower altitudes west of the parks, where hunting parties killed a great many of them. Japanese pheasants were seen along the headwaters of Sequoia Creek. Owing to failure this season of the pine and oak seed crop in the parks, as the means of supplying ample food for the squirrels, they have been forced to migrate to other localities in the State where food is more abundant.

FISH.

Fishing in the parks was excellent, but all those streams within easy access to automobile traffic and in the vicinity of the main tourist camps in the Sequoia Park were soon fished out, and as the result fishing in the streams in these localities was very poor after the middle of July.

While the necessity of an increased food supply is turning the attention of every one to the prevention of waste and the further utilization of undeveloped resources, the United States Government, in whose hands is placed the administration of the wild-life resources of our national parks, should not overlook its share of the work in furnishing methods of utilizing such natural resources of food supply as fish, which can only be accomplished in a satisfactory degree by the establishment and maintenance of a United States fish hatchery in the Sequoia National Park. There are many suitable sites for a fish hatchery in the park, and by this method of procedure an annual output of thousands of tons of choice fish could be produced as food supply for the Nation. This can only be accomplished in a meager way otherwise.

FOREST FIRES.

The following is a report of the fires that occurred in Sequoia Park during the season, cause of their origin, approximate area burned, character of timber destroyed, and amount of damage done:

July 13; cause, lightning; area burned, one-fourth acre; character of timber, brush; no damage.

July 13; cause, lightning; area burned, 1 acre; character of timber, brush; no damage.

July 14; cause, lightning; area burned, one-half acre; character of timber, merchantable; a number of small seedlings and one large fir tree destroyed.

July 14; cause, lightning; area burned, 3 acres; character of timber, brush; no damage.

July 15; cause, lightning; area burned, 2 acres; character of timber, merchantable; three large pine trees badly scorched.

July 16; cause, lightning; area burned, one-half acre; character of timber, brush; no damage.

July 16; cause, lightning; area burned, 1½ acres; character of timber, merchantable; five large pine trees badly scorched and probably will die.

July 16–17; cause, lightning; area burned, 15 acres; character of timber, merchantable and brush; many small seedlings and three large fir trees destroyed.

July 20; cause, unknown; area burned, one-fourth acre; character of timber, merchantable; five large pine trees badly scorched and a number of small pine saplings destroyed.

July 22–23; cause, lightning; area burned, 3 acres; character of timber, merchantable; no damage.

July 31; cause, lightning; area burned, one-half acre; character of timber, merchantable; one large fir tree destroyed and three large pine trees badly scorched.

July 31; cause, lightning; area burned, 1½ acres; character of timber, brush; no damage.

August 1; cause, campers failing to properly extinguish their camp fire; area burned, one-fourth acre; character of timber, merchantable; 21 small pine saplings and 1 large fir tree destroyed.

August 1; cause, unknown; area burned, 3½ acres; character of timber, merchantable; five small pine trees destroyed.

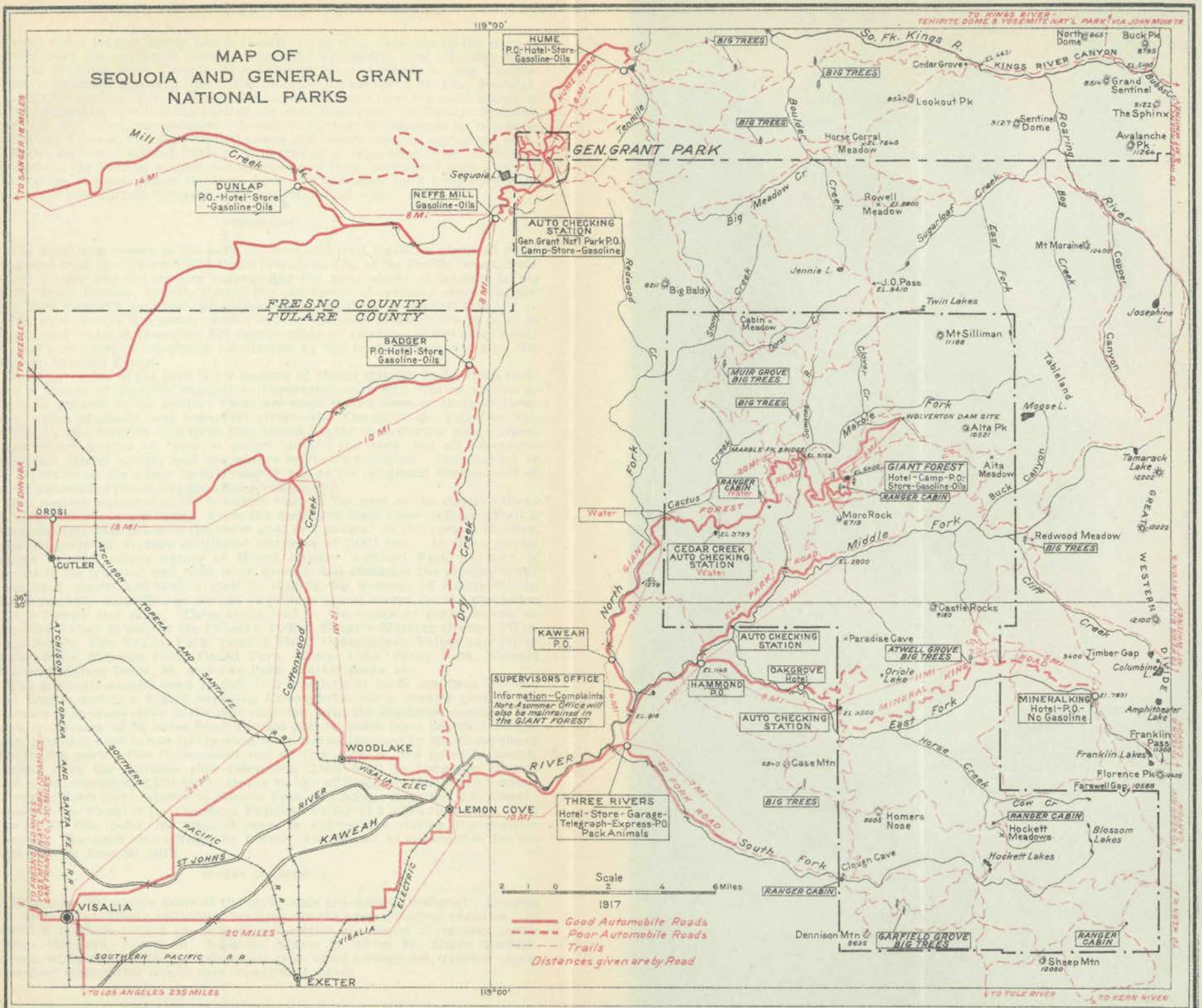
August 2; cause, lightning; area burned, 16 acres; character of timber, brush and merchantable; 3 large fir trees destroyed and 12 large fir trees badly scorched.

August 2; cause, lightning; area burned, 5½ acres; character of timber, merchantable; one large pine and one large fir tree destroyed and six large fir trees badly scorched.

August 3; cause, lightning; area burned, 7 acres; character of timber, brush; no damage.

August 9; cause, unknown; area burned, 4½ acres; character of timber, merchantable; three fir trees and a number of fir saplings destroyed.

August 9; cause, unknown; area burned, 2 acres; character of timber, brush and merchantable; about 200 small pine seedlings destroyed.


MAP OF
SEQUOIA AND GENERAL GRANT
NATIONAL PARKS
119°00'
HUME
P.O.-Hotel-Store-
Gasoline-Oils
HUME ROAD
8 MI
BIG TREES
So. Fk. Kings R.
TO KINGS RIVER-
TENIPITE DOME & YOSEMITE NAT'L PARK VIA JOHN MUIR TR
North Dome 8463
Buck Pk 8795
Cedar Grove
KINGS RIVER CANYON
EL. 5100
Grand Sentinel 8514
The Sphinx 9122
Lookout Pk 8537
Sentinel Dome 9127
Avalanche Pk 11260
Tenmile Cr
Boulder Creek
Roaring River
Horse Corral Meadow EL. 7645
GEN. GRANT PARK
Sequoia L
Mill Creek
14 MI
DUNLAP
P.O.-Hotel-Store
-Gasoline-Oils
NEFFS MILL
Gasoline-Oils
8 MI.
AUTO CHECKING STATION
Gen Grant Nat'l Park P.O.
Camp-Store-Gasoline
Redwood Creek
Big Meadow Cr
Big Meadow
Rowell Meadow EL. 8800
Sugarloaf Creek
Bog Creek
East Fork
Copper Creek
Mt Moraine 10400
Jennie L.
Big Baldy 8211
J.O. Pass EL. 9410
Twin Lakes
Josephine L.
Stony Creek
Cabin Meadow
Dorst Cr
Mt Silliman 11188
Tableland
Canyon
FRESNO COUNTY
TULARE COUNTY
BADGER
P.O.-Hotel-Store
Gasoline-Oils
MUIR GROVE BIG TREES
BIG TREES
Clover Cr
Marble Fork
WOLVERTON DAM SITE
Moose L.
Alta Pk 10521
Summers
MARBLE FK. BRIDGE EL. 5159
GIANT FOREST
Hotel-Camp-P.O.-
Store-Gasoline-Oils
RANGER CABIN
Alta Meadow
Tamarack Lake 12202
Buck Canyon
Great Western Divide
TO DINUBA
TO REEDLEY
TO SANGER 18 MILES
OROSI
15 MI
CUTLER
ATCHISON TOPEKA AND SANTA FE
10 MI
Cottonwood Creek
Dry Creek
RANGER CABIN
Water
Cactus
FOREST
ROAD
20 MI
3 MI
Moro Rock 6719
EL. 5783
Redwood Meadow
BIG TREES
Middle Fork
CEDAR CREEK AUTO CHECKING STATION
Water
EL. 2800
North Fork
GIANT FOREST
9 MI
EL. 1279
ELK PARK
13 MI
Castle Rocks 9185
Cliff
Creek
12100
KAWEAH P.O.
AUTO CHECKING STATION
Paradise Cave
ATWELL GROVE BIG TREES
Timber Gap 9400
Columbine L.
SUPERVISORS OFFICE
Information--Complaints
Note: A summer office will also be maintained in the GIANT FOREST
EL. 1148
OAKGROVE Hotel
Oriole Lake
HAMMOND P.O.
EL. 916
8 MI
3 MI
MINERAL KING
11 MI
EL. 3500
MINERAL KING
Hotel-P.O.-
No Gasoline
EL. 7831
Amphitheater Lake
AUTO CHECKING STATION
East Fork
Horse Creek
Franklin Pass 11200
Franklin Lakes
Florence Pk 11408
Farewell Gap 10588
WOODLAKE
RIVER
VISALIA ELEC
24 MI
SOUTHERN PACIFIC R.R.
TOPEKA AND SANTA FE R.R.
LEMON COVE
10 MI
THREE RIVERS
Hotel-Store-Garage-
Telegraph-Express-P.O.
Pack Animals
7 MI
SO. FORK ROAD
Case Mtn 8840
BIG TREES
Homers Nose 9005
Cow Cr
RANGER CABIN
Hockett Meadows
Blossom Lakes
Hockett Lakes
South Fork
Clough Cave
RANGER CABIN
Scale
2 1 0 2 4 6 Miles
1917
Good Automobile Roads
Poor Automobile Roads
Trails
Distances given are by Road
VISALIA
20 MILES
EXETER
TO LOS ANGELES 235 MILES
119°00'
TO TULE RIVER
TO KERN RIVER
Dennison Mtn 8635
GARFIELD GROVE BIG TREES
RANGER CABIN
Sheep Mtn 10080

Total number of fires, 19; approximate area burned over, 74¾ acres; estimated cash value of timber destroyed by reason of the fires, $168.50; scenic value, unimportant.

The above-mentioned fires were detected soon after their origin and extinguished prior to their rapid spreading; consequently the damage was reduced to a minimum. On every occasion when fires were discovered they were quickly attacked by park rangers and cattlemen and fought vigorously and effectively until finally extinguished. On a few occasions park visitors volunteered their services and rendered assistance of very great value.

Three large fires that started in the national forest west of the Sequoia Park and threatened great damage thereto were extinguished prior to their entering the park by volunteer and paid fire-fighting men working under the direction of park and forest rangers.

GOVERNMENT RECORDS BURNED.

The supervisor's residence, situated in the vicinity of Three Rivers, just outside of Sequoia National Park, where a general headquarters and supply station for the park supervisor was maintained, was burned by a forest and grass fire that swept through the region on August 9, 1917. Record books containing copies of letters that had been sent from the park office prior to July 1, 1910, were burned in the building, also over 4,000 specimens of the flora of the Sequoia and General Grant National Parks that had been collected and prepared for use in an exhibit of the flora of the parks were destroyed.

WEATHER CONDITIONS.

The past season was a dry one, but during the period of July 13 to August 7 several light showers, accompanied by thunder and lightning, passed over the area of the parks. No rain of consequence fell, but many fires were started by lightning. Aside from these disturbances, weather conditions were about normal throughout the season and the atmosphere cool and pleasant.

NEW APPOINTMENT.

Mr. Ansel F. Hall, of Berkeley, Cal., was appointed a first-class park ranger in Sequoia National Park, effective May 17, 1917, to fill the vacancy caused by the removal of Oliver R. Prien.

RECOMMENDATIONS.

The following recommendations are made:

(1) That Congress be requested to provide measures whereby title to the patented lands within the Sequoia and General Grant National Parks may be acquired by the United States Government for park purposes.

(2) That the State of California be requested to cede to the United States Government entire jurisdiction over the Sequoia and General Grant National Parks.

(3) That S. 2021, introduced by Senator Phelan, April 21, 1917, providing for the extension of the boundaries of Sequoia National Park to include the Kings and Kern River Canyons and the crest of the Sierra Nevada Range, receive the early consideration of Congress.

MOUNT RAINIER NATIONAL PARK.

D. L. Reaburn, Supervisor, Ashford, Wash.

GENERAL STATEMENT.

Mount Rainier National Park was created by act of Congress approved March 2, 1899 (30 Stat., 993), and exclusive jurisdiction of the territory so set aside was ceded to the United States by act of the Legislature of the State of Washington approved March 16, 1901. Exclusive jurisdiction of the reservation was accepted by act of Congress approved June 30, 1916.

The park is located in the western part of the State of Washington, immediately west of the summit of the Cascade Mountains, and about 40 miles southeasterly from the southern end of Puget Sound. It is situated largely in Pierce County, but a portion lies in Lewis County. The main entrance to the park is located near the southwest corner, distant by automobile road 93 miles from Seattle, 56 miles from Tacoma, and 6½ miles from Ashford, on the Tacoma Eastern Railroad, a branch line of the Chicago, Milwaukee & St. Paul Railway.

Longmire Springs, distant 6½ miles by automobile road from the main entrance, is the headquarters within the park of the park supervisor, the Rainier National Park Co., and other concessioners. Longmire Springs is connected by telephone to Seattle, Tacoma, and the principal camps and ranger stations within the park.

Mount Rainier National Park is in charge of a supervisor, who is assisted throughout the year by a clerk-stenographer and three permanent park rangers. During the summer season the local force was increased by 8 temporary park rangers, 9 construction foremen, and from 200 to 250 men.

TOPOGRAPHY.

The northwest corner of the park, by road and trail travel, is about 45 miles southeast from the tidewaters of Puget Sound, an arm of the Pacific Ocean, from which waters and the country surrounding the main object of interest in the park, Mount Rainier, appears during the prevalence of ordinary clear weather as a most imposing spectacle—an ice and snow clad dome 14,408 feet high.

The park reserve is a nearly perfect square, the sides of which are 18 miles in length, and contains, therefore, 324 square miles, or (sections of 640 acres each) 207,360 acres, and is completely surrounded by the lands embraced within the Rainier National Forest.

Near the center of the park is the summit of Mount Rainier, from which radiates a system of glaciers, ranking in importance with any similar system or group of glaciers in the world. There are more than a score of these glaciers, from which originate four important rivers—the Nisqually, the Puyallup, the White, and the Cowlitz—the three first named having large electric-power generating plants located on them at points outside the park, but all dependent upon this glacial system and the waters originating therein. The Cowlitz is as important as the others in this respect, but as yet completed development of power-generating plants has not been accomplished.

The general elevation at the boundary lines of the park of the glacial valleys is 2,000 feet above sea level. From the boundary lines these valleys afford a comparatively easy grade to the lower ends or "snouts" of the various glaciers, approximately an average additional elevation of 2,000 feet. At these glacial snouts the real alpine nature of Mount Rainier National Park territory is opened to the traveler, and from, over, around, and alongside the glaciers trails have been constructed with a view to making the wonders of nature within the park easily accessible as well as to provide patrol routes for the protection of the forests and game. These trails lead to the camps or parks known as Paradise Valley (Camp of the Clouds), Indian Henry's Hunting Ground (Wigwam Hotel), Van Trump Park, Cowlitz Park, Ohanapecosh Valley and Silver Spray Falls, Moraine Park, Grand Park, Mystic Lake, Spray Park, Natural Bridge, Cataract Basin, St. Andrews Park, Glacier Basin, etc.

The main automobile road to this vast wonderland leads out from Tacoma and Seattle and is a highly improved thoroughfare for a greater part of the distance from these cities to the park entrance, near the southwest corner of the park, a distance of 56 miles from Tacoma and 93 miles from Seattle. At the park gate this road is met by the road built and maintained by the Government within the park. The Government end of this road is 20.4 miles in length, leading from the entrance gate (elevation, 2,003 feet) to Longmire Springs (6.6 miles; elevation, 2,750 feet); thence to foot of Nisqually Glacier (5.3 miles; elevation, 3,909 feet); thence to Narada Falls (4.1 miles; elevation, 4,572 feet); thence to the Camp of the Clouds in Paradise Valley (4.4 miles; elevation, 5,557 feet). To this point the road is open to automobiles during the summer months. The road above Nisqually Glacier was opened to automobiles for the first time on June 20, 1915.

FOREST CONDITIONS.

More than 200 square miles of the park lands are densely timbered. Douglas fir, white cedar, Alaska cedar, and hemlock are the predominating varieties. In addition to those named the following varieties are found at various points within the park: Lovely fir, Noble fir, Alpine fir, silver fir, Alpine hemlock, spruce, white pine, black (or lodge-pole) pine, alder cottonwood, quaking aspen, broadleaf maple, vine maple, and smooth-leaf maple.

At an approximate general elevation of 4,500 feet the density of timber growth gradually diminishes until the extreme timber line is reached. The intervening areas, which are usually benches or plateaus on the long, sloping ridges separating the various glacial basins, form beautiful natural parks, in some of which tent camps or hotels are established and to which tourists resort in large numbers for rest and recreation. These natural parks and tent camps serve as bases for the arduous task of ascending to the summit of Mount Rainier, and for exploring the lesser mountain peaks, the glaciers, snow fields, and canyons so numerous within the park areas and in the areas surrounding.

These upland meadows, benches, plateaus, or natural parks are beautifully adorned by nature with flowers and shrubs of infinite variety and color and furnish to the most skilled botanist, not to speak of the amateur and the mere lover of the beautiful, problems in nature study never ending. Nearly 400 varieties of plant life are known to grow within the park.

ROADS.

South Side road.—The Government road from the southwest corner of the park to Paradise Valley, 20.4 miles long, was constructed under direction of the War Department at an original cost of $240,000, and was opened for travel in 1910.

The section of road above Nisqually Glacier was opened to automobiles on June 20, 1915. It is operated on a one-way schedule, by which automobiles leave Nisqually Glacier and Paradise on each hour, passing at Narada Falls on the half hour. This traffic is controlled by three park rangers in telephone communication. The system has proved very satisfactory, and seems to have met with the approval of the public.

During the past three seasons about 15,000 automobiles and 85,000 people have passed over this section of road without an accident.

White River road.—During the seasons of 1914, 1915, and 1916 the Mount Rainier Mining Co., under a permit from the department, constructed a wagon road up the north bank of White River from the ranger station at boundary post No. 62 to Glacier Basin, a distance of about 10 miles.

This road was built for use by the company in connection with its mining operations in Glacier Basin. It follows practically the water grade of White River, which runs from 2½ per cent in the lower sections to 13½ per cent at the extreme upper end. Only one or two short sections are over 11 per cent. It is a single-track wagon road, graded to a uniform grade, 12 feet wide inside of ditches. The bridges and culverts are 16 feet wide and are well constructed. A considerable portion of the road has been surfaced and the company is now operating an auto truck over it.

After the completion next year of the McClellan Pass highway to the ranger station, there will be a strong demand from tourists and park visitors to the north side to use the road.

TRAILS.

Of approximately 200 miles of trails within the park about 120 miles have been improved and are now in first-class condition for tourist travel.

The cut-off trail, 3.1 miles long, constructed last year from forks of the Mowich River to Crater Lake, together with the Ipsut Creek trail, 6 miles long, now under construction, from Crater Lake to the Carbon River, will effect a saving of 15 miles in distance between the southwest entrance and the Carbon River ranger station, and will also facilitate game protection in the vicinity of Eunice Lake, a favorite hunting ground of the past.

ROAD IMPROVEMENT.

The following amounts have been expended on maintenance and improvement of the South Side road from park entrance to Paradise Valley, 20 miles:

July 1, 1914, to June 30, 1915	$32,364.19
July 1, 1915, to June 30, 1916	17,865.94
July 1, 1916, to June 30, 1917	25,560.58
July 1, 1917, to date (approximate)	16,000.00
Total	91,790.71

This work has included general repair and maintenance, consisting of widening, construction of wood and concrete culverts, reshaping and ditching, constructing rock and timber crib retaining walls, guardrails, construction and repair of concrete and wooden bridges, clearing of dead and dangerous timber from the roadside, and surfacing with 6 inches of cement gravel.

During the present season the road is being widened at all points below Nisqually Glacier Bridge to a minimum width of 16 feet. At Narada Falls the parking space has been increased 50 per cent, and the entire 8 miles of road above the Glacier is being made safe by the construction of rock and log parapet walls.

The timber work in the old truss bridge over Van Trump Creek at Christine Falls is badly decayed and the bridge was condemned for the 1917 season. A new 60-foot span bridge has been constructed across the box canyon close in to the falls, which involved some heavy excavation in solid rock on the approaches.

The following amounts have been expended on the construction and improvement of the Storbo road:

By Mount Rainier Mining Co	$38,500
By National Park Service since July 1 (approximate)	5,000
Total	43,500

ROAD SURVEYS.

East Side road.—Location surveys by Engineer J. G. Morgan were made during the 1916 season for an automobile road, starting from the south side road at Inspiration Point (elevation 4,850 feet) above Narada Falls and following via Reflection Lakes, Stevens Canyon, south end of Cowlitz Divide, Ohanapecosh and Chinook Rivers, to connect with the McClellan Pass State highway in Cayuse Pass (elevation 4,600 feet). The survey was made on a maximum grade of 6 per cent and the total length is about 28 miles.

When completed it will open up the park to the Yakima Valley and the entire eastern part of the State and make it possible for automobilists west of the Cascades to completely encircle the mountain, entering the park by the southwest gate and leaving via White River, or vice versa.

The park trail system, which now entirely encircles the mountain, has a total length of about 200 miles.

The trip around the mountain can be made in about seven days, and with proper advertising should become a very popular feature. By making camp each night at certain points in the natural parks and upland meadows the tourist can travel on foot by the shortest route between camps, crossing the glaciers, well above timber line, and obtain a magnificent view of the mountain and surrounding country from all angles, affording one of the most interesting scenic trips in the world.

FIRES.

No fires occurred within the park during the season of 1917, but there were numerous fires outside the park in the surrounding forests, and the smoke drifted into the park at times to such an extent that sight-seeing was impossible except in the early morning hours.

WILD ANIMALS.

Hunting is absolutely prohibited in park territory, and every precaution is taken by park officers to prevent poaching, but the densely wooded nature of the territory adjacent to the park boundary makes it impossible to entirely stop the practice. A great many deer are driven down into the lower elevations by the fall and winter snows. They find their way across the boundary into the favorite hunting grounds, where they are killed in large numbers.

It is recommended that steps be taken to create a game preserve surrounding the park.

A great many deer and bears have been observed in the park during the season. Bears have broken into the meat houses in the construction camps on several occasions and carried away considerable quantities of fresh and cured meats.

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MINING CLAIMS.

Mining operations are confined to claims located prior to the act of Congress of May 27, 1908, prohibiting the location of mineral claims within the national park.

The Mount Rainer Mining Co. has been operating for several years, under permit from the department, on the development of its claims in Glacier Basin. During the past three seasons it has constructed a wagon road up the valley of White River to Glacier Basin and has installed a sawmill, a power and light plant, an aerial tramway, and has driven several hundred feet of tunnels in addition to the construction of several permanent buildings. Its working force has consisted of from 40 to 50 men working the year round.

In the vicinity of Longmire Springs the Eagle Peak Copper Mining Co. is working toward the development of two claims, and Sherman Evans and Ike Evans two claims. The Eagle Peak Copper Mining Co. has driven a tunnel 410 feet long and installed a power plant, consisting of a 14-inch turbine wheel, operating under a head of 55 feet and generating about 20 horsepower. Water is conveyed from Paradise River through a flume to the wheel. The power is used to operate an 8 by 8 inch Ingersoll Rand compressor with a capacity of 90 cubic feet per minute. Sixty feet of tunnel was driven this year and about 50 feet last year.

The Mount Rainer Mining Co. has made several shipments of ore, which assays about $60 per ton. No shipments, except for test purposes, have been made by the Eagle Peak Co.

MINERAL SPRINGS.

The principal mineral springs, and the only ones of easy access to the tourist, are those located on the patented land at Longmire Springs. Several kinds of mineralized water spring from the ground on this tract. Some of this water has a temperature of 70° F. on reaching the surface. It is heavily charged with sulphur, and a swimming tank is provided in order that visitors may take a "sulphur plunge." Other waters are charged with iron, and still others are sweet, cool, and sparkling.

But little care has been exercised in the past to prevent pollution of these springs. During the past season the property was leased to a company known as the Longmire Springs Hotel Co. This company has constructed 16 new cottages and has done considerable work toward cleaning up the springs and grounds and a new two-story hotel building 50 by 100 feet has been constructed.

The Ohanapecosh hot springs, near the southeast corner of the park, are very hot and are noted for their curative qualities. Very little development work has been done on them, and they are accessible by trail only, 13 miles from Lewis, Wash., or 15 miles from Narada Falls. They are located just south of the park boundary in the national forest. The small amount of land involved should be added to the park, so that it may be properly developed by the park service and made available for use of visitors.

Fine mineralized water has been discovered along the recently constructed West Side trail on the South Fork of the Puyallup River, near boundary post No. 16.

TRAVEL.

Owing to the heavy snowfall during the past winter, which was about the deepest on record, the South Side road was open for automobile travel to Longmire Springs and Nisqually Glacier two weeks later than in the 1916 season.

The following table shows the dates the road was opened during the past three seasons:

To—	1915	1916	1917
Longmire Springs	All winter...	May 18.....	June 4.
Nisqually Glacier	May 15.....	June 15.....	June 28.
Narada Falls	June 10.....	July 14.....	July 12.
Paradise Valley	June 15.....	Aug. 24.....	Aug. 9.

In connection with the above opening dates the following record of travel is shown:

Period.	1915	1916	1917
To June 30	4,751	811	1,177
Month of July	11,306	4,786	8,132
Month of August	13,782	10,574	17,864
Sept. 1 to close of season	5,327	7,818	8,395
Total	35,166	23,989	35,568

The total registration for the season up to October 12 was as follows:

At the main entrance	35,020
At the White River entrance	279
At the Carbon River entrance	165
At the Ohanapecosh entrance	104
Total	35,568

Distribution of visitors:

From Tacoma	8,488
From Seattle	10,217
From other points in the State of Washington	8,876
From points outside the State of Washington	7,987
Total	35,568

Number entering in private automobile	29,304
Number entering by Ashford stage	1,332
Number entering by Tacoma and Seattle stage	1,426
Number entering by rented cars (not operated by Rainier National Park Co.)	2,608
Number entering by motorcycle	186
Number entering by horse-drawn vehicle	149
Number entering on foot	563
Total	35,568

It is estimated that 4,390 people came into the park for camping purposes.

AUTOMOBILES AND MOTORCYCLES.

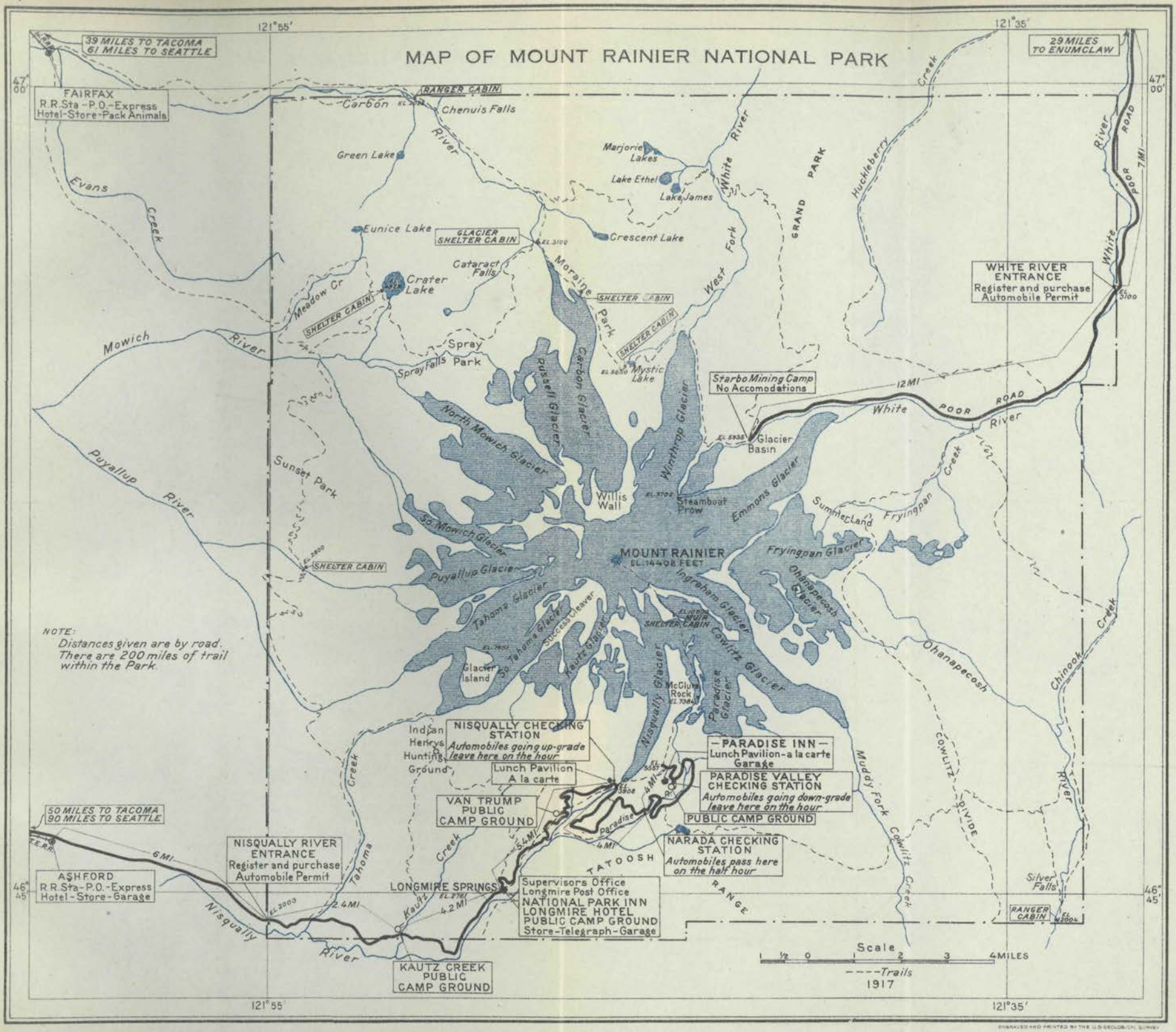
During the year ended October 12, 1917, 5,894 automobile entrance permits and 94 motorcycle permits were issued.

HOTELS AND CAMP ACCOMMODATIONS.

Rainier National Park Co.—This company, organized in March, 1916, to operate hotel, camp, and transportation service in the park, has completed its second season. Its principal activities have been the following:

Paradise Inn, in Paradise Valley: This hotel was built last year and opened July 1, 1917. There are 44 sleeping rooms in the building and 82 double bungalow tents grouped near by. All rooms in the hotel and all bungalow tents are heated and lighted by electricity. This room and bungalow-tent arrangement provides sleeping quarters for 400 guests and the dining-room and kitchen equipment is such that 600 or more persons may be accommodated for meals. It may be said that the service at Paradise Inn during the season just closing has been fully up to public expectations. Many times during the season Paradise Inn has been filled to overflowing, but the service in all departments has been of high quality and entirely satisfactory to patrons. In fact, Paradise Inn very satisfactorily fills a long-delayed public demand.

New Paradise Camp: This camp is new in plan only. The camp equipment formerly used by John L. Reese is employed. The location this year was the same as in former years, the very deep snows of this season having made it im-


MAP OF MOUNT RAINIER NATIONAL PARK
121°55'
121°35'
47° 00'
46° 45'
39 MILES TO TACOMA
61 MILES TO SEATTLE
29 MILES TO ENUMCLAW
FAIRFAX
R.R.Sta.-P.O.-Express
Hotel-Store-Pack Animals
RANGER CABIN
Carbon
Chenuis Falls
Green Lake
Evans Creek
Marjorie Lakes
Lake Ethel
Lake James
White River
GRAND PARK
Huckleberry Creek
White River ROAD 7 MI POOR
Eunice Lake
GLACIER SHELTER CABIN
Crescent Lake
Cataract Falls
Crater Lake
Meadow Cr
SHELTER CABIN
Moraine Park
SHELTER CABIN
West Fork
WHITE RIVER ENTRANCE
Register and purchase
Automobile Permit
Mowich River
Spray
Spray Falls Park
Carbon Glacier
Russell Glacier
Mystic Lake
Starbo Mining Camp
No Accomodations
12MI POOR ROAD
White River
Glacier Basin
North Mowich Glacier
Winthrop Glacier
Emmons Glacier
Puyallup River
Sunset Park
Willis Wall
Steamboat Prow
Summerland
Fryingpan Creek
So. Mowich Glacier
MOUNT RAINIER
EL. 14408 FEET
Fryingpan Glacier
Puyallup Glacier
Ingraham Glacier
Tahoma Glacier
Success
Cleaver
Kautz Glacier
Ohanapecosh Glacier
Cowlitz Glacier
Nisqually Glacier
Paradise Glacier
Glacier Island
McClure Rock
Ohanapecosh
Chinook Creek
NOTE:
Distances given are by road.
There are 200 miles of trail
within the Park.
NISQUALLY CHECKING STATION
Automobiles going up-grade
leave here on the hour
Indian Henrys Hunting Ground
Lunch Pavilion
A la carte
PARADISE INN
Lunch Pavilion-a la carte
Garage
PARADISE VALLEY CHECKING STATION
Automobiles going down-grade
leave here on the hour
VAN TRUMP PUBLIC CAMP GROUND
PUBLIC CAMP GROUND
Muddy Fork Cowlitz River
Tahoma Creek
50 MILES TO TACOMA
90 MILES TO SEATTLE
NISQUALLY RIVER ENTRANCE
Register and purchase
Automobile Permit
6MI
NARADA CHECKING STATION
Automobiles pass here
on the half hour
5.4MI
4MI
TATOOSH RANGE
ASHFORD
R.R.Sta.-P.O.-Express
Hotel-Store-Garage
LONGMIRE SPRINGS
Supervisors Office
Longmire Post Office
NATIONAL PARK INN
LONGMIRE HOTEL
PUBLIC CAMP GROUND
Store-Telegraph-Garage
2.4MI
4.2MI
Nisqually River
Kautz Creek
KAUTZ CREEK PUBLIC CAMP GROUND
Silver Falls
RANGER CABIN
Scale
1/2 0 1 2 3 4 MILES
Trails
1917

possible to change location of the camp as planned. Apparently the new plan of operation has proven entirely satisfactory to the public. There have been many expressions of approval of the plan and service and no complaints. Under the new plan of operation patrons are allowed to do very much as they like. Furnished tents, with or without bedding, may be rented at very moderate prices. Patrons may have meals at a lunch counter operated by the camp or they may do their own cooking as they elect, the company furnishing fuel to those who desire to cook for themselves. Campers' supplies are sold at New Paradise Camp so that patrons may, in every way, be governed entirely by their own wishes in their manner of living. New Paradise Camp has been liberally patronized during the past season. All of the equipment has been employed most of the season and the camp has many times been filled to overflowing. With the accommodations offered by Paradise Inn and New Paradise Camp, as many as 600 people have been accommodated in Paradise Valley on several occasions during the past season.

