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J O B T R A I N I N G
F O R
T E M P O R A R Y S U M M E R R A N G E R S
A T
C R A T E R L A K E N A T I O N A L P A R K

by
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SCHOOL OF FORESTRY
OREGON STATE COLLEGE
CORVALLIS, OREGON

A Thesis
Presented to the Faculty
of the
School of Forestry
Oregon State College

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science
June 1940

Approved:


.....Professor of Forestry.....

ACKNOWLEDGEMENT

I am particularly indebted to Lt. E. P. Leavit, Superintendent of Crater Lake National Park, and to J. Carlisle Crouch, Chief Ranger at Crater Lake National Park, for their assistance granted me in supplying me access to information pertinent to this phase of National Park work. They also have granted to me the opportunity, at Crater Lake National Park, to experience this "on the job" training.....

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Permanized
 OLD RELIABLE BOND
 RESISTANT

J O B T R A I N I N G
F O R
T E M P O R A R Y S U M M E R R A N G E R S
A T
C R A T E R L A K E N A T I O N A L P A R K

Due to the increasing development of activities in the fields of forestry, scores of additional employees have been added to administrative departments of forest industries and organizations. Along with this huge increase has come the birth of a new employee--that of a temporary summer worker. In most cases, he is a college man backed by one or two years of technical learning but decidedly deficient in practical experience as well as adequate knowledge of the organization in which he is to work. The task of training such a person, to obtain his maximum efficiency, is extremely difficult in as much as the work, usually of two or three months duration, will not stand a long training period. For instance, a permanent employee, in just such a field, would require at least four to six months of intensive training to gain a full and comprehensive understanding of his position. The temporary summer man, too, should receive a proportional amount of training. We can see the need for such training when we read the personnel reports of college men who have taken just such jobs with the United States Forest Service or the National Park Service. Time and time again, these reports tell of the inefficiencies of the man which, principally, are due to lack of knowledge about his job. In most cases, if he were given

a chance, by making available to him training on the job, he would write an entirely different story upon his personnel record. Thus, seeing the importance of job training on the early professional success, we should endeavor to adopt such measures as will grant this training to the short time summer seasonal worker.

In recent years, several forest agencies have slowly begun to establish modified types of job training for the short time forest employee. The Forest Service has developed an efficient fire training school in which to train the summer man in the technique of forest fire suppression. Other agencies have also done some training along the same line--fire suppression, but most all have failed to give through this training a full knowledge of the organization's make-up and operation. Without full and complete information, as to the history of the agency, principles, objectives, organization, methods of operation and control, this type of worker can not properly perform his functions to best advantage.

Because of the increasing use of forest recreation by the general public, the summer worker is rapidly becoming the contact man between his employing organization and the public. The variety of questions on most every conceivable topic allied to his work asked by the public visitor must be coped with by this summer man. His job is no longer merely the doing of a specific task as it once was. Today, he is a man with many duties, and his newest and most difficult is public education. There should be no excuse for such a summer Forest Service or Park Service man's not knowing where and how to find answers

to all reasonable questions, and, in most cases, he should be able to answer questions readily at the time of asking.

In my experience, during the last two summers as temporary Park Ranger at Crater Lake National Park, I learned, for instance, how varied, but yet important, these questions asked by the Park visitors can be. The questions asked were something as follows: "What is the story of Crater Lake's formation?"--a problem in geology; "What bug is the greatest forest tree killer?"--a problem in entomology; "What is the difference between the Park Service and the Forest Service?"; and multiple other similar questions. Other demands of knowledge were manifested also in the public's reliance upon me, a man in uniform, for their protection. They looked to me for any first aid treatment required, protection from wild life and fire. Knowledge in these specialized fields was required from me on my first day on the job. True, I was a college man with two years of learning behind me, but still I only had general theories and hazy concepts. I, as well as every other new man on the job, needed additional training.

Prior to two years ago, there at Crater Lake National Park they had had no-job training as it was believed that the season was too short to give paying results. Two years ago, a Ranger training program was adopted to test its worth. This training school lasted one month, one third of the summer season, and was carried on in coordination with the regular duties of each man. It called for extra work on the part of the permanent Rangers, the Chief Ranger, the Superintendent,

who acted as teachers, as well as the temporary Rangers. Many "off duty" afternoons and evenings were spent in study. During the long hours of work and study, we all wondered if it was worth the extra effort. However, after the training period had been completed, teachers as well as pupils knew it had been worthwhile. The new men as well as the old all admitted that they had made great advances in the performance of their duties. As results, we had a much more efficient and better trained force.

Thus, after seeing the worth of such a training system in the past, I am endeavoring in this thesis to develop a hypothetical case in which I am responsible for the organization and development of a summer training school for temporary summer rangers at Crater Lake National Park. It will be based upon my experience as a temporary park ranger at Crater Lake National Park, information concerning past ranger schools carried on there in the last two summers, and personal research in other fields of job training. The following material is to be covered in the school and will be further explained on the following pages.

Even though its scope is narrowed and rather limited to Crater Lake National Park, similar training programs for temporary summer men in other National Parks can be modeled from it. By merely changing the general factual material, it can accomplish the same purpose in most any park--that of training such a worker on the job. The general idea and outline may perhaps even be applicable to other allied fields of forestry such as the Forest Service in training their summer employees.

EXPLANATION OF SCHOOL PROCEDURE

The following material is to be used, more or less, as the text for this hypothetical ranger school. Material covering the day's topic will be found in the following text. This material corresponding with the scheduled class meeting should be studied by the student before going to the class meeting. The regular classes will start the evening of July 1, 1940 and will continue until July 30, 1940 and are to follow the schedule outlined below.

July 1 (evening) Introduction of new men and personnel-- introductory remarks by Superintendent. Topic-- History of the National Park Service; instructor-- Chief Ranger. 7-9PM.

The students are to gain a comprehensive picture of the National Park Service as a whole: know events and important names leading up to its formation; position of National Monuments in its organization; policies of the Park Service; a brief knowledge of other National Parks other than Crater Lake; and knowledge of park activities.