Glacier Camp: This camp is located at the terminus, or "snout," of Nisqually Glacier, 5 miles above Longmire Springs. The camp was operated last year, a large tent serving as dining room. Last fall a very attractive log and shingle structure took the place of the tent dining room. The new structure has been in service during the past season. A number of bungalow tents are operated in connection with this camp and provide sleeping quarters. The camp is supplied with electric current and the bungalow tents are heated and lighted in this way. Glacier Camp provides sleeping accommodations for 40 people. A very important service of this camp is that of providing quick service and refreshments of all kinds for automobilists who stop for a short period at this location. The camp has been well operated and has established a good reputation with patrons.

Transportation: An important branch of the company's business is that of handling the stage and automobile transportation within the park and from Ashford and Tacoma to national-park points. Twelve-passenger auto stages handle train passengers from Ashford to all points within the park and seven-passenger touring cars are operated on daily schedule from Tacoma to park points.

National Park Inn.—The franchise to operate this hotel, located at Longmire Springs, is held in the name of the Tacoma Eastern Railroad and expires May 1, 1921.

The building is a 2½-story frame structure 125 feet long and 32 feet wide. There are 36 guest rooms in the main building, and through the use of tents 250 guests may be accommodated. There is, in addition, a very attractive clubhouse or assembly room built of pine logs. Water is taken from the Nisqually River for the operation of an electric-light and refrigerating plant, which also supplies electric light to all Government buildings at Longmire Springs.

INFORMATION BUREAU.

A bureau of information, in charge of Prof. J. B. Flett, park ranger, was maintained at Longmire Springs for the purpose of keeping visitors informed in regard to points of interest in the park, assigning parties to the public camp grounds, etc.

Prof. Flett's intimate knowledge of the flora, trees, and points of scenic interest in the park was a source of much interest. This information was sought by large numbers of visitors.

CRATER LAKE NATIONAL PARK.

ALEX SPARROW, Supervisor, Crater Lake, Oreg.

GENERAL STATEMENT.

Crater Lake National Park was created by act of Congress approved May 22, 1902, and is located on the crest of the Cascade Mountains in southern Oregon, about 60 miles from the California line. It is approximately 13½ miles east and west and 18 miles north and south and contains 249 square miles, including the wreck of Mount Mazama, at one time a giant among the mountains of the earth. Subsequently all that portion above 8,000 feet elevation disappeared—sank into the bowels of the earth—leaving a vast crater 5½ miles in diameter, which gradually filled with pure, crystal water to a depth of 2,000 feet. On all sides of the lake thus formed the walls of the cauldron still tower to a height of from 500 to nearly 2,000 feet.

Crater Lake was first discovered by white men on June 12, 1853. There were 22 prospectors in the party, of whom the leader, Mr. John W. Hillman, then of Jacksonville, Oreg., was the last survivor. Mr. Hillman died in Hope Villa, La., February 19, 1915, at the advanced age of 83 years.

The tract was but little known, even among residents of southern Oregon, when Mr. Will G. Steel, on August 16, 1885, started a movement for the creation of a national park, which was successful only after 17 years of strenuous labor. Then came a long struggle for development, which is just beginning to bear fruit. Probably the first step in that direction consisted in stocking the lake with rainbow trout, which was also done by Mr. Steel, who in 1888 carried a few minnows nearly 50 miles and got them into the waters of the lake in good shape. The fishing now is unsurpassed and the fish are of excellent quality.

ROADS.

A few years ago an appropriation was made by Congress for the survey of a comprehensive system of roads within the park, the main feature of which consisted in a road entirely around the lake, close to the rim whenever possible. This survey was made under the direction of the Secretary of War, two seasons being required to complete it, and a report thereon was submitted to Congress, estimating the total cost, including $65,000 for a sprinkling plant, at approximately $700,000, and recommending that it be placed under the continuing-contract feature in a manner similar to certain harbors. Of this amount an appropriation was made of $50,000 for use during the season of 1913, $75,000 for 1914, $85,000 for 1915, $50,000 for 1916, $50,000 for 1917, and $50,000 for 1918, making a total to date of $360,000.

Under these appropriations grading has proceeded steadily, resulting in the reconstruction of old roads and the building of new ones, until at this time there are 51 miles of well-constructed dirt roads in use, leaving 6 miles of construction for the season of 1918, when the road around the rim will be complete, providing an excellent highway that will soon become famous throughout the world for its unsurpassed scenic beauty and grandeur.

TRAILS.

Three trails were constructed this season, radiating from Crater Lake Lodge—one to the boat landing, 1¼ miles, descending 900 feet on an easy grade; one to Garfield Peak, 1¼ miles, ascending 1,000 feet and affording magnificent views of the lake and many miles of surrounding country; and one to the Watchman, 4 miles, a winding, scenic trail, passable for horses and affording extraordinary views of the lake for the entire distance.

TELEPHONE SYSTEM.

The National Park Service controls 20 miles and the United States Engineer Department controls 34 miles of telephone lines in the park. All service in the park is free. Government messages are transmitted free over 9 miles of commercial line to Fort Klamath, in exchange for 50 per cent of the revenue from private calls to or from the park. The revenue from this service is small and necessitates a switchboard at park headquarters. A movement, however, is under way to obviate the necessity of this switchboard. The United States Engineer Department also has 14 miles of line from the east entrance of the park to Kirk, at the end of the railroad. Considering the temporary construction of much of these lines, the service is very good.

TRANSPORTATION.

A line of automobile stages is maintained by the Crater Lake Co. from Medford, on the main line of the Southern Pacific Railway, and from Klamath Falls, in eastern Oregon, to the park. All first-class tickets between Oregon and California points are good via Crater Lake during the season, with the addition of the stage fare between Klamath Falls and Medford.

HOTELS.

Crater Lake Lodge is located directly on the rim of the lake, 1,000 feet above the water, where comfortable quarters are available for guests. The lodge is a

cut-stone building containing 60 rooms, some of which have hot and cold water and other conveniences.

Besides the lodge, Anna Spring Camp, adjoining the park headquarters, 5 miles distant, is maintained at cheaper rates, where comfortable quarters may be obtained, with well-floored tents for sleeping accommodations. A general merchandise store is also maintained at this point, where gasoline and other supplies may be purchased.

Free camping privileges are accorded the public throughout the park, subject only to the rules and regulations of the National Park Service.

WILD ANIMALS.

The park abounds in black and brown bear, black-tailed deer, cougar, lynx, timber wolves, coyotes, pine marten, fisher, several varieties of squirrels, ringtail grouse, the common pheasant, Clark crow, and numerous varieties of birds common to the country at large.

FISH.

There are no fish in any of the waters of the park except the lake itself and Anna Creek, below the falls. Crater Lake is abundantly supplied with a fine quality of rainbow trout. No fishing is permitted except with hook and line and a limit of five in one day is maintained. The fish are large and the flesh is firm. A few have been taken 25 to 28 inches long, weighing from 6 to 7 pounds.

FOREST FIRES.

One small forest fire occurred in the park this season, but it was brought under control before any damage was done. There were many fires outside and at some distance from the park, particularly to the southwest. At times the view of the lake was entirely obliterated by the dense clouds of smoke that rolled in from these fires, but an east wind for a few hours always cleared the atmosphere.

RANGER FORCE.

The ranger force consists of one permanent first-class ranger and three rangers for the months of July, August, and September. Two ranger cabins were constructed this year, one at the east and the other at the west entrance. They were built of logs and are very artistic and well constructed. We now have a cabin at each of the three entrances.

VISITORS AND AUTOMOBILES.

The heavy snowfall in the winter and the late spring delayed the regular tourist travel about three weeks. After much shoveling of snow by the Crater Lake Co., automobiles arrived at park headquarters July 7 and at Crater Lake Lodge July 18, but the roads were not in condition for regular travel until August 1.

The number of visitors and automobiles are as follows:

	Visitors.		Automobiles.	
	1916	1917	1916	1917
East entrance	859	1,174	193	293
West entrance	9,571	5,368	1,293	1,234
South entrance	1,835	5,103	1,163	1,229
Total	12,265	11,645	2,649	2,756

RECOMMENDATION.

I wish to call the attention of the Service to the recommendation of my predecessor, Will G. Steel, in his report of 1916, that a water system be installed on the rim near the lodge for the use of campers and for other purposes. This water supply is of the utmost importance. Only through the generosity of the Crater Lake Co. in furnishing water to us were we enabled to establish a construction camp of 25 men on the rim instead of 1 mile distant from our trail work.

WIND CAVE NATIONAL PARK.

THOMAS W. BRAZELL, Supervisor, Wind Cave, via Hot Springs, S. Dak.

GENERAL STATEMENT.

The act of Congress approved January 9, 1903 (32 Stat., 765), made reservation of a tract of land in South Dakota, comprising 10,522 acres, to be known as the Wind Cave National Park.

When this act was passed there were several tracts of patented lands within the boundaries of the park, all of which have since been acquired by the Government.

The park, in shape, is almost square and is situated in a semimountainous region on the southern slope of the Black Hills, in the southwestern corner of South Dakota, about 36 miles from the southern boundary of the State and 24 miles from the Wyoming line.

The altitude at headquarters is 4,030 feet and portions of the mountains west of the cave 4,700 feet.

The park is in charge of a supervisor, the only employee on regular salary. During the past summer two park rangers have been employed for guide and general service.

THE CAVE.

The chief attraction is the cave, entrance to which is somewhat north of the center of the park and about 11 miles north of Hot Springs, the most accessible town of any importance.

The main road through the park, comprising 6 miles, constitutes a portion of the Denver-Deadwood highway, the Black Hills part of which is famed for its beautiful and varied scenery.

This road is rapidly gaining the favor of the automobile traveling public, traffic this season exceeding that of last season by approximately 40 per cent.

The Chicago, Burlington & Quincy Railroad and the Chicago & North Western Railway have regular service, with east and west connections, to Hot Springs, S. Dak., and a majority of visitors to the park come from this town.

Hot Springs is the post office and shipping point. The cave has been made accessible to the public by the working out of passageways to admit of easy travel; it has also been necessary to build several stairways, landings, railings, and bridges within the cave. The lower levels to which visitors are conducted are possibly 480 feet below the entrance, and the aggregate length of all routes now open to the public approximates 3 miles.

There is a spring and miniature lake in one place, but aside from these the cave is without moisture, except from condensation of a heavily laden air and seepage from surface here and there. In this way moisture gathers on the ceilings of some chambers and drops to the floors, causing wet spots, though in very few places.

The various formations within the cave are most wonderful exhibitions of diversified beauty and the inimitable work of nature.

The extent and number of the various crevices, cross passages, and chambers which make up the cave no one knows and no one can intelligently guess, though we do know that the part open to the public is a very small fraction in extent of the part that has been explored and not surveyed; beyond this the wildest guess is admissible.

VISITORS.

There seems to be a gradual increase in the number of visitors to the park each succeeding year, the number this year being the highest of record. Every State in the Union has been represented, and several of the foreign countries, though about 80 per cent of the visitors are from this or near-by States.

South Dakota this season has been represented by 50 per cent of the total number, Nebraska by 30 per cent, Iowa by 5½ per cent, Wyoming by 3 per cent, Illinois by 2 per cent, and North Dakota, Minnesota, and Montana each by less than 2 per cent but more than 1 per cent.

It is the custom for an authorized guide (or guides) to conduct visitors through the cave, and as a trip requires about three hours, but two trips each day are



MAP OF CRATER LAKE NATIONAL PARK

made. The established time of entrance is at 9 a. m. and 2 p. m. As a great many auto tourists do not know of the established hours for starting for cave trips, they can not manage to get here at the right time, and often do not wait for the trip, and can not be accommodated unless extra guides are available. The widest publicity should be given to times of entrance to the cave, which would result in far less disappointment and a very substantial increase in the number of visitors to the interior of the cave.

The pavilion and other camp sites are occupied by one or more camping parties nearly every night during the summer season, but it is seldom anyone remains for a longer time than one day.

Since June 1, 1916, the entrance fee to the cave has been made 25 cents.

ROADS.

The main park road, about 6 miles in extent, is in very fair condition for a dirt road, but calls for continuous attention to keep it so. The general direction of the road is north and south, though it deviates therefrom on account of buffalo fence and topography of the park. The road is of soil interspersed with gravel and rock, and requires considerable work for first-class maintenance. Much work was done during the past year on the park road. The entire way was shaped, smoothed, and cleared of loose rock, grades reduced in many places. curves reduced or eliminated, where practicable, and repeatedly dragged.

It is planned to have sometime in future a good permanent road through the park, and with this end in view each parcel of road built or repaired is, as far as possible, a direct contribution thereto. The practice is showing gratifying results. Work of installing culverts and gutters for adequate drainage is well started and will be pushed to completion as funds are available.

Diverging from the main park road at a point one-half mile south of headquarters there is what is called the Martin Valley and Buffalo Gap road; the park part of this road is in good shape, and with but little work by those interested a very good road from the park to Buffalo Gap would result.

BRIDGES.

The four oldest and largest bridges on the park road are about to collapse and must be replaced by new crossings; no doubt this will be done, when the season is over, and they will be ready for traffic next season, as request for funds for this purpose has been made.

BUILDINGS.

The buildings consist of supervisor's residence, public or registration building, ice house, barn, workshop, camp pavilion, and house over the entrance to the cave. All are in good condition, except that the residence has never been finished upstairs and the house over the cave entrance is badly dilapidated.

WATER SUPPLY.

The source of water supply is a spring about half a mile west of and 150 feet higher than the park residence. An old pipe line serves to conduct the water from the spring to the recently installed supply or storage tank. This reservoir is of rock and cement, and has a capacity of 450 barrels. It is situated at an elevation of 70 feet above the park buildings.

The water is conducted by gravity, through galvanized pipe, to the various outlets in the yard and street and to a sanitary drinking fountain at the public building. Last fall the system was extended to the barn. The supply pipe from the spring to the reservoir, a distance of one-half mile, being too close to the surface of the ground, is affected by atmospheric conditions, the water getting unpalatably warm in summer and very cold in winter. Last winter it was obstructed by freezing, which caused much inconvenience and considerable expense to open up. It is planned to remedy this defect before cold weather. With the above exception the water system has worked perfectly since being built.

The flow from the spring averages about 75 barrels a day and the water is excellent.

STREAMS.

There is a running stream which skirts the northern boundary, meandering on and off the park. This stream is suitable for propagation of trout, with which it was generously stocked this year.

BIRDS.

More than 60 varieties of birds are found here at some time of the year, and all, more particularly those classed as game birds, are noticeably tamer than they are outside the park. Many kinds of birds stay the year round, but most are migratory.

The bobwhite, yellow-legged prairie chicken, and pin-tailed grouse are present within the park, but the prevalence of rainstorms in nesting season was severely destructive to grouse and prairie chickens this season, and the young are very few in number.

PREDATORY ANIMALS.

Coyotes and bobcats (lynx) are common and occasionally a gray wolf is seen. The combined efforts of Forest Service, Biological Survey, park management, and settlers have materially reduced the number of predatory animals in this vicinity.

Weasel, mink, skunk, and porcupine are found here; the first two are rare, the latter numerous. The weasel, mink, and coyote are a menace to bird life. The magpie, a most beautiful bird itself, is the most destructive of all to bird life and should be exterminated.

NATIONAL GAME PRESERVE.

A national game preserve has been established in the park under the provisions of "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1913," approved August 10, 1912 (37 Stat., 293), as follows:

"For the establishment of a national game preserve, to be known as the Wind Cave National Game Preserve, upon the land embraced within the boundaries of the Wind Cave National Park, in the State of South Dakota, for a permanent national range for a herd of buffalo to be presented to the United States by the American Bison Society, and for such other native American game animals as may be placed therein, the Secretary of Agriculture is authorized to acquire, by purchase or condemnation, such adjacent lands as may be necessary for the purpose of assuring an adequate water supply, to inclose the game preserve with a good and substantial fence, and to erect thereon all necessary sheds and buildings for the proper care and maintenance of the said animals, $26,000, to be available until expended."

WILD ANIMALS.

As a natural game preserve there is but one animal, the whitetail deer, that has come under the protection of the park. These are present in small numbers throughout the year, with more in the autumn season, on account of the hunting to the northward which drives them to the park for refuge.

The establishment on the game preserve of herds of bison, elk, and antelope has resulted in an added interest by the public in the park. The location is particularly adapted to this purpose and the animals are doing well. The inclosure is about the western portion of the park and creates a pasture of nearly 4,000 acres.

PERMITS FOR TRANSPORTATION BY AUTOMOBILE.

For the year January 1, 1917, to December 31, 1917, seven permits for transportation of passengers by automobile were issued.

RECOMMENDATIONS.

Employment of a park ranger for the entire year, for guide service and labor.

Appropriate fence to be built for residence yard.

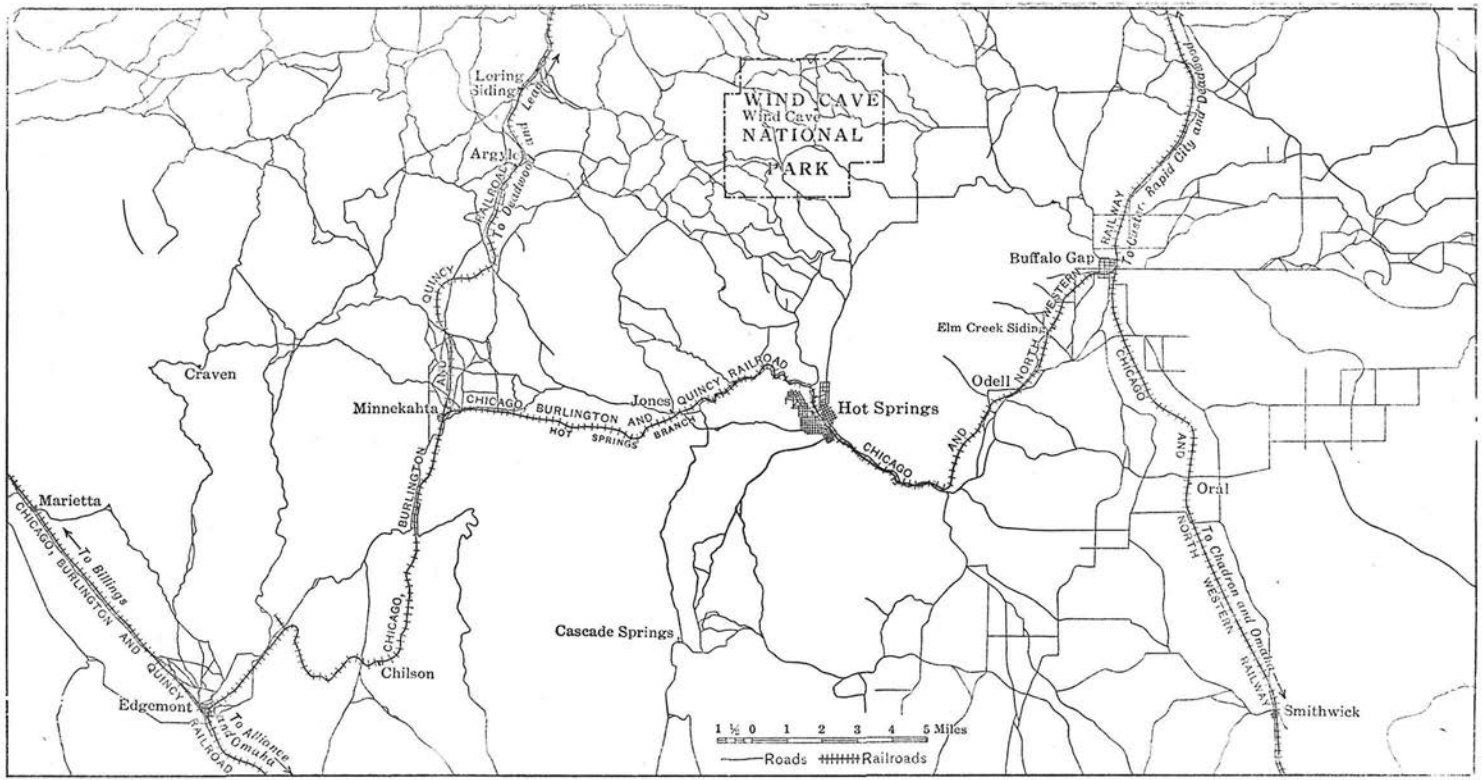
Cement crossing in street, and pavement in front of registration building to be installed and a walk from front around to rear of residence constructed.

New building, of rock, over cave entrance, to be constructed with cement floor.

Four new bridges to be built on park road, replacing old ones.

One mile of road to be surfaced with gravel.

Guardrail to be installed from public building across bridge toward pavilion.



MAP SHOWING RAILROAD CONNECTIONS FOR WIND CAVE NATIONAL PARK.

PLATT NATIONAL PARK.

R. A. SNEED, Supervisor, Sulphur, Okla.

GENERAL STATEMENT.

By the acts of Congress of July 1, 1902 (32 Stat., 641), and April 21, 1904 (33 Stat., 220), 629.33 and 218.98 acres, respectively, at the town of Sulphur, Okla. (then Indian Territory), were segregated as the "Sulphur Springs Reservation," which designation, by joint resolution approved June 29, 1906, was changed to "Platt National Park."

The park, with a total area of 848.22 acres, extends in irregular form a distance of approximately 3 miles from northeast to southwest along Travertine Creek, including a portion of Rock Creek, into which the Travertine empties, and it has a circuit of 9 miles.

There are within the park a number of known mineral and three nonmineral springs. The principal groups of these springs are the Bromide and Medicine Springs (to which has been added the Sodium-Chloride, a new spring recently developed), in the extreme western portion of the park; the Beach, Pavilion, and Hillside Springs in the north-central portion of the park; and the Sulphur-Bromide, Black Sulphur, and Wilson Springs in the south-central part of the park. Sulphur springs predominate.

The Antelope and Buffalo Springs, nonmineral in character, are situated at the extreme northeastern end of the park, with an elevation of 1,080 feet above sea level at the Antelope Spring and 1,078 feet at the Buffalo. They have an approximate discharge of 5,000,000 gallons daily into Travertine Creek and are the source of this beautiful creek. A number of other springs in the bed of the creek add to the volume of water which glides down this stream and forms its pretty waterfalls.

The Medicine Spring was discovered within the last few years, and while it has been confined it is still subject to overflows by Rock Creek and the matter of its proper improvement will be taken up during the present year.

VISITORS.

The weather during the present season for visitors to this park has been unusually pleasant. There have been but few days during the entire season when a cool breeze has not been blowing, and we have just enough rain to keep the roads in good condition for automobile traffic. For the last few years the greater number of visitors to this park have come in cars, and the park roads have proven a great attraction to this class of visitors.

During the present summer the visitors have averaged in number about the same as last season, with this season perhaps leading last during the month of August. I should estimate that about 35,000 people visited the park during this season.

There were registered in the park office during the fiscal year 1,146 persons who came into the park and camped for three days or more, which is more than twice the number who camped in the park during last season. Last year only 547 persons camped here. Among the 1,146 campers during the fiscal year just ended there were three companies of Boy Scouts with their scout masters from adjacent towns, who tramped from their homes to the park and went swimming soon after their arrival.

As shown by the records of the laborer at the Bromide Spring pavilion, the visitors there during the fiscal year just ended numbered 147,889, exceeding the number of visitors for last year by 47,552. As before, however, this total is made up from day to day of visitors and resident citizens who make frequent trips to the springs, and does not represent as many individuals. At the same time the increased number of visitors to these springs indicates a decided increase in the number of individual visitors to the town for this season over last.

The practice of having persons who desire consignments of the Bromide and Medicine waters shipped to them secure physician's orders for same has been discontinued during the year just ended, and license was issued to Mr. Ira E. Pacey to ship these (and other waters of the park) on a percentage basis to the Government, with the privilege of advertising the waters and making shipment to anybody who desires it, but giving preference to invalids during the season for visitors to the park when the Bromide water is often scarce. Under

this privilege Mr. Pacey pays the Government at the rate of 1 cent per gallon on all water shipped, which increased the revenues accruing to the park from the sale of this privilege. During the year there were shipped a total of 7,205 gallons of Bromide water, 2,725 gallons of Medicine, and 270 gallons of the new Sodium-Chloride spring water, a total of 10,200 gallons shipped. Mr. Pacey's records show that these waters have gone into the following States: Minnesota, Nebraska, Wyoming, Colorado, Kansas, Texas, Arkansas, Missouri, Tennessee, Alabama, Ohio, New York, Louisiana, and Oklahoma.

During the year a total of 73,562 gallons of water (including the water shipped) were taken from the springs, which exceeds the total amount taken away last year by 15,472 gallons. Of the 73,562 gallons, there were 50,421 gallons of Bromide, 21,748 gallons of Medicine, and 1,393 gallons of the Sodium-Chloride water taken.

SODIUM-CHLORIDE SPRING.

Because of the scarcity of the Bromide water and the increasing demand for it, in October, 1915, an allotment was made for the purpose of investigation, surveys, etc., relative to a mineral spring (thought to be bromide) which was escaping into the bed of Rock Creek near the Bromide Spring; but due to high waters in the creek and continued rains up to the end of the fiscal year 1915–16 I was unable to have this investigation made during that year, and the allotment was canceled. In January of 1917 a new allotment was made and contract entered into with A. A. Letterman, foreman in charge of construction of the new Bromide Bridge, for building a concrete wall inclosing this spring and carrying it up to a point above low-water level, thus completely isolating the waters of the spring from those of the creek. A sample was taken and sent to the Department of Agriculture for analysis by the Bureau of Chemistry, and it was ascertained that the composition of this water is very similar to that from Bromide Spring, excepting that the new spring contains no iron and 7.2 milligrams per liter of hydrogen sulphid, while the Bromide Spring water contains 8 parts per million of iron oxid and no hydrogen sulphid. Also, the bromin content of the new spring is less than half the amount as shown in the analysis of water from the Bromide Spring. Sodium-chlorid being the predominant hypothetical combination of the component parts of this water, this spring was named the "Sodium-Chloride" Spring. It was deemed by the service so valuable as to warrant completing the inclosure and covering it over (thus preventing overflow by the creek and contamination) and piping over to the spring house for use. This was done at expense of the park revenues, and a pump was provided for conducting this water into a container inside the Bromide pavilion for public use. It has proved to be a great help in supplying the increased demands for the waters of this group of springs.

PAVILION AT BROMIDE.

At the end of the fiscal year 1916 the pavilion over the Bromide Spring which replaced the one destroyed by the flood of January 21, 1916, had been completed with exception of inside plastering, latticework under the pavilion, painting, and the smooth topping which had to be given the cement floor. During the last fiscal year this was done, and both the Bromide and Medicine Springs were provided with earthenware containers and pumps for bringing these waters up into the pavilion for the convenience of the public. On the east end of the pavilion I built during the year 1916–17 a small office building, size 8 by 14 by 10 feet, with flue attached, for use of the laborer at these springs. This office was plastered and finished throughout in exact accord with the main pavilion, and greatly adds to the outside appearance of this building, as well as to its usefulness.

BROMIDE BRIDGE.

On June 26, 1916, formal contract was entered into with the Illinois Steel Bridge Co., of Jacksonville, Ill., for the construction of a steel truss bridge, including concrete piers and abutments, superstructure, flooring, electric-lighting fixtures, and all appurtenances, for the sum of $4,353, the dimensions of same to be 120 feet in length by 10 feet in width, outside measurements. Necessarily this bridge could not be built during the fiscal year and final completion was not effected until April 21, 1917. This bridge was located and installed under the supervision of Mr. A. H. Winter, draftsman of the department, who designed the bridge. It was built about 350 feet upstream from the location of the former bridge, where it could be safeguarded from damage by future floods by throwing

it diagonally across the creek and landing the south abutment on a solid rock foundation at a point where the curve of the creek throws the water against the rock. This leaves a walk between the bridge and the Bromide pavilion, which will have to be improved in a manner to prevent its erosion by the high waters of Rock Creek. This is made the subject of one of my recommendations in this report. At present a temporary walk has been provided, and temporary approaches at each end of the bridge, which will have to be replaced by permanent approaches made of cement and filled in with gravel.

RESIDENCE AT BROMIDE.

Contract was let under date of June 16, 1916, to John T. Chapman for the erection of a four-room bungalow, with screened back porch, pantry, bathroom, and an L porch on the front and side for use as a residence for the laborer at the Bromide Spring, the former residence of the laborer having been destroyed in the flood of January 21, 1916. This residence was constructed during the fiscal year just ended and is a substantial cottage, equipped with all modern conveniences except the drops for electric lights.

ROADS AND TRAILS.

But $275 was spent during the past fiscal year for repairs to roads and trails, due to the fact that I had gotten the roads in the park all in good repair the previous year, and to the further fact that we had very little rain here during the last fiscal year to wash the roads. The flood of January 21, 1916, badly damaged a number of the roads in the park, and a special appropriation was made for repairs to all storm damages, and this enabled me to put these damaged roads in excellent repair during the fiscal year 1916.

COMFORT STATIONS.

During the fiscal year just ended I had three cement comfort stations built in the park, bungalow style, size 10 feet 4 inches by 15 feet 4 inches by 10 feet high, with cement floors. These are divided on the inside into three compartments and have all city sewer and water connections and are provided with lavatories and a small closet for garden tools. Two of these are located in the vicinity of the Bromide Spring and one just northwest of the Lincoln Bridge in West Central Park. Foundation was laid for the fourth station (located in West Central Park), and this has been completed since the end of the fiscal year.

SWIMMING POOL IN TRAVERTINE CREEK.

Allotment was made from the revenues during the last fiscal year for building a dam across Travertine Creek at Sylvan Cove just below Panther Falls for the purpose of enlarging the swimming pool at this location, but this was not quite completed prior to the end of the fiscal year. It has since been finished and is proving an added attraction to the visitors who come to this park. This dam is 67 feet in length, 5 feet high, and 4 feet wide at the bottom, sloping to a 3-foot width at the top.

RECOMMENDATIONS.

Beach Springs (three in number), located just north of the Coney Island ford, should be repaired. These springs are completely submerged with every flood stage of Rock Creek. The waters of these springs are preferred by many visitors to the park, and I feel that they should be improved and a pavilion erected over them. I recommend that the proposed improvements at these springs consist of a large inverted funnel-shaped inclosure, confining the three springs so as to make a combined flow of the three springs from one outlet, the funnel to be constructed of galvanized iron, over which a cement covering should be laid, the approximate measurement of the inclosure to be 600 feet. Surrounding this inclosure to the springs proper should be built a square inclosure to prevent overflow of these springs by the creek. This second inclosure should be about 6 feet high at the creek edge and should bed back into the hill, the depth of the side walls gradually decreasing as the hill rises, but the top of the wall remaining level with the wall along the creek edge, the approximate measurement of this entire wall being 540 square feet.

On the bottom of the outer inclosure should be laid a cement floor, rising with the hill in a succession of 4-foot steps with 6-inch risers, the approximate surface of this floor measuring about 720 feet.

On the top of the outer inclosure to this group of springs, supported by conglomerate columns, should be erected a pavilion, size 24 by 30 by 9 feet, having pagoda roof with a small dog house on the top, supporting a flagpole. The probable cost of labor on this entire improvement, including the pavilion, would be about $900, with a total cost of $2,000, and I recommend that that estimate be submitted to Congress for an appropriation to cover this cost.

It will be noted that my estimate covering cost of this improvement is much greater than estimates in former reports, but this is due to the greatly increased cost of all commodities and labor.

Each year of my incumbency in this office I realize more forcibly the necessity and desirability of a Government owned and operated bathhouse in this park, and I repeat in this report my recommendation of several years past that the Government build this bathhouse, the estimated cost of the building, including equipment, not to exceed $20,000. The supply of water for the bathhouse could be obtained by gravitation from Hillside Spring, while the sewage could be emptied into the manhole of the flush tank on the south bank of Travertine Creek, which is a part of the siphon to line E of the park sewer system, and a distance of about 300 feet from the proposed location of the bathhouse. The material to be used in the construction of this building should be brick and stone, but it is impossible to give the size of the building or the itemized cost of material, labor, etc., without the assistance of an experienced architect.

Around the East and West Central Parks and around the park at Bromide Springs I should like to be able to build an iron fence of two rails of 1½-inch pipe with 2-inch posts set in cement, with ornamental conglomerate rock gateposts at the entrance, the whole to cost not exceeding $3,000. This character of fencing around these parks I desire for the reason that these parks are near the city of Sulphur and are much frequented by visitors to the park, and the old method of fencing with wire, especially for these portions of this park, is not in keeping with what might be expected in a national park. Without fences of some kind around these parks it is impossible to keep campers from stopping overnight in them, or for a noon meal, and leaving them littered up.

I also desire that $1,000 be requested of Congress for the purchase of 10,000 post-oak posts for use in replacing the posts which were used in building the park fences nine years ago. These posts were originally green oak, and many of them are badly decayed, and if they are not soon replaced with new ones the park fences will fall to pieces and have to be replaced entirely, as the wire would rust if allowed to fall to the ground. A great many of the posts have already rotted off at the ground and are now hanging by the wire, and some of the wire has also been rendered useless from contact with the ground.

I shall need $1,000 for building a permanent walk from the new Bromide Bridge to the pavilion over the Bromide Spring along the foot of the bluff. This walk should be built with a strong retaining wall of rock and cement so as to prevent its being washed by the high waters of Rock Creek, and it should be surfaced with either cement or the park native gravel. It would be impossible to decide as to which of these would be preferable until the work was under way. The length of the walk would be about 350 feet, and the cost of labor would be the principal item of expense in its construction, as the rock and gravel are available within the park. Cement would probably be the only commodity which would have to be purchased.

The Cliffside trail is badly in need of repair, especially as to bridges across the small ravines. These were constructed of old lumber when the trail was built, and they should be replaced with cement culverts. The trail has been eroded in many places by the surface waters coming down over the bluff, and these should all be filled in and the trail smoothed off. I estimate that the total cost of improving this trail would be $500, and I recommend that this amount be included in the estimates to Congress.

SUMMARY.

The appropriations above recommended total $34,800. In all cases where recommendations of former years are repeated in this report the costs exceed those in the previous estimates. This is due, as previously stated, to the increased cost of both commodities and labor. While the total asked for necessarily is increased, nothing has been included in my estimate which I do not consider absolutely essential to the proper development of this park. The numerous natural advantages here should be carefully maintained and improved upon.

This park is so situated that it is probably the only place sufficiently near to the warm Southwestern States for persons of moderate means to be able to avail themselves of the relief from the heat which the cool breezes here afford. The climate here both winter and summer is ideal. It is always warm enough during the winter months to permit of outdoor exercises, and during the summer when people all over the country are suffering from heat prostrations there is a cool breeze blowing in this park. The waters of the park have proved to be of material benefit in the treatment of numerous ailments, and I feel that the Federal Government should be asked to appropriate for its upkeep and improvement in the amounts herein recommended.

MESA VERDE NATIONAL PARK.

THOMAS RICKNER, Supervisor, Mancos, Colo.

GENERAL STATEMENT.

The Mesa Verde National Park was established by the act of June 29, 1906 (34 Stat., 616). It is situated in the extreme southwestern portion of Colorado, in Montezuma County, and originally embraced an area of 66.2 square miles, or 42,376 acres, but by the act of Congress approved June 30, 1913, the boundaries of the park were so changed as to include an aggregate area of 76.51 square miles, or 48,966.4 acres.

CHARACTER OF THE COUNTRY.

Mesa Verde is a high table-land dividing the Mancos and Montezuma Valleys. This mesa is elevated above the valleys some 2,000 feet, and rises abruptly from their floors, with precipitous sides, like the walls of a canyon. The northern extremity of this great mesa terminates in Point Lookout, which juts out between the two valleys, a landmark for miles in all directions. The surface of this table-land is broken by innumerable canyons, which start from the very edge of the mesa on the northern and western sides, and, growing deeper and more rugged as they descend, finally open out into the Mancos Canyon. These canyons have many great caverns in their side walls, with the overhanging rock for roofs, and in these caverns are found the ruins of the cliff dwellings.

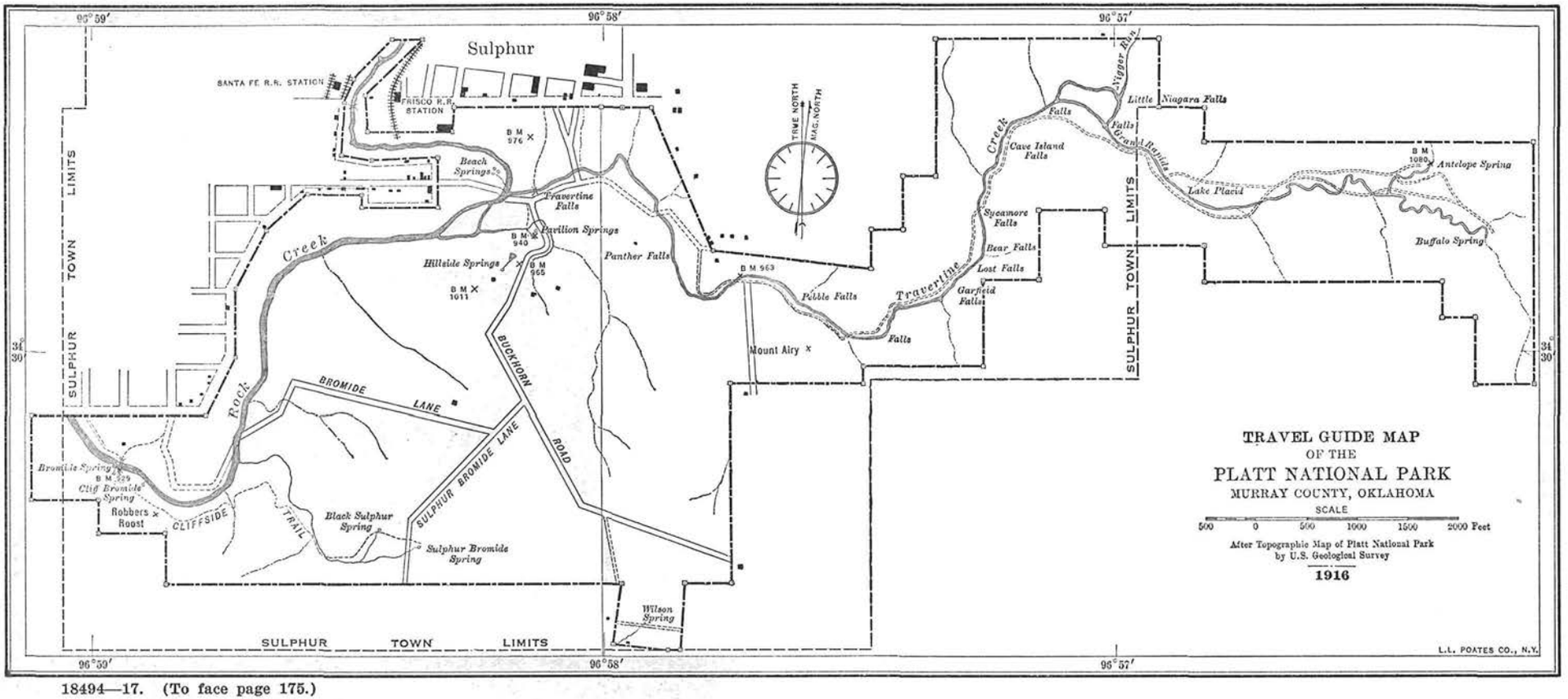
The principal ruins are found in Navajo, Cliff, Soda, Long, and Rock Canyons, though there are hundreds of lesser ruins in all the canyons in the park. Spruce Tree House is in Spruce Canyon, a branch of Navajo; Cliff Palace is in Cliff Canyon; Balcony House is in Soda Canyon; Peabody House and Inaccessible are in Navajo Canyon; Long House is in Rock Canyon; and a recently discovered ruin is in Long Canyon. These ruined houses, or villages, are found in the recesses of the canyon walls and, protected from the weather, are remarkably well preserved. Some of them are small, with only a few rooms, while others are large and must have accommodated a large population. The ruins found on the mesas, without the protection of the overhanging cliffs, have not withstood the ravages of time and are now but mounds of stone and earth.

Park Point, near the northern boundary of the park, is the highest point, with an altitude of 8,574 feet.

At a point in Long Canyon, just below the ruin known as Spring House, has recently been brought to notice a natural bridge, spanning the small gulch that runs down from under Spring House. The bridge is some 90 feet in span and about 25 feet high to the bottom of the arch. To reach this natural bridge a trail from Spruce Tree Camp has been made, a distance of about 5 miles. The trail is a good one, and tourists can visit the bridge either on foot or with saddle horses.

CUSTODIANSHIP.

The custody of the park is delegated by the Director of the National Park Service to a supervisor, whose office is maintained at Mancos, Colo., the nearest railroad point to the park. The supervisor is assisted by a limited number of rangers, whose duty it is to act as guides through the ruins and to police the park. The best of order has been maintained within the park, and the ruins have been protected from vandalism; in fact, no attempts have been made to evade the rules and regulations.



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STOCK.

It has been the custom of the department to lease the grazing lands to owners of patented lands within the park, and at present there are four leases or permits for the grazing of 1,600 head of cattle. The lessees are required to assist in maintaining order and to guard against fires within the park.

ROADS AND TRAILS.

The roads have been kept in good shape for all kinds of travel. That portion of the road under Point Lookout, where the ascent to the mesa is made, has given the usual amount of trouble, but, by using every precaution, no accidents have occurred on this hill. A system of control of travel over this part of the road, through the use of the telephone in the supervisor's office, allows no cars to meet on this hill, cars being held at the top or bottom of the hill, as the case may be, until the road is clear. Two new trails have been made, one from Spruce Tree Camp to Spring House and the natural bridge, and one from Chapin Mesa to Soda Canyon.

WATER SUPPLY.

The water supply varies very little from year to year, as most of the water in the park is derived from springs and wells. The spring at Spruce Tree House holds out at all times and has thus far furnished all the water required, though with building and the increased number of tourists the demand has been much greater than usual.

RUINS.

During the summer of 1916 Dr. J. Walter Fewkes, of the Smithsonian Institution, uncovered a large building near Mummy Lake. This ruin is near the main road into the park and can be seen for a long distance. It was found to be a much older building than Sun Temple, the ruin uncovered in 1915. The name given this ruin is Far-View Pueblo, because from its position on the top of the mesa a commanding view of many miles of surrounding territory may be obtained.

WILD ANIMALS.

Wild animals are increasing each year, and there are many deer now making their home in the park for the entire year. Mountain lions, too, are on the increase, and several pairs are known to live within or near the park. These animals should be killed off, as they prey upon the deer.

AUTOMOBILES.

Automobiles are now generally employed, although the horse-drawn vehicle still makes the trip, and some parties still go in on horseback, following the more romantic trails instead of the road.

MINES.

George S. Todd operates the only mine in the Mesa Verde, but his workings have been, for the entire year, on the land of the Southern Ute Indians.

LANDS.

There are 720 acres of patented lands within the park, and these lands should be acquired by the Government at as early a date as possible, especially the four claims that lie on the mesa, in the heart of the park—the two Prater claims, the Armstrong claim and the Waters claim.

VISITORS.

The number of tourists registering in the park from May 1 to October 12 was 2,223, a much greater number than for the same time last year. The automobile road from Denver has been the means of bringing many parties from the east. The scenery of Wolf Creek Pass and the Mesa Verde Park is unsurpassed.

RECOMMENDATIONS.

The expense of maintaining in good shape the road ascending the mesa has fully demonstrated the necessity for a new road, not only from a safety point of view, but from an economic one. It has cost more to keep this portion of the road passable and in good shape than it has to maintain all other roads in the park for the season. The new road on the east side of the mesa should be constructed at once, so as to eliminate the only dangerous road in the park. New approaches to some of the ruins should be provided. Strong iron ladders, in place of the wooden ones now in use, should be placed, and I would urge the restoration of Peabody House at as early a date as possible.

GLACIER NATIONAL PARK.

GEORGE E. GOODWIN, Acting Supervisor, Belton, Mont.

GENERAL STATEMENT.

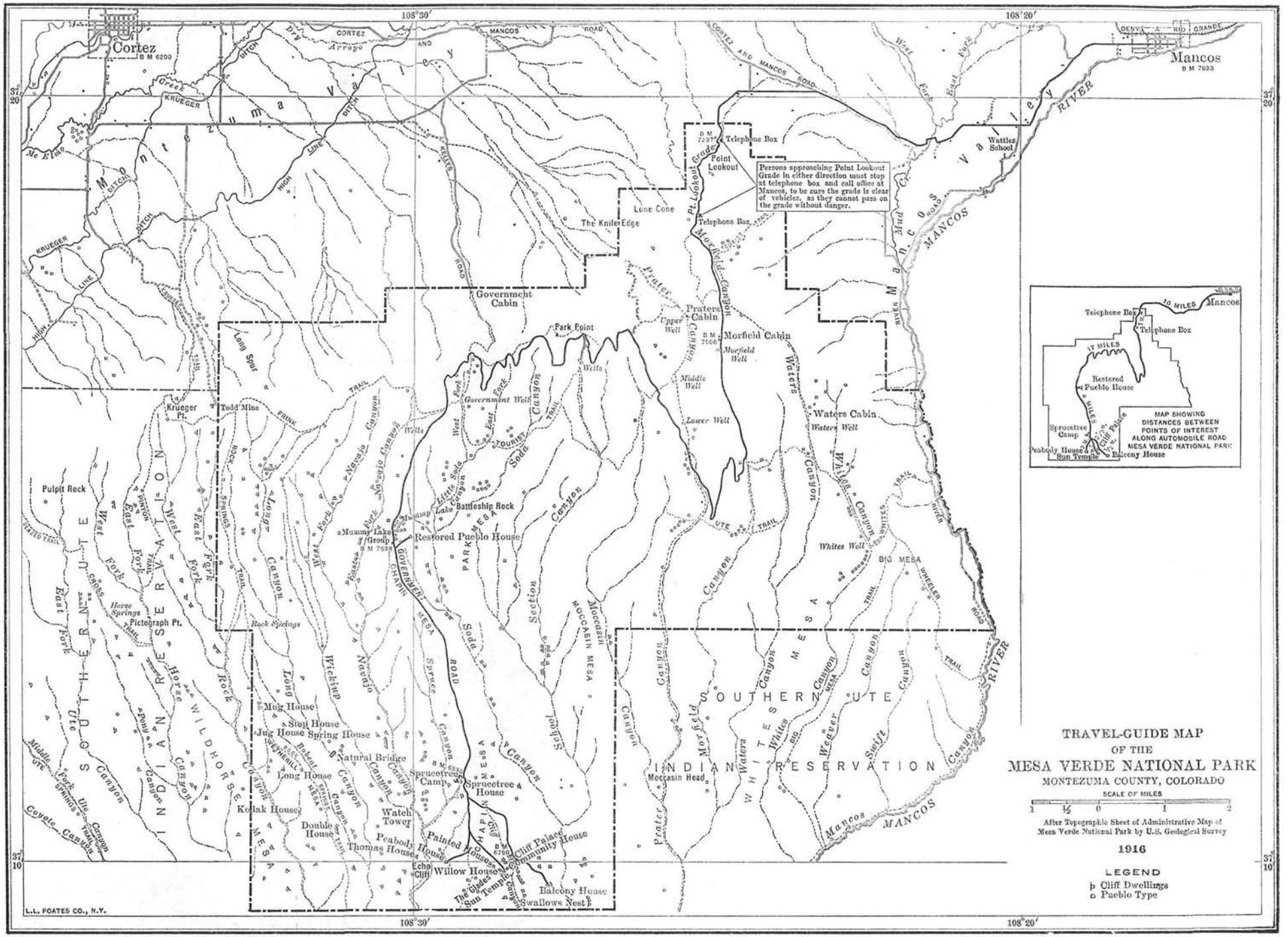
The Glacier National Park was established by the act of Congress approved May 11, 1910 (36 Stat., 354), and is located in northwestern Montana. It embraces 1,534 square miles of the Rocky Mountains and adjacent territory, extending north from the main line of the Great Northern Railway to the Canadian border. The eastern boundary is the Blackfeet Indian Reservation, and the western boundary is formed by the Flathead River. The park, which is irregular in shape, has an area of 981,681 acres. Its greatest length in a northwesterly-southeasterly direction is about 60 miles, with a maximum width approaching 40 miles. Within its borders are attractions for the scientist, nature lover, and tourist unsurpassed by any country in the world, tourists of world-wide experience pronouncing it the Switzerland of America.

The elevations in the park range from 3,100 feet to over 10,400 feet. The high central portions of the area in the northwestern-southeastern axis are formed by the Continental Divide, the peaks and cliffs of which are sharper and bolder than found elsewhere in the United States and are in marked comparison with the open plains of the east and the valleys of the Flathead River on the west. Many of the mountain peaks are difficult to climb, one of which—Mount St. Nicholas, "The Matterhorn"—has never been climbed. Mount Cleveland, the highest mountain in the park, is 10,438 feet in elevation; but the most wonderful of all the mountains is Triple Divide Peak, for from the top of this mountain, and from no other place in North America, one can stand and throw stones into the headwaters of streams flowing northward into the Hudson Bay, into those flowing southward to the Gulf of Mexico, and into those flowing westward into the Pacific Ocean.

Within the confines of the park are 60 or more active glaciers, these ice sheets being the source of beautiful cascades and mountain streams flowing into numerous clear and placid lakes, for which the park is famed. The most noted of these are Lake McDonald, Lake St. Mary, Lake Ellen Wilson, Iceberg Lake, Red Eagle Lake, Kintla Lake, Bowman Lake, Waterton Lake, Quartz Lake, Harrison Lake, Logging Lake, and Two Medicine Lake. Lake McDonald, which is situated at the west entrance, and Lake St. Mary, about 36 miles north of the Glacier Park entrance on the east side of the park, are the two largest and most widely known, and are visited by a large number of tourists each season. They are of easy access and have pleasure launches for the accommodation of visitors. Each lake in the park has a distinct individuality of its own. A special setting of soft, beautifully wooded hills and mountains, or rugged, bold, many-colored cliffs and towering, serrated peaks with dazzling snowcaps, or perhaps blue-white glaciers, all of which present to the eye of the visitor a picture of unsurpassed beauty that is never forgotten.

WEATHER.

The winter of 1916–17 was known locally as a very hard winter. The cold weather came early in the fall and lasted until well on to the following spring, while the snowfall was the heaviest that had occurred for many years. On the 1st of May it looked as though the opening of the trails and roads of the



TRAVEL-GUIDE MAP
OF THE
MESA VERDE NATIONAL PARK
MONTEZUMA COUNTY, COLORADO

SCALE OF MILES
1 ½ 0 1 2

After Topographic Sheet of Administrative Map of Mesa Verde National Park by U.S. Geological Survey

1916

LEGEND
þ Cliff Dwellings
o Pueblo Type

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park to tourist travel would be later than usual, and all indications pointed to severe floods throughout the park. However, the warm weather which started in June was broken up by short periods of cold weather, and as a result the run-off from the mountains occurred gradually and over quite an extended period, and, in the meantime, the weather became sufficiently hot to clear the trails of snow. As a consequence, it was possible to open up the roads and trails of the park earlier than they have been opened theretofore.

The hard winter was followed by an extremely dry summer. Practically no rain fell in the western portion of the park from about the last of June until the date of present writing, September 7, and as a result of this drought a number of forest fires occurred.

VISITORS.

During the 1917 season the number of tourists that visited the park exceeded those of any previous year. From June 1, 1917, to October 12, 1917, there were 14,050 people registered at the two principal entrances of the park, and it is estimated that at least 1,000 other people, who did not enter at these places and who, accordingly, were not registered, visited the park, making a total of at least 15,050. The increase in the number of private vehicles and the number of people entering by private vehicles was quite large, there being 1,121 private automobiles registered at the two principal entrances.

Considering the adverse conditions under which the country is laboring, owing to the war and the unusual business conditions, the number of visitors this year exceeded all expectations and is the strongest possible recommendation as to the popularity of the park, and is indicative of a rapidly increasing growth of travel for the future. The weather, from the point of the visitor, was exceptionally good, as there was but little rain during the tourist season and the average temperature for the summer was somewhat higher than the usual, although as the consequence of the dry weather many forest fires occurred which made the air at times quite hazy and smoky, thus obscuring the mountain views.

ROADS.

There are approximately 130 miles of roads in the park and in the Blackfeet Indian Reservation adjacent to the park, which are repaired and maintained by the service, of which about 100 miles are suitable for use by automobiles, and the remainder, owing to their unimproved condition, are used only by teams and horse-drawn vehicles. All roads in the park have been improved and repaired to some extent during the past year. The principal work completed is itemized as follows:

Glacier Park–Many Glacier automobile road.—This road lies partially on the Blackfeet Indian Reservation and follows a general course parallel to the eastern boundary of the park. It was constructed by the Great Northern Railway Co., but during the past year and a half has been improved and maintained by the service. The principal improvement work on this road consisted of regraveling, widening, installing small drainage structures, and digging small side-drainage ditches. The section of the road which has been graveled lies between the 16 and 23 mileposts, which is from the North Fork of the Cut Bank River through to the Hudson Bay Ridge; from the 25 to the 27 mileposts, which is from Fox Creek through to Divide Creek, and about one-half mile across the St. Marys River Flats just north of the St. Marys River. All of this gravel surface has been put on about 8 to 12 inches thick and from 12 to 16 feet in width, depending on the condition of the road and the width of the roadbed. The thirty-fourth, thirty-fifth, and thirty-sixth miles of the road, in the vicinity of Lower St. Marys Lake, has been regraded and will be regraveled. Most of the bridges on the Babb–Many Glacier section of this road have been redecked and some of the small culverts on the Babb–Glacier Park section have been repaired. The bridge across Two Medicine River has been improved by installation of stringers and has been redecked.

Cut Bank road.—This road, which is approximately 6 miles long, leads from the Glacier Park–Many Glacier road to the park boundary, a distance of about 3 miles, and thence into the Cut Bank chalets. It was originally built by the Great Northern Railway Co., but has been maintained and repaired by the service. Slides and loose rock have been removed during the past season, side ditches cleaned out, and all cross-drainage structures redecked, with exception of the main bridge across Cut Bank Creek.

Two Medicine road.—This road leads from the Glacier Park–Many Glacier road to the park boundary, a distance of about 8 miles, and thence on to the Two Medicine chalets. The road was originally built by the Great Northern Railway Co., and its total length is 14 miles. The rebuilding of about 2 miles of this road was undertaken in 1915, but was not completed until the first part of the fiscal year 1917. This stretch of new road extends from the crossing of the Two Medicine River to the foot of Two Medicine Lake. Aside from the new construction work, the principal repairs and improvements have consisted of removal of two or three small slides and some loose rocks, the redecking of all cross-drainage culverts and small bridges, and the construction of a small bridge across the Two Medicine River to replace a temporary structure.

Belton-Fish Creek Road.—This road, which is 5 miles long, leads from the Belton entrance to the park supervisor's headquarters, and has been maintained during the year. It has been improved by removal of some small slides, cleaning out of drainage ditches, and redecking of culverts. The approach to the Belton Bridge was repaired and the bridge raised 3 feet.

North Fork Road.—This road, which leads from the park supervisor's office at Fish Creek through to the Canadian line, up the valley of the North Fork of the Flathead River, is about 50 miles long. It has a good grade from Fish Creek to McGee Meadows, a distance of about 5 miles. About 20 miles of the road was improved with side drainage ditches, regrading, removal of stumps, construction of new culverts, and installation of quite a large amount of corduroy, most of this work being done between the McGee Meadows and Christensen's ranch and between Bowman Creek and Indian Creek. The road has been kept free from fallen timber and has been made available for use by horse-drawn vehicles. Automobiles have been run over this road from Belton through to the Canadian line and are frequently used between Belton and the Christensen ranch. The Fish Creek–McGee Meadow portion of the road, about 5 miles in length, has been repaired and a number of troublesome earth slides removed and trenched to prevent recurrence.

TRAILS.

All trails throughout the park, aggregating somewhat over 200 miles, were, with exception of the Two Medicine Pass trail and the Avalanche Creek trail and the Mineral Creek and Waterton Valley trails, gone over and put in shape for the season's tourist travel. This work consisted of cutting out windfalls, removing small rock slides, putting in a few small corduroys, or digging drainage ditches and in some places cutting trails through heavy snowdrifts that occurred on steep hillsides.

The new trail construction, revision, and principal repairs done during the season were as follows:

Lake McDonald—Granite Park trail.—Reconstruction of this trail was started last year, and about 7 miles improved. Additional improvements were made this spring over this 7 miles, consisting of corduroying, side-drainage ditches, and reconstruction of certain short sections of the trail, and about 9 miles of additional trail was constructed through to Granite Park, 4 miles of which was built to partial width only in order to permit its being used by the tourist traffic this season. Where construction is completed this trail is cleared to a width of about 10 to 12 feet and graded to a width of about 3½ feet, corduroying and bridges being from 6 to 10 feet in width.

Piegan trail.—About 5 miles of this trail, in the vicinity of Lakes McDermott and Louise and through to Feather Plume Falls, was relocated and reconstructed. It is cleared to an average width of about 8 or 9 feet and graded about 3½ feet. This improvement takes the trail out of a muddy bottom and shortens the distance about 1 mile. About 1 mile of this trail was relocated and reconstructed in the vicinity of Morning Eagle Falls. This improvement shortens the distance over a quarter of a mile and changes the location of the trail so that it avoids the large, heavy snow fields that block the trail in this vicinity each season.

Sexton Glacier trail.—This trail, which leads in to Baring Basin, and construction of which was started last year, was extended about 3¼ to 4 miles this season. The work which was done this year makes it possible for tourists to ride from the entrance to Baring Basin through to the top of Sexton Glacier. Very little clearing was done on this trail. The trail was graded to a width of about three feet, except in rock, where it was graded wider.

St. Marys—Gunsight trail.—The trail from St. Marys to Gunsight, along the north shore of St. Marys Creek, has been relocated and reconstructed from Sun Camp to one-half mile beyond Rose Creek, a distance of about 3½ miles. This improvement eliminates the very steep, rough, and tortuous grade between the above points, shortens the distance about half a mile, and gives a uniform grade and at the same time a scenic trail. The clearing of the trail averages about 8 feet in width and is graded about 3 feet wide.

Quartz Creek—Logging Lake trail.—About 8 miles of fire and patrol trail was constructed between Quartz Creek and Logging Lake. Most of the work on this trail was done primarily to get men in to fight a forest fire in this section, and the trail was completed through to make it possible to move fire-fighting crews from one valley to the other. Very little grading was done on the trail, it being cleared to an average width of about 5 feet. This trail will probably be used by tourists who desire to travel from Bowman to Logging Lake.

Middle Fork patrol trail.—In order to patrol the park against fires and poachers, a trail has been constructed from Paola through to Ole Creek, a distance of between 5 and 6 miles. This trail runs near the southern boundary of the park and may be used by tourists who desire to make fishing trips in that section, but its principal use is for patrol purposes. This trail is cleared to about 6 or 8 feet in width and graded about 2½ feet where grading was necessary.

Lake McDonald trail.—Construction of a trail on the east side of Lake McDonald, from the foot of the lake to Lewis's hotel, has been undertaken and will be completed this season. This trail will be cleared out about 6 to 8 feet wide and will be about 9 miles long.

Logan Pass trail.—This trail, which extends from Granite Park along the west side of the Continental Divide through Logan Pass, thence down Reynolds Creek to a junction with the Piegan trail, is under construction. A stretch of about 12 miles is practically completed and about 4 miles more will be roughed out so that it can be used for travel. The grading on this trail varies from about 3 feet in dirt to 6 or 8 feet in the heavier rockwork, quite a good deal of which was encountered. When completed the trail will be about 16 miles long and will be the most scenic and of highest average elevation of any in the park. It will also open to tourist travel the Twin Lakes and Hidden Lake regions, which have heretofore been practically inaccessible except to foot tourists that were good climbers.

Trapper Creek trail.—A trail has been constructed from the McDonald-Granite Park trail up Trapper Creek to the Logan Pass trail near Logan Pass, a distance of about 6 miles. This trail was constructed primarily for the purpose of packing in construction supplies and equipment to the crews employed on the Logan Pass trail. It has rather steep grades, is cleared to an average width of from 6 to 8 feet, and graded 2½ to 3 feet where needed. Although this trail is not built as a tourist trail, it is quite probable that it will be used by tourists desiring to travel from St. Marys Valley to the McDonald Valley via Logan Pass.

Fire trails.—Several miles of fire trails have been constructed during the past season in connection with the work on the forest fires in different places in the park. These trails will be useful for fire-patrol purposes in the future, and some of them may ultimately be developed into tourist trails. About 3 or 4 miles of such trail was constructed up the Little St. Marys Creek; about 3 miles between the old North Fork Road and the top of Apgar Ridge; about 3 miles between the North Fork River and the top of Apgar Ridge; about 2 miles from Tepee Flats into Indian Creek; and several other shorter trails. No grading work was done on any of these trails.

Footpaths.—A walking path from Swiftcurrent Pass to the top of Swiftcurrent Peak, about 1½ miles, was constructed in order that tourists might visit this viewpoint. A walking path was constructed from near Granite Park Chalet to the so-called Rosenwald Reef, a distance of about one-third of a mile. A walking path from near Granite Park Chalet, along the Garden Wall above Grinnell Glacier and through to Gould Mountain, aggregating 2½ miles, has been constructed and will probably be continued through to a junction with the Logan Pass trail near Haystack Butte.

A footpath one-third of a mile long has been constructed from the end of the horse trail to Grinnell Glacier in order that tourists may walk onto the moraines and the glacier.

All these footpaths have been constructed solely with the idea of their being used by pedestrians, and have been made in most cases only a foot or so in width. They will probably never be used as horse trails.

BUILDINGS.

During the year a three-room, one-story, log ranger's cabin was constructed at Nyack, and a two-room, log ranger's cabin was started and is under contract at Cut Bank entrance. At Glacier Park a small temporary warehouse was built for the purpose of storing supplies and construction equipment.

FISH.

Three plantings of trout fry were placed in the lakes and streams during the spring of 1917. Fishing has been excellent throughout most of the year and is much better in the McDermott and St. Marys Lakes than heretofore.

WILD ANIMALS.

Last winter was a cold and unusually severe one, with a larger snowfall than has occurred for years, consequently many of the deer died from cold and lack of browse. The other wild animals, it is believed, wintered well and are as abundant as heretofore. An accurate estimate can not be made of the number of the various kinds of wild animals that are to be found in the park, but the following numbers have been used in previous reports:

Deer.—Both blacktail and whitetail, about 11,000. They range in general throughout the park, but more especially along the western and southern boundaries.

Elk.—The estimate is 900. They are found principally through the eastern and southeastern sections of the park, but are seen at times in other portions of the park.

Moose.—Number, 100. Moose are found practically only in the valleys of the North and Middle Forks of the Flathead River.

Bighorn mountain sheep.—Estimated number, 1,500; found throughout the entire higher mountain area of the park, and more especially through that portion of the park between St. Marys Lake and McDonald Lake and through to Waterton and Kintla Lakes.

Rocky mountain goats.—One thousand two hundred. Goats are found throughout the higher altitudes of the park. Both sheep and goats are believed to be increasing in numbers.

Bear.—No estimate as to number. The brown and the black bear are found in considerable numbers, and are at times quite frequent visitors at the construction and tourist camps in the park. There are also some grizzly bears in the park, but they are seldom seen, and scarcely ever give any trouble.

PREDATORY ANIMALS.

There are a few wolves and a number of coyotes to be found in various portions of the park and some mountain lions. During the past winter a number of mountain lions were killed by hunters licensed by the service for this purpose.

FUR-BEARING ANIMALS.

The usual fur-bearing animals, such as mink, lynx, weasel, and marten are found quite abundantly throughout the wooded sections of the park. There are also some beaver.

WILD FOWLS AND BIRDS.

In the west portion of the park are found a good many grouse of the blue, ruffed, and pin-tail varieties. In the eastern portion prairie chickens and ruffed grouse are found, and at the higher altitudes ptarmigan are often seen. The lakes and streams along the foothills of the park abound with ducks and geese during the season. Many small birds are also found in the park, but for some reasons are not so prevalent in this park as in many similarly located sections.

WILD ANIMAL PROTECTION.

The wild animals within the park are afforded such protection as the ranger force is able to give. During the past year no one has been arrested for poaching, although signs of poaching have been discovered. The people who did the poaching were not seen, and could not be apprehended. During the early spring of 1917 quite a number of elk that had drifted out of the park in the vicinity of the Two Medicine and Cut Bank streams, on the east side of the park, were killed by the Blackfeet Indians. Efforts have been made to have this prevented in the future.

RECOMMENDATONS.

Of the various physical improvements needed for the park, administration buildings are among the most important. The small two-room log shack at Fish Creek, on the shore of Lake McDonald, which has been used as an office since the establishment of the park, is absolutely inadequate and unfitted for office use, being in a decaying condition and not one-fourth large enough, and the out-of-the-way location makes it very difficult to transact the administrative affairs of the office. To remedy this condition, Mr. Stephen T. Mather, Director of the National Park Service, purchased a private holding of about 160 acres situated within the park on the Belton-Lake McDonald road at the Flathead River and donated it to the park as an administrative site. The old buildings that are on this land are unsuited for administration buildings and are not worth remodeling or repairing, and there should be a suitable administration building erected, one that is large enough to care for the rapidly growing needs of the park. A supervisor's residence is also badly needed, as with the rapidly increasing travel and growing importance of the supervisor's duties he will be obliged to entertain considerably and should have a house that will admit of this. Both buildings should be of simple but substantial design and should harmonize architecturally with their surroundings.

The old log bridge across the Middle Fork of the Flathead River at the Belton entrance is in bad repair and no longer safe. An item was included in the last estimate for a concrete bridge across the river from Belton to the new administrative site, but no appropriation was made for the purpose. A new bridge should be built next year—a high-level concrete bridge—across from Belton to the administrative site, if possible; but if the funds can not be secured for this purpose, then a short-span steel bridge should be erected near the old bridge and the road from the bridge to the administrative site raised so that it will not be inundated during the high-water periods.

At the Glacier Park entrance of the park there are no buildings for the storage of supplies and equipment or for administrative purposes. The Great Northern Railway Co. has agreed to deed to the park sufficient land at a convenient location for the purpose of erecting a storehouse and a small administrative building, with sleeping quarters for a storehouse clerk, a residence for the chief ranger, and a small combination stable and garage. These buildings would greatly facilitate the work and reduce the cost of the supplies that are used on the physical improvements of the park.

In order to properly patrol the park, several additional ranger's cabins should be built, so that rangers may be stationed in the locality where they are most needed; also several small patrol and shelter cabins should be built for the use of the rangers on long patrols. On some of the longer walking trails shelter cabins should be erected for the use of the walking tourists that may become storm bound. The cost of these various buildings would be small, and their expense would be well repaid by the increased efficiency of the ranger force and the safety and pleasure of the tourist.

In this age of automobile travel, the road system of the park is the vital factor in its development. The present roads are not sufficient to develop the park properly. On the east side of the park the roads now in use will, if improved by widening, straightening, and graveling in places, serve the demands of travel for a time, but the west side of the park is badly in need of additional roads. There should also be a road connecting the east side of the park with the west side, in order that the park may be toured by automobiles on both sides without shipping cars across the mountains by railroad. A road should be constructed from the foot of Lake McDonald to the head of the lake. This road could be built on either side of the lake. There is also a growing demand for the opening up of the northwest part of the park to auto travel. This necessitates the improvement of the present North Fork wagon road, a mere wagon trail for much of its distance. This road is nearly 50 miles long, but only about 10 miles of the southern end of it may be used by automobiles, and that only during the dry summer season. The remainder of the road north to Kintla Creek should be improved by grading, draining, and bridges. Owing to the many private holdings in the northwestern section of the park and the commercial use to which this road is being constantly put by residents of the county, the county of Flathead should contribute toward the expense of this improvement to the extent of the taxes collected within the park boundaries.

Before the best and most economical location for an east and west road across the Rocky Mountains can be determined it will be necessary to investigate and estimate the several practicable routes, and at least $10,000 should be appropriated for such surveys and estimates.

It will never be possible to completely tour the park and see its many wonders and inspiring views other than by horses or on foot, hence numerous horse and foot trails are a necessity. There are at present between 200 and 300 miles of trails, varying from game trails that are difficult and dangerous to traverse to two of the finest trails built—the Swiftcurrent Pass trail and the Iceberg Lake trail. The majority of the trails, however, owing to lack of funds, have never been sufficiently improved for easy tourist travel, and more trails should be constructed at once to develop the park to meet the present needs. A horse trail is needed from Granite Park to follow along the west side of the Garden Wall and through Logan Pass to St. Marys Lake. Other trails are needed from Browns Pass to Kintla Creek, and from St. Marys River over Logan Mountain to Red Eagle Basin, which will give access to the Blackfeet, Red Eagle, and Pumpelly Glaciers; also trails to Sexton and Grinnell Glaciers.

Walking paths are also needed to bring out the rarest viewpoints. Paths should be constructed along the crest of the Garden Wall, to the top of some of the peaks near Granite Park, Sperry, and Going-to-the-Sun Chalets, and Many Glacier and Glacier Hotels. These paths will cost but little and will be of great advantage to the general tourists and to those who are guests of the hotels and chalets.

Boundary trails for ranger patrol purposes and fire fighting and patrolling are badly needed along the west and south sides of the park to supplement the few boundary trails that are now in this section. These patrol trails could also be used for tourist travel, but should not be built for scenic purposes.

This park is popular as a place for private camping parties, and, to meet the wants of the campers, several camping sites should be prepared by clearing from underbrush, the erecting of toilet buildings, etc. The greatest present need for these sites is upon the shores of Lake McDonald.