(Text-pages 11 to 21)

July 2 (evening) Topic--History of Crater Lake National Park; instructor--Chief Ranger. Recitation on History of National Park Service and discussion. 7-9PM.

The students are to know important events and names in the discovery of Crater Lake. Special attention should be paid to events of historical importance such as discovery dates and names as shown on the following chart of dates.

(Text-pages 23 to 26)

July 3 (evening) Topic-Geological History of Crater Lake; instructor-Chief Ranger. Recitation on History of Crater Lake and discussion. 7-9PM.

This part of your training work is of utmost importance as you will be asked more questions about this phase of your work than any other so particular emphasis should be put upon learning as much as possible about this phase of Crater Lake history. The material in the text should be augmented by additional material that can be found in the park library concerning the geological history of the lake. The student should have a clear general picture of the geological story of the lake formation. A study of the map on the last page of this topic will also give the student a general picture of the terrain surrounding Crater Lake.

(Text-pages 27 to 31)

July 4 to 7 No classes, Fourth of July weekend.

July 8 (evening) Topic-Legend of Crater Lake; instructor-Chief Ranger and Chief Naturalist. Recitation on Geological History of Crater Lake and discussion. 7-9PM.

The legend of any such ancient formation as Crater Lake is of great interest to a certain class of visitor. The student should be familiar with the story to relate it to any visitor interested.

(Text-pages 32 to 35)

July 9 (evening) Topic- Park Organization and lecture and discussion of checking station duties; instructor-Chief Ranger. Recitation on Legend of Crater Lake and any other questions of interest to all. 7-9PM.

The student should be familiar with our Park organization, have a knowledge of each park officer and his duties, and, of most importance, have an understanding of checking station duties.

(Text-pages 36 to 38)

July 10 (afternoon) Half of ranger force today, the rest tomorrow. Topic-Checking procedure and technique practiced at Ranger Stations. Instructor-Checking Officer. 1-3PM.

Proper checking station procedure is of utmost importance to every ranger. This phase of the school should be studied with care to insure an adequate understanding of this work to properly fill the duties of checking ranger.

(Text-pages 39 to 40)

July 11 (afternoon) Rest of ranger force-Checking procedure and technique practiced at Ranger Stations. Instructor-Checking Officer. 1-3PM.

(evening) Topic-Police Protection; instructors-Chief Ranger, United States Commissioner, and Superintendent. 7-9PM.

The student should be familiar with the Park Rules and regulations. He should know his powers of arrest, filing a complaint, searching of premises, and method of conduct at a hearing.

(Text-pages 41 to 43)

July 12 to 14 No school due to weekend increase of visitors.

July 15 (afternoon) Topic-Police Protection; instructors-two agents of United States Department of Justice from Portland Field Office. Lecture on finger prints. 1-4PM.

Practical problems will be taken up and studied. Such problems as re-enactment of hit-and-run accidents, gathering evidence, and care and use of fire arms will be studied.

(Text-pages 41 to 43)

July 16 (evening) Field Ranger School Examination, Number 1. 7-9PM.

This Field Ranger School Examination will cover all material in training school text, class discussions, and field trips covered thus far in Ranger School.

July 17 (afternoon) Topic-Forest Fire Protection; instructor-permanent Rangers and Chief Ranger. Field trip to Watchman Lookout and Fire Dispatching Office. 1-4PM.

(evening) Discussion and lecture of afternoon trips. 7-9PM.

This phase is another important part of our work. Particular effort should be made to gain a mastery of it. Detection, dispatching, smoke chasing, and suppression will be taken up for study. Special attention should be paid to the Administrative Plan of Action at Crater Lake National Park.

(Text-pages 47 to 51)

July 18 (afternoon) Topic-Forest Fire Protection; instructor-permanent Rangers and Chief Ranger. Field trip to imaginary fire. 1-4PM.

(evening) Discussion and lecture on afternoon trip. 7-9PM.

This afternoon field trip will be action against an imaginary fire where each ranger will have the opportunity to work on fire detail work.

July 19 (afternoon) Topic-Forest Disease and Forest Insects; Instructors-Officers of Bureau of Entomology and Chief Ranger. 1-4PM.

(evening) Discussion and lecture on afternoon trip. 7-9PM.

This field trip is important in that we will visit infested areas where forest disease and forest insects are doing damage to our park trees.

(Text-pages 52 to 55)

July 22 (evening) Field Ranger School Examination, Number 2. 7-9PM.

This second examination will cover all material in training school text and class discussion and also field trips covering work done since last examination.

July 23 (evening) Topic-First Aid; instructors-qualified first aid instructors. Chapter 1 to 3 in First Aid Text. 7-9PM.

First aid instruction is one of the more important parts of the entire ranger training course. It is one thing that every ranger must know thoroughly. The text to be used is the American Red Cross First Aid Text published by this organization. They can be purchased from the Ranger Office for a nominal sum. Each ranger is recommended to buy one as it will serve as a valuable reference in later work. Introduction and bleeding will be treated on the first evening of study.

July 24 (evening) Topic-First Aid, Chapter 3-7 in First Aid Text. 7-9PM.

A study of shock, unconsciousness, fainting, epilepsy, and heat exhaustion will be treated this evening.

July 25 (evening) Topic-First Aid, Chapter 8-10 in First Aid Text. 7-9PM.

A study of transportation of injured, artificial respiration, and burns will be studied.

July 26 (evening) Topic-First Aid, Chapter 11-14 in First Aid Text. 7-9PM.

A study of fractures, dislocations and sprains, and bandages and dressings will be treated.

July 30 (evening) Graduation from Ranger School-certificate of completion is to be given as shown on page

TOPIC 1HISTORY OF THE NATIONAL PARK SERVICE

This part of the text is to be studied by the student before attending the evening lecture on July 1. The student is to be familiar with events and major names leading up to the formation of the National Park Service, policies of the Park Service, activities of the Park Service, and a brief knowledge of other National Parks in the park system.

HISTORY OF THE NATIONAL PARK SERVICE

The National Park Service is a bureau of the Department of the Interior, being the ninth bureau to be established in that department. It is engaged in the supervision, management, and control of those national parks and monuments which are under that department's jurisdiction. It was created by the act of August 25, 1916, but did not begin to function until after the approval of the deficiency appropriation act of April 17, 1917 which provided funds for its establishment.