The telephone system in the park is not adequate to meet the demands of the service. There is no means of communication between the east and west sides of the park except by Western Union Telegraph. A telephone line should be constructed on the east side, connecting the various ranger stations and construction camps with each other, and a connecting line then constructed between the east side and the west side of the park. It is probable that the best location for this line would be along the railroad, as this is about the only pass through which this service could be maintained throughout the winter. The expense of this line would be quite considerable, but the advantage of a telephone line throughout the park would justify the expense.

The present ranger force consisting of a chief ranger and 13 first-class rangers, is not sufficiently large to patrol the park against poachers during the hunting season and against fires during the dry summer season, or to properly police it during the tourist season. The ranger force should be increased to 1 chief ranger, 2 assistant chief rangers, and 14 first-class rangers; and to this force should be added the necessary road patrols and auto checkers during the tourist season.

Nearly every spring a good many elk, which range through the park most of the year, drift down into the foothills on the eastern side of the park in the vicinity of the Cut Bank and Two Medicine streams and are killed by the Indians of the Blackfeet Indian Reservation, who claim their treaty permits them to kill this game. The Indian Office has been requested to take such steps as may be necessary to prevent this, if possible, and if this is not possible under the law then some legislation should be enacted to prevent the killing of these almost tame elk, and especially the cows and calves.

The various private holdings of land that are scattered throughout the park make its administration difficult, especially with respect to hunting, burning

of brush by homesteaders during the dry season of the year, and the trespassing of the privately owned stock on the park land. Suitable legislation should be enacted which would permit jurisdiction by the National Park Service over the above matters. This is necessary in order that the wild animals may be afforded the proper protection and that the forest fires in the park which are caused by brush fires of the homesteaders getting beyond their control can be, in a measure at least, eliminated.

The sundry civil act approved June 12, 1917, authorized the necessary repairs to roads from Glacier Park station through the Blackfeet Indian Reservation to various points on the boundary line of Glacier National Park. Additional legislation should be enacted, however, which will permit the regulation of traffic and police jurisdiction over these roads similar to that exercised within the boundaries of the park. This is necessary in order that traffic regulations as to speed, irresponsible driving, etc., can be put into effect, and also so that the road will not be damaged by heavily loaded freight wagons during the spring and winter months when they are in a soft and muddy condition. In order to best secure this result, it is believed that the eastern boundary of the park should be moved so as to embrace all portions of the Glacier Park-Many Glacier highway, or at least that the police jurisdiction of the National Park Service should be extended so as to embrace this area, and that this jurisdiction should not only include the regulation of traffic over the roads, but that it should include the enforcement of regulations with respect to the hunting and killing of wild game within this additional area, for if this is done, it is doubtful if but few, if any, elk or other game would range outside of these limits.

In concluding this report I desire to express my appreciation of the harmonious relations that have existed and the cooperative assistance that has been rendered during the past season to the office of the supervisor by the various concessioners who are operating in the park under contracts and privileges granted by this service, which have tended toward more successful administration and have secured more satisfactory results in entertaining and caring for the park travel.

ROCKY MOUNTAIN NATIONAL PARK.

L. C. WAY, Chief Ranger in Charge, Estes Park, Colo.

GENERAL STATEMENT.

The Rocky Mountain National Park was created by the act of January 26, 1915 (38 Stat., 798). Under the act approved February 14, 1917 (39 Stat., 916), entitled "An act to add certain lands to the Rocky Mountain National Park, Colorado," approximately 43 square miles have been added, making the present area of the park approximately 400 square miles. Exclusive jurisdiction over this area has not as yet been ceded to the Federal Government by the State of Colorado.

TRAVEL.

Due to a severe winter and late spring the roads and trails within the park were not opened to the public until after June 10, and in high elevations until July 15. This prevented many early arrivals from enjoying the park. No count was taken of people entering the park prior to July 1, 1917. The aggregate number of persons entering the park during July, August, and September, 1917, was 70,417. During the entire season the estimated number of visitors to the park was 117,186. 13,807 automobiles and 70,417 visitors were actually counted, and a conservative estimate indicates that 9,197 automobiles and 46,769 visitors entered the park without actual count.

ROADS.

Within the park boundaries there are only 5 miles of road under absolute park jurisdiction:

Beaver Creek road.—This road begins at a point on the east line of section 24, township 5 north, range 74 west, sixth principal meridian, and extends thence northwesterly a distance of 1½ miles to a point in section 14, same township and range. This road is used only as a logging road for the removal of burned timber and by fishermen, and is in bad condition.

Mill Creek road.—This road begins at a point in section 6, township 4 north, range 73 west, sixth principal meridian, and extends thence to Mill Creek ranger station in section 1, township 4 north, range 74 west, sixth principal meridian, distance 1¼ miles. It is extensively used by parties going over Flattop trail to Grand Lake and side trips from said trail; also for hauling timber and wood from old burns. It should be placed in first-class condition for present use and to open up public camping ground sites.

Bear Lake-Sprague road.—Beginning at a point on the north line of section 8, township 4 north, range 73 west, sixth principal meridian, and extending thence southwesterly to a point in section 13, township 4 north, range 74 west, sixth principal meridian, distance 2¾ miles. This road is in good condition and is extensively used by parties going to Bear Lake, Loch Vale, Glacier Gorge, and Sprague. It should be extended to Bear Lake.

In addition to the above we have within the park boundaries approximately 50 miles of county roads, generally in very poor condition. Steps should be taken to have these roads placed under the control of the National Park Service as soon as adequate appropriations can be secured to place them in good serviceable condition.

Contracts have been let for the completion of additional sections of the Fall River road by the State of Colorado, one section on the western slope and one on the eastern slope of the Continental Divide. Contracts for connecting sections to complete the road will probably be awarded this fall, and it is expected that work will begin early in the spring of 1918. Little has been accomplished this year on account of the late season.

Eastern approach.—Roads from Fort Collins, Loveland, and Lyons, Colo., have been in poor condition this season, especially sections passing through Larimer County. During the early part of the season it was at times impossible to move freight from railroad terminals at Fort Collins, Loveland, and Lyons, Colo., to the park. Our supply of provisions and coal ran low, and building operations within the park were retarded.

Southern approach.—The travel over the South St. Vrain road via Boulder and Lyons, Colo., has increased 150 per cent this season, due to the condition of the road, which has been good, and to its scenic attractions.

Western approach.—This approach will not become popular until the Fall River road across Continental Divide is completed. Travel over this approach, however, has increased this season via Granby, Colo., and road conditions have been generally good.

TRAILS.

One mile of new trail has been built. This trail will ultimatley reach Lakes Nanita and Nakoni on the western slope. Owing to the small amount of money available, we could do no more than put the old trails in passable condition.

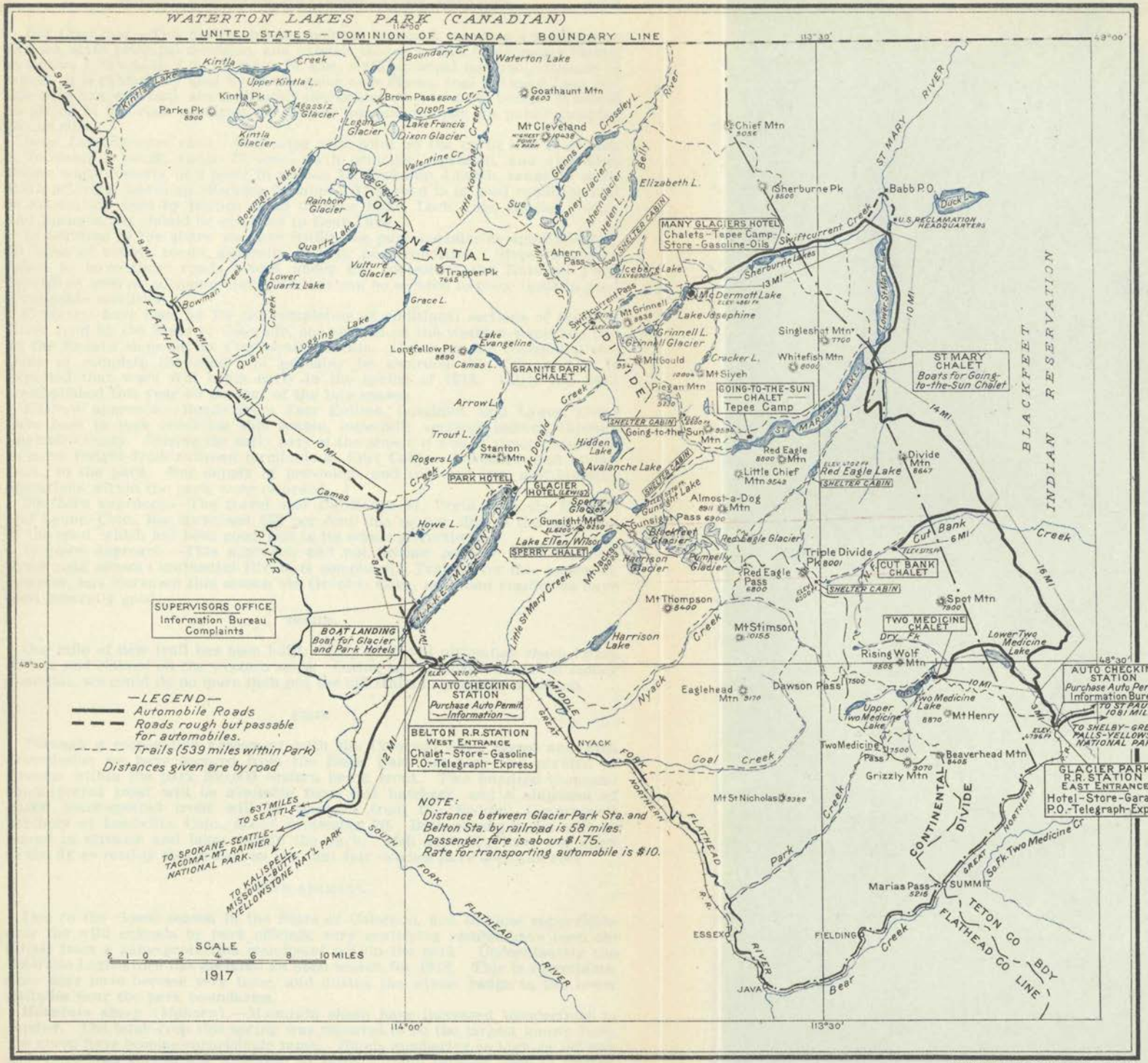
FISH.

Through a cooperative agreement with the Colorado State Game and Fish Commission we have secured from the Estes Park hatchery and planted in streams within the park 340,000 eastern brook trout. Two hundred thousand black-spotted trout will be available from this hatchery, and a shipment of 10,000 black-spotted trout will be received from the Federal Government hatchery at Leadville, Colo., about September 20. Both consignments will be placed in streams and lakes within the park. Fish generally have not risen to the fly as readily this season as last, but fair catches have been the rule.

WILD ANIMALS.

Due to the closed season in the State of Colorado, and to close supervision over the wild animals by park officials, very gratifying results have been obtained from a game-protection standpoint within the park. Unfortunately the Colorado Legislature has declared an open season for 1918. This is regrettable, since deer have become very tame, and during the winter range in the lower altitudes near the park boundaries.

Mountain sheep (bighorn).—Mountain sheep have increased wonderfully in number. The lamb crop this spring was reported to be the largest known here. The sheep have become surprisingly tame. Bands numbering as high as 192 animals have been approached to within 50 yards without causing them to scatter.



MAP OF GLACIER NATIONAL PARK

ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

The ranger in charge this summer approached within 50 feet of two rams without their becoming frightened. Unfortunately, a few of the sheep are affected with scabies, and steps are being taken to eliminate the disease before the entire band becomes affected.

The fact that sheep can be approached in automobiles and seen in this way almost every day adds to their value within the park.

Deer.—Deer are also on the increase within the park, and are becoming remarkably tame. Herds numbering as high as 63 animals have been counted. They show little fear of human beings, and pictures are easily secured.

Elk.—In 1914, 25 elk were shipped in from Yellowstone National Park. Several died the first year, and others drifted from the park. The remnant of the original band, however, has now secured a good footing and is growing rapidly. Seven calves were counted this year, and the known herd now numbers 27 head.

Bear.—Bears are not numerous within the park. Three black, one brown with cub, and one silver-tip have been reported this season.

Predatory animals.—A start was made last winter to exterminate predatory animals, but, as a great amount of necessary improvement work had to be carried on by the ranger force, little was accomplished, the killing of five foxes and seven martens being the extent of this work. Two mountain lions were reported as having been seen within the park, but we were unsuccessful in our attempt to trap them. Two deer and one sheep have been reported killed by mountain lions. Much better results are expected from this work during the coming winter.

Birds.—Song and insectivorous birds, being protected from cats and the small boy with his rifle, are increasing, 175 different species being reported in the park for this season. An exceptional increase in ptarmigan is also apparent.

VIOLATIONS OF REGULATIONS.

Several minor violations of the park regulations have occurred this season, none, however, flagrant enough to make court action necessary. In all cases an amicable settlement was made, which resulted in hearty cooperation with the park authorities thereafter by the offending parties.

FOREST FIRES.

Five fire calls were responded to by the ranger force, three within the park and two on national forest lands adjacent to the park, none of which resulted in damage. Our new fire plan, introduced this season, has proven very effective, great credit being due to local people for cooperation, and especially to the Rocky Mountain Parks Transportation Co., the greatest amount of time required in any case being seven minutes to place at my disposal six men and an automobile for a fire which occurred in Beaver Creek Canyon. Their prompt response on this occasion prevented a disastrous fire.

IMPROVEMENTS.

Chief among our improvements this season is the construction of 18 miles of metallic circuit telephone line from the Mill Creek ranger station to Grand Lake, giving communication between district rangers and the park office. This work was done, mostly on snowshoes and skis, during the winter months.

Three new caches for fire tools, of log construction, large enough to afford shelter in case of emergency, have been completed, and work is progressing rapidly on others. This work is being done entirely by rangers. The new caches replace the board boxes now in use.

A new log shelter cabin with fireplace, located on the Cache la Poudre River, is about completed.

Residence for chief ranger in charge.—The size of this new structure is 24 by 30 feet, with a 10 by 12 foot addition and a 10 by 30 foot porch. This building has been occupied since May and is rapidly nearing completion.

WINTER SPORTS.

A winter sports carnival was held in February, 1917, which is, I believe, a new departure in national parks. The carnival was a decided success, 463 people participating in the sports, which consisted of snowshoeing, skiing, and tobogganing. The Colorado Mountain Club and the Estes Park Outdoor Club brought

out 85 members. While the members of these clubs are thoroughly familiar with the park under summer conditions, they are all agreed that winter conditions equal, if not surpass, those of the summer, both from a scenic as well as a recreative standpoint. Work is now under way to improve ski runs and toboggan slides at Fern Lake. Carnivals will be held yearly hereafter.

WOMEN NATURE GUIDES.

Another new attraction introduced this season is the nature guide. Young ladies who are well informed in matters relating to flowers, birds, animals, and trees, are available to teach nature lore to men, women, and children visiting the park. They have been highly successful and popular this season, and fill a long-felt want. They are required to pass an examination as to their qualifications as nature teachers and in first-aid work and knowledge of the country. Their operations (unless accompanied by a first-class guide) are limited to one-day trips below timber line, and to sections with which they are personally familiar.

ACCIDENTS.

I regret to report three serious accidents, one resulting fatally, within the park this season.

Mrs. Peter Hondius, of Estes Park, Colo., while participating in a toboggan race during the winter sports carnival in February, was thrown from a toboggan and sustained a broken leg.

On August 2 Miss Eula Frost, of Sterling, Colo., in company with Mr. Homer Thompson, of Estes Park, attempted to cross a large snowdrift near the Fall River road. Miss Frost lost her footing; and pulled Mr. Thompson down. Miss Frost slid a distance of approximately 500 feet, striking outcropping rocks, the bruises from which caused her death. Mr. Thompson missed the rocks but continued to slide another 500 feet to the lower edge of the drift, receiving several serious cuts and bruises, none of which proved fatal.

Several accidents occurred this season, due to collisions between automobiles and equestrians, resulting in minor cuts. In one case a horse's leg was broken.

SULLYS HILL NATIONAL PARK.

SAMUEL A. M. YOUNG, Acting Supervisor, Fort Totten, N. Dak.

GENERAL STATEMENT.

This reservation was set aside by Executive proclamation dated June 2, 1904, under act of Congress approved April 27, 1904 (33 Stat., 319), and contains about 780 acres. It is located on the south shore of Devils Lake, N. Dak., about 14 miles from the town of Devils Lake. The park is located about 1 mile northeast of the Fort Totten Indian School and has a shore line about 2 miles long, bordering on the lake. The park may be reached by wagon road from Devils Lake by way of Narrows or by launch from Chautauqua on the north.

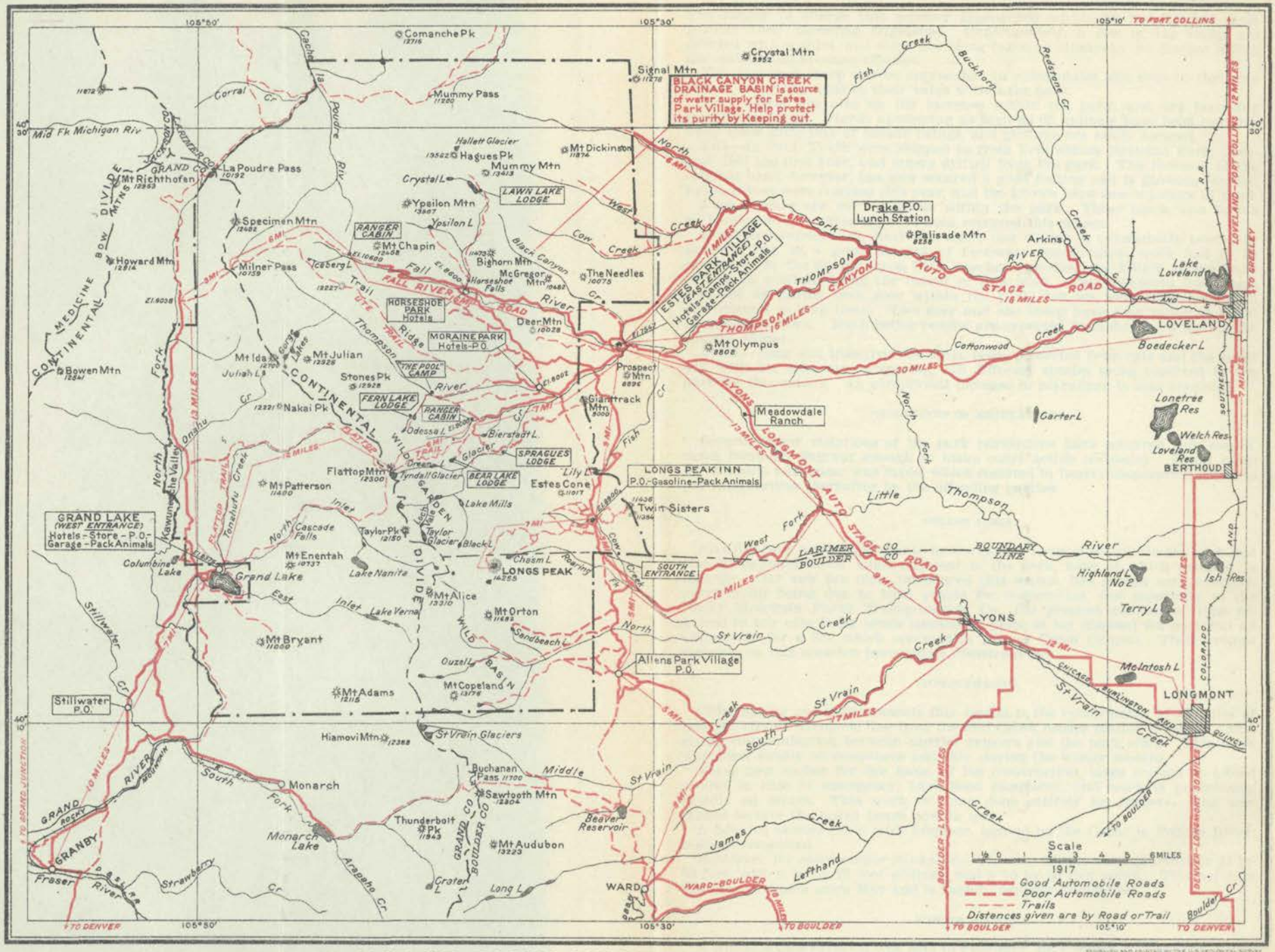
IMPROVEMENTS.

In 1916 the park was inclosed, by the Biological Survey of the Department of Agriculture, with a substantial woven-wire fence, at a cost of $9,186. During the present summer a tract embracing 27½ acres at the west end of the park has been fenced off for a camping ground. This tract is immediately adjacent to Sweetwater Lake.

Within the smaller inclosure a 5-room frame cottage was built for the warden, at a cost of $1,557, and was completed July 1. There was also constructed a barn with room for three horses and one cow, also room for hay and grain, at a cost of $649. During the summer the park has been under the immediate direction of Mr. F. M. Dille, inspector of mammal and bird reservations.

WILD ANIMALS.

Last March, 15 head of elk were placed in the park. They were brought from the Yellowstone National Park. One of these soon died, leaving 14 elk in the park at the present time. In May, four whitetailed deer were brought from the Fargo Agricultural Experiment Station and placed in the park. One of these



MAP OF ROCKY MOUNTAIN NATIONAL PARK

also died, but the other three are doing well. It is planned in the near future to procure as an added attraction six head of bison from the Yellowstone National Park.

TRAVEL.

Up to date, the number of visitors have been approximately 87 in May, 340 in June, 820 in July, 760 in August, and 200 in September. The total number of visitors for the entire season was 2,207.

CASA GRANDE RUIN.

JAMES P. BATES, Custodian, Florence, Ariz.

GENERAL STATEMENT.

The ruin known by the Spanish name Casa Grande, "Great House," is situated near the left bank of the Gila River about 12 miles from the site of the present town of Florence, Ariz. It can be conveniently reached by carriage either from the town of Florence or from Casa Grande station on the Southern Pacific Railway. The route to the ruin via Florence is slightly shorter than that from Casa Grande station, enabling one to make the visit and return in a single day. There are a hotel and livery stables in both towns, but the visitor should provide for his own refreshment at the ruin.

This reservation was set aside by Executive order dated June 22, 1892, under the act approved March 2, 1889 (25 Stat., 961). By presidential proclamation of December 10, 1909, the boundaries of the reservation were changed by the elimination of 120 acres on which there were no prehistoric ruins and the inclusion of a tract of 120 acres adjoining the reservation on the east, on which are located important mounds of historic and scientific interest.

Casa Grande was a ruin when discovered and has not been permanently inhabited since it was first seen by a white man. The identity of its builders has furnished a constant theme for speculation from the discovery of the ruin to the present time. Although it has been ascribed to the Aztec, there is no evidence that the ancient people who inhabited this building were closely related to any tribes of the Mexican plateau, whose culture, as indicated by archaeologic remains, was different from that of the Pueblos, or sedentary tribes of New Mexico and Arizona. The age of Casa Grande and contiguous remains is unknown, but there is good reason to believe that settlements on their site were older than most of the present pueblos or cliff dwellings. The Pima claim, however, that it is not so old as ruins of the same general character situated near Phoenix, on Salt River, a short distance from its junction with the Gila.

During the year at request of the National Park Service the Commissioner of the General Land Office replaced, at expense of the annual appropriation for protecting the public lands, the roof on the custodian's house, which was blown off by a storm, and has improved a dug well sunk many years ago by installing over it a small engine and pump. The casing had decayed and fallen in, in large measure, and since the improvement was made the walls have again caved badly, so that the well is now in bad condition. It is recommended that a new well be drilled a short distance west of the present one to a depth of 80 to 100 feet, cased with 5-inch casing, and the engine and pump moved over to the new well. The cost is estimated at $450. The improvement is badly needed.

The reservation is considerably in need of fencing to protect the ruin from inroads of stray cattle. The cost, estimated last year at $800, is now anticipated to be not less than $1,500, the increase being attributable to rise in price of materials.

The reservation is situated 12 miles from the nearest town and there is no rural delivery route which passes near, so that the custodian is without regular mail service and is put to much inconvenience to obtain supplies. It is recommended that a small automobile be supplied, the expense of which would be considerably less than a team.

APPENDIX C.

STATISTICS.

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STATISTICS.

Visitors to parks, 1904 to 1917.

Name of park.	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Hot Springs Reservation	[2] 101,000	[2] 109,000	[1]	[1]	[1]	[1]	[2] 120,000	[2] 130,000	[2] 135,000	[2] 135,000	[2] 125,000	[2] 115,000	[2] 118,740	[2] 135,000
Yellowstone National Park	13,727	26,188	17,182	16,414	19,542	32,545	19,575	23,054	22,970	24,929	20,250	51,895	35,849	35,400
Casa Grande Ruin	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[2] 450	[2] 450	[2] 450	[2] 500	[2] 500	1,909	2,437
Sequoia National Park	[1]	[1]	[2] 700	[2] 900	1,251	854	2,407	3,114	2,923	3,823	4,667	7,647	10,780	18,510
Yosemite National Park	[1]	[1]	5,414	7,102	8,850	13,182	13,619	12,530	10,884	13,735	15,145	33,452	33,390	34,510
General Grant National Park	[2] 1,000	[2] 1,000	[2] 900	[2] 1,100	1,773	798	1,178	2,160	2,240	2,756	3,735	10,523	15,360	17,390
Mount Rainier National Park	563	928	1,786	2,068	2,826	5,968	8,000	10,306	8,946	13,501	15,038	35,166	23,989	35,568
Crater Lake National Park	[2] 1,500	[2] 1,400	[2] 1,800	[2] 2,600	5,275	4,171	[2] 5,000	[2] 4,500	5,235	6,253	7,096	11,371	12,265	11,645
Wind Cave National Park	[2] 2,900	2,438	2,787	2,751	3,171	3,216	3,387	3,887	3,199	3,988	3,592	2,817	[2] 9,000	16,742
Platt National Park	[1]	[1]	[1]	[2] 28,000	[2] 26,000	[2] 25,000	[2] 25,000	[2] 30,000	[2] 31,000	[2] 35,000	[2] 30,000	[2] 20,000	[2] 30,000	[2] 35,000
Sullys Hill Park	[1]	[1]	[1]	[2] 400	[2] 250	[2] 190	[2] 190	[2] 200	[2] 200	[2] 300	[2] 500	[2] 1,000	[2] 1,500	2,207
Mesa Verde National Park	.....	.....	[1]	[1]	[2] 80	165	250	206	230	280	502	663	1,385	2,223
Glacier National Park	.....	.....	.....	.....	.....	.....	.....	[2] 4,000	6,257	12,138	14,168	14,265	12,839	15,050
Rocky Mountain National Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[2] 31,000	[2] 51,000	[2] 117,186
Hawaii National Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[1]	[1]
Lassen Volcanic National Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[1]	[2] 8,500
Mount McKinley National Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[1]
Total	120,690	140,954	30,569	61,335	69,018	86,089	198,606	224,407	229,534	252,153	240,193	335,299	358,006	487,368

[1] No record.

[2] Estimated.

Automobile and motorcycle licenses issued during seasons of 1914, 1915, 1916, and 1917.

Name of park.[1]	1914		1915		1916		1917[2]	
	Automobiles.	Motorcycles.	Automobiles.	Motorcycles.	Automobiles.	Motorcycles.	Auto. mobiles.	Motorcycles.
Yellowstone[3]	.....	.....	958	.....	3,430	.....	5,285	.....
Sequoia[4]	164	.....	343	11	731	4	923	.....
Yosemite	871	.....	3,901	.....	3,932	.....	5,000	.....
General Grant	409	12	1,604	40	1,730	41	2,091	.....
Mount Rainier	1,597	204	3,235	247	2,973	99	5,792	87
Crater Lake	1,117	18	2,015	31	2,051	29	1,766	15
Mesa Verde	30	4	86	.....	178	2	308	.....
Glacier	267	4	467	16	511	11	1,121	.....
Total	4,455	242	12,609	345	15,536	186	22,286	102

[1] No licenses required for Casa Grande Ruin, Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, and Rocky Mountain National Parks. No roads in Mt. McKinley Park.
[2] Number of licenses formally reported to Washington, to and including Oct. 10, 1917.
[3] Opened to automobiles Aug. 1, 1915.
[4] License required only for Giant Forest road.
Licenses not required in certain parks because of small road mileage or unimproved condition of roads (see footnote 1). Licenses also not required for travel on unimproved roads in other parks. No license required for operating cars on official business.

Receipts collected from automobiles and motorcycles (single trip[1] and season permits) during seasons of 1914, 1915, 1916, and 1917.

Name of park.[2]	1914	1915	1916	1917[3]
Yellowstone[4]	.....	$7,076.57	$25,387.50	$39,637.50
Sequoia[5]	$817.61	1,183.56	1,600.00	2,307.50
Yosemite	4,033.45	13,457.71	19,885.00	25,000.00
General Grant	445.89	1,685.50	[6] 957.50	1,045.50
Mount Rainier	8,147.95	16,371.61	13,194.00	[7] 13,875.50
Crater Lake	1,167.00	2,102.00	4,402.00	4,433.00
Mesa Verde	38.52	85.07	95.50	154.00
Glacier	342.52	573.99	312.00	1,121.00
Total	14,992.94	42,536.11	65,833.50	87,574.00

[1] By regulation of May 1, 1917, single-trip license abolished and all permits made good for entire season.
[2] No license required for Casa Grande Ruin, Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, and Rocky Mountain National Parks. No roads in Mt. McKinley Park.
[3] Received in Washington, to and including Oct. 10, 1917.
[4] Opened to automobiles Aug. 1, 1915.
[5] License required only for Giant Forest road.
[6] Automobile single-trip fee reduced by regulation, Mar. 1, 1916, from $1 to 50 cents, season permit from $5 to $2.50.
[7] Automobile single-trip and season permit fee reduced by regulation May 1, 1917, from $4 and $6, respectively, to $2.50.

Private automobiles entering parks during seasons of 1916 and 1917.

Name of park.	1916	1917[1]	Name of park.	1916	1917[1]
Yellowstone	3,445	5,703	Wind Cave[2]	[4] 2,500	4,837
Casa Grande Ruin[2]	[4] 470	604	Mesa Verde	185	364
Sequoia[3]	736	2,334	Glacier	902	1,121
Yosemite	4,043	6,521	Rocky Mountain[2]	[4] 10,050	[5] 23,004
General Grant	1,778	2,158			
Mount Rainier	3,070	5,894	Total	29,828	55,296
Crater Lake	2,649	2,756			

[1] Automobiles entering parks with or without licenses, to and including Oct. 12, 1917.
[2] No license required.
[3] License required only for Giant Forest road.
[4] Estimated.
[5] 13,807 actually counted from July 1 to Oct. 1, 9,197 conservative estimate of those not counted.

Statement of appropriations made for, and received revenues from, the various national parks, and expenditures made therefrom during the fiscal years 1904–1918, inclusive.

Name of the national park.	Appropriations.		Revenues.	
	Appropriated.	Expended.	Received.	Expended.
Hot Springs Reservation:				
1904	$36,050.00	(1)	$18,430.00	(1)
1905	8,000.00	(1)	19,330.00	(1)
1906	6,000.00	(1)	19,748.33	(1)
1907			20,165.00	$19,938.41
1908			28,090.00	21,115.56
1909			31,475.00	19,699.27
1910			36,510.00	28,401.97
1911	2,935.00	$2,935.00	36,060.00	56,375.33
			[2] 82,518.00	
1912			35,279.16	3,267.96
				[3] 42,957.18
1913			40,711.00	[4] 29,438.25
				[3] 34,581.57
			[5] 1,287.90	[6] 1,273.70
1914			38,380.00	[5] 36,658.62
1915			37,877.66	36,911.95
1916			37,926.32	40,261.14
1917			35,611.75	31,302.98
1918				
Yellowstone:				
1904	8,910.30	(1)		
1905	7,500.00	(1)		
1906	7,500.00	(1)	1,522.50	(1)
1907	7,500.00	7,498.64	1,838.96	3,617.04
1908	8,000.00	7,999.40	4,699.65	4,228.37
1909	[7] 8,000.00	7,997.44	4,790.20	3,661.47
	[8] 2,500.00	1,962.53		
1910	8,000.00	7,999.71	5,110.05	3,359.80
1911	8,500.00	8,499.96	23,420.13	7,998.47
1912	8,500.00	8,500.00	16,476.38	8,103.41
1913	8,500.00	8,500.00	21,980.10	6,449.97
1914	8,500.00	8,500.00	15,439.23	13,813.21
1915	8,500.00	8,500.00	20,307.40	12,881.18
1916	8,500.00	8,491.41	46,628.49	26,350.96
1917	8,500.00	8,500.00	51,795.69	53,775.61
1918	10,500.00			
Sequoia:				
1901	10,089.69	(1)		
1905	10,000.00	(1)		
1906	10,000.00	(1)		
1907	10,000.00	9,919.82	159.50	
1908	15,550.00	15,333.50	43.15	18.97
1909	15,550.00	15,373.96	46.57	
1910	15,550.00	15,514.19	121.78	
1911	15,550.00	15,513.34	255.65	31.25
1912	15,550.00	15,549.20	305.16	48.25
1913	15,550.00	15,519.52	353.85	70.81
1914	15,550.00	15,519.27	4,091.21	83.91
1915	15,550.00	15,519.65	1,975.03	3,498.23
1916	15,550.00	15,519.75	5,169.86	4,740.75
1917	22,300.00	15,605.28	10,326.60	415.01
	[9] 50,000.00	50,000.00		
1918	25,000.00			
Yosemite:				
1904	6,000.00	(1)		
1905	8,400.00	(1)		
1906	25,400.00	(1)	1,000.00	
1907	5,750.00	5,705.24	9,193.04	1,000.00
1908	30,000.00	29,508.58	14,390.06	7,131.37
1909	30,000.00	29,969.86	15,851.17	5,024.84
1910	30,000.00	29,983.82	21,373.18	34,486.09

[1] Figures not available.
[2] Proceeds from sale of Government lots (lot fund).
[3] Expenditure from lot fund.
[4] Includes $1,272.71 expended in making survey and preparation of plans, etc., for sewer system, city of Hot Springs.
[5] Includes 99 cents expended on account of survey sewer system.
[6] Contributed by city of Hot Springs on account of sewer system; $14.20 returned to city.
[7] Administration and protection.
[8] Marking unmonumented portions of park boundaries.
[9] For purchase of private holdings.

Statement of appropriations made for, and received revenues from, the various national parks, etc.—Continued.

Name of the national park.	Appropriations.		Revenues.	
	Appropriated.	Expended.	Received.	Expended.
Yosemite—Continued.				
1911	$62,000.00	$62,000.00	$35,765.48	$19,050.39
	[1] 12,000.00	[1] 11,646.37		
1912	50,000.00	49,999.68	23,855.77	35,970.68
1913	80,000.00	80,000.00	19,495.83	16,431.16
1914	125,000.00	124,798.49	23,406.14	9,903.58
1915	100,000.00	99,235.22	37,019.20	40,699.30
1916	75,000.00	74,996.88	49,878.42	52,961.53
1917	250,000.00	250,000.00	53,500.66	55,098.45
1918	235,000.00			
General Grant:				
1904	2,058.65	(2)		
1905	2,000.00	(2)		
1906	2,000.00	(2)		
1907	2,000.00	1,988.75		
1908	2,000.00	1,914.76	63.75	
1909	2,000.00	1,999.93		
1910	2,000.00	1,999.90	50.00	
1911	2,000.00	1,999.89	210.64	18.88
1912	2,000.00	1,998.60	173.54	.99
1913	2,000.00	1,999.20	158.68	503.01
1914	2,000.00	2,000.00	429.64	1.59
1915	2,000.00	2,000.00	560.89	355.68
1916	2,000.00	1,999.36	1,795.50	481.46
1917	2,000.00	2,000.00	1,153.78	536.97
1918	2,000.00			
Mount Rainier:				
1907	[3] 2,500.00	2,407.91	205.22	
1908	3,000.00	2,965.59	170.00	8.96
1909	3,000.00	2,961.61	1,104.79	27.65
1910	3,000.00	3,000.00	9,053.79	2,763.86
1911	3,000.00	2,998.90	7,748.48	5,342.47
1912	5,400.00	5,399.99	5,370.36	9,363.33
1913	20,000.00	19,989.70	7,301.62	6,791.80
1914	23,400.00	23,347.05	9,040.10	6,039.42
1915	51,000.00	50,907.79	12,893.29	5,513.46
1916	30,000.00	30,000.00	19,317.99	15,026.08
1917	30,000.00	30,000.00	14,346.80	17,617.04
1918	75,000.00			
Crater Lake:				
1904	2,000.00	(2)		
1905	3,000.00	(2)		
1906	3,000.00	(2)		
1907	3,000.00	2,989.75	10.00	[4]
1908	7,315.00	7,314.65		
1909	3,000.00	2,999.21	15.00	
1910	3,000.00	2,999.97	11.00	
1911	3,000.00	2,999.77	30.00	
1912	3,000.00	2,998.75	323.00	
1913	3,000.00	2,978.41	784.18	
1914	7,540.00	7,483.61	793.00	
1915	8,040.00	7,884.59	1,359.50	
1916	8,000.00	7,836.84	2,402.04	
1917	8,000.00	7,995.08	4,565.25	
1918	15,000.00			
Wind Cave:				
1904	[5] 2,500.00	(2)		
1905	2,500.00	(2)		
1906	2,500.00	(2)		
1907	4,400.00	4,398.08		
1908	2,500.00	2,433.54	200.00	
1909	2,500.00	2,335.37	450.00	220.80
1910	2,500.00	2,500.00	523.25	62.88
1911	2,500.00	2,413.60	340.00	562.26
1912	2,500.00	2,499.86	675.00	278.56
1913	375.00	132.50	528.26	1,197.39
1914	2,500.00	2,500.00	246.17	366.72
1915	2,500.00	2,496.97	2,342.90	606.16
1916	2,500.00	2,497.82	2,590.89	981.57
1917	2,500.00	2,499.87	1,632.60	1,013.04
1918	2,500.00			

[1] Appropriation, without year, for examination of water supply for city of San Francisco.
[2] Figures not available.
[3] No appropriation made for Mount Rainier prior to 1907.
[4] Expenditure of revenues of Crater Lake Park for park purposes therein not authorized by existing statutes enacted by Congress.
[5] No appropriation made for the Wind Cave National Park prior to 1904.

Statement of appropriations made for, and received revenues from, the various national parks, etc.—Continued.

Name of the national park.	Appropriations.		Revenues.	
	Appropriated.	Expended.	Received.	Expended.
Platt:				
1906	(1)		$37,307.44	
1907			178.00	$7,082.25
1908			7,021.00	10,552.26
1909			272.00	15,764.27
1910			164.50	11,734.74
1911	$5,000.00	$4,994.64	422.75	779.06
1912	10,000.00	9,999.34	165.50	219.84
1913	8,000.00	7,999.95	49.95	100.11
	[2] 17,500.00	[2] 10,120.73	[2] 17,500.00	[2] 10,119.06
1914	8,000.00	7,988.55	282.81	67.48
1915	8,000.00	8,000.00	241.76	178.87
1916 (deficiency, $10,000)	18,000.00	16,974.49	301.11	44.35
1917	8,000.00	8,000.00	434.11	138.28
1918	7,180.00			
Mesa Verde:				
1907–8	[3] 7,500.00	7,455.82		(4)
1909	7,500.00	7,348.33		
1910	7,500.00	7,443.09		
1910–11 (for examination of coal lands in park)	2,000.00	947.75		
1911	20,000.00	19,808.63	100.00	
1912	7,500.00	7,351.54	898.92	
1913	15,000.00	14,956.91	615.21	
1914	10,000.00	9,880.30	679.00	
1915	10,000.00	9,665.75	637.42	
1916	10,000.00	9,644.39	946.38	
1917	10,000.00	9,998.51	130.14	
1918	10,000.00			
Glacier:				
1911	[5] 15,000.00	14,998.59	326.88	
1912	69,200.00	69,117.94	1,490.94	
1913	75,000.00	74,568.24	4,677.14	428.84
1914	100,000.00	99,999.49	4,010.71	477.07
1915	75,000.00	74,994.27	4,218.51	9,735.44
1916	75,000.00	74,936.88	10,011.76	844.58
1917	110,000.00	109,279.52	3,202.40	1,352.75
1918	115,000.00			
Rocky Mountain:				
1915	[6] 3,000.00	2,910.80		(7)
1916	8,000.00	7,942.84	501.93	
1917	10,000.00	9,968.09	871.27	
1918	10,000.00			
Protection of national monument:				
1917	3,500.00	2,354.89		
1918	5,000.00			
Improvement of Mukuntuweap National Monument, Utah: 1917	15,000.00	14,997.14		
Improvement of Navajo National Monument, Ariz.:				
1917	3,000.00	1,962.69		

[1] No appropriation for Platt Park prior to 1911 fiscal year. Land prior to creation of park included in Sulphur Springs Reservation.
[2] Construction sanitary sewer, like amount being contributed by the city of Sulphur, Okla.; $7,380.94 returned to city.
[3] No appropriation made for the Mesa Verde National Park prior to 1907.
[4] Expenditure of revenues of Mesa Verde Park for park purposes therein not authorized by existing statutes enacted by Congress.
[5] No appropriation made for the Glacier National Park prior to 1911.
[6] No appropriation made for the Rocky Mountain National Park prior to 1915.
[7] Expenditure of revenues from Rocky Mountain Park not authorized by existing statutes for park purposes therein.

Summary of appropriations for the administration, protection, and improvement of the national parks for the fiscal years 1904–1918, inclusive.

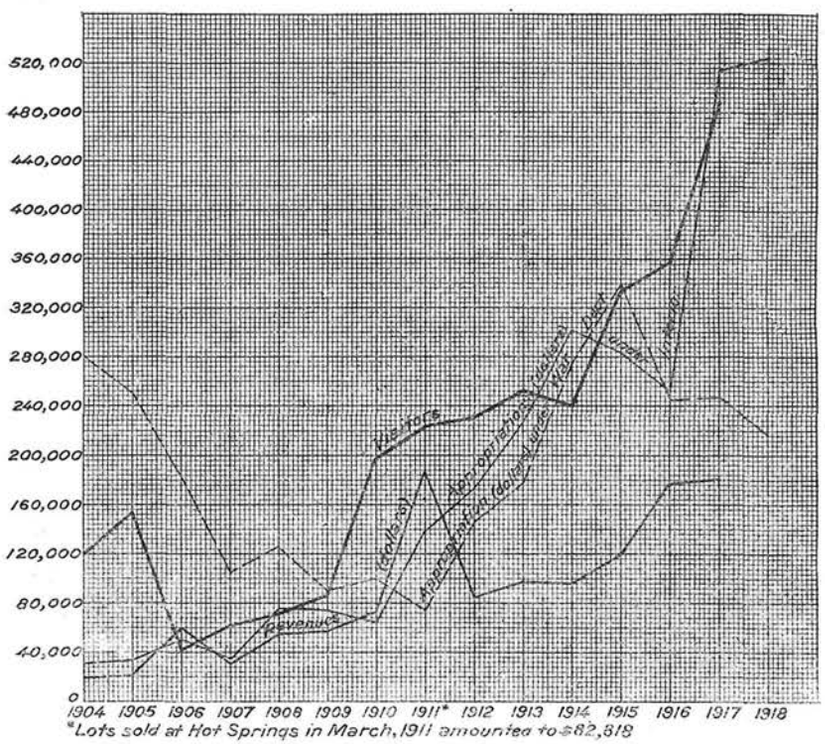
1904	$67,638.64
1905	41,400.00
1906	56,400.00
1907	42,650.00
1908	68,365.00
1909	74,050.00
1910	73,550.00

1911	$151,485.00
1912	173,650.00
1913	244,925.00
1914	302,490.00
1915	283,590.00
1916	252,550.00
1917	514,966.67
1918	524,780.00

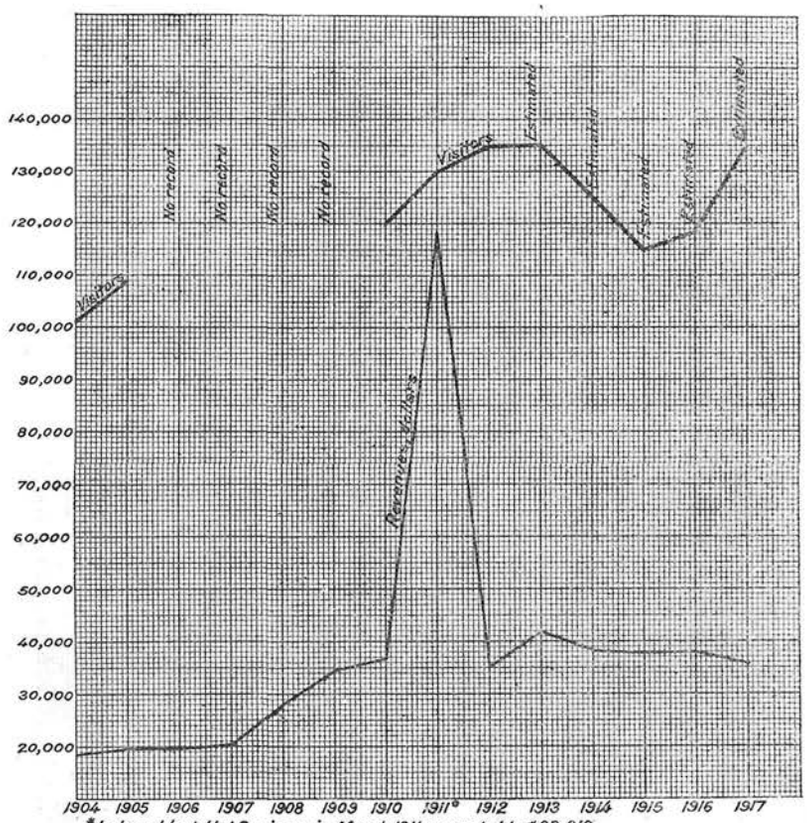
Summary of appropriations for the various national monuments for the fiscal years 1906–1918, inclusive.

1906–1916	None.
1917	[1] $21,500.00
1918	5,000.00

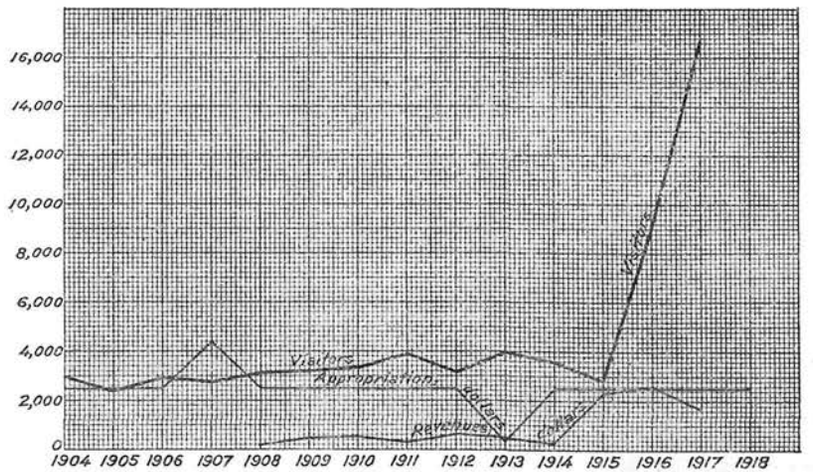
[1] See detailed statement, p. 221.



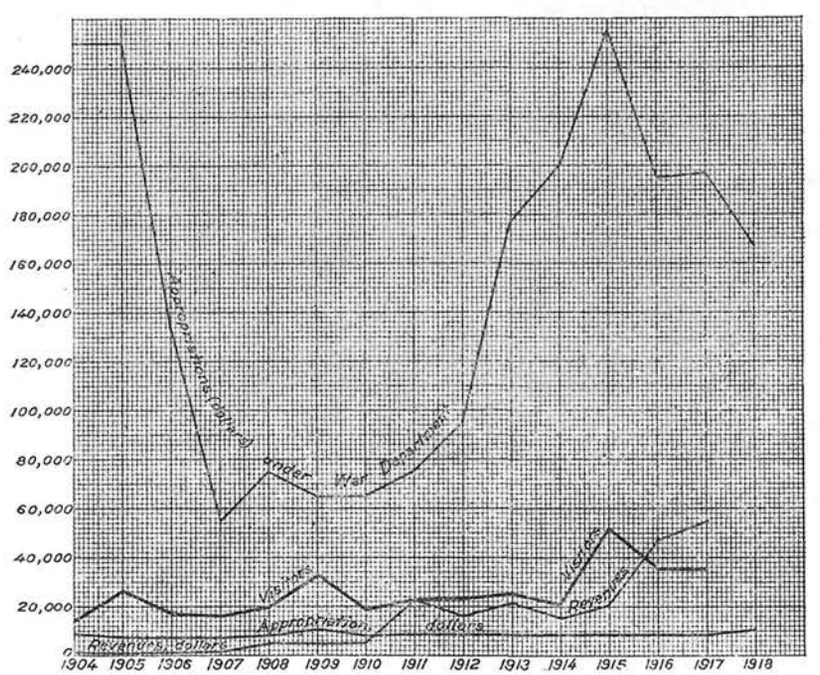
All national parks.—Total appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years. Appropriations under War Department for road work in Crater Lake, Mount Rainier, and Yellowstone National Parks.



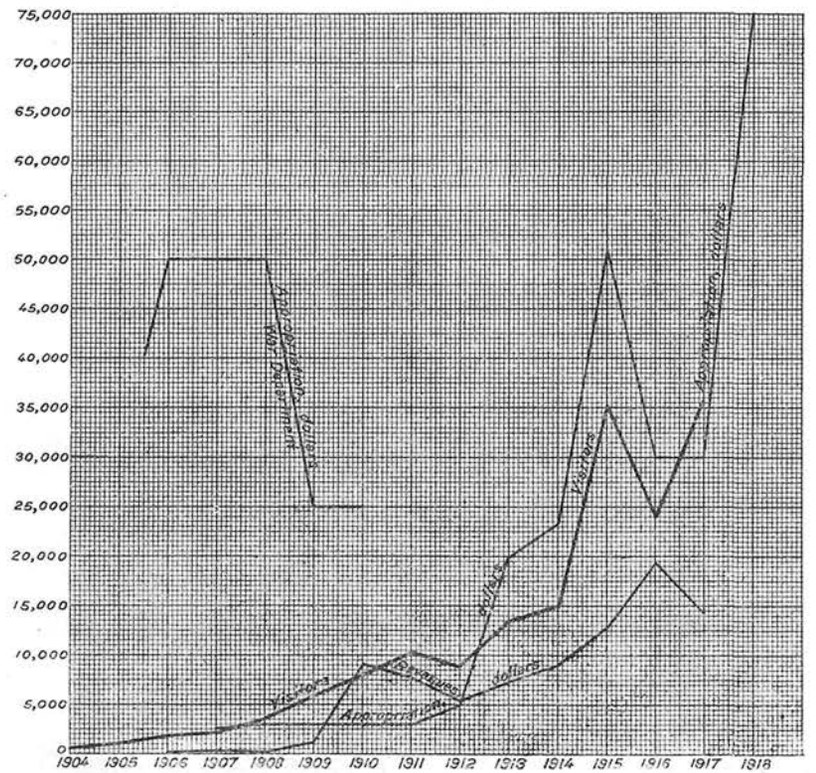
Hot Springs Reservation.—Revenues and visitors. Revenues by fiscal years and visitors by seasons.



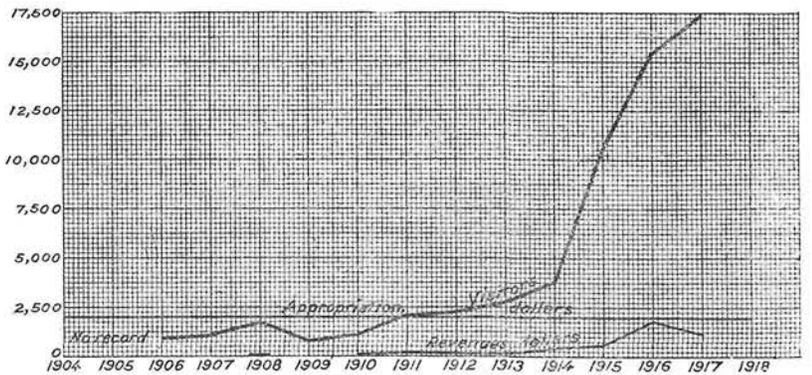
Wind Cave National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years.



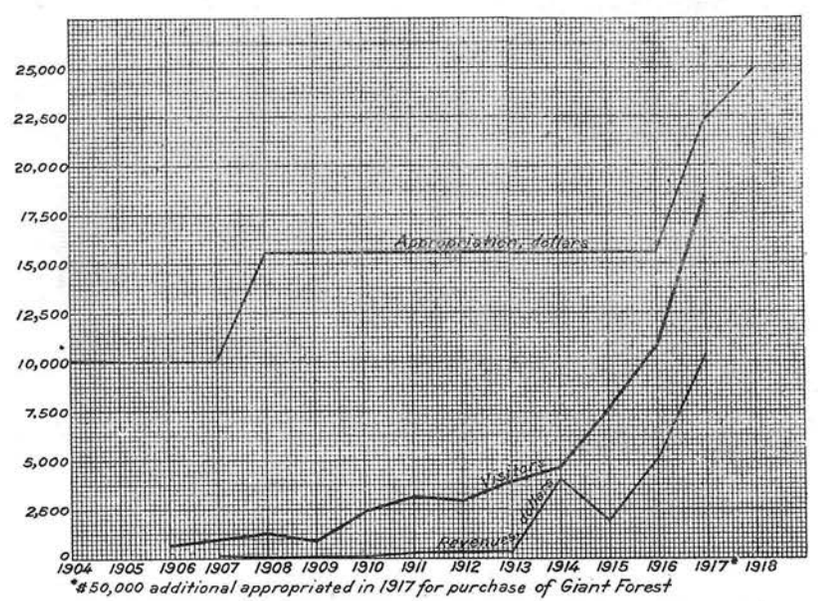
Yellowstone National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years. Appropriations under War Department for road work.



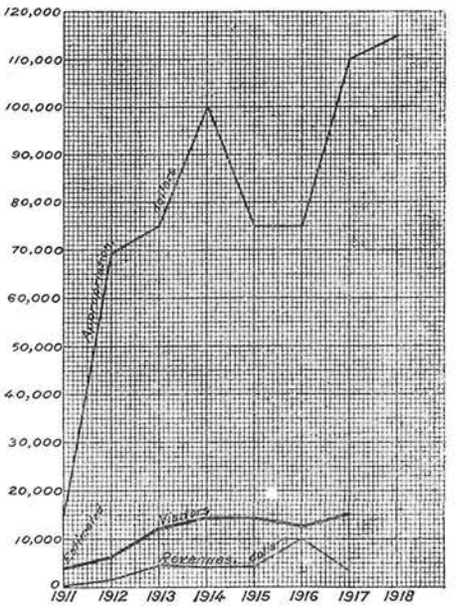
Mount Rainier National Park.—Appropriations, revenues, and visitors. Visitors by seasons, appropriations and revenues by fiscal years Appropriations under War Department for road work.



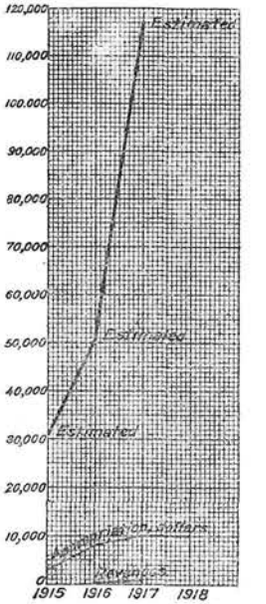
General Grant National Park.—Appropriations, revenues, and visitors. Visitors by seasons, appropriations and revenues by fiscal years.



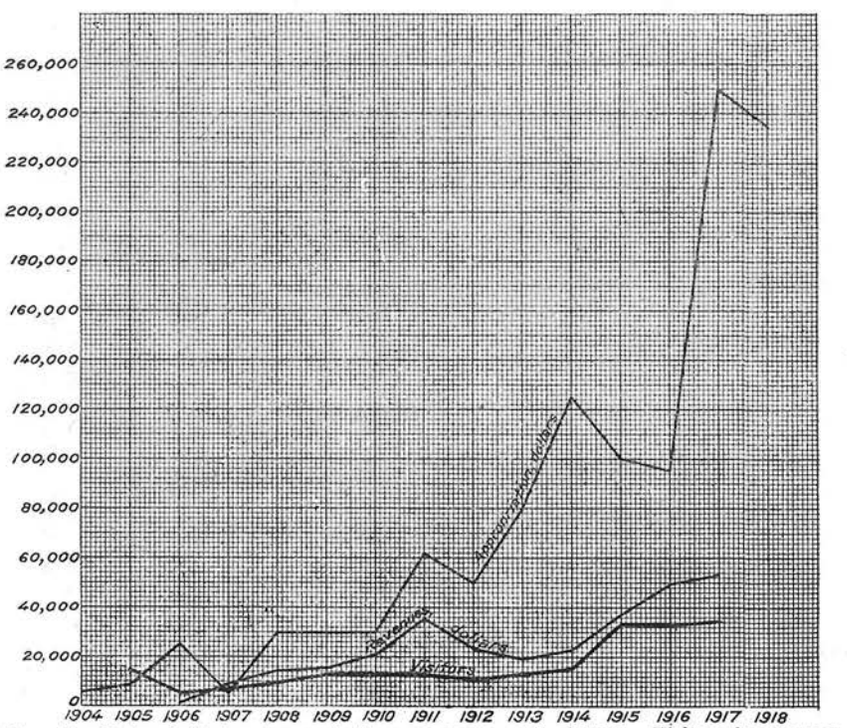
Sequoia National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years.



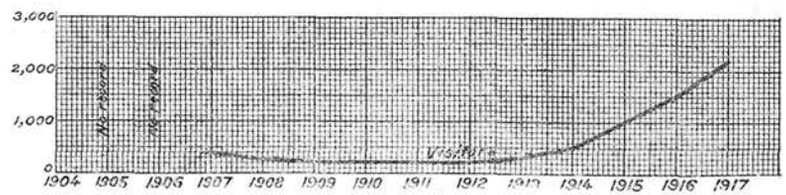
Glacier National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years.



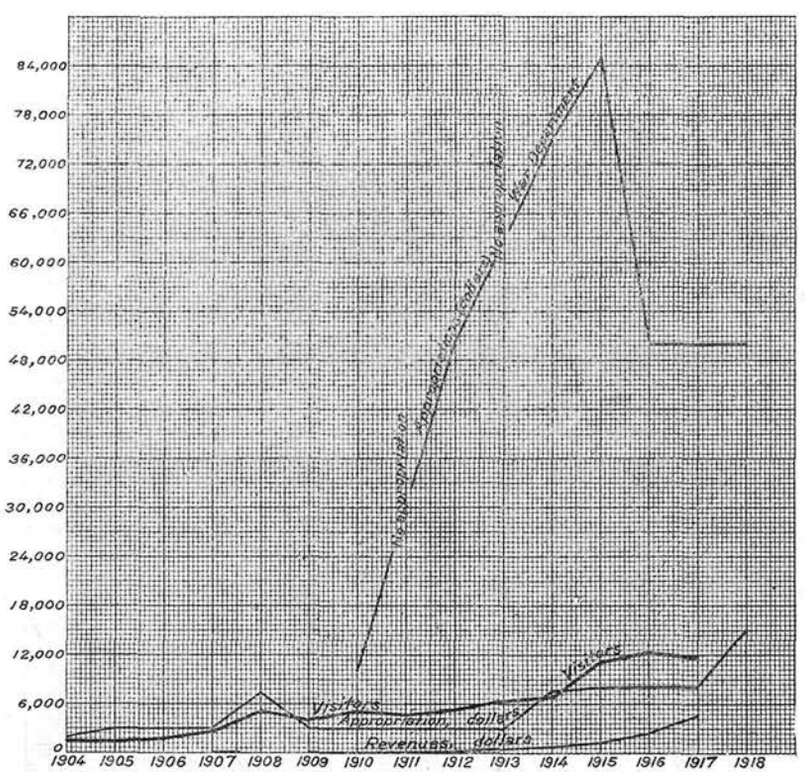
Rocky Mountain National Park.— Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years.



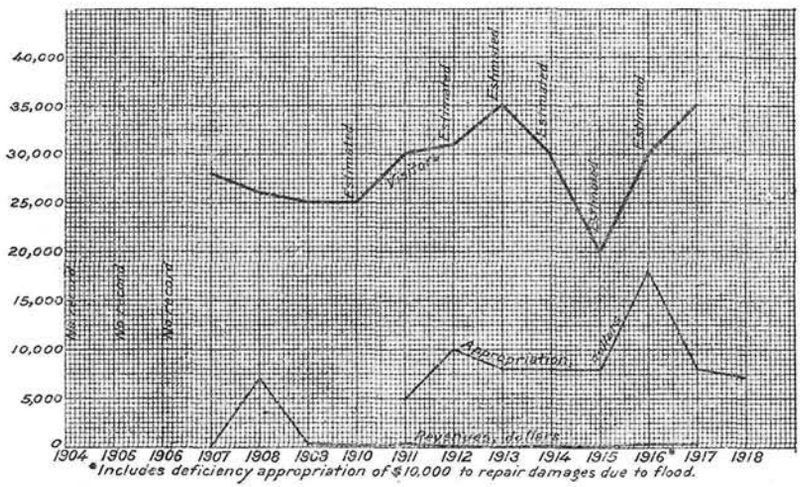
Yosemite National Park.—Appropriations, revenues, and visitors. Visitors by seasons, appropriations and revenues by fiscal years.



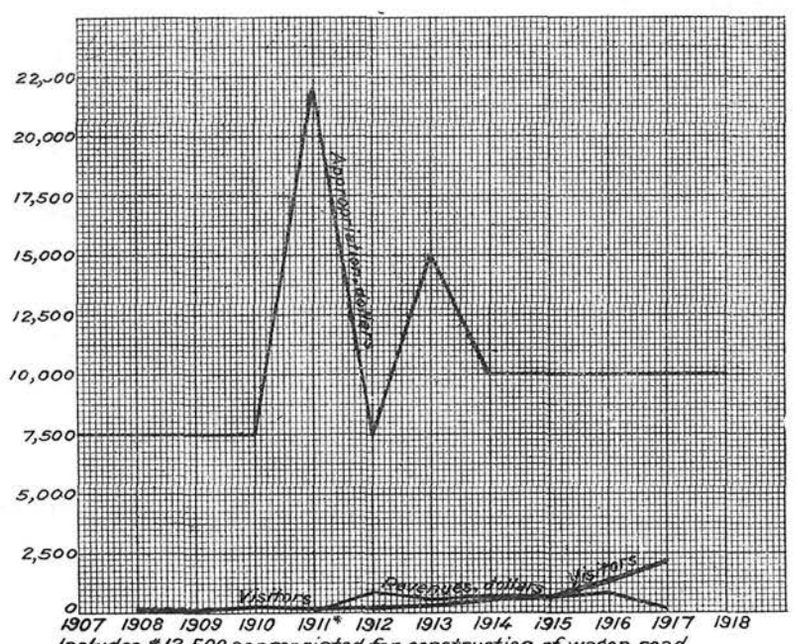
Sullys Hill Park.—Visitors by season.



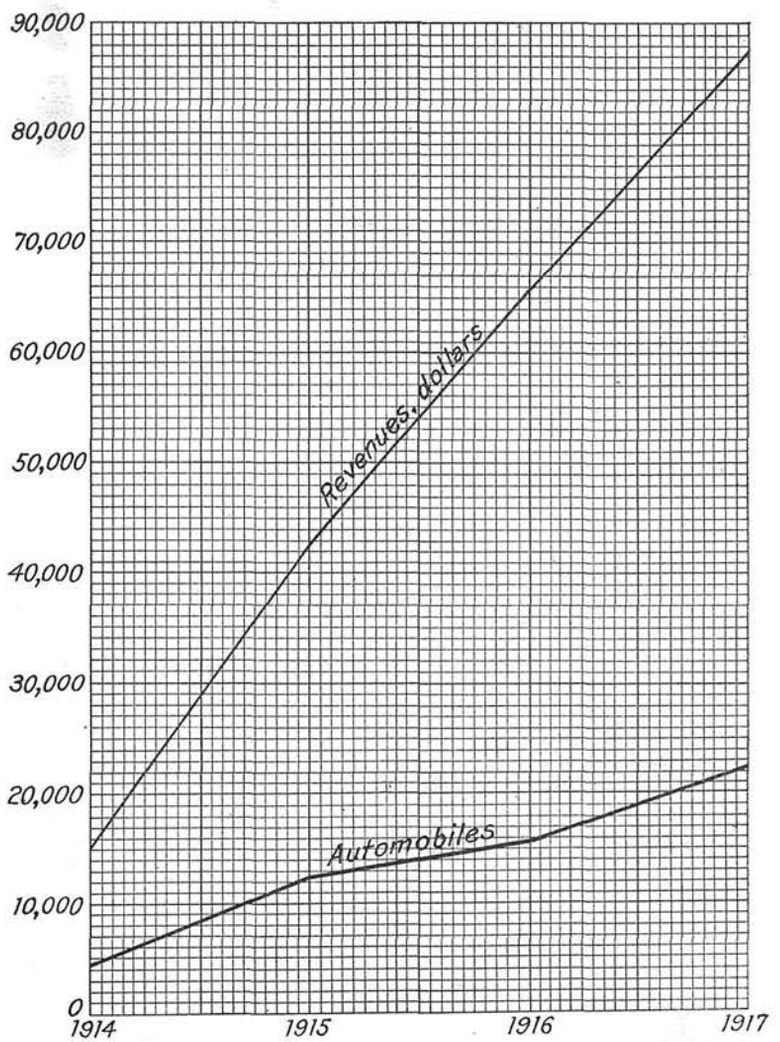
Crater Lake National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years. Appropriations under War Department for road work.



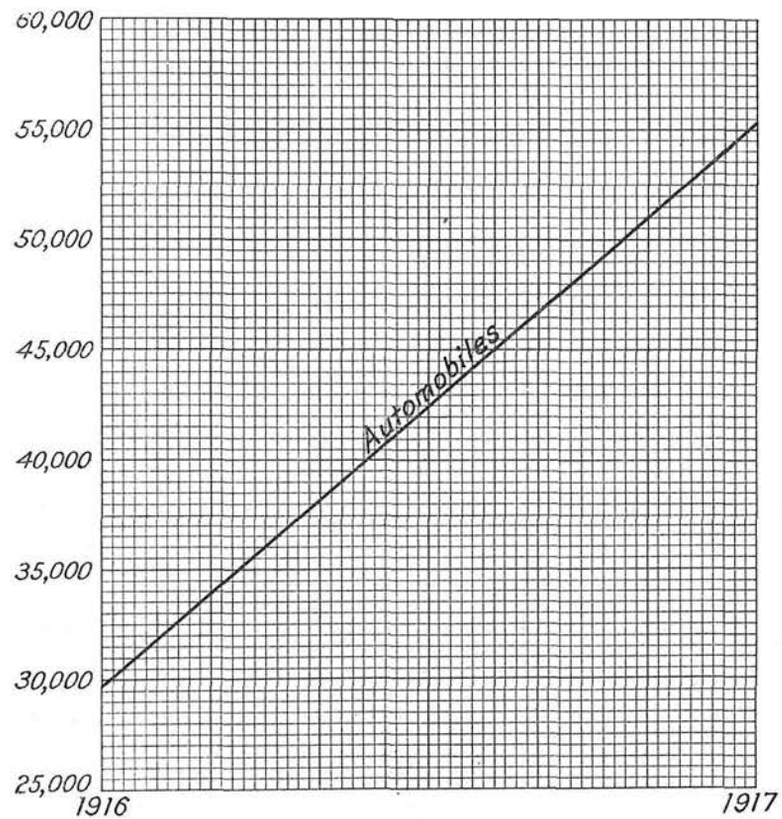
Platt National Park.—Appropriations, revenues, and visitors. Visitors by seasons, appropriations and revenues by fiscal years.



Mesa Verde National Park.—Appropriations, revenues, and visitors. Visitors by season, appropriations and revenues by fiscal years.



Totals of all private automobiles entering the national parks under permits and revenues derived from permit fees. See tables of statistics, page 191.



Totals of all private automobiles entering the national parks during the 1916 and 1917 seasons, with or without permits. See table of statistics, page 191.

DETAILED STATEMENT OF APPROPRIATIONS FOR NATIONAL PARKS AND NATIONAL MONUMENTS UNDER THE JURISDICTION OF THE SECRETARY OF THE INTERIOR, 1879–1918, INCLUSIVE.

NATIONAL PARK SERVICE.[1]

1917. National Park Service in the District of Columbia, deficiency act of Apr. 17, 1917 (Public No. 2, 65th Cong.)	$3,666.67
1918. National Park Service in the District of Columbia, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	17,600.00
Total	21,266.67

YELLOWSTONE NATIONAL PARK, WYO.[2]

UNDER INTERIOR DEPARTMENT.

[From Mar. 1, 1872, to June 20, 1878, no annual appropriations for the park were made by Congress. See below for some of the expenses for such period paid by later appropriation acts.]

1879. Protection and improvement of the park, sundry civil act of June 20, 1878 (20 Stats., 229)	$10,000.00
1880. Protection and improvement of the park, sundry civil act of Mar. 3, 1879 (20 Stats., 393)	10,000.00
1881. Protection and improvement of the park, sundry civil act of June 16, 1880 (21 Stats., 273)	15,000.00
1882. Protection and improvement of the park, sundry civil act of Mar. 3, 1881 (21 Stats., 451)	15,000.00
1880. For deficiency on account of protection and improvement, fiscal year 1880, deficiency act of Mar. 3, 1881 (21 Stats., 421)	89.76
1883. Protection and improvement of the park, sundry civil act of Aug. 7, 1882 (22 Stats., 329)	15,000.00
1879.[3] Protection and improvement of the park, deficiency act of Aug. 5, 1882 (22 Stats., 276)	150.00
1877–78. For salary and expenses of Supt. Norris from Apr. 18, 1877, to June 30, 1878, sundry civil act of Aug. 7, 1882 (22 Stats., 329)	3,180.41
1884. Protection and improvement, including salary of superintendent, $2,000, and 10 assistants at $900 each, sundry civil act of Mar. 3, 1883 (22 Stats., 626)	40,000.00
1885. Protection and improvement of the park, including salaries, sundry civil act of July 7, 1884 (23 Stats., 211)	40,000.00
1886. Protection and improvement of the park, including salaries sundry civil act of Mar. 3, 1885 (23 Stats., 499)	40,000.00
1886. Continuation of compensation, superintendent and employees, July 1 to 15, 1886, joint resolutions of July 1 and 15, 1886 (24 Stats., 343 and 345)	934.25
Reimbursement for expense of quarters of late Supt. Conger, deficiency act of Sept. 30, 1890 (26 Stats., 523)	169.37
1887. Protection and improvement of the park (construction of roads and bridges under direction engineer officer detailed by Secretary of War), sundry civil act of Aug. 4, 1886 (24 Stats., 240)	20,000.00
1894. For office of United States commissioner and jail, act of May 7, 1894, to protect birds and punish crimes in the park (28 Stats., 75)	5,000.00
1895. Reimbursement of United States commissioner the amount paid for completion office and jail buildings, sundry civil act of Mar. 2, 1895 (28 Stats., 945)	385.75

[1] Established by act of Aug. 25, 1916 (39 Stats., 535).
[2] Created by act of Mar. 1, 1872, secs. 2474 and 2475, Rev. Stats.
[3] And prior years.