Though the National Park Service is of recent origin, the system of national parks of which it is an outgrowth dates back half a century to the creation, in 1872, of the Yellowstone National Park, the first true national park established in the United States. Inasmuch as the creation of the Yellowstone was the result of a conception of the conservation of natural wonders which has come to be known as the "National Park Idea," it will be proper at this point to discuss briefly the events leading up to the inception of the idea.

The existence of the natural wonders which occur in such profusion in the upper Yellowstone country had been known early in the last century to a few wandering hunters and trappers who visited the region in search of beaver. John Colter, a hunter who had accompanied Lewis and Clark on their expedition to the Pacific, visited the park region in 1807, and was probably the first white man to see the curiosities it contained.

Practically all of these men, from Colter down, brought back accounts, some truthful, some exaggerated, of the wonders they had seen in the shape of geysers, hot springs, etc.

These accounts, however, were almost universally disbelieved, Colter's being hailed with especial derision, and the thermal region he described coming to be known popularly as "Colter's Hell."

The persistency of these hunters' tales, however, and their essential agreement resulted eventually in the arousing of curiosity. In Montana especially there developed a desire to settle definitely the truth or falsity of the rumors of amazing phenomena around the upper reaches of the Yellowstone. The result was the first expedition in 1869 which had for its definite object the exploration of the much-talked-of area.

In the following year, Mr. Langford was a member of the second exploring expedition to enter the region, the Washburn-Doane expedition, so-called from its being led by General Henry D. Washburn, Surveyor-General of Montana, and Lieutenant G. D. Doane of the United States Army, who commanded a military escort detailed by the War Department.

It was on this expedition that expression was first given to the thought which has been responsible for the creation and development of the country's system of national parks. At a camp fire of this expedition, on September 19, 1870, the members were discussing the wonders they had seen and the certainty of the remarkable area becoming a mecca for tourists. This led to the suggestion by several that it would be a "profitable speculation" to take up land surrounding the principal phenomena and exploit them as commercial enterprises. Objection to this point of view was expressed by Hedges, a member of the party, to effect that the recently discovered wonder-

land should never be allowed to pass into private ownership, but should be set aside for the use and enjoyment of all the people. The other members of the party at once fell in with this higher conception of the matter, and all agreed to unite in an endeavor to make it an accomplished fact. This was the beginning of the "National Park Idea."

After the Yellowstone was established, it was administered in the office of the Secretary of the Interior. As other parks were established from time to time--fourteen were created between the founding of the Yellowstone, and they came to be spoken of collectively as the National Parks. They continued to be so referred to even after the creation of the National Park Service in 1916.

Distinction between Parks and Monuments

The act of June 8, 1906 entitled "An act for the preservation of American antiquities," gave the President discretionary power to set aside by proclamation any lands owned or controlled by the United States containing "historic landmarks, historic or prehistoric structures, and other objects of historic or scientific interest" as "national monuments."

The passage of this act was the culmination of an organized movement by a group of archaeologists, scientists, and others, to put such safeguards about the unique archaeological treasures which the country possesses in the ancient pueblos and cliff dwellings of the Southwest as would prevent their spoilation and ultimate destruction. Their protection by the creation of additional park areas had been found impracticable because a special congressional enactment was necessary in each

case, and because Congress was unwilling to create a great number of parks, many of which would be, necessarily, of very limited area. The original idea had been to protect ancient ruins only, but the act was broadened so as to include within its scope other objects of historic or scientific value, natural as well as artificial. The first monument created, as a matter of fact, was the Devils Tower, in Wyoming, a natural formation.

Some confusion has arisen as to the difference between parks and monuments. It has been asked, for example, why, of two reserved areas, the basic reasons for the reservation in each case being the preservation of a natural wonder, one should be a park and the other a monument.

The object of a monument is the preservation from destruction or spoliation of some object of historic scientific, or other interest. The object of a park is that and something more; namely, the development of the area reserved for its more complete and perfect enjoyment by the people. It might be said that a monument is park raw material, because many of the existing monuments, in all probability, will receive park status when their development as parks is practicable. Several of the present parks of the system originally has monument status, notably Grand Canyon, Lafayette, and Zion Parks.

Fundamental policies of the National Park Service

"Secretary of the Interior, Franklin K. Lane, in the Wilson Administration on May 13, 1918, enunciated the broad and fundamental policies which were to prevail in the administrat-