1902. Repairs to United States commissioner's building, sundry civil act of Mar. 3, 1901 (31 Stats., 1162)	$450.00
1902.[1] Administration and protection, sundry civil act of Mar. 3, 1901 (31 Stats., 1169)	5,000.00
1902.[2] Surveying northern and western boundaries, sundry civil act of Mar. 3, 1901 (31 Stats., 1160)	3,300.00
1903.[2] Administration and protection, sundry civil act of June 28, 1902 (32 Stats., 456)	5,000.00
Completion survey of eastern boundary, sundry civil act of June 28, 1902 (32 Stats., 456)	2,800.00
For payment to E. F. Stahle for survey of western boundary, deficiency act of July 1, 1902 (32 Stats., 573)	13.99
For payment to E. F. Stahle for additional allowance for surveying boundary, deficiency act of July 1, 1902 (32 Stats., 573)	313.71
Purchase of buffalo and providing corral and feed, deficiency act of July 1, 1902 (32 Stats., 574)	15,000.00
Payment to the State of Wyoming for protection of park in prior years, act of May 27, 1902 (32 Stats., 236)	7,780.44
1904.[2] Administration and protection (including $2,500 for maintenance of buffalo), sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	7,500.00
Surveying boundaries, deficiency act of Feb. 8, 1904 (33 Stats., 32)	1,440.30
1905.[2] Administration and protection (including $2,500 for maintenance of buffalo), sundry civil act of Apr. 28, 1904 (33 Stats., 487)	7,500.00
1906.[2] Administration and protection (including $2,500 for maintenance of buffalo), sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	7,500.00
1907.[2] Administration and protection (including $2,500 for maintenance of buffalo), sundry civil act of June 30, 1906 (34 Stats., 729)	7,500.00
1908.[2] Administration and protection (including $2,500 for maintenance of buffalo, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	8,000.00
1909.[2] Administration and protection (including $2,500 for maintenance of buffalo, and $2,500 for surveying and marking unmonumented portions of park boundaries), sundry civil act of May 27, 1908 (35 Stats., 351)	10,500.00
1910.[2] Administration and protection (including $2,500 for maintenance of buffalo), sundry civil act of Mar. 4, 1909 (35 Stats., 990)	8,000.00
1911.[2] Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of June 25, 1910 (36 Stats., 745)	8,500.00
1912.[2] Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of Mar. 4, 1911 (36 Stats., 1420)	8,500.00
1913.[2] Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of Aug. 24, 1912 (37 Stats., 460)	8,500.00
1914. Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of June 23, 1913 (38 Stat., 49)	8,500.00
1915. Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of Aug. 1, 1914 (38 Stats., 648)	8,500.00
1916. Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of Mar. 3, 1915 (38 Stats., 862)	8,500.00

[1] Protection and improvement appropriations for the years 1888 to 1901, inclusive, were expended by the War Department.
[2] Improvement appropriations of these years were expendable by the War Department.

1917. Administration and protection (including $3,000 for maintenance of buffalo), sundry civil act of July 1, 1916 (39 Stats., 307)	$8,500.00
1918. Administration and protection (including $5,000 for maintenance of buffalo), sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	10,500.00
Total	382,507.98

UNDER WAR DEPARTMENT.

1888. Protection and improvement, sundry civil act of Mar. 3, 1887 (24 Stats., 531)	20,000.00
1889. Protection and improvement of park, sundry civil act of Oct. 2, 1888 (25 Stats., 534)	25,000.00
1890. Protection and improvement, sundry civil act of Mar. 2, 1889 (25 Stats., 967)	50,000.00
1891. Protection and improvement, sundry civil act of Aug. 30, 1890 (26 Stats., 398)	75,000.00
1892. Improvement of the park, sundry civil act of Mar. 3, 1891 (26 Stats., 977)	75,000.00
1893. Improvement of the park, sundry civil act of Aug. 5, 1892 (27 Stats., 376)	45,000.00
1894. Improvement of the park, sundry civil act of Mar. 3, 1893 (27 Stats., 598)	30,000.00
1895. Improvement of the park, sundry civil act of Aug. 18, 1894 (28 Stats., 403)	30,000.00
1896. Improvement and protection of the park, sundry civil act of Mar. 2, 1895 (28 Stats., 945)	30,000.00
1897. Improvement and protection, sundry civil act of June 11, 1896 (29 Stats., 442)	35,000.00
Improvement and protection, sundry civil act of June 4, 1898 (30 Stats., 43)	35,000.00
1898. Improvements, deficiency act of June 8, 1896 (29 Stats., 284)	5,000.00
Improvement of the park, deficiency act of July 19, 1897 (30 Stats., 143)	.78
1899. Improvement and protection, sundry civil act of July 1, 1898 (30 Stats., 629)	40,000.00
Improvements, deficiency act of July 7, 1898 (30 Stats., 667)	93.75
1900. Improvement and protection, sundry civil act of Mar. 3, 1899 (30 Stats., 1105)	40,000.00
Improvement of the park, deficiency act of Mar. 3, 1899 (30 Stats., 1226)	99.80
1901. Improvement and protection, sundry civil act of June 6, 1900 (31 Stats., 624)	60,000.00
Improvement, deficiency act of June 6, 1900 (31 Stats., 291)	6.95
Improvement for 1898, deficiency act of June 6, 1900 (31 Stats., 291)	162.62
1902. Improvement of the park, sundry civil act of Mar. 3, 1891 (31 Stats., 1169)	113,000.00
1903. Improvement of the park, sundry civil act of June 28, 1902 (32 Stats., 466)	250,000.00
Payment to Northern Pacific R. R. Co. for transportation of cast-iron pipe, deficiency act of Feb. 14, 1902 (32 Stats., 12)	31.96
1904. Improvement of the park, sundry civil act of Mar. 3, 1903 (32 Stats., 1130)	250,000.00
1905. Improvement of the park, sundry civil act of Apr. 28, 1904 (33 Stats., 498)	250,000.00
1906. Improvement of the park, sundry civil act of Mar. 3, 1905 (33 Stats., 1198)	133,000.00
1907. Maintenance and repair of improvements in park, sundry civil act of June 30, 1906 (34 Stats., 743)	55,000.00
1908. Maintenance and repair of improvements in park, sundry civil act of Mar. 4, 1907 (34 Stats., 1349)	75,000.00
1909. Maintenance and repair of improvements in park, sundry civil act of May 27, 1908 (35 Stats., 365)	65,000.00

1910. Maintenance and repair of improvements in park, sundry civil act of Mar. 4, 1909 (35 Stats., 1005)	$65,000.00
1911. Maintenance and repair of improvements in park, sundry civil act of June 25, 1910 (36 Stats., 725)	75,000.00
1912. Maintenance and repair of improvements in park, sundry civil act of Mar. 4, 1911 (36 Stats., 1402)	70,000.00
Construction of chapel in park on or near military reservation Army appropriation act of Mar. 3, 1911 (36 Stats., 1050)	25,000.00
1913. Maintenance and repair of improvements in park, sundry civil act of Aug. 24, 1912 (37 Stats., 442)	100,000.00
Widening and improving surface of roads, for building bridges and culverts to make roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of Aug. 24, 1912 (37 Stats., 442)	77,000.00
1914. Maintenance and repair of improvements in park, sundry civil act of June 23, 1913	125,000.00
Widening and improving surface of roads, for building bridges and culverts to make roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of June 23, 1913 (38 Stats., 33)	75,000.00
1915. Maintenance and repair of improvements, sundry civil act of Aug. 1, 1914 (38 Stats., 632)	125,000.00
Widening to not exceeding 18 feet, and improving surface of roads, and for building bridges and culverts in the park to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of Aug. 1, 1914 (38 Stats., 632)	100,000.00
Widening to not exceeding 18 feet and improving the surface of roads and for building bridges and culverts *in the forest reserve* leading out of the park from the east boundary to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of Aug. 1, 1914 (38 Stats., 633)	30,000.00
1916. Maintenance and repair of improvements, sundry civil act of Mar. 3, 1915 (38 Stats., 845)	125,000.00
Widening and improving surface of roads, for building bridges and culverts to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of Mar. 3, 1915 (38 Stats., 845)	50,000.00
Completing the widening to not exceeding 18 feet of roadway and improving the surface of roads and for building bridges and culverts *in the forest reserve* leading out of the park from the east boundary, to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of Mar. 3, 1915 (38 Stats., 845)	20,000.00
1917. Maintenance and repair of improvements, sundry civil act of July 1, 1916 (39 Stats., 288)	152,500.00
For completing the widening to not exceeding 18 feet of roadway and improving the surface of roads and for building bridges and culverts *in the forest reserve* leading out of the park from the east boundary, sundry civil act of July 1, 1916 (39 Stats., 289)	6,000.00
Widening and improving surface of roads, for building bridges and culverts to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, sundry civil act of July 1, 1916 (39 Stats., 289)	38,700.00
1918. For maintenance and repair of improvements, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	147,500.00
For resurfacing and for finishing the belt line with oil macadam, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	20,000.00
Total	3,213,095.86

RECAPITULATION.

Appropriations under the Interior Department, 1879 to 1918, inclusive	$382,507.98
Appropriations under the War Department, 1888 to 1918, inclusive	3,213,095.86
Total	3,595,603.84

YOSEMITE NATIONAL PARK, CAL.[1]

[From Oct. 1, 1890, to July 1, 1898, no appropriations for the park were made by Congress.]

1899. For improvement, sundry civil act of July 1, 1898 (30 Stats., 624)	$4,000.00
1900. For improvement, sundry civil act of Mar. 3, 1899 (30 Stats., 1100)	4,000.00
1901. Protection and improvement, sundry civil act of June 6, 1900 (31 Stats., 618)	4,000.00
1902. Protection and improvement, sundry civil act of Mar. 3, 1901 (31 Stats., 1162)	4,000.00
1903. Protection and improvement, sundry civil act of June 28, 1902 (32 Stats., 456)	6,000.00
Payment of expenses incurred by officer detailed from Sequoia Park to Yosemite Park for investigation, deficiency act of Mar. 3, 1903 (32 Stats., 1060)	49.25
1904. Protection and improvement, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	6,000.00
1905. Protection and improvement, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	5,400.00
Yosemite Park Lands Commission, for examination of conditions, etc., to ascertain what parts not necessary for park purposes, and determine course proposed road to Yosemite Valley, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	3,000.00
1906. Protection and improvement, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	5,400.00
Management, protection, and improvement, joint resolution of Mar. 3, 1905 (33 Stats., 1286)	20,000.00
1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	5,750.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	30,000.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	30,000.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 990)	30,000.00
1911. Protection and improvement (inclusive of $12,000 reserved within appropriation for road sprinkling), sundry civil act of June 25, 1910 (36 Stats., 745)	62,000.00
1912. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of Mar. 4, 1911 (36 Stats., 1420)	50,000.00
1913. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	80,000.00
1914. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of June 23, 1913 (38 Stats., 49)	125,000.00

[1] Created by act of Oct. 1, 1890 (26 Stats., 650); boundaries changed by act of Feb. 7, 1905 (33 Stats., 702), and joint resolution of June 11, 1906 (34 Stats., 831), the latter accepting recession of Yosemite Valley from the State of California.

1915. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	$100,000.00
1916. Protection and improvement, construction and repair of bridges, fences and trails, and improvement of roads other than toll roads, including not exceeding $2,700 for maintenance and repair of horse-drawn passenger-carrying vehicles for use of superintendent, supervisor, resident engineer, and employees in connection with general park work, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	75,000.00
To cover claim of Crane Co. for water system supplies as reported in House Document 1579, Sixty-third Congress, third session, deficiency act of Mar. 4, 1915 (38 Stats., 1157)	196.80
1917. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, including not exceeding $500 for maintenance and repair of horse-drawn passenger-carrying vehicles for use of supervisor and employees in connection with general park work, not exceeding $1,000 for a motor-driven passenger-carrying vehicle for the use of supervisor and the maintenance, operation, and repair thereof, not exceeding $75,000 for grading in width not exceeding 20 feet El Portal-Yosemite road, and not exceeding $150,000 for installation of a hydroelectric power plant, sundry civil act of July 1, 1916 (39 Stats., 308)	250,000.00
1918. For protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, including not exceeding $800 for maintenance and repair of horse-drawn and motor-driven passenger-carrying vehicles for use of the supervisor and employees in connection with general park work, not exceeding $8,000 for a bridge at the old Sentinel Bridge site, and not exceeding $75,000 for grading in width not exceeding 20 feet El Portal-Yosemite road; also not exceeding $60,000 for the completion of the installation of the hydroeletcric power plant authorized by the sundry civil act for the fiscal year 1917, sundry civil act of June 12, 1917 (Public, No. 21, 65th Cong.); in all	235,000.00
Total	1,134,796.05

GLACIER NATIONAL PARK, MONT.[1]

1911. For improvement of Glacier National Park, the construction and repair of roads and trails, sundry civil act of June 25, 1910 (36 Stats., 745)	$15,000.00
1912. For administration and improvement, construction of roads, bridges, telephone lines, and repair of roads, trails, and bridges (appropriation made immediately available), sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	69,200.00
1913. For administration and improvement, construction of roads, bridges, telephone lines, and repair of roads, trails, and bridges, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	75,000.00
1914. For administration and improvement, construction and repair of roads, bridges, and telephone lines, sundry civil act of June 23, 1913 (38 Stats., 49)	100,000.00
1915. For administration and improvement, construction and repair of roads, trails, bridges, and telephone lines, sundry civil act of Aug. 1, 1914 (38 Stats., 648–649)	75,000.00
1916. For administration and improvement, construction and repair of roads, trails, bridges, and telephone lines, sundry civil act of Mar. 3, 1915 (38 Stats., 862–863)	75,000.00

[1] Created by act of Congress approved May 11, 1910 (36 Stats., 354).

1917. For administration and improvement, construction and repair of roads, trails, bridges, and telephone lines, including $500 for construction of warehouse, and $10,000 reimbursement to Great Northern Railway Co. for repair of 32 miles of roads in the Blackfeet Indian Reservation, sundry civil act of July 1, 1916 (39 Stats., 307–308)	$110,000.00
1918. For administration and improvement, construction and repair of roads, trails, bridges, and telephone lines, including necessary repairs to the roads from Glacier Park station through the Blackfeet Indian Reservation to various points in the boundary line of the park, and for the purchase and maintenance of horse-drawn and motor-driven passenger-carrying vehicles for the use of the supervisor and employees in connection with general park work, sundry civil act of June 12, 1917 (Public, No. 21, 65th Cong.)	115,000.00
Total	634,200.00

SEQUOIA NATIONAL PARK, CAL.[1]

[From Sept. 25, 1890, to June 6, 1900, no appropriations for the park were made by Congress.]

1901. Protection and improvement, sundry civil act of June 6, 1900 (31 Stats., 618)	$10,000.00
1902. Protection and improvement, sundry civil act of Mar. 3, 1901 (31 Stats., 1162)	10,000.00
1903. Protection and improvement, sundry civil act of June 28, 1902 (32 Stats., 456)	10,000.00
1904. Protection and improvement, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	10,000.00
Protection and improvement, deficiency act of Mar. 3, 1903 (32 Stats., 1060)	89.69
1905. Protection and improvement, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	10,000.00
1906. Protection and improvement, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	10,000.00
1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	10,000.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	15,550.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	15,550.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 990)	15,550.00
1911. Protection and improvement, sundry civil act of June 25, 1910 (36 Stats., 745)	15,550.00
1912. Protection and improvement, construction and repair of bridges, fences, and trails, sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	15,550.00
1913. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	15,550.00
1914. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of June 23, 1913 (38 Stats., 49)	15,550.00
1915. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, including the purchase of site for ranger station not to exceed $500, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	15,550.00

[1] Created by acts of Sept. 25, 1890 (26 Stats., 478), and Oct. 1, 1890 (26 Stats., 650).

1916. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, including the purchase of site for ranger station not to exceed $500, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	$15,550.00
1917. Protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of July 1, 1916 (39 Stats., 308)	22,300.00
Purchase of lands in Sequoia National Park, sundry civil act of July 1, 1916 (39 Stats., 308)	50,000.00
1918. For protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	25,000.00
Total	307,339.69

GENERAL GRANT NATIONAL PARK, CAL.[1]

[From Oct. 1, 1890, to June 6, 1900, no appropriations for the park were made by Congress.]

1901. Improvement of park, sundry civil act of June 6, 1900 (31 Stats., 618)	$2,500.00
1902. Protection and improvement, sundry civil act of Mar. 3, 1901 (31 Stats., 1162)	2,500.00
1903. Protection and improvement, sundry civil act of June 28, 1902 (32 Stats., 456)	2,500.00
1904. Protection and improvement, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	2,000.00
For improvement of park in 1901, deficiency act of Mar. 3, 1903 (32 Stats., 1060)	58.65
1905. Protection and improvement, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	2,000.00
1906. Protection and improvement, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	2,000.00
1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	2,000.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	2,000.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	2,000.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 990)	2,000.00
1911. Protection and improvement, sundry civil act of June 25, 1910 (36 Stats., 745)	2,000.00
1912. Protection and improvement, sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	2,000.00
1913. Protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	2,000.00
1914. Protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of June 23, 1913 (38 Stats., 49)	2,000.00
1915. Protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	2,000.00
1916. Protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	2,000.00
1917. Protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of July 1, 1916 (39 Stats., 308)	2,000.00
1918. For protection and improvement, construction of fences and trails, and repairing and extension of roads, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	2,000.00
Total	37,558.65

[1] Created by act of Oct. 1, 1890 (26 Stats., 650).

MOUNT RAINIER NATIONAL PARK, WASH.[1]

UNDER INTERIOR DEPARTMENT.

[From Mar. 2, 1899, to June 30, 1906, no appropriations for the park were made by Congress.]

1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	$2,500.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	3,000.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	3,000.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 991)	3,000.00
1911. Protection and improvement, sundry civil act of June 25, 1910 (36 Stats., 745)	3,000.00
1912. Protection and improvement, construction of bridges, fences, and trails, etc., sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	[2] 5,000.00
1913. Protection and improvement, construction of bridges, fences, and trails, and improvement of roads, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	20,000.00
1914. Protection and improvement, construction of bridges, fences, and trails, and improvement of roads, sundry civil act of June 23, 1913 (38 Stats., 50)	13,400.00
For survey for the extension of the present road from a point at or about Longmire Springs eastward to the eastern boundary line of the forest reserve surrounding the park and for survey of necessary trails, sundry civil act of June 23, 1913 (38 Stats., 50)	10,000.00
1915. Protection and improvement, construction of bridges, fences, and trails, and improvement of roads, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	51,000.00
1916. Protection and improvement, construction of bridges, fences, and trails, and improvement of roads, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	30,000.00
1917. Protection and improvement, construction of bridges, fences, and trails, and improvement of roads, sundry civil act of July 1, 1916 (39 Stats., 308)	30,000.00
1918. Protection and improvement, construction of roads, bridges, fences, and trails, and improvement of roads, including not exceeding $1,250 for the purchase of a motor-driven vehicle and the maintenance and repair thereof, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	75,000.00
Total	248,900.00

UNDER WAR DEPARTMENT.

1903. Survey of most practicable route for wagon road into park and toward construction of said road after survey shall have been made, deficiency act of Mar. 3, 1903 (32 Stats., 1131)	10,000.00
1904. Continuing construction wagon road, sundry civil act of Apr. 28, 1904 (33 Stats., 498)	30,000.00
1906. Continuing construction wagon road, sundry civil act of June 30, 1906 (34 Stats., 744)	50,000.00
1907. Continuing construction wagon road, sundry civil act of Mar. 4, 1907 (34 Stat., 1349)	50,000.00
1908. Continuing construction wagon road, sundry civil act of May 27, 1908 (35 Stats., 365)	50,000.00
1909. Completion of wagon road, sundry civil act of Mar. 4, 1909 (35 Stats., 1005)	25,000.00

[1] Created by act of Mar. 2, 1899 (30 Stats., 993).
[2] By the act of Aug. 14, 1911 (37 Stats., 38), the above-mentioned appropriation was reduced to $5,000.

1910. Additional work upon wagon road, sundry civil act of June 25, 1910 (36 Stats., 725)	$25,000.00
Total	240,000.00

RECAPITUATION.

Appropriations under the Interior Department, 1907 to 1918, inclusive	248,900.00
Appropriations expended under the War Department, 1903 to 1910, inclusive	240,000.00
Total	488,900.00

CRATER LAKE NATIONAL PARK, OREG.[1]

UNDER INTERIOR DEPARTMENT.

1902 and 1903. Protection and improvement, deficiency act of July 1, 1902 (32 Stats., 571)	$2,000.00
1904. Protection and improvement, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	2,000.00
1905. Protection and improvement, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	3,000.00
1906. Protection and improvement, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	3,000.00
1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	3,000.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	7,315.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	3,000.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 990)	3,000.00
1911. Protection and improvement, sundry civil act of June 25, 1910 (36 Stats., 745)	3,000.00
1912. Protection and improvement, sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	3,000.00
1913. Protection and improvement, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	3,000.00
1914. Protection and improvement and repairing and extension of roads, sundry civil act of June 23, 1913 (38 Stat., 50)	7,540.00
1915. Protection and improvement and repairing and extension of roads, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	8,040.00
1916. Protection and improvement and repairing and extension of roads, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	8,000.00
1917. Protection and improvement and repairing and extension of roads, sundry civil act of July 1, 1916 (39 Stats., 308)	8,000.00
1918. Protection and improvement and repairing and extension of roads, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	15,000.00
Total	81,895.00

UNDER WAR DEPARTMENT.

1910. Surveying, locating, and preparing plans and estimates for roads and trails in the park, sundry civil act of June 25, 1910 (36 Stats., 725)	10,000.00
1913. Construction of wagon road and necessary bridges through park, with system of tanks and water-supply pipes for sprinkling, sundry civil act of Aug. 24, 1912 (37 Stats., 443)	50,000.00
1914. Continuation of the construction of a wagon road and the necessary bridges through park, with system of tanks and water-supply pipes for sprinkling, sundry civil act of June 23, 1913 (38 Stats., 33)	75,000.00

[1] Created by act of May 22, 1902 (32 Stats., 202).

1915. Continuation of the construction of a wagon road and the necessary bridges through park, with system of tanks and water-supply pipes for sprinkling, sundry civil act of Aug. 1, 1914 (38 Stats., 633)	$85,000.00
1916. Continuation of the construction of a wagon road and the necessary bridges through park, with system of tanks and water-supply pipes for sprinkling, sundry civil act of Mar. 3, 1915 (38 Stats., 845)	50,000.00
1917. Continuation of the construction of a wagon road and the necessary bridges through park, with system of tanks and water-supply pipes for sprinkling, also for maintenance, repair, and operation of two horse-drawn passenger-carrying vehicles, sundry civil act of July 1, 1916 (39 Stats., 289)	50,000.00
1918. For continuation of a wagon road and the necessary bridges through the park, together with a system of tanks and water-supply pipes for sprinkling (H. Doc. 328, 62d Cong., 2d sess.), and for maintenance, repair, and operation of two horse-drawn passenger-carrying vehicles, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	50,000.00
Total	370,000.00

RECAPITULATION.

Appropriations under the Interior Department, 1902 to 1918, inclusive	81,895.00
Appropriations expended under the War Department, 1910 to 1918, inclusive	370,000.00
Total	451,895.00

WIND CAVE NATIONAL PARK, S. DAK.[1]

1904. Protection and improvement, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	$2,500.00
1905. Protection and improvement, sundry civil act of Apr. 28, 1904 (33 Stats., 487)	2,500.00
1906. Protection and improvement, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	2,500.00
1907. Protection and improvement, sundry civil act of June 30, 1906 (34 Stats., 729)	4,400.00
1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	2,500.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 352)	2,500.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 991)	2,500.00
1911. Protection and improvement, sundry civil act of June 25, 1910 (36 Stats., 745)	2,500.00
1912. Management, improvement, and protection, sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	2,500.00
1913. No appropriation made.	
1914. Improvement and protection, sundry civil act of June 23, 1913 (38 Stats., 50)	2,500.00
1915. Protection and improvement, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	2,500.00
1916. Protection and improvement, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	2,500.00
1917. Protection and improvement, sundry civil act of July 1, 1916 (39 Stats., 308)	2,500.00
1918. For improvement and protection, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	2,500.00
Total	36,900.00

[1] Created by act of Jan. 9, 1903 (32 Stats., 765).

UNDER DEPARTMENT OF AGRICULTURE.[1]

1913. For the establishment of a national game preserve, to be known as the Wind Cave National Game Preserve, upon the land embraced within the boundaries of the Wind Cave National Park, in the State of South Dakota, for a permanent national range for a herd of buffalo to be presented to the United States by the American Bison Society, and for such other native American game animals as may be placed therein. The Secretary of Agriculture is authorized to acquire by purchase or condemnation such adjacent lands as may be necessary for the purpose of assuring an adequate permanent water supply, and to inclose the said game preserve with a good and substantial fence and to erect thereon all necessary sheds and buildings for the proper care and maintenance of the said animals, to be available until expended, Agricultural act of August 10, 1912 (37 Stats., 293)	$26,000.00

RECAPITULATION.

Appropriations under the Interior Department, 1904 to 1918, inclusive	36,900.00
Appropriation expended under the Department of Agriculture, appropriated for the fiscal year 1913 and made available until expended	26,000.00
Total	62,900.00

MESA VERDE NATIONAL PARK, COLO.[2]

1908. Protection and improvement, sundry civil act of Mar. 4, 1907 (34 Stats., 1337)	$7,500.00
1909. Protection and improvement, sundry civil act of May 27, 1908 (35 Stats., 351)	7,500.00
1910. Protection and improvement, sundry civil act of Mar. 4, 1909 (35 Stats., 990)	7,500.00
1911. Protection and improvement, inclusive of $12,500 reserved within appropriation for construction of main wagon road through the park, sundry civil act of June 25, 1910 (36 Stats., 745)	20,000.00
For examination and leasing, etc., of coal lands in the park, deficiency act of June 25, 1910 (36 Stats., 796)	2,000.00
1912. Protection and improvement, sundry civil act of Mar. 4, 1911 (36 Stats., 1421)	7,500.00
1913. Protection and improvement, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	15,000.00
1914. Protection and improvement, sundry civil act of June 23, 1913 (38 Stats., 50)	10,000.00
1915. Protection and improvement, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	10,000.00
1916. Protection and improvement, including not exceeding $456 for maintenance and repair of horse-drawn passenger-carrying vehicle, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	10,000.00
1917. Protection and improvement, including not exceeding $433 for maintenance and repair of horse-drawn passenger-carrying vehicles, sundry civil act of July 1, 1916 (39 Stats., 308)	10,000.00
1918. Protection and improvement, including not exceeding $433 for maintenance and repair of horse-drawn passenger-carrying vehicles for use of superintendent and employees, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	10,000.00
Total	117,000.00

[1] Funds for the maintenance and further improvement of this game preserve are allotted each year from lump-sum appropriations for the Biological Survey, Department of Agriculture.

[2] Created by act of June 29, 1906 (34 Stats., 616).

PLATT NATIONAL PARK.[1] (Formerly Sulphur Springs Reservation, Okla.)

[From July 1, 1902, to June 25, 1910, no appropriations for the park were made by Congress.]

1909 and 1910. Appropriation of $16,000 for certain specified improvements out of park-revenue fund. This was ineffective, as the revenue-fund balance was only sufficient to carry a reduced force of employees for the proper protection of the park, sundry civil act of Mar. 4, 1909 (35 Stats., 991).	
1911. Care and maintenance, including all personal services, sundry civil act of June 25, 1910 (36 Stats., 745)	$5,000.00
1912. Maintenance, bridging, roads, trails, and sewerage, sundry civil act of Mar. 4, 1911 (36 Stats., 1420)	10,000.00
1913. Maintenance, bridging, roads, and trails, sundry civil act of Aug. 24, 1912 (37 Stats., 460)	8,000.00
1913. Construction sanitary sewer (contingent on city of Sulphur, Okla., appropriating a similar sum), Indian appropriation act of Aug. 24, 1912 (37 Stats., 532)	17,500.00
1914. Maintenance, bridging, roads, and trails, deficiency appropriation act of Oct. 22, 1913 (38 Stats., 218)	8,000.00
1915. Maintenance, bridging, roads, and trails, sundry civil act of Aug. 1, 1914 (38 Stats., 649)	8,000.00
1916. Maintenance, bridging, roads, and trails, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	8,000.00
To cover the cost of repairing damage to bridges, roads, trails, buildings, etc., deficiency appropriation act of Mar. 31, 1916 (39 Stats., 42)	10,000.00
1917. For improvement and protection, sundry civil act of July 1, 1916 (39 Stats., 308)	8,000.00
1918. For improvement and protection, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	7,180.00
Total	89,680.00

SULLYS HILL PARK, N. DAK.[2]

UNDER THE DEPARTMENT OF THE INTERIOR.

[From June 2, 1904 to June 30, 1913, no appropriations for the park were made by Congress.]

1914. For examination of the land embraced in Sullys Hill Park to determine whether it contains valuable minerals, Indian appropriation act of June 30, 1913 (38 Stats., 92)	$500.00

UNDER DEPARTMENT OF AGRICULTURE.

1915. For the improvement of the game preserve in the park, Agricultural appropriation act of June 30, 1914 (38 Stats., 434)	5,000.00
1916. For the improvement of the game preserve in the park, including construction of fences, sheds, buildings, corrals, roads, and other structures which may be necessary, Agricultural appropriation act of Mar. 4, 1915 (38 Stats., 1105)	5,000.00
1917. For the improvement of the game preserve in the park, including construction of fences, sheds, buildings, corrals, roads, and other structures which may be necessary, Agricultural appropriation act of Aug. 11, 1916 (39 Stats., 467)	5,000.00

[1] Created by acts of July 1, 1902 (32 Stats., 641), and Apr. 21, 1904 (33 Stats., 220); name changed by joint resolution of June 29, 1906 (34 Stats., 837).
[2] Created by executive proclamation of June 2, 1904, under the act approved Apr. 27, 1904 (33 Stats., 319).

1918. For the maintenance and improvement of the game preserves in Sullys Hill National Park, including the construction of all fences, sheds, buildings, corrals, roads, and other structures which may be necessary, in addition to the amount heretofore appropriated, available until expended, Agricultural appropriation act of Mar. 4, 1917 (Public No. 390, 64th Congress)	$5,000.00
Total	20,000.00

RECAPITULATION.

Appropriations under the Interior Department, fiscal year 1914	500.00
Appropriations expended under the Department of Agriculture, 1914 to 1917, inclusive	20,000.00
Total	20,500.00

ROCKY MOUNTAIN NATIONAL PARK.[1]

1915. For protection and improvement, deficiency appropriation act of Mar. 4, 1915 (38 Stats., 1148)	$3,000.00
1916. For protection and improvement, sundry civil act of Mar. 3, 1915 (38 Stats., 863)	8,000.00
1917. For protection and improvement, sundry civil act of July 1, 1916 (39 Stats., 308)	10,000.00
1918. For protection and improvement, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	10,000.00
Total	31,000.00

HOT SPRINGS RESERVATION, ARK.[2]

[From Apr. 20, 1832, to Mar. 3, 1877, no appropriations were made by Congress.]

TITLE: PROTECTION AND IMPROVEMENT, HOT SPRINGS RESERVATION.[3]

Specific appropriations by Congress from revenue fund.

1893. Improvement of Whittington Lake Reserve from proceeds of sale of lots included in above fund, 1892,[4] sundry civil act Aug. 5, 1892 (27 Stats., 373)	[5] $30,000.00
1896. To repay expenditures upon a sewer, 1896, act May 1, 1896 (29 Stats., 110)	[5] 930.00
1913. For survey for storm drainage and sanitary sewer system city of Hot Springs, abutting Hot Springs Reservation, sundry civil act of Aug. 24, 1912 (37 Stats., 457)	5,000.00
1918. For the employment of a landscape engineer and such other expenses as may be required for the preparation of a practical and comprehensive plan, together with an accurate estimate of the cost thereof, for improving the Hot Springs Reservation, sundry civil act of June 12, 1917 (Public No. 21, 65th Cong.)	10,000.00
Total	45,930.00

TITLE: IMPROVEMENT, HOT SPRINGS RESERVATION.[3]

Specific appropriation by Congress from revenue fund.

Improvement of Hot Springs Creek, 1883,[4] sundry civil act of Aug. 7, 1882 (22 Stats., 329)	[5] $33,744.78

This amount accrued to the revenue fund from operation of the bathhouses by the Court of Claims receiver in 1878.

[1] Created by act of Jan. 26, 1915 (38 Stats., 798).
[2] Created by acts of Apr. 20, 1832 (4 Stats., 505); Mar. 3, 1877 (19 Stats., 377); and June 16, 1880 (21 Stats., 289).
[3] Designations given on books of Treasury Department.
[4] Years scheduled on books of Treasury Department.
[5] Without year.

TITLE: SALARIES AND EXPENSES, HOT SPRINGS RESERVATION.[1]

Salaries and expenses Hot Springs Commission, 1877,[2] sundry civil act of Mar. 3, 1877 (19 Stats., 356)	[3] $27,500.00
Same as above, 1878, deficiency act of Dec. 15, 1877 (20 Stats., 12)	[3] 15,000.00
Same as above, 1879, act of Dec. 16, 1878 (20 Stats., 258)	[3] 27,000.00
Same as above, 1879, deficiency act of Mar. 3, 1879 (20 Stats., 415)	[3] 12,000.00
Total	[4] 82,000.00

TITLE: PROTECTION AND IMPROVEMENT, HOT SPRINGS RESERVATION.

Specific appropriations by Congress from moneys in Treasury not otherwise appropriated.

Improvement of Hot Springs Creek, 1885,[2] sundry civil act July 7, 1884 (23 Stats., 208)	[5] $75,000.00
Same as above, 1886, sundry civil act Mar. 3, 1885 (23 Stats., 498)	[5] 8,000.00
Same as above, 1887, sundry civil act Aug. 4, 1886 (24 Stats., 239)	[5] 20,000.00
Reservoirs, pumps, piping, and improvement of the free bathhouse, sundry civil act Oct. 2, 1888 (25 Stats., 527)	[5] 36,000.00
Improvement of the free bathhouse, 1890, deficiency act Apr. 4, 1890 (26 Stats., 40)	[3] 3,200.00
For mains, pipes, pumping engine, etc., 1891, deficiency act of Sept. 30, 1890 (26 Stats., 523)	[3] 5,000.00
Construction of roads, 1892, sundry civil act of Mar. 3, 1891 (26 Stats., 972)	[5] 5,000.00
Total	152,200.00

TITLE: HOT SPRINGS RESERVATION.[1]

Specific appropriations by Congress from moneys in Treasury not otherwise appropriated.