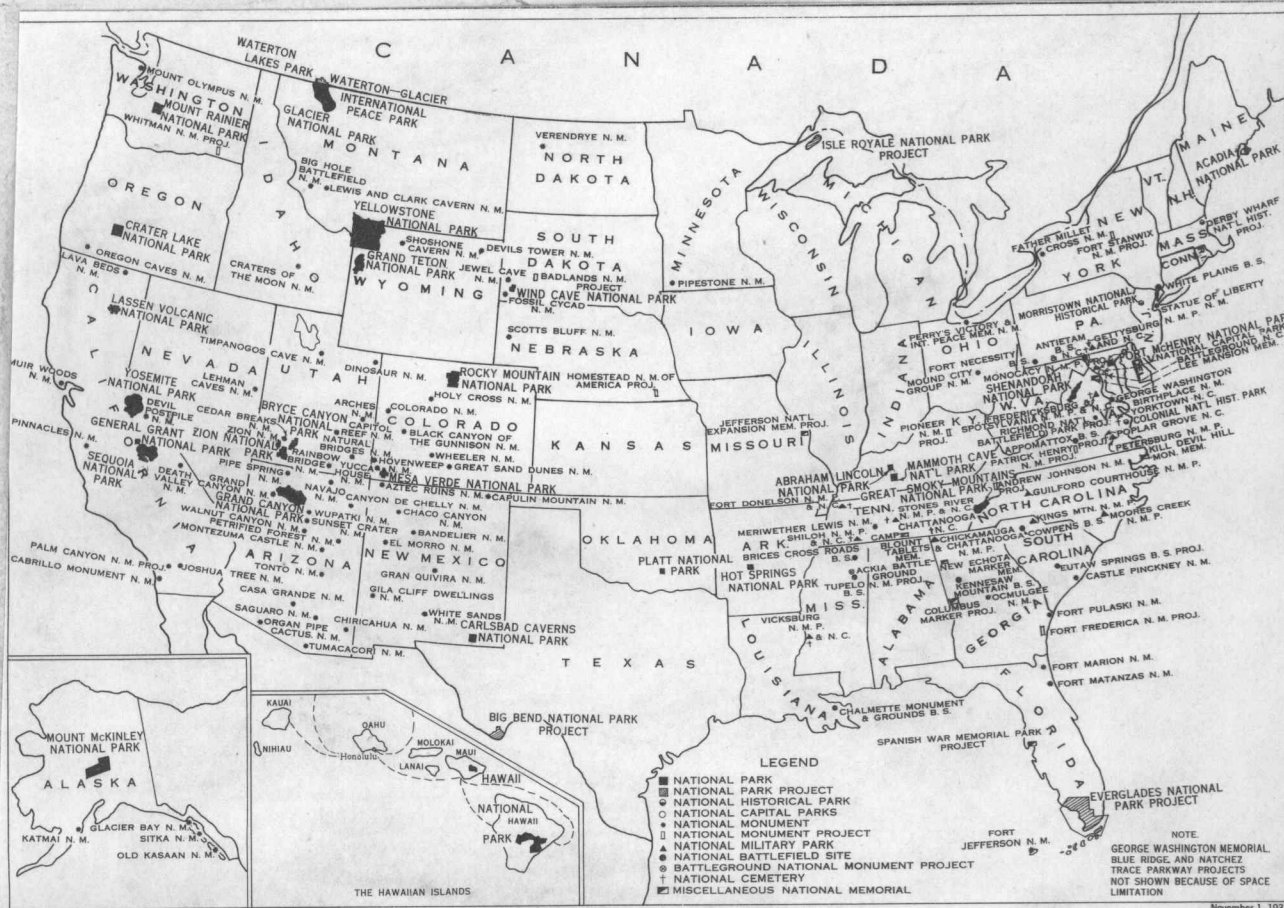
ion of national parks:"

1. "That the National Park must be maintained in absolutely unimpaired form for the use of future generations as well as those of our own."
2. "That they are set aside for the use, observation, health and pleasure of the people."
3. "That the national interest must dictate all decisions affecting public or private enterprise in the parks."

(From Ranger Manual, Crater Lake National Park-1938)

The Several Parks

In the pages that follow individual sketches of the parks in the national system are given in short description.



November 1, 1937

AREAS ADMINISTERED BY THE NATIONAL PARK SERVICE

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On the preceding page is shown a map of the United States designating areas administered by the National Park Service. Areas of National Park, National Park Project, Historical Park National Monuments, National Military Park, National Battlefield Site, National Cemetery, and miscellaneous National Memorial are shown on it. It is interesting to note that the larger National Parks are located in the western half of the United States while most of the smaller areas of historic interest are located in the eastern half.

On the following page a brief of our National Parks is listed showing the major parks of importance. This listing was obtained from a National Park publication, "Glimpses of Our National Parks". A vivid and interesting description can be gotten from this publication as it contains brief but interesting articles on each park and is illustrated with many outstanding photographs.

Brief of our National Parks--

NATIONAL PARKS IN BRIEF

- ABRAHAM LINCOLN, KY.—Birthplace of Abraham Lincoln. Established 1916; 0.17 square mile.
- ACADIA, MAINE.—Combination of mountain and seacoast scenery. Established 1919; 26.01 square miles.
- BRYCE CANYON, UTAH.—Canyons filled with exquisitely colored pinnacles. Established 1928; 56.23 square miles.
- CARLSBAD CAVERNS, N. MEX.—Beautifully decorated limestone caverns. Established 1930; 15.75 square miles.
- CRATER LAKE, OREG.—Beautiful lake in crater of extinct volcano. Established 1902; 250.52 square miles.
- FORT McHENRY, MD.—Its defense in 1814 inspired writing of Star Spangled Banner. Established 1925; 0.07 square mile.
- GENERAL GRANT, CALIF.—General Grant Tree and grove of Big Trees. Established 1890; 3.98 square miles.
- GLACIER, MONT.—Unsurpassed alpine scenery; 200 lakes; 60 glaciers. Established 1910; 1,537.98 square miles.
- GRAND CANYON, ARIZ.—World's greatest example of erosion. Established 1919; 1,008 square miles.
- GRAND TETON, WYO.—Most spectacular portion of Teton Mountains. Established 1929; 150 square miles.
- GREAT SMOKY MOUNTAINS, N. C.-TENN.—Massive mountain uplift; magnificent forests. Established for protection 1930; 683.75 square miles.
- HAWAII: ISLANDS OF HAWAII AND MAUI.—Interesting volcanic areas. Established 1916; 248.54 square miles.
- HOT SPRINGS, ARK.—Forty-seven hot springs reserved by the Federal Government in 1832 to prevent exploitation of waters. Made national park in 1921; 1.54 square miles.
- LASSEN VOLCANIC, CALIF.—Only recently active volcano in United States proper. Established 1916; 163.48 square miles.
- MAMMOTH CAVE, KY.—Interesting caverns, including spectacular onyx cave formation. Established for protection 1936; 60.2 square miles.
- MESA VERDE, COLO.—Most notable cliff dwellings in United States. Established 1906; 80.21 square miles.
- MOUNT McKINLEY, ALASKA.—Highest mountain in North America. Established 1917; 3,030.46 square miles.
- MOUNT RAINIER, WASH.—Largest accessible single-peak glacier system. Established 1899; 377.78 square miles.
- OLYMPIC, WASH.—Forests of unusual density; rare Roosevelt elk. Established 1938; 1,012.5 square miles.
- PLATT, OKLA.—Mineral springs. Established 1906; 1.32 square miles.
- ROCKY MOUNTAIN, COLO.—Peaks from 11,000 to 14,255 feet in heart of Rockies. Established 1915; 405.33 square miles.
- SEQUOIA, CALIF.—Outstanding groves of Sequoia gigantea. Established 1890; 604 square miles.
- SHENANDOAH, VA.—Outstanding scenic area in Blue Ridge. Established 1935; 282.14 square miles.
- WIND CAVE, S. DAK.—Beautiful cavern of peculiar formations. Established 1903; 19.75 square miles.
- YELLOWSTONE, WYO.-MONT.-IDAHO.—World's greatest geyser area; an outstanding game preserve. Established 1872; 3,471.51 square miles.
- YOSEMITE, CALIF.—Valley of world-famous beauty; spectacular waterfalls; magnificent High Sierra country. Established 1890; 1,176.41 square miles.
- ZION, UTAH.—Zion Canyon 1,500 to 2,500 feet deep. Spectacular coloring. Established 1919; 138.04 square miles.