Repairs to roads, drives, etc., and remodeling free bathhouse, 1903,[2] sundry civil act of June 28, 1902 (32 Stats., 456)	[3] $48,562.00
Repairs to roads, etc., and storage reservoir, 1904, sundry civil act of Mar. 3, 1903 (32 Stats., 1119)	[3] 30,500.00
Reimbursement of disbursing officer, 1904, deficiency act of Feb. 18, 1904 (32 Stats., 32)	[3] 500.00
Installation of electric motor for the free bathhouse, 1904, deficiency act of Apr. 27, 1904 (33 Stats., 409)	[5] 1,550.00
For gutters on mountain roads, 1905, sundry civil act of Apr. 28, 1904 (33 Stats., 486)	[5] 8,000.00
Filling lakes in Whittington Park, 1906, sundry civil act of Mar. 3, 1905 (33 Stats., 1188)	[5] 6,000.00
Total	95,112.00

TITLE: CLAIMS FOR CONDEMNATION OF BUILDINGS, HOT SPRINGS RESERVATION.[1]

Specific appropriations (indefinite) from moneys in Treasury not otherwise appropriated (sundry civil act of Mar. 3, 1901).

1902[2]	[3] $26,385.45
1903	[3] 18,372.07
1904	[3] 3,500.00
1911	[3] 2,935.00
Total	51,192.52

[1] Designations given on books of Treasury Department.
[2] Years scheduled on books of Treasury Department.
[3] Without year.
[4] Reimbursable from fund arising from sale of Hot Springs lots, but treated by Treasury Department as a direct appropriation.
[5] Limited to fiscal years.

Recapitulation of specific appropriations, 1877 to 1906, inclusive.

Titles of appropriations.	Specific appropriation from revenue fund.	Specific appropriation from Treasury.	Total.
Protection and improvement, Hot Springs Reservation	$45,930.00	$152,200.00	$193,130.00
Improvement, Hot Springs Reservation	33,744.78		33,744.78
Hot Springs Reservation		95,112.00	95,112.00
Salaries and expenses, Hot Springs Reservation		82,000.00	82,000.00
Claims for condemnation of buildings, Hot Springs Reservation		51,192.52	51,192.52
Total	79,674.78	380,504.52	455,179.30

No appropriations from moneys in the Treasury not otherwise appropriated have been made since the sundry civil act of Mar. 3, 1905, the revenues being ample at the present time to cover all expenses of administration, etc.

National parks, listed by name and date of creation, for which no appropriations have been made since the date of their establishment: Casa Grande Ruin, March 2, 1889 (25 Stats., 961). Hawaii, August 1, 1916 (39 Stats., 432). Lassen Volcanic, August 9, 1916 (39 Stats., 442). Mount McKinley, February 26, 1917 (39 Stats., 938).

NATIONAL MONUMENTS.[1]

ADMINISTERED UNDER THE SUPERVISION OF THE SECRETARY OF THE INTERIOR.

[Prior to the fiscal year 1917 no appropriations were made by Congress for the national monuments.]

National Monuments, General.

1917. Protection of national monuments: For the preservation, development, administration, and protection, sundry civil act of July 1, 1916 (39 Stats., 309)	$3,500.00
1918. For the preservation, development, administration, and protection of the national monuments, sundry civil act of June 12, 1917 (Public No. 21, 65th Congress)	5,000.00
Total	8,500.00

Navajo National Monument, Ariz.

1917. For preservation and repair of prehistoric pueblo ruins and cliff dwellings, under supervision of the Smithsonian Institution, Indian appropriation act of May 18, 1916 (39 Stats., 132)	3,000.00

Mukuntuweap National Monument, Utah.

1917. For a proportionate share of the amount required to construct an interstate wagon road or highway through the monument, approximately 15 miles, deficiency appropriation act of Sept. 8, 1916 (39 Stats., 818)	15,000.00
Total	26,500.00

[1] Set apart from public domain under act of June 8, 1906 (34 Stats., 225.)

APPENDIX D.

LEGISLATION.

Legislation affecting the national parks, enacted by Congress since December 1, 1916.

Presidential proclamations relating to the national monuments issued during 1917.

LEGISLATION.

[PUBLIC—No. 316—64TH CONGRESS.]

[H. R. 10124.]

An act to add certain lands to the Rocky Mountain National Park, Colorado.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the eastern boundary line of the Rocky Mountain National Park between the section corner common to sections two and three, township three north, and sections thirty-four and thirty-five, township four north, range seventy-three west, and the township corner common to townships five and six north, ranges seventy-two and seventy-three west, is hereby changed so as to read as follows:

"Beginning at a point on the present eastern boundary line of the Rocky Mountain National Park, Colorado, which is the northwest corner of section two and the northeast corner of section three, township three north, range seventy-three west of the sixth principal meridian, Colorado, running thence east along the township line to its intersection with the main hydrographic divide east of Cow Creek, between section thirty-one, township four north, and section six, township three north, range seventy-two west; thence northwesterly following along said hydrographic divide, passing over Twin Sisters, The Crags, passing west of Lily Lake, and continuing along said hydrographic divide, now between Aspen Brook and Fish Creek and passing over Lily Mountain and Gianttrack Mountain to a point which is the southeast corner of section thirty-four and the southwest corner of section thirty-five, township five north, range seventy-three west; thence north along the section lines between sections thirty-four and thirty-five, twenty-six and twenty-seven, twenty-two and twenty-three, fourteen and fifteen, to the quarter corner common to sections fourteen and fifteen, all in township five north, range seventy-three west; thence east along quarter-section line, through sections fourteen and thirteen, township five north, range seventy-three west and along the continuation of said quarter-section line through section eighteen to the quarter corner common to sections eighteen and seventeen, township five north, range seventy-two west; thence north along the section line between sections eighteen and seventeen, seven and eight, five and six, all in township five north, range seventy-two west, to that point which is the northeast corner of section six and the northwest corner of section five in said township and range; thence west along the township line to the township corner common to townships five and six north, ranges seventy-two and seventy-three west, which is on the present eastern boundary line of the Rocky Mountain National Park, Colorado."

And the lands lying between the present existing eastern boundary and the eastern boundary as changed by this act between said section corner common to sections two and three, township three north, and sections thirty-four and thirty-five, township four north, range seventy-three west, and said township corner common to townships five and six north, ranges seventy-two and seventy-three west, are hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States, and said tracts are hereby made a part of and included in the Rocky Mountain National Park, and all the provisions of the act to establish the Rocky Mountain National Park in the State of Colorado, and for other purposes, approved January twenty-sixth, nineteen hundred and fifteen, are hereby made applicable to and extended over the lands hereby added to the park.

Approved, February 14, 1917 (39 Stats., 916).

[PUBLIC—No. 353—64TH CONGRESS.]

[S. 5716.]

An act to establish the Mount McKinley National Park, in the Territory of Alaska.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the tract of land in the Territory of Alaska particularly described by and included within the metes and bounds, to wit: Beginning at a point as shown on Plate III, reconnoissance map of the Mount McKinley region, Alaska, prepared in the Geological Survey, edition of nineteen hundred and eleven, said point being at the summit of a hill between two forks of the headwaters of the Toklat River, approximate latitude sixty-three degrees forty-seven minutes, longitude one hundred and fifty degrees twenty minutes; thence south six degrees twenty minutes west nineteen miles; thence south sixty-eight degrees west sixty miles; thence in a southeasterly direction approximately twenty-eight miles to the summit of Mount Russell; thence in a northeasterly direction approximately eighty-nine miles to a point twenty-five miles due south of a point due east of the point of beginning; thence due north twenty-five miles to said point; thence due west twenty-eight and one-half miles to the point of beginning, is hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States, and said tract is dedicated and set apart as a public park for the benefit and enjoyment of the people, under the name of the Mount McKinley National Park.

SEC. 2. That nothing herein contained shall affect any valid existing claim, location, or entry under the land laws of the United States, whether for homestead, mineral, right of way, or any other purpose whatsoever, or shall affect the rights of any such claimant, locator, or entryman to the full use and enjoyment of his land.

SEC. 3. That whenever consistent with the primary purposes of the park, the act of February fifteenth, nineteen hundred and one, applicable to the location of rights of way in certain national parks and national forests for irrigation and other purposes, shall be and remain applicable to the lands included within the park.

SEC. 4. Nothing in this act shall in any way modify or affect the mineral land laws now applicable to the lands in the said park.

SEC. 5. That the said park shall be under the executive control of the Secretary of the Interior, and it shall be the duty of the said executive authority, as soon as practicable, to make and publish such rules and regulations not inconsistent with the laws of the United States as the said authority may deem necessary or proper for the care, protection, management, and improvement of the same, the said regulations being primarily aimed at the freest use of the said park for recreation purposes by the public and for the preservation of animals, birds, and fish and for the preservation of the natural curiosities and scenic beauties thereof.

SEC. 6. That the said park shall be, and is hereby, established as a game refuge, and no person shall kill any game in said park except under an order from the Secretary of the Interior for the protection of persons or to protect or prevent the extermination of other animals or birds: *Provided*, That prospectors and miners engaged in prospecting or mining in said park may take and kill therein so much game or birds as may be needed for their actual necessities when short of food; but in no case shall animals or birds be killed in said park for sale or removal therefrom, or wantonly.

SEC. 7. That the said Secretary of the Interior may, in his discretion, execute leases to parcels of ground not exceeding twenty acres in extent for periods not to exceed twenty years whenever such ground is necessary for the erection of establishments for the accommodation of visitors; may grant such other necessary privileges and concessions as he deems wise for the accommodation of visitors; and may likewise arrange for the removal of such mature or dead or down timber as he may deem necessary and advisable for the protection and improvement of the park: *Provided*, That no appropriation for the maintenance of said park in excess of $10,000 annually shall be made unless the same shall have first been expressly authorized by law.

SEC. 8. That any person found guilty of violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and shall be subjected to a fine of not more than $500 or imprisonment not exceeding six months, or both, and be adjudged to pay all costs of the proceedings.

Approved, February 26, 1917 (39 Stats., 938).

[PUBLIC—No. 370—64TH CONGRESS.]

[S. 784.]

An act to authorize the sale of certain lands at or near Belton, Montana, for hotel purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior be, and hereby is, authorized to sell and convey to the Glacier Park Hotel Company, a corporation organized under the laws of the State of Minnesota and authorized to do business in the State of Montana, its successors and assigns, for hotel purposes, and at a price to be fixed by appraisement at not less than $25 per acre, and under such terms, conditions, and regulations as the Secretary of the Interior may prescribe, all that part of the south half of the northwest quarter of section thirty-six, in township thirty-two north, of range nineteen west, Montana principal meridian, within the following described area: Beginning at a point on the southerly line of the right of way of the Great Northern Railway Company, one hundred feet southerly from and at right angles to the center line of the main track of said railway at a point in said center line four hundred and eighty-four feet easterly from its intersection with the west line of said section thirty-six; thence southerly at right angles to said center line three hundred and thirty feet, this course following approximately the line of the westerly fence constructed by the United States Forestry Service in nineteen hundred and nine; thence easterly at right angles to the last-described course six hundred and seventy-two feet; thence northerly at right angles to the last-described course to the said southerly line of right of way, this course following, approximately, the line of the easterly fence constructed by the United States Forestry Service in nineteen hundred and nine; thence westerly along the said southerly line of the right of way of the Great Northern Railway to the place of beginning, excepting therefrom that portion within lot eight, containing five acres, more or less within the Flathead National Forest, at or near Belton, Montana: *Provided, however*, That any hotel erected on said land shall be operated by the said Glacier Park Hotel Company, its successors and assigns, under such rules and regulations as the Secretary of the Interior may prescribe for the conduct and operation of hotels within the Glacier National Park.

Approved, March 2, 1917 (39 Stats., 994).

[PUBLIC—No. 382—64TH CONGRESS.]

[S. 778.]

An act to authorize an exchange of lands with owners of private holdings within the Glacier National Park.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior, for the purpose of eliminating private holdings within the Glacier National Park and the preservation intact of the natural forest along the roads in the scenic portions of the park, both on patented and park lands, is hereby empowered, in his discretion, to obtain for the United States the complete title to any or all of the lands held in private or State ownership within the boundaries of said park within townships thirty-two and thirty-three north, ranges eighteen and nineteen west of Montana principal meridian, by the exchange of dead, decadent, or matured timber of approximately equal values that can be removed from any part of the park without injuriously affecting the scenic beauty thereof; or upon the approval of the Secretary of Agriculture, the timber to be selected or exchanged may be taken from the Government lands within the metes and bounds of the national forests within the State of Montana.

SEC. 2. That the value of all patented lands within said park, including the timber thereon, offered for exchange, and the value of the timber on park lands, or on Government lands within the metes and bounds of the national forests within the State of Montana, proposed to be given in exchange for such patented

lands, shall be ascertained in such manner as the Secretary of the Interior and the Secretary of Agriculture may jointly in their discretion direct, and all expenses incident to ascertaining such values shall be paid by the owners of said patented lands; and such owners shall, before any exchange is effective, furnish the Secretary of the Interior evidence satisfactory to him of title to the patented lands offered in exchange; and if the value of timber on park lands or on the Government lands in the national forests within the State of Montana exceeds the value of the patented lands deeded to the Government in exchange, such excess shall be paid to the Secretary of the Interior by the owners of the patented lands before any timber is removed, and shall be deposited and covered into the Treasury as miscellaneous receipts: *Provided*, That the lands conveyed to the Government under this act shall become a part of the Glacier National Park.

SEC. 3. That all timber on Government lands in the park must be cut and removed under regulations to be prescribed by the Secretary of the Interior, and any damage which may result to the roads or any part of the park or the national forests in consequence of the cutting and removal of the timber therefrom shall be borne by the owners of the patented lands, and bonds satisfactory to the Secretary of the Interior and the Secretary of Agriculture, jointly, must be given for the payment of such damages, if any, as shall be determined by the Secretary of the Interior so far as the same relates to lands within a national park and by the Secretary of Agriculture where the same relates to lands in the national forests: *Provided further*, That the Secretary of Agriculture and the Secretary of the Interior shall jointly report to Congress in detail the factors upon which valuations were made.

Approved, March 3, 1917 (39 Stats., 1122).

Excerpt from "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and seventeen, and prior fiscal years, and for other purposes."

NATIONAL PARK SERVICE.

For employees from April fifteenth to June thirtieth, nineteen hundred and seventeen, inclusive, at annual rates of compensation as follows: Director, $4,500; assistant director, $2,500; chief clerk, $2,000; draftsman, $1,800; clerks—one of class three, two of class two, two at $900 each; messenger, $600; in all, for park service in the District of Columbia, $3,666.67, or so much thereof as may be necessary, to be in lieu of salaries, during such period, of the Superintendent of National Parks and four other persons authorized to be employed in the District of Columbia during the fiscal year nineteen hundred and seventeen by the sundry civil appropriation act approved July first, nineteen hundred and sixteen.

Approved, April 17, 1917 (Public, No. 2, 65th Congress).

Excerpts from "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eighteen, and for other purposes."

INTERIOR DEPARTMENT.

NATIONAL PARKS.

National Park Service: Director, $4,500; assistant director, $2,500; chief clerk, $2,000; draftsman, $1,800; clerks—one of class three, two of class two, two at $900 each; messenger, $600; in all, for park service in the District of Columbia, $17,600.

Yellowstone National Park: For administration and protection, including not exceeding $600 for maintenance and repair of horse-drawn and motor-driven passenger-carrying vehicles for use of the superintendent in making inspections of the park, $5,500: *Provided*, That no part of this appropriation or the revenues of the Yellowstone National Park shall be used for payment of salaries for the protection of the park, authorized by the act of March third, eighteen hundred and eighty-three, to be performed by the detail of troops.

For procuring feed for buffalo, salaries of buffalo keepers, seeding and fencing new meadowlands, irrigation, and so forth, $5,000, to be available immediately.

Glacier National Park, Montana: For administration and improvement, construction of roads, trails, bridges, and telephone lines and the repair thereof, including necessary repairs to the roads from Glacier Park Station through the Blackfeet Indian Reservation to various points in the boundary line of the Glacier National Park, including $1,970 for the purchase and the maintenance of horse-drawn and motor-driven passenger-carrying vehicles for the use of the supervisor and employees in connection with general park work, $115,000.

The Secretary of the Interior is authorized, in his discretion, to accept buildings, moneys, or other property which may be useful in the betterment of the administration and affairs of the Glacier National Park under his supervision and which may be donated for park purposes.

Yosemite National Park, California: For protection and improvement, construction and repair of bridges, fences, and trails, and improvement of roads other than toll roads, including not exceeding $800 for maintenance and repair of horse-drawn and motor-driven passenger-carrying vehicles for use of the supervisor and employees in connection with general park work, not exceeding $8,000 for a bridge at the old Sentinel Bridge site, and not exceeding $75,000 for grading in width not exceeding twenty feet El Portal-Yosemite Road; also not exceeding $60,000 for the completion of the installation of the hydroelectric power plant authorized by the sundry civil act for the fiscal year nineteen hundred and seventeen; in all, $235,000: *Provided*, That the unexpended balance of the appropriation of $150,000 for the fiscal year nineteen hundred and seventeen for the hydroelectric power plant is made available for the fiscal year nineteen hundred and eighteen.

Sequoia National Park, California: For protection and improvement, construction and repair of bridges, fences, and trails, improvement of roads other than toll roads, $25,000.

General Grant National Park, California: For protection and improvement, construction of fences and trails, and repairing and extension of roads, $2,000.

Mount Rainier National Park, Washington: For protection and improvement, construction of roads, bridges, fences, and trails, and improvement of roads, including not exceeding $1,250 for the purchase of a motor-driven vehicle and the maintenance and repair thereof, $75,000.

Hereafter the Secretary of the Interior is authorized to accept patented lands or rights of way over patented lands in the Mount Rainier National Park that may be donated for park purposes.

Mesa Verde National Park, Colorado: For protection and improvement, including not exceeding $433 for maintenance and repair of horse-drawn passenger-carrying vehicles for use of the superintendent and employees, $10,000.

Hereafter the Secretary of the Interior is authorized to accept patented lands or rights of way over patented lands in the Mesa Verde National Park that may be donated for park purposes.

Hereafter the Secretary of the Interior is authorized to accept for park purposes any lands and rights of way, including the Grandfather Mountain, near or adjacent to the Government forest reserve in western North Carolina.

Rocky Mountain National Park, Colorado: For protection and improvement, $10,000.

Hereafter the Secretary of the Interior is authorized to accept patented lands or rights of way over patented lands in the Rocky Mountain National Park that may be donated for park purposes.

Crater Lake National Park, Oregon: For protection and improvement, and repairing and extension of roads, $15,000.

Hereafter the Secretary of the Interior is authorized to accept patented lands or rights of way over patented lands in the Crater Lake National Park that may be donated for park purposes.

Wind Cave National Park, South Dakota: For improvement and protection, $2,500.

Platt National Park, Oklahoma: For improvement and protection, $7,180.

Protection of national monuments: For the preservation, development, administration, and protection of the national monuments, to be expended under the direction of the Secretary of the Interior, $5,000.

From and after July first, nineteen hundred and eighteen, all revenues of the national parks, except Hot Springs Reservation, Arkansas, shall be covered into the Treasury to the credit of miscellaneous receipts; and the Secretary of the Interior is directed to submit, for the fiscal year nineteen hundred and nineteen and annually thereafter, estimates of the amounts required for the care, maintenance, and development of the said parks.

Hot Springs Reservation, Arkansas: For the employment of a landscape engineer and such other expenses as may be required for the preparation of a practical and comprehensive plan, together with an accurate estimate of the cost thereof, for improving the Hot Springs Reservation, there is authorized to be expended from the revenues received from the said reservation the sum of $10,000.

WAR DEPARTMENT.

Yellowstone National Park: For maintenance and repair of improvements $147,500, including not to exceed $5,000 for maintenance of the road in the forest reserve leading out of the park from the east boundary, and not to exceed $7,500 for maintenance of the road in the forest reserve leading out of the park from the south boundary, and including not exceeding $3,000 for purchase, operation, maintenance, and repair of motor-driven and horse-drawn passenger-carrying vehicles to be used for inspection of roads and road work, to be expended by and under the direction of the Secretary of War: *Provided*, That no portion of this appropriation shall be expended for the removal of snow from any of the roads for the purpose of opening them in advance of the time when they will be cleared by seasonal changes.

For resurfacing and for finishing the belt line with oil macadam, $20,000.

Crater Lake National Park, Oregon: For continuation of a wagon road and the necessary bridges through the park, together with a system of tanks and water-supply pipes for sprinkling, in accordance with the recommendations in House Document Numbered Three hundred and twenty-eight, Sixty-second Congress, second session, and for maintenance, repair, and operation of two horse-drawn passenger-carrying vehicles, to be expended under the direction of the Secretary of War, $50,000.

Approved June 12, 1917 (Public No. 21, 65th Congress).

PRESIDENTIAL PROCLAMATIONS.

EL MORRO NATIONAL MONUMENT, NEW MEXICO.

(Second proclamation.)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

Whereas it appears that the public good will be promoted by adding to the El Morro National Monument certain lands within the State of New Mexico containing ruins of archæological value:

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the power in me vested by section two of the act of Congress approved June 8, 1906, entitled "An act for the preservation of American antiquities," do proclaim that a tract described as the southeast quarter of the northwest quarter and the northeast quarter of the southwest quarter of section six, township nine north, range fourteen west, New Mexico principal meridian, is hereby reserved from appropriation and use of all kinds under all of the public-land laws, subject to all prior valid adverse claims, and set apart as an addition to the El Morro National Monument, and that the boundaries of said national monument are now as shown on the diagram hereto annexed and forming a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, remove, or destroy any feature of this national monument, or to locate or settle on any of the lands reserved by this proclamation.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this 18th day of June, in the year of our Lord one thousand nine hundred and seventeen, and of the independence of the United States the one hundred and forty-first.

[SEAL.] WOODROW WILSON.

By the President:

ROBERT LANSING,
Secretary of State.

[No. 1377.]

VERENDRYE NATIONAL MONUMENT, NORTH DAKOTA.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

Whereas a high and imposing butte, locally known as Crowhigh Mountain, located in township 192 north, range 93 west of the fifth principal meridian, North Dakota, was discovered and utilized between 1738 and 1742 by Verendrye, an explorer of New France and the first white man known to have entered upon the territory now embraced within the present State of North Dakota, as an observation station from which to spy out the farther and unknown West; and

Whereas this lofty natural summit, both because of its usefulness as stated and because it marks the spot where the Verendrye party first crossed the Missouri River in their journey to the Rocky Mountains, thus giving the place great historic interest, and it appears that the public interests will be promoted by reserving the lands upon which Crowhigh Mountain is located as a national monument:

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the power and authority in me vested by section two of the act of Congress entitled, "An act for the preservation of American antiquities," approved June 8, 1906 (34 Stat., 225), do proclaim that there are hereby reserved from all forms of appropriation under the public-land laws, and set apart as the Verendrye National Monument, all the tracts of land in the State of North Dakota shown upon the diagram hereto attached and made a part hereof, and more particularly described as follows, to wit, the southeast quarter, the southeast quarter of the southwest quarter, and lots four and five, in section fourteen, township one hundred and fifty-two north, range ninety-three west, of the fifth principal meridian.

Warning is hereby given to all unauthorized persons not to appropriate or injure any natural feature of this monument or to occupy, exploit, settle, or locate upon any of the lands reserved by this proclamation.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this 29th day of June, in the year of our Lord one thousand nine hundred and seventeen, and of the independence of the United States the one hundred and forty-first.

[SEAL.] WOODROW WILSON.

By the President:

ROBERT LANSING,
Secretary of State.

[No. 1380.]

APPENDIX E.

BIBLIOGRAPHIES.

Bibliography of books and magazine articles on national-park subjects. September, 1916–October, 1917.

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Vol. 34 (May, 1917), pp. 65–66. "Through Glacier National Park for $1.39 a day." By A. F. Chalmers.

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Vol. 13 (June, 1917), pp. 529–535. "Awheel through Hawaii." By Woods Peters.
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MOTOR.

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Vol. 27 (April, 1917), pp. 65–67, 164, 178, 192. "When springtime calls." By Eleanor E. Day.
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Vol. 30 (Sept. 7, 1916), p. 15. "See America first; Phantom ship and palisade in Crater Lake National Park."
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Vol. 30 (Nov. 16, 1916), pp. 5 et seq. "The forest of jewels." (Petrified Forest and Painted Desert.)
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Vol. 30 (Dec. 28, 1916), p. 9. "New laws."
Vol. 31 (Apr. 5, 1917), pp. 10–11. "Motor regulations in our national parks."
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Vol. 31 (June 28, 1917). "Parks await motoring."
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Vol. 26 (Apr. 1, 1917), pp. 10–11. "Studebaker again first to get into Yosemite."
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Vol. 8 (September, 1917), pp. 53–55. "Good roads—Utah's best advertisement." By James P. Casey.
Vol. 8 (October, 1917), pp. 13–20. "Zion Canyon. Masterpiece among Utah's scenic wonders." By Marion A. Byrne.

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Vol. 2 (December, 1916), pp. 30, 32. "Our Washington bureau. National highway and automobile news."
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Vol. 2 (February, 1917), p. 16. "Always on the job."
Vol. 2 (February, 1917), p. 40. "The wild animals of the Yellowstone."
Vol. 2 (February, 1917), p. 40. "Two camping companies of Yellowstone consolidate."
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Vol. 2 (May, 1917), pp. 13–22. "Yellowstone and Glacier." By Robert Sterling Yard.
Vol. 2 (May, 1917), p. 13. "A national park camp." By G. P. W. (Verse.)
Vol. 2 (May, 1917), p. 14. "The new odor of things."
Vol. 2 (May, 1917), pp. 14, 48, 50, 52. "You must mind these rules when in our national parks with your auto."
Vol. 2 (May, 1917), pp. 15, 45–48. "Far from eastern centers are modern hotels in the parks." (Yellowstone, Mount Rainier, and Glacier.)
Vol. 2 (May, 1917), pp. 15, 44. "National park trail men meet in annual session."
Vol. 2 (May, 1917), pp. 15, 44. "Lake McDonald-Waterton Lake, Glacier National Park."

NORTHWESTERN MOTORIST—Continued.

Vol. 2 (May, 1917), pp. 18–19. "Yellowstone National Park."
Vol. 2 (May, 1917), pp. 20–21. "Rainier by auto will be popular this year."
Vol. 2 (May, 1917), pp. 22–24. "Glacier National Park."
Vol. 2 (May, 1917), pp. 24–25. "National Park Service organized with Stephen T. Mather at its head."
Vol. 2 (May, 1917), pp. 26–30. "Across the top of the U. S. A. is the trail of scenic wonder."
Vol. 2 (June, 1917), p. 28. "Eastern Washington folks strong for park trips."
Vol. 2 (August, 1917), pp. 16–18. "To Lake Angus McDonald." By James Bonner.
Vol. 2 (August, 1917), pp. 24–25. "Going to the mountain." By Lora W. Hughes. (Mount Rainier.)
Vol. 2 (August, 1917), pp. 26–27. "How Gallatin Valley is becoming great summer playground of central Montana." By J. A. Harader.
Vol. 2 (September, 1917), pp. 16, 17, 34. "Yellowstone-Glacier bee line highway." By John A. Curry.
Vol. 2 (September, 1917), p. 24. "Good roads doings in great Northwest."
Vol. 2 (September, 1917), p. 28. "Montana's good roads news discussed by Leavitt."

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Vol. 38 (October, 1916), pp. 373–374. "A grizzly attack in Yellowstone National Park."
Vol. 38 (December, 1916), pp. 578–580. "Some side lights on Bruin's annual sleep." By J. A. McGuire. (Yellowstone bears.)
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Vol. 69 (October, 1916). "Above the frontier in Montana." By E. H. Sanborn. (Glacier National Park.)
Vol. 69 (March, 1917), pp. 708–715. "Knapsack and a pair of legs." By F. A. Cromwell. (Glacier.)
Vol. 70 (April, 1917), pp. 5–20. "Fishing around Glacier National Park." By E. W. Sanborn.
Vol. 70 (June, 1917), pp. 342–348. "Outdoors in the Puget Sound country." (Mount Rainier.)
Vol. 70 (July, 1917), pp. 538–540. "The open road—'On recreation.'"
Vol. 70 (August, 1917), pp. 610–615. "Oregon, land of roses and glaciers." (Crater Lake and Columbia Highway.)

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Vol. 114 (Dec. 13, 1916), p. 788. "National dunes park agitation."
Vol. 115 (Apr. 25, 1917), pp. 726, 728. "Our national forests and parks."
Vol. 115 (Apr. 25, 1917), pp. 739–742. "The traveler and the automobile." By Henry B. Joy.
Vol. 115 (Apr. 25, 1917), pp. 744, 749, 750. "Railway touring in the United States." By Frank Trumbull.
Vol. 115 (Apr. 25, 1917), pp. 745–748. "Some American travel pictures."
Vol. 115 (Apr. 25, 1917), pp. 750–751. "Sieur de Monts and Yosemite." By Stephen T. Mather.

OUT WEST.

Vol. 44 (October, 1916), pp. 153–160. "Among the ruins of the Mesa Verde." By Arthur Chapman.

OVERLAND MONTHLY.

Vol. 68 (December, 1916), pp. 553, 556. "Uncle Sam's latest playground." (Lassen Volcanic National Park.)

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Vol. 5 (September, 1916). "Park-to-park Highway Association formed."
Vol. 5 (October, 1916), pp. 16–18. "Autumn touring in the high Sierras." By E. E. Newell. (Yosemite, Tioga Road.)
Vol. 5 (December, 1916), pp. 30–32. "Little Zion Canyon of Utah is scenic wonder." By Albert Marple. (Mukuntuweap.)

PACIFIC GOLF AND MOTOR—Continued.

Vol. 5 (March, 1917), pp. 16, 17. "The national parks and the automobile." By Luther Whiteman. (Lassen Volcanic.)

PARADISE OF THE PACIFIC.

Vol. 30 (September, 1917), pp. 20, 21. "Lava overflow breaks record." (Hawaii.)

Vol. 30 (October, 1917), pp. 25–28. "Six years with Hawaiian volcanoes." By T. A. Jaggar.

PLEASURELAND.

Vol. 22 (October, 1917), pp. 3–4. "Your national parks." By Enos A. Mills.

Vol. 22 (October, 1917), p. 5. "An Indian legend." By M. Imogene McPherson.

Vol. 22 (October, 1917), p. 6. "Original Estes Park."

POPULAR MECHANICS.

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Vol. 15 (June, 1917). "Glacier, national park of inspirations."

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Vol. 56 (January, 1917), pp. 18, 19. "Our willful waste of elk." By Will C. Barnes. (Yellowstone.)

Vol. 56 (February, 1917), pp. 83, 84. "Development of national parks."

Vol. 56 (March, 1917), pp. 119, 120. "The mountaineering clubs of America." By Allen H. Bent.

Vol. 56 (April, 1917), pp. 161–170. "Not all of fishing." By Ed. Harrington. (Apache Trail.)

Vol. 56 (April, 1917). "Mountaineering Clubs of America." Part II. (Conclusion.) By Allen H. Bent.

Vol. 56 (May, 1917), pp. 206–208. "Recreation Men—III. The Kolb Brothers of Grand Canyon, Arizona."

Vol. 56 (May, 1917), pp. 215, 216, 229, 230. "To Wyoming to hunt elk." By Henry Bannon.

Vol. 56 (June, 1917), pp. 261–263. "Where the seeing is good." By Edward Cave.

Vol. 56 (June, 1917), pp. 268–276. "The hub of our national park system." By Arthur Chapman. (Rocky Mountain.)

Vol. 56 (June, 1917), pp. 276, 277, 300. "Once more—must our elk herds be exterminated?"

Vol. 57 (July, 1917), pp. 11–13. "Recreation Men—IV. C. M. Russell, the Cowboy artist." (Glacier.)

Vol. 57 (July, 1917), pp. 19–20. "A hike through Yellowstone Park to the Tetons." By Arthur C. Tate.

Vol. 57 (August, 1917), p. 85. "Game in Mount McKinley National Park."

Vol. 57 (August, 1917), pp. 101–104. "Our elk policy."

Vol. 57 (September, 1917), p. 142. "Mount Rainier's name stands."

Vol. 57 (September, 1917), pp. 142–143. "Chicago 'mountains.'" (Sand dunes.)

REVIEW OF REVIEWS.

Vol. 55 (June, 1917), pp. 635–640. "New national parks." By Guy E. Mitchell.

Vol. 55 (June, 1917), p. 634. "Seeing America."

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Vol. 11 (May, 1917), pp, 7–9, cover. "Wonders of the Yellowstone Trail." By F. L. Clark.

Vol. 11 (June, 1917), pp. 7–8, 21. "Roads in Yellowstone National Park."

Vol. 11 (July, 1917), cover design. "Golden Gate to Yellowstone National Park, showing government boulevard."

Vol. 11 (September, 1917), pp. 42–44. "The summer playground of America—visited by thousands of motorists."

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August 25, 1917, p. 23. "Who's who—and why." Stephen T. Mather.

September 8, 1917, pp. 57, 59. "Where rolls the Hudson." By Enos A. Mills. (Palisades Interstate Park.)

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SCIENTIFIC AMERICAN SUPPLEMENT, THE.

Vol. 82 (Nov. 11, 1916), pp. 312–313. "Our national parks." By C. H. Claudy.

Vol. 83 (Apr. 7, 1917), pp. 216–217. "The eruption of Mount Lassen." By A. H. Palmer.

Vol. 83 (May 12, 1917), p. 297. "Prehistoric ruins of Mesa Verde."

Vol. 83 (May 19, 1917), pp. 316–317. "Life on glaciers and snow fields." By Titus Ulke.

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Vol. 4 (April, 1917), pp. 378–381. "Archæological work in Mesa Verde National Park in 1916."

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Vol. 60 (September, 1916), pp. 273–294. "The call of the mountains." By Le Roy Jeffers.

Vol. 61 (April, 1917), pp. 484–494. "The national park on Mount Desert Island." By B. Farrand. (Sieur de Monts.)

Vol. 61 (October, 1917), pp. 398–410. "The Mount McKinley National Park." By Belmore Browne.

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Vol. 10, No. 2 (January, 1917), pp. 159–164. "The Yosemite Cony—A chapter in the natural history of the Yosemite National Park." By Joseph Grinnell and Tracy I. Storer.

Vol. 10, No. 2 (January, 1917), pp. 137–151. "The Sierra Club." By Joseph N. Le Conte.

Vol. 10, No. 2 (January, 1917), pp. 170–178. "The Kern River outing of 1916." By Jessie McGilvray Treat.

Vol. 10, No. 2 (January, 1917), pp. 184–201. "Studies in the Sierra."

Vol. 10, No. 2 (January, 1917), pp. 202–209. "Indian village and camp sites in Yosemite Valley." By C. Hart Merriam.

Vol. 10, No. 2 (January, 1917), pp. 212–213. "National parks progress."

Vol. 10, No. 2 (January, 1917), pp. 227–230. "Climbing Mount Clark from Merced Lake."

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June 15, 1917, pp. 19–20. "Why summer resorts call in war time." By Barton Stillman.

ST. NICHOLAS.