National Monuments

Individual sketches of the National Monuments would be superfluous. They received no appropriations prior to 1917. They were placed in charge of officers of the Department of the Interior in the vicinity--General Land Office employees, etc. In a few cases custodians have been employed at nominal salaries, and in the case of Muir Woods custodian service has been paid out of the appropriation for protecting public lands.

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ACTIVITIES

Conservation of Physical Features

Conservational activities of the National Park Service are concerned with two kinds of conservation. First, there is the preservation in their natural states of the actual, physical parks themselves, their formations, their forests, and their waters. Then there is the protection of the wild life in the parks to the end that it may be preserved from extermination and given a chance to increase freely and develop in natural surroundings.

Natural Wonders. The formations about the Yellowstone geysers and hot springs and rock and other formations in all the parks and monuments possess special attractions for the initial-cutting vandal and the souvenir-hunter. During the tourist season an important part of the work of the rangers consists in preventing depredations of this sort.

Ruins and Historic Structures. Before coming under Government protection many of the prehistoric cliff dwellings of the Southwest were being seriously injured by depredations of pottery and relic hunters and persons who, for sheer wantonness, injured and defaced the ruins. They ravages of time and the elements were also making inroads, and an unchecked deterioration was setting in. Most of these ruins and structures are located in monuments, though one important park, Mesa Verde, is chiefly notable because of the ruins it contains. The Service not only protects these places with custodians, printed warnings, and where possible ranger patrol, but, as far as its funds will permit, performs considerable work of restoration.

Forests and plants. Protection of the forests and of the plant life of the parks constitutes one of the largest problems of the National Park Service, and a large part of the work of the ranger forces, especially during the dry months, which coincide with the tourist season and consequently with the season of camp fires, is directed toward this end. Fire is the greatest menace. Close cooperation is maintained with the Forest Service in this connection, national forests adjoining most of the larger parks.

Lakes and Streams. About the only direct activity of the Service in lake and stream conservation consists in the guarding against pollution of the waters. Water power in the parks is not utilized by private individuals, although the Service, in a number of instances, notably in the Yosemite, has erected power plants for its own use.

Conservation of Wild Life

Hunting is not allowed in any of the parks, and rigid restrictions are placed about the possession of fire-arms. The park rangers are continually on the lookout for poachers. Predatory animals, such as wolves, coyotes, and the mountain lions are also hunted by rangers, and efforts looking to their extermination are constantly going on. Many are trapped and sent away to zoos and menageries.

All of the parks are bird refuges, and birds are protected from hunters and predatory animals while in the parks. Many migratory birds find the park safe stopping places each year on their passages back and forth between their breeding places in the north and their winter homes in the south.

Fishing with hook and line is permitted in the parks under regulations enforced by the park authorities, which regulations may be suspended by the Superintendent at any time and fishing absolutely prohibited in certain waters if in his judgment such action is advisable.

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TOPIC 2HISTORY OF CRATER LAKE NATIONAL PARK

This part of the text is to be studied by the student before attending the evening lecture on July 2. The student is to be familiar with events and names important in the history of Crater Lake's history and discovery.

HISTORY OF CRATER LAKE NATIONAL PARK

Of the lakes in the United States there are many and in great variety, but of crater lakes there is but one of great importance. Crater lakes are lakes which occupy the craters of volcanoes or pits (calders) of volcanic origin. They are most abundant in Italy and Central America, regions in which volcanoes are still active; and they occur also in France, Germany, India, Hawaii, and other parts of the world where volcanism has played an important role in its geologic history.

Discovery

According to W. G. Steel, (from the Mountains of Oregon, by W. G. Steel, 1890), the lake was first seen by white men in 1853. It had long previously been known to the Indians, whose legends have contributed a name, Llac Rock, to one of the prominences of its rim. They regarded the lake with awe as an abode of the Great Spirit. Prospectors were the earliest explorers of the lake. The first travelers of note who visited the lake were Lord Maxwell and Mr. Bentley, who in 1872, with Captain O. C. Applegate, of Modoc war fame, and three others, made a boat trip along its borders and named several of the prominences on the rim after members of the party.

The first white man given credit for its discovery was John Wesley Hillman. He first accidentally discovered the lake in 1852 with a group of prospectors and named it Deep Blue Lake. Later Jim Dutton, accompanied by David Linn and family visited the lake and named it Crater Lake, the name it retains today.

The first Geological Survey party visited the lake in 1883, when Everette Hayden, after spending several days in examining the rim, tumbled logs over the cliffs to the water's edge and paddled over to the island. In 1886, under the direction of Captain C. E. Dutton, many soundings of the lake were made by W. G. Steel, and a topographic map of the vicinity was prepared. Under the inspiration of the "Mazamas," a more extended study was made by government parties from the Department of Agriculture and the Geological Survey.

Events

Of Historical Importance

- 1852--John Wesley Hillman and a group of prospectors discovered the lake and named it Deep Blue Lake.
- 1862--Chauncey Nye and party, unaware of the previous discovery, accidentally visited the lake.
- 1865--Soldiers from Fort Klamath, without knowledge of previous discoveries, visited the lake and named it Lake Majesty.
- 1869--Jim Sutton, accompanied by Linn and family, visited the lake and named it Crater Lake .
- 1873--J. S. Diller, geologist, and Everette Hayden, of the United States Geological Survey, visited the lake.
- 1885--William Gladstone Steel, with party, visited the lake. Mr. Steel suggested that a national park be established and a petition was sent to President Cleveland.
- 1886--The President issued a proclamation withdrawing 10 townships, including Crater Lake.

- 1888--First fish planted in Crater Lake by William Gladstone Steel.
- 1896--Mazamas visited Crater Lake and christened the ancestral mountain, of which only the caldera and lower slopes remain, Mount Mazama.
- 1902--Crater Lake National Park, created by congressional action, by Theodore Roosevelt.
- 1907--First automobile driven to rim of Crater Lake by Charles True, from Medford, Oregon.
- 1912--Crater Lake Lodge, the oldest structure now existing in the rim area, was built.
- 1935--Park-approach roads and highway to rim open for first time throughout winter.
- (following from Crater Lake National Park Booklet, United States National Park Service, Washington, D. C.)

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TOPIC 3GEOLOGICAL HISTORY OF CRATER LAKE

This part of the text is to be studied by the student before attending the evening lecture on July 3. The student should obtain a clear general picture of the geological story of the lake formation. This phase of your training work is of utmost importance. Particular emphasis should be put upon its mastery.

GEOLOGICAL HISTORY OF CRATER LAKE

Wonderful as the lake, encircled by cliffs, may be, it serves but to conceal in part the greatest wonder--that is, the enormous pit or caldera which is half filled by the lake. The caldera is 4,000 feet deep. The caldera extends from the top of the rim, which is the very summit of the Cascade Range, half-way down to the sea level, and nearly a square mile of its bottom is below the level of Upper Kalamath Lake at the eastern foot of the range. The volume of the caldera is nearly a dozen cubic miles, and if we add the volume of the lost Mount Mazama, that amount would be increased by at least one-half. How was it possible to remove so large a mass and in process develop so great a depression?

The caldera is completely inclosed, so that it can not be regarded as an effect of erosion. The volcanic origin of everything about the lake would suggest in a general way that this revolution must have been wrought by volcanism, either blown out by a great volcanic explosion or swallowed up by an equally great engulfment.

At first sight the rim about Crater Lake suggests that the caldera was produced by an explosion, and the occurrence of much pumice in that region leads support to this view; but on careful examination we find that the rim is not made up of fragments blown from the pit, but of layers of solid lava interbedded with those volcanic conglomerate erupted from Mount Mazama before the caldera originated. The moraines deposited by glaciers descending from the mountain formed the surface around a large part of the rim, and as there is no fragmental

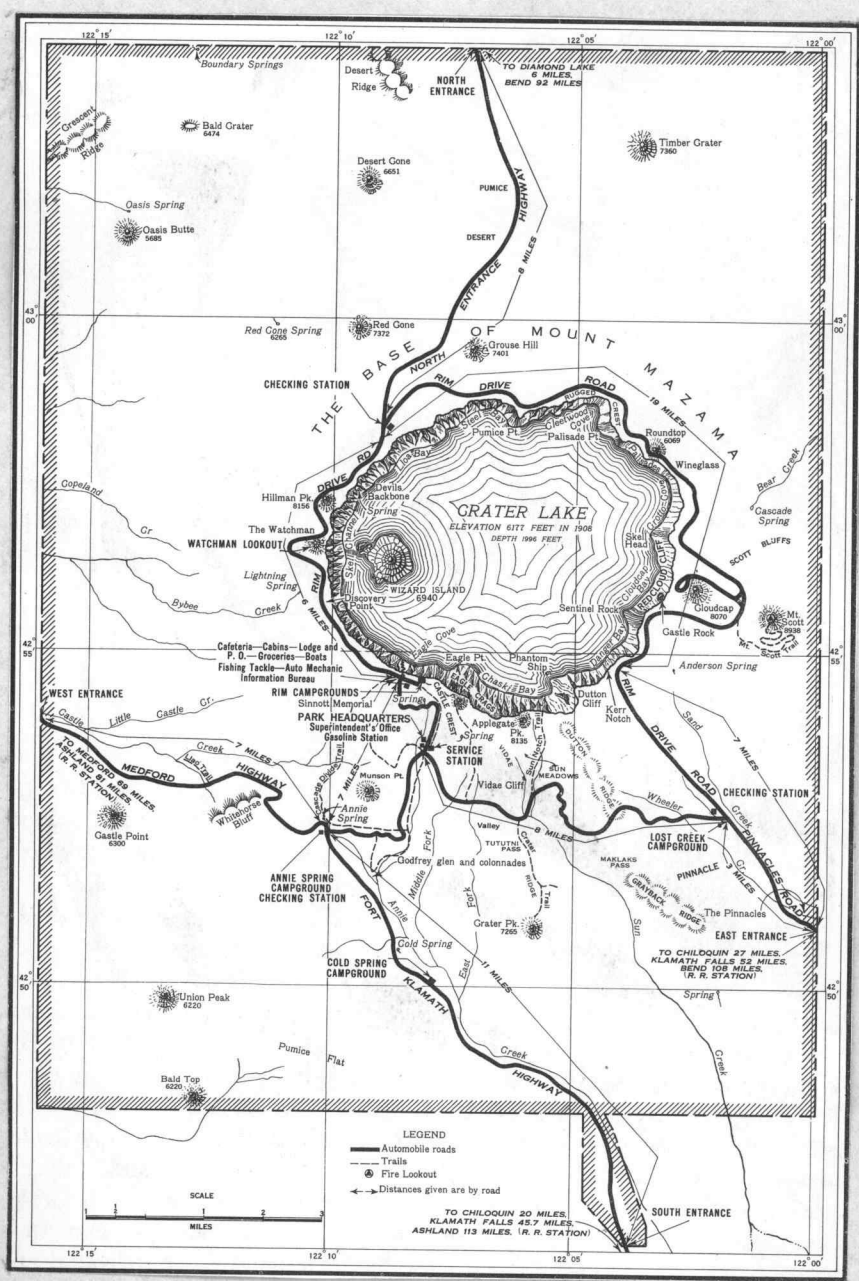
deposits on these moraines, it is evident that there is nothing whatever to indicate any explosive action in connection with the formation of the caldera.