Vol. 44 (August, 1917), pp. 866–874. "Where the sunsets of all yesterdays are found." By Olin D. Wheeler. (Yellowstone Park.)

SUNSET.

Vol. 37 (September, 1916), pp. 21–33. "On barking Betsy to the mountain—A motorcycle run to Mount Rainier National Park." By H. M. Laing.

Vol. 37 (September, 1916), p. 27. "The director of the Nation's playgrounds." By Robert Sterling Yard.

Vol. 37 (December, 1916), pp. 24–25. "Chugging over and through Colorado." By H. M. Laing.

Vol. 38 (April, 1917), p. 92. "Crater Lake National Park." By A. Drury.

Vol. 38 (May, 1917), pp. 7–9, 95–98. "Trailing Mark Twain through Hawaii." By Mildred Leo Clemens.

Vol. 39 (July, 1917), pp. 22–26, 86–87. "A free car and the open road. Auto vacationing in three States along the Pacific." By Wilbur Hall.

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Vol. 39 (July, 1917), pp. 42–43, 82, 85, 88. "Main traveled roads in the sunset country."
Vol. 39 (August, 1917), p. 6. "World's highest regatta, Grand Lake, Rocky Mountain National Park."
Vol. 39 (August, 1917), pp. 36–38, 71. "Summer homes for everybody."
Vol. 39 (August, 1917), p. 74. "Two miles high on high gear." By Lindsey Howell. (Rocky Mountain.)
Vol. 39 (September, 1917), pp. 30, 66. "Girls will be guides." By Metta M. Loomis. (Rocky Mountain.)
Vol. 39 (September, 1917). "In the heart of the Giant Forest." By Charles Francis Saunders.
Vol. 39 (September, 1917), pp. 38–40, 73, 74. "Over the top." By Kathryne Wilson.

SURVEY.

Vol. 37. (Dec. 9, 1916), pp. 263–264. "Saving the dunes." (Proposed Indiana Sand Dunes National Park.)

TOURING TOPICS.

Vol. 8 (September, 1916), pp. 7–10. "Impressions of a recent auto tour to Lake Tahoe." (Yosemite.)
Vol. 8 (September, 1916), pp. 14–16. "Two thousand mile inspection tour by club car." (Yosemite, Sequoia.)
Vol. 9 (June, 1917), pp. 7–13. "Highways are open to Tahoe and the national parks." (Yosemite.)
Vol. 9 (July, 1917), pp. 17–19. "Fourteen cars compete in Los Angeles-Yosemite run."

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July 1, 1917, p. 27. "Scenic gems in Glacier National Park."

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Vol. 28 (December, 1916), pp. 34–37. "Through an unknown corner of California." By Marion Randall Parsons.
Vol. 28. (March, 1917), pp. 17–23. "Wild life in the Yellowstone."
Vol. 29 (May, 1917), pp. 7–12. "Mount McKinley, a new national park." By Stephen R. Capps.
Vol. 29 (May, 1917), pp. 22–26. "The lure of Rocky Mountain National Park." By Arthur Chapman.
Vol. 29 (June, 1917). "Mukuntuweap, a desert Yosemite." By Guy E. Mitchell.
Vol. 29 (July, 1917). "The Hive Dwellings of New Mexico." By Guy E. Mitchell. (Bandelier Monument.)
Vol. 29 (September, 1917), pp. 17–20. "The mystery of Crater Lake." By Guy E. Mitchell.

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Vol. 4 (November, 1916), pp. 84–85. "Game farming in national parks and forests." By Smith Riley.
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November 25, 1916. "California leads in national wonder parks."

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APPENDIX F.

NATIONAL PARKS PUBLICATIONS.

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NATIONAL PARKS PUBLICATIONS.

(Mailed free of charge upon application to the Director of the National Park Service.)

Progress in the Development of the National Parks. By Stephen T. Mather, Director of the National Park Service. 1916. 39 pages.

Contains a statement of results accomplished in development of the national parks, and an outline of their needs in the way of improvement and management.

Annual Report of the National Park Service for the Year 1917. By Horace M. Albright, Acting Director.

Contains summary of the operation and development of the national parks for current year, photographs of more important improvements, reports of park supervisors, national park and monument statistics, etc.

Glimpses of our National Parks. By Robert Sterling Yard, chief, educational division, National Park Service. 40 pages.

Contains descriptions of the most important features of the principal national parks and the Grand Canyon of the Colorado.

General Information Regarding the National Monuments.

Contains descriptions of all national monuments administered by the Department of the Interior, the Department of Agriculture, and the War Department.

Report on the Proposed Sand Dunes National Park, Indiana. By Stephen T. Mather, Director of the National Park Service. 1917. 113 pages.

Contains description and maps of the sand dunes, the history of the project, and the hearings held in Chicago October 30, 1916.

Information circular containing data regarding hotels, camps, points of interest, books, magazine articles, maps, regulations, etc., about each of the following national parks:

Yellowstone.	Mesa Verde.	Glacier.
Yosemite.	Sequoia and	Rocky Mountain.
Mount Rainier.	General Grant.	Wind Cave.
Crater Lake.	Hot Springs.	Casa Grande Ruin.

Map showing all national parks and national monuments with railroad connections.

Automobile road and trail map of each of the following national parks:

Yellowstone.	Sequoia and	Glacier.
Yosemite.	General Grant.	Rocky Mountain.
Mount Rainier.	Crater Lake.	

The following named publications relating to Sieur de Monts National Monument:

Announcement by the Government of the creation of the Sieur de Monts National Monument by Presidential Proclamation on July 8, 1916.

Addresses at meeting held at Bar Harbor on August 22, 1916, to commemorate the establishment of the Sieur de Monts National Monument.

The Sieur de Monts National Monument as a Bird Sanctuary.

The Coastal Setting, Rocks and Woods of the Sieur de Monts National Monument.

An Acadian Plant Sanctuary.

Wild Life and Nature Conservation in the Eastern States.

Man and Nature. Our Duty to the Future.

The Acadian Forest.

The Sieur de Monts National Monument as commemorating Acadia and early French influences of Race and Settlement in the United States.

Purchas translation of de Monts' Commission. De Monts: an Appreciation.

Natural Bird Gardens on Mount Desert Island.

The Sieur de Monts National Monument and its Historical Associations.

Garden Approaches to the National Monument. The White Mountain National Forest. Crawford Notch in 1797.

SOLD BY THE SUPERINTENDENT OF DOCUMENTS.

(Remittances for publications listed below should be by money order, payable to the Superintendent of Documents, Government Printing Office, Washington, D. C., or in cash. Checks and postage stamps can not be accepted.)

PAMPHLETS.

Geological History of Yellowstone National Park. By Arnold Hague. 1912. 24 pages, including 10 illustrations. 10 cents.

Contains a general résumé of the geologic forces that have been active in the Yellowstone National Park.

Geysers. By Walter Harvey Weed. 1912. 32 pages, including 23 illustrations. 10 cents.

In this pamphlet is a description of the forces which have produced the geysers.

Fossil Forests of Yellowstone National Park. By F. H. Knowlton. 1914. 32 pages, including 15 illustrations. 10 cents.

Contains descriptions of the fossil forests of the Yellowstone National Park and an account of their origin.

Fishes of the Yellowstone National Park. By W. C. Kendall. (Bureau of Fisheries Document 818.) 1915. 28 pages, including 17 illustrations. 5 cents.

Contains descriptions of the species and lists of streams where found.

Origin of the Scenic Features of Glacier National Park. By M. R. Campbell. 1914. 42 pages, including 25 illustrations. 15 cents.

Contains a general account of the forces that have caused the development of the mountain ranges, the valleys, and lakes of Glacier National Park.

Glaciers of Glacier National Park. By W. C. Alden. 1914. 48 pages, including 30 illustrations. 15 cents.

Contains descriptions of the principal features of the larger glaciers in the park.

Some Lakes of Glacier National Park. By M. J. Elrod. 1912. 32 pages, including 19 illustrations. 10 cents.

Contains a description of some of the principal lakes, with special reference to the possibility of stocking the lakes with fish.

Glacier National Park—A Popular Guide to Its Geology and Scenery. By M. R. Campbell. (Bulletin 600, U. S. Geological Survey.) 1914. 54 pages, 13 plates, including map. 30 cents.

Geological History of Crater Lake. By J. S. Diller. 1912. 32 pages, including 28 illustrations. 10 cents.

Contains an account of the formation of Crater Lake.

Forests of Crater Lake National Park. By J. F. Pernot. 1916. 40 pages, including 26 illustrations. 20 cents.

Contains descriptions of the forest cover and of the principal species.

Features of the Flora of Mount Rainier National Park. By J. B. Flett. 1916. 48 pages, including 40 illustrations. 25 cents.

Contains descriptions of the flowering trees and shrubs in the park.

Forests of Mount Rainier National Park. By G. F. Allen. 1916. 32 pages, including 27 illustrations. 20 cents.

Contains descriptions of the forest cover and of the principal species.

Mount Rainier and Its Glaciers. By F. E. Matthes. 1914. 48 pages, including 26 illustrations. 15 cents.

Contains a general account of the glaciers of Mount Rainier, and of the development of the valleys and basins surrounding the peak.

Sketch of Yosemite National Park and An Account of the Origin of Yosemite and Hetch Hetchy Valleys. By F. E. Matthes. 1912. 48 pages, including 24 illustrations. 10 cents.

Contains a description of the general features of the Sierra Nevada and the Yosemite National Park and an account of the origin of the Yosemite and Hetch Hetchy Valleys.

Forests of Yosemite, Sequoia, and General Grant National Parks. By C. L. Hill. 1916. 40 pages, including 23 illustrations. 20 cents.

Contains descriptions of the forest cover and of the principal species.

The Secret of the Big Trees—Yosemite, Sequoia, and General Grant National Parks. By Ellsworth Huntington. 1913. 24 pages, including 14 illustrations. 5 cents.

Contains an account of the climatic changes that are indicated by the thickness of the growth rings in the big trees, and gives a comparative statement of the climatic conditions in California and Asia during a period of 3,400 years.

Antiquities of the Mesa Verde National Park: Spruce Tree House. By J. W. Fewkes. (Bull. 41, Bureau of American Ethnology.) 1909. 58 pages, 21 plates, 37 text figures. 40 cents.

Contains a detailed account of the structure and of the objects found in it.

Antiquities of Mesa Verde National Park: Cliff Palace. By J. W. Fewkes. (Bull. 51, Bureau of American Ethnology.) 1911. 82 pages, 35 plates, 4 text figures. 45 cents.

Contains a detailed account of the structure and of the objects found in it.

Excavation and Repair of Sun Temple. By J. W. Fewkes. 1916. 32 pages, including 18 illustrations. 15 cents.

Contains an account of a new ruin discovered in 1915.

Analyses of the Waters of the Hot Springs of Arkansas, by J. K. Haywood, and Geological Sketch of Hot Springs, Ark., by Walter Harvey Webb. 56 pages. 10 cents.

Proceedings of the [First] National Park Conference Held at Yellowstone National Park, September 11 and 12, 1911. 210 pages. 15 cents.

Contains a discussion of national-park problems by officers of the Government and other persons.

Proceedings of the [Second] National Park Conference Held at Yosemite National Park, October 14, 15, and 16, 1912. 146 pages. 15 cents.

Consist mainly of a discussion regarding the advisability of admitting automobiles to the national parks.

Proceedings of the [Third] National Park Conference Held at Berkeley, Cal., March 11, 12, and 13, 1915. 1915. 166 pages. 20 cents.

Contains discussions of national-park problems by officers of the Government and others.

Proceedings of the [Fourth] National Park Conference held at Washington, D. C., January 2 to 6, 1917. 362 pages. 25 cents.

Contains discussions of national-park problems by officers of the Government and others.

The National Parks Portfolio. By Robert Sterling Yard, chief, educational division, National Park Service.

Contains nine sections, each descriptive of a national park and one description of the Grand Canyon. 1917. 260 pages, including 270 illustrations. Pamphlet edition, loose in flexible cover, 35 cents; book edition, containing same material securely bound in cloth, 55 cents.

Guidebook of Rocky Mountain National Park. By Dr. Willis T. Lee. 1917.

Contains a detailed description of the park and its various geologic and scenic features. Now in course of publication. Price not ascertained.

PANORAMIC VIEWS.

(The panoramic views listed below are based on accurate surveys and give an excellent idea of the configuration of the surface as it would appear to a person flying over it. The meadows and valleys are printed in light green, the streams and lakes in light blue, the cliffs and ridges in combinations of color, and the roads in light brown. The lettering is printed in light brown and is easily read on close inspection, but merges into the other colors when the sheet is held at some distance.)

Panoramic view of Crater Lake National Park. 16½ x 18 inches, scale 1 mile to the inch. 25 cents.

Panoramic view of Yosemite National Park. 18½ x 18 inches, scale 3 miles to the inch. 25 cents.

Panoramic view of Glacier National Park. 18½ x 21 inches, scale 3 miles to the inch. 25 cents.

Panoramic view of Mount Rainier National Park. 20 x 19 inches, scale 1 mile to the inch. 25 cents.

Panoramic view of Yellowstone National Park. 18 x 21 inches, scale 3 miles to the inch. 25 cents.

Panoramic view of Mesa Verde National Park. 22½ x 19 inches, scale three-fourths mile to the inch. 25 cents.

Panoramic view of Rocky Mountain National Park. 14 x 17½ inches, scale 2 miles to the inch. 25 cents.

MAPS SOLD BY THE U. S. GEOLOGICAL SURVEY.

(The maps listed below may be purchased from the Director of the United States Geological Survey, Washington, D. C. Remittances should be by money order or in cash. Personal checks can not be accepted. A discount of 40 per cent is allowed on all orders for maps amounting to $3 net or more.)

Crater Lake National Park, Oreg. Limiting parallels, 42° 48′ and 43° 04′. Limiting meridians, 122° and 122° 16′. Size, 19 by 22 inches. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval, 50 feet. An illustrated description of the lake and the manner of its formation is given on the back of the sheet. Price, 10 cents.

Glacier National Park, Mont. Limiting parallels, 48° 14′ 36″ and 49°. Limiting meridians, 113° 10′ and 114° 30′. Size, 31 by 35 inches. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price, 25 cents.

Mesa Verde National Park, Colo. Limiting parallels, 37° 09′ 18″ and 37° 21′. Limiting meridians, 108° 15′ and 108° 37′ 30″. Size, 31 by 46 inches. Scale, 1:31,250, or about one-half mile to 1 inch. Contour interval, 25 feet. Price, 20 cents.

Mount Rainier National Park, Wash. Limiting parallels, 46° 43′ 43″ and 47° 00′. Limiting meridians, 121° 30′ and 121° 55′. Size, 22 by 23 inches. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval, 100 feet. Price, 10 cents.

Yellowstone National Park, Wyo.-Mont.-Idaho. Limiting parallels, 44° 08′ 17″ and 45° 01′ 55″. Limiting meridians, 110° and 111° 05′ 53″. Size, 32 by 36 inches. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price, 25 cents.

Yosemite National Park, Cal. The park limits established by acts of Congress are shown in colors. Limiting parallels, 37° 30′ and 38° 15′ 39″. Limiting meridians, 119° and 120°. Size, 29 by 31 inches. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price, 25 cents. Also issued folded between covers; price, 40 cents. The Yosemite Valley is shown on a larger scale on the Yosemite Valley map. See below.

(Some of the national parks and reservations are shown in whole or in part on the standard topographic maps, as indicated below.)

Casa Grande Ruin, Ariz. The northern part of this area is shown on the Sacaton map. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval 50 feet. Price, 10 cents.

General Grant National Park, Cal. Shown on the Tehipite map. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price, 10 cents.

Hot Springs Reservation, Ark. Shown on the map of Hot Springs and vicinity. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval, 20 feet. Price, 10 cents.

Platt National Park, Okla. This park is at the town of Sulphur, Murray County, which is shown on the Stonewall map. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 50 feet. Price, 10 cents.

Rocky Mountain National Park, Colo. The greater portion of this park is shown on the Longs Peak map. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 50 feet. Price, 10 cents.

Sequoia National Park, Cal. Shown on the Kaweah and Tehipite maps. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price of each map, 10 cents.

Wind Cave National Park, S. Dak. Shown on the Harney Peak and Hermosa maps. Scale, 1:125,000, or about 2 miles to 1 inch. Contour interval, 100 feet. Price of each map, 10 cents.

Yosemite Valley, Cal. Shown on the Yosemite Valley map. Limiting parallels, 37° 42′ and 37° 47′ 05″. Limiting meridians, 119° 30′ and 119° 43′ 40″. Scale, 1:24,000, or about 2½ inches to 1 mile. Contour interval, 50 feet. Price, 10 cents.

APPENDIX G.

MISCELLANEOUS.

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THE NATIONAL PARK CONFERENCE, WASHINGTON, D. C., JANUARY 2–6, INCLUSIVE, 1917.

PROGRAM.

TUESDAY, JANUARY 2.

Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

MORNING SESSION, 9.30.

OUR NATIONAL PARKS.

Franklin K. Lane, Secretary of the Interior.
Senator Reed Smoot, of Utah.
Representative Scott Ferris, of Oklahoma.
Representative Irvine L. Lenroot, of Wisconsin.
Representative William Kent, of California.
Carl Vrooman, Assistant Secretary of Agriculture.

AFTERNOON SESSION, 2.15.

DEVELOPMENT OF THE NATIONAL PARKS.

Enos Mills: "The national parks for all the people."
Mrs. John Dickinson Sherman, conservation chairman, General Federation of Women's Clubs: "Women's part in national parks development."
Huston Thompson, jr., Assistant Attorney General: "The public and the national parks."
Prof. Lowell Jackson Thomas, Princeton University: "Typical development at Mount Rainier."

EVENING SESSION, 8.15.

Opening of the first annual exhibition of national parks paintings in the galleries of the National Museum.

WEDNESDAY, JANUARY 3.

Robert Sterling Yard, presiding.

EDUCATIONAL DAY.

MORNING SESSION, 9.30.

George D. Pratt, conservation commissioner of the State of New York: "Organized out of doors."
Prof. E. M. Lehnerts, of the University of Minnesota: "University classes in the national parks."
Philander P. Claxton, United States Commissioner of Education: "Public schools and the national parks."
J. Horace McFarland, president American Civic Association: "Economic destiny of the national parks."

AFTERNOON SESSION, 2.15.

Dr. Charles D. Walcott, secretary Smithsonian Institution: "National parks as a scientific asset."
Arthur E. Bestor, president Chautauqua Institution: "Organized popular education."

Herbert Quick, member of Federal Farm Loan Board: "The author and the national parks."
Gilbert H. Grosvenor, editor National Geographic Magazine: "Teaching by picture."
William H. Holmes, head curator National Gallery of Art: "The painter and the national parks."
Rev. Charles W. Gilkey, of Chicago: "Spiritual uplift of scenery in national parks and the Grand Canyon."

EVENING SESSION, 8.15.

Illustrated lecture by Herbert W. Gleason.

THURSDAY, JANUARY 4.

MORNING SESSION, 9.30.

Enos Mills, presiding.

RECREATIONAL USE OF THE NATIONAL PARKS.

W. A. Welch, chief engineer Palisades Interstate Park: "The making of a recreational park."
J. W. Barber: "Winter sports in the national parks."
Mrs. Ada F. Chalmers: "Family hiking in the national parks."
Dr. Hugh M. Smith, Commissioner of Fisheries: "Fish and fishing in the national parks."
Marion Randall Parson, Sierra Club: "Living in the national parks."

AFTERNOON SESSION, 2.15.

John B. Burnham, president American Game Protective and Propagation Society, presiding.

WILD ANIMAL LIFE IN THE NATIONAL PARKS.

Henry S. Graves, forester and chief, Forest Service: "National forests and national parks in wild life conservation."
Charles Sheldon, chairman game preservation committee, Boone and Crockett Club: "Mount McKinley."
E. W. Nelson, Chief of Bureau of Biological Survey: "The Yellowstone and the game supply."
E. Lester Jones, Suprintendent Coast and Geodetic Survey: "Future of the antelope."
T. S. Palmer, assistant in charge of game preservation, Bureau of Biological Survey: "National monuments as wild animal sanctuaries."
Belmore Brown, Camp Fire Club: "Climbing Mount McKinley."

EVENING SESSION, 8.15.

Illustrated lecture on Mount McKinley, by Stephen R. Capps, geologist, United States Geological Survey.

FRIDAY, JANUARY 5.

MORNING SESSION, 9.30.

Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

THE QUESTION BOX.

J. B. Harkin, commissioner of Dominion parks, department of the interior, Canada: "Canadian national parks."

AFTERNOON SESSION, 2.15.

Dr. H. M. Rowe, president American Automobile Association, presiding.

MOTOR TRAVEL TO THE PARKS.

George C. Diehl, chairman A. A. A. Good Roads Board: "Touring, a by-product of roads building; or roads building, a by-product of touring."
Cortlandt Field Bishop: "American versus European scenic assets."
Orville Wright: "Air routes to the national parks."
A. W. Seaman, Long Island Automobile Club: "Transcontinental touring equipment."
Frank A. Davis, secretary-treasurer National Old Road Trails: "Sign posting the highways and byways."
David G. Joyce, chairman A. A. A. Touring Board: "Multiplication of American road travel."

EVENING SESSION, 8.15.

Illustrated lectures by H. H. Hays and Judge Will G. Steel.

SATURDAY, JANUARY 6.

Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

MORNING SESSION, 9.30.

THE GRAND CANYON.

Representative Simeon D. Fess, of Ohio: "Colossus of canyons."
Dr. George Otis Smith, Director United States Geological Survey: "The Survey's contribution to the national park movement."
Ford Harvey: "The public and the Grand Canyon."
Charles Sheldon, chairman game preservation committee Boone and Crockett Club: "Glories of the Cataract Canyon."
L. Claude Way: "Practical problems."

AFTERNOON SESSION, 2.15.

THE GREATER SEQUOIA.

Representative Frederick H. Gillett of Massachusetts: "The problem of the Greater Sequoia."
E. O. McCormick, vice president Southern Pacific Co.: "National parks and the railroads."
Enos Mills: "Perhaps our greatest national park."
Emerson Hough: "The top of America—Mount Whitney."
Robert Sterling Yard: "The Tehipite Valley and Kings Canyon."

EVENING SESSION, 8.15.

Bear stories by Enos Mills.
Illustrated lecture by Dr. Harry O. Reik.

FIRST EXHIBITION OF NATIONAL PARKS PAINTINGS.

CATALOGUE OF A LOAN COLLECTION OF 45 PAINTINGS ILLUSTRATING SCENES MAINLY IN THE NATIONAL PARKS AND MONUMENTS OF THE UNITED STATES, ASSEMBLED BY THE NATIONAL PARK SERVICE IN THE NATIONAL GALLERY OF ART IN CONNECTION WITH THE MEETING OF THE NATIONAL PARK CONFERENCE HELD IN THE NATIONAL MUSEUM, JANUARY 2–6, 1917.

This exhibition was opened with a special view on the evening of January 2. On January 16, 1 painting was withdrawn, and on January 30, 14 paintings were returned to the owners. The remaining 30 continued on exhibition in the main room of the gallery, new building of the National Museum, until after March 5. Those withdrawn before the close of the exhibition are indicated by an asterisk.

DEAN BABCOCK:

*The Twin Sisters.
*A Glimpse of the Range.
The Explorers.
*The Crags.
Scenes in the Rocky Mountain National Park. (Lent by the artist.)

ALBERT BIERSTADT:
Mount Whitney.
The Sequoia National Park. (Lent by the Minneapolis Institute of Arts.)
Whyte's Lake, Estes Park, Colo.
The Rocky Mountain National Park. (Lent by the Art Association of Indianapolis, John Herron Art Institute.)

HOWARD RUSSELL BUTLER:
*Sunrise near Mesa Verde.
The Mesa Verde National Park.
Sunshine and Shadow in The Grand Canyon, Ariz.
Grand Canyon National Monument. (Lent by the artist.)

ELLIOTT DAINGERFIELD:
Trees on the Rim of the Grand Canyon, Arizona.
From Rim to Rim of the Grand Canyon, Arizona.
(Lent by the artist.)

W. HERBERT DUNTON:
*Late into Camp.
*The Hunter's Supper.
The Start for the Hills.
(Lent by the artist.)

J. R. FOUNTAIN:
Crater Lake, Oregon.
The Crater Lake National Park. (Lent by the Southern Pacific Co.)

ALBERT L. GROLL:
Laguna Pueblo.
New Mexico. (Lent by the National Gallery of Art.)

JAMES HENRY HARPER:
Sunset on the Oregon Trail.
(Lent by the artist.)

W. VICTOR HIGGINS:
*Chile Venders, Taos.
Pueblo of Taos, New Mexico. (Lent by the artist.)

THOMAS HILL:
Yosemite Valley.
The Yosemite National Park. (Lent by the Southern Pacific Co.)

SYDNEY M. LAURENCE:
The Trapper.
Alaska.
Mount McKinley.
Alaska.
(Lent by the National Gallery of Art.)

WILLIAM R. LEIGH:
Grand Canyon.
Arizona. (Lent by Snedecor & Co.)

THOMAS MORAN:
A Rocky Mountain Solitude.
The Rocky Mountain National Park. (Lent by the artist.)
In the Grand Canyon of the Colorado.
Arizona. (Lent by the National Gallery of Art.)
Grand Canyon of the Yellowstone.
The Yellowstone National Park. (Lent by the artist.)
Grand Canyon of Arizona on the Santa Fe.
(Lent by the Atchison, Topeka & Santa Fe Railway.)

DE WITT PARSHALL:
The Hermit Creek Canyon, The Grand Canyon.
Arizona. (Lent by the Worcester Art Museum.)
Isis Peak, The Grand Canyon.
Arizona. (Lent by the Syracuse Museum of Fine Arts.)
Granite Gorge, The Grand Canyon.
Arizona. (Lent by the Toledo Museum of Art.)

SHELDON PARSONS:
*Morning in the Canyon.
The Grand Canyon, Ariz. (Lent by the artist.)

F. C. PEYRAUD:
Afternoon in The Grand Canyon.
Arizona. (Lent by the artist.)

EDWARD H. POTTHAST:
The Chasm.
The Grand Canyon, Ariz. (Lent by the artist.)
*Bright Angel Canyon of Arizona on the Santa Fe.
The Grand Canyon, Ariz. (Lent by the Atchison, Topeka & Santa Fe Railway.)

ARTHUR J. E. POWELL:
St. Marys Lake.
Grinnell Lake and Glacier.
Scenes in the Glacier National Park. (Lent by the artist.)

LUCIEN W. POWELL:
Grand Canyon of the Yellowstone.
The Yellowstone National Park. (Lent by the National Gallery of Art.)

WILLIAM RITSCHEL:
Awakening of The Grand Canyon of Arizona.
(Lent by the artist.)

CARL RUNGIUS:
Near Timberline, Bridges Forest Reserve, Wyoming.
The Yellowstone National Park. (Lent by the artist.)

BIRGER SANDZEN:
*Sunset in the Mountains, Colorado.
The Rocky Mountain National Park.
*The Arapahoes.
The Rocky Mountain National Park.
*Sunset in The Grand Canyon.
Arizona. (Lent by the artist.)

E. SERBAROLI:
*Mount Tamalpais.
California. (Lent by Hon. William Kent.)

J. H. TWACHTMAN:
*Waterfall, Yellowstone Park.
The Yellowstone National Park. (Lent by the City Art Museum of St. Louis.)

WALTER UFER:
Indian Gardens.
The Grand Canyon, Arizona. (Lent by the artist.)

PETER VAN VEEN:
*Mount Rockwell, Glacier National Park.
(Lent by the artist.)

F. BALLARD WILLIAMS:
Grand View, The Grand Canyon of Arizona on the Santa Fe.
(Lent by the Atchison, Topeka & Santa Fe Railway.)

SCHEDULE OF NATIONAL PARK TOURS ARRANGED BY THE MASSACHUSETTS FORESTRY ASSOCIATION.

	I.	II.	III.
June 28	Leave Boston	Leave Boston	Leave Boston.
June 29	Leave Chicago	Leave Chicago	Leave Chicago.
June 30	En route	En route	En route.
July 1	Denver	Denver	Denver.
July 2	Rocky Mountain (Estes) Park.	Rocky Mountain (Estes) Park.	Rocky Mountain (Estes) Park.
July 3	do	do	Do.
July 4	En route	En route	En route.
July 5	Yellowstone	Yellowstone	Yellowstone.
July 6	do	do	Do.
July 7	do	do	Do.
July 8	do	do	Do.
July 9	do	do	Do.
July 10	do	do	Do.
July 11	En route	En route	En route.
July 12	Glacier Park	Glacier Park	Glacier Park.
July 13	do	do	Do.
July 14	do	do	Do.
July 15	do	do	Do.
July 16	do	do	Do.
July 17	do	do	Do.
July 18	En route	En route	En route.
July 19	Lake Chelan	Lake Chelan	Lake Chelan.
July 20	Seattle	Seattle	Seattle.
July 21	do	do	Do.
July 22	Mount Rainier	Mount Rainier	Mount Rainier.
July 23	do	do	Do.
July 24	do	do	Do.
July 25	Portland	Portland	Portland.
July 26	do	do	Do.
July 27	do	do	Do.
July 28	Crater Lake	Crater Lake	En route.
July 29	do	do	Do.
July 30	do	do	Chicago.
July 31	San Francisco	San Francisco	En route.
Aug. 1	do	do	Boston.
Aug. 2	do	do	
Aug. 3	Yosemite	Yosemite	
Aug. 4	do	do	
Aug. 5	do	do	
Aug. 6	do	do	
Aug. 7	do	do	
Aug. 7, 8	General Grant Park	Leave Oakland	
Aug. 9	do	Salt Lake City	
Aug. 10	Los Angeles	Royal Gorge	
Aug. 11	do	En route	
Aug. 12	do	Chicago	
Aug. 13, 14	San Diego	Boston	
Aug. 15	Riverside		
Aug. 16	Redlands		
Aug. 17, 18	Grand Canyon		
Aug. 19, 20	En route		
Aug. 21	Chicago		
Aug. 22	Boston		

PRICES.

I—56 days	$605
Chicago to Chicago	552
II—47 days	510
Chicago to Chicago	457
III—34 days	395
Chicago to Chicago	342

SCHEDULE OF NATIONAL PARK TOURS ARRANGED BY THE MASSACHUSETTS FORESTRY ASSOCIATION.—Continued.

	IV.	V.	VI.
July 2	Leave Boston	Leave Boston	Leave Boston.
July 3	Leave Chicago	Leave Chicago	Leave Chicago.
July 4	En route	En route	En route.
July 5	Yellowstone	Yellowstone	Yellowstone.
July 6	do	do	Do.
July 7	do	do	Do.
July 8	do	do	Do.
July 9	do	do	Do.
July 10	do	do	Do.
July 11	En route	En route	En route.
July 12	Glacier Park	Glacier Park	Glacier Park.
July 13	do	do	Do.
July 14	do	do	Do.
July 15	do	do	Do.
July 16	do	do	Do.
July 17	do	do	Do.
July 18	En route	En route	En route.
July 19	Lake Chelan	Lake Chelan	Lake Chelan.
July 20	Seattle	Seattle	Seattle.
July 21	do	do	Do.
July 22	Mt. Rainier	Mt. Rainier	Mt. Rainier.
July 23	do	do	Do.
July 24	do	do	Do.
July 25	Portland	Portland	Portland.
July 26	do	do	Do.
July 27	do	do	Do.
July 28	Crater Lake	Crater Lake	En route.
July 29	do	do	Do.
July 30	do	do	Chicago.
July 31	San Francisco	San Francisco	En route.
Aug. 1	do	do	Boston.
Aug. 2	do	do	
Aug. 3	Yosemite	Yosemite	
Aug. 4	do	do	
Aug. 5	do	do	
Aug. 6	do	do	
Aug. 7	do	do	
Aug. 8	General Grant Park	Leave Oakland	
Aug. 9	do	Salt Lake City	
Aug. 10	Los Angeles	Royal Gorge	
Aug. 11	do	En route	
Aug. 12	do	Chicago	
Aug. 13	San Diego	Boston	
Aug. 14	do		
Aug. 15	Riverside		
Aug. 16	Redlands		
Aug. 17, 18	Grand Canyon		
Aug. 19, 20	En route		
Aug. 21	Chicago		
Aug. 22	Boston		

PRICES.

IV—52 days	$575
Chicago to Chicago	522
V—43 days	480
Chicago to Chicago	427
VI—30 days	365
Chicago to Chicago	312

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SCHEDULE OF NATIONAL PARK TOURS ARRANGED BY THE MASSACHUSETTS FORESTRY ASSOCIATION.—Continued.

	VII.	VIII.	IX.
July 9	Leave Boston	Leave Boston	Leave Boston.
July 10	Leave Chicago	Leave Chicago	Leave Chicago.
July 11	En route	En route	En route.
July 12	Glacier Park	Glacier Park	Glacier Park.
July 13	....do	....do	Do.
July 14	....do	....do	Do.
July 15	....do	....do	Do.
July 16	....do	....do	Do.
July 17	....do	....do	Do.
July 18	En route	En route	En route.
July 19	Lake Chelan	Lake Chelan	Lake Chelan.
July 20	Seattle	Seattle	Seattle.
July 21	....do	....do	Do.
July 22	Mount Rainier	Mount Rainier	Mount Rainier.
July 23	....do	....do	Do.
July 24	....do	....do	Do.
July 25	Portland	Portland	Portland.
July 26	....do	....do	Do.
July 27	....do	....do	Do.
July 28	Crater Lake	Crater Lake	En route.
July 29	....do	....do	Do.
July 30	....do	....do	Chicago.
July 31	San Francisco	San Francisco	En route.
Aug. 1	....do	....do	Boston.
Aug. 2	....do	....do	
Aug. 3	Yosemite	Yosemite	
Aug. 4	....do	....do	
Aug. 5	....do	....do	
Aug. 6	....do	....do	
Aug. 7	....do	....do	
Aug. 8	General Grant Park	Leave Oakland	
Aug. 9	....do	Salt Lake City	
Aug. 10	Los Angeles	Royal Gorge	
Aug. 11	....do	En route	
Aug. 12	....do	Chicago	
Aug. 13	San Diego	Boston	
Aug. 14	....do		
Aug. 15	Riverside		
Aug. 16	Redlands		
Aug. 17, 18	Grand Canyon		
Aug. 19, 20	En route		
Aug. 21	Chicago		
Aug. 22	Boston		

PRICES.

VII—44 days	$497
Chicago to Chicago	444
VIII—35 days	402
Chicago to Chicago	349
IX—23 days	287
Chicago to Chicago	234

The prices include (1) rail and Pullman tickets only from Boston to Chicago and return, (2) all expenses from Chicago, as follows: Back to Chicago for all tours reaching Chicago August 21. Through Portland, thence rail and Pullman only for all tours returning from Portland. Through the Yosemite, thence rail and Pullman only for all tours returning from the Yosemite. Stop-over privileges on any of these returns.

Tours leaving on July 3 and July 9 include rail and Pullman only to the Yellowstone and to Glacier Park, respectively; thence as under (2).

Where the price is inclusive, every calculable expense is covered, except laundry and similar personal items. Transportation to and from railroad stations is included, three meals per day, all fees and tips, all expenses in connection with excursions included in the itinerary.

Accommodations.—Standard Pullman sleepers (one-half section) included throughout. Hotels on a basis of two in a room, without bath, except in Seattle and San Francisco, where rooms with private baths are included. Rooms with private baths elsewhere and compartments or drawing rooms on sleepers will, if available, be provided upon request at the actual difference in cost.

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