We may be aided in understanding the possible origin of the caldera by picturing the conditions that must have obtained during an eruption of Mount Mazama. At such a time the column of molten material rose in the interior of the mountain until it overflowed at the summit or burst open the sides of the mountain and escaped through fissures. Fissures formed in this way usually occur high on the slopes of the mountain. If instead, however, an opening were effected on the mountain side at a much lower level--say some thousands of feet below the summit--and the molten material escaped, the mountain would be left hollow, and the summit, having so much of its support removed, might cave in and disappear in the molten reservoir.

The elevated position of the great caldera occupied by the lake makes its origin by subsidence seem the more probable. The level of the lowest bed of the lake reaches the surface within fifteen miles down the western slope of the range. That Mount Mazama was engulfed is plainly suggested by the behavior of its final lava stream. The greater portion of this last flow descended and spread over the outer slope of the rim, but from the thickest part of the flow where it fills an old valley some of the same lava poured down the inner slope. The only plausible explanation of this phenomena seems to be that soon after the final eruption of Mount Mazama, and before the thickest part of the lava effused at that time had solidified, the mountain collapsed and sank away and ~~the~~ yet viscous portion of the stream followed down the inner slope of the caldera.

MAP OF CRATER LAKE NATIONAL PARK

On the following page is shown a map of Crater Lake National Park showing highways and points of interest within its boundaries. Each ranger is expected to have mental pictures of important spots in the park. Always be able to tell the visitor where a specific point of interest is when asked. Knowing your park well is an important part of your work.



Map of Crater Lake National Park showing highways and points of interest

TOPIC 4LEGEND OF CRATER LAKE

This part of the text is to be studied by the student before attending the evening lecture on July 8. The student is to be familiar with the legendary story of Crater Lake so as to relate it to any visitor interested. This phase of the lake's history is of exceeding interest to a certain class of park visitors.

LEGEND OF CRATER LAKE



Llao, the master of everything living under the earth and water, dwelt in the fiery pit where Crater Lake now lies, and this was the only place he could come to the surface of the earth. Skell was master of all the animals that lived on the earth. Both were in love with the daughter of the chief of the Klamath Indians and both asked for her hand in marriage and were refused because her father was rearing her to be chief of the tribe when he died. Llao felt wronged when he was refused her hand and returned to his home on Llao Rock and brooded. Skell understood and pledged his help to the Indians if they needed it.

Then Llao commanded the chief to deliver his daughter to him in three days, or seven days of death and destruction would be launched against the Indians. The girl wanted to sacrifice herself for her people, but they wouldn't let her. They tied her in her tent and lay face downward awaiting destruction. Skell started to help the Indians, but Llao, seeing him go,

hurled a flaming boulder across the skies and struck him dead. Then Llao's children took Skell's heart from his body and brought it to their father.

All of Skell's children gathered at a fountain where he drank and bewailed his fate. Llao sent a messenger to them proclaiming himself lord of everything above earth as well as underneath it.

After he left, the coyote said, "Since it is proclaimed that Skell's heart will live and his body live if his heart be returned, let us proceed to the home of Llao and declare ourselves his loyal subjects, awaiting the change to restore the heart to our master."

Taunts greeted them as they arrived, and the weasel, brother of Llao, ran to the ballground with Skell's heart and began to toss it into the air. The coyote followed him and began to chide him for not being able to throw it far. Other animals tried to toss it too but the coyote chided them all for not being able to throw it high into the air. Finally, Llao became angry at his taunts and stalked out and hurled it far into the air. It soared and soared and finally came to the ground on the far end of the baseball ground. The fox, who was hidden near, snatched it and rushed into the forest. As Llao's children were about to catch the fox, the antelope burst through the throng and took the heart and rushed on with it. The eagle swooped down and, taking the heart from the antelope, flew out of sight with it. A voice of a dove, sounding from a great distance, told them Skell lived again.

Brooding over this, Llao went to Skell's land and challenged him to a wrestling match. Skell knew that Lloa was stronger, but decided to wrestle rather than appear cowardly before his children and the other gods. Llao threw him across his shoulder and started toward his home. When they were only a short distance from Llao's home, Skell said that a louse was biting him and he wanted to scratch. Llao taunted him saying, "What matter a little bite when I am soon going to cut you to pieces and feed you to my children?"

"But you will grant me this one last wish," pleaded Skell. Llao freed one of his hands and Skell pulled out his knife and cut off Llao's head. Then he sent word to Llao's children that Skell had been killed. They gathered around the pit beneath Llao's throne and ate the pieces of their master as they were thrown down to them. But when their master's head was tossed over, they were grieved and would not touch it. It remains today where it was thrown and is known as Wizard Island. Then the pit grew dark and the children wept, their tears falling into the dark pit which is today known as Crater Lake.

TOPIC 5PARK ORGANIZATION

This part of the text is to be studied by the student before attending the evening lecture on July 9 and 10. Each man should know the park organization well in order to work toward our mutual goal of attainment. He should have a knowledge of each park officer and his duties. Thorough knowledge and understanding of checking duties must be gained by each ranger.

PARK ORGANIZATION

The administration of Crater Lake National Park is in direct charge of the Park Superintendent selected by the Director of the National Park Service in Washington, D. C. The ranger organization is a separate department working under the immediate supervision of the Superintendent. The personnel of the department consists of two general classes, permanent and temporary, with the following numbers and designations:

- 1 Chief Park Ranger
- 2 Permanent Park Rangers
- 13 Seasonal Rangers
- 3 Fire Guards
- 1 Fire Lookout

Chief Ranger:

The rangers and other protection personnel are under the direct supervision of the Chief Ranger who is responsible for all activities carried on in the Ranger Department.

Permanent Rangers:

Under general supervision of the Chief Ranger and in responsible charge of specific park areas or special assignments. A sufficient number of seasonal rangers to accomplish the particular assignment or to carry on general work will be assigned to permanent rangers.

Seasonal Rangers:

Appointed and employed to supplement the permanent force during the summer travel and fire season. All instructions relative to the work of these will be issued by or through the

Chief Ranger or his designated representative.

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THE COLLECTOR
OF THE BUREAU OF LANDS
WASHINGTON, D. C.

CHECKING STATION DUTIES

Locations: There are three checking entrances in the park. Annie Springs station is located in the south end of the park where the Klamath Falls and Medford highways meet six miles from the lake proper. This station is the major checking station in the highway systems within the park boundaries where the majority of the visitors enter the region. North Entrance station, the checking station located on the highway from Bend, and the Lost Creek station, the checking station located just off the Dalles-California highway east of the park, are the minor ones.

Importance of good checking technique: As the checking stations are the first points of contact between the park officers and visitors, care must be made to convey the proper first opinion of the park personnel. Courtesy and personal appearance of the checking ranger are the prime requisites for making a good ranger.

Duties: One of the first and prime duties of the checking ranger is the giving of information to the public. Such as follows are to given: general information about the park, the adjacent country, special features of the park, roads and trails, mileages, plant life, animal life, rates and schedules, and technical questions.

Permits: The issuance of automobile permits, windshield stickers and booklet of information constitutes one of the most important and exacting duties. There are three different kinds of permits: regular permit at a cost of \$1.00; complimentary permit; and commercial permit at a cost of \$10.00. All motor

vehicles entering the park must obtain one of the three permits or one of the passes. Care should be exercised by all rangers in issuing the proper permit.

Windshield Stickers: Each motor vehicle receiving one of the three permits receives a windshield sticker which indicates to rangers that the operator has secured a permit. Owners or drivers of automobiles entering the park on return trips and displaying windshield stickers should present their permit receipts to the ranger. Stickers do not necessarily mean that a permit has been secured. The place for the sticker is in the lower right hand side of automobile windshields or on the glass of their front doors out of the direct line of vision of the operators.



On the afternoon of ranger school designated for study of station duties half the checking force will meet at one of the stations while the other half remain on skeleton duty. The officer in charge of the checking stations will conduct the class there explaining all phases not explained here and answering all questions to be asked. The other half will meet the next afternoon and repeat the same procedure.

TOPIC 6POLICE PROTECTION

This part of the text is to be studied by the student before attending the lecture on the evenings of July 11 and 15. The student should be familiar with the park rules and regulations, know his powers of arrest, of searching of premises, and know the method of conduct at a hearing.

POLICE PROTECTION

Rules and regulations for the National Parks with special supplements as promulgated and approved by the Secretary of the Interior are incorporated in the regular Ranger Manual and each ranger must study these rules and regulations and become thoroughly familiar with them. The laws governing the National Parks are based on Congressional Acts.

Rangers are responsible for law enforcement within the park. The Superintendent may delegate police authority to any park employee and each employee has a citizen's authority to arrest.

A ranger may make an immediate arrest only when the offense is actually witnessed by him. Arrest in this instance is made by restraint of the offender after informing him that he is under arrest for violating a specific law, rule or regulation. If the offender resists arrest, force sufficient to overcome this resistance may be used by the arresting ranger.

Arrest through a complaint filed with the United States Commissioner is made only through a warrant of arrest. If the ranger does not witness the offense, but through investigation to determine beyond a reasonable doubt the guilt of the accused, arrest can be made only after a third party has filed a complaint before the Commissioner and a warrant of arrest issued. A ranger may hold a Deputy Marshall commission.

Search of premises can be made only after a warrant of search has been issued by the Commissioner. A ranger is not authorized to serve a search warrant. Such a warrant is issued on the basis of a complaint, the character of which must set forth definite proof that evidence in a case is located within

private premises. A Deputy Marshall must serve the warrant of search which must describe full premises to be searched and what is wanted in the place.

The resident United States Commissioner is a trial judge and as such may hold hearings of offenders. The offender may waive this preliminary hearing and have the case presented to a Federal Grand Jury.

When an offender has been arrested by a ranger and is brought before the Commissioner for a hearing, the ranger must be in a position to present the case to the Commissioner. It is, therefore, imperative that rangers obtain all possible evidence to present with his case. Definite, factual, incontestable evidence must be obtained and presented in sequence to the Commissioner by the ranger if the charge is to result in a conviction. Names and addresses of witnesses together with written and signed statements by them should be obtained.

FIELD RANGER SCHOOL EXAMINATION

No. 1.

An examination of this sort will be given all rangers attending the field ranger school on the evening of July 16. This examination will cover all material in training school text, class discussions, and field trips covered thus far in Ranger School.

NAME: FIELD RANGER SCHOOL EXAMINATION GRADE:
Number 1.

1. In what year was Yellowstone National Park created _____
2. List the names of the expedition largely responsible for its creation _____
3. Some of the earlier parks were administered by the _____ Department.
4. The National Park Service is a bureau in the _____ Department.
5. Crater Lake was discovered in _____ by _____
6. It was first named _____
7. Who was largely responsible for the establishment of Crater Lake National Park _____
8. Crater Lake National Park was established in _____ and contains _____ acres.
9. The _____ Department is responsible for protection activities in the Park.
10. What is the primary purpose of the uniform _____
11. Name six duties of a checking ranger _____

12. Name three conditions under which a ranger may make an arrest _____
13. To whom is a complaint sworn _____
14. Who is authorized to serve a warrant _____
15. Name one condition under which a ranger might use force to effect an arrest _____
16. Name two general classifications of evidences _____

17. Name three types of evidence to look for in a case of a hit and run driver _____

18. What is the first concern of a ranger in investigating an automobile accident in which personal injuries have been suffered _____.

19. Name ten personal features to be recorded in a description of people _____

20. What is meant by a latent fingerprint _____

S E C O N D H A L F
O F
R A N G E R S C H O O L

TOPIC 7

FOREST FIRE PROTECTION

This part of the text is to be studied by the student before attending the lectures and field trips on July 17 and 18. Forest fire protection is an important part of our work. Particular effort should be made to gain a mastery of it. Detection, dispatching, smoke chasing, and suppression are the topics to be taken up in discussion. Outside study in addition to the text should be made to insure adequate knowledge to cope with forest fires.

FOREST FIRE PROTECTION

Instruction of forest fire protection is covered by several field trips to surrounding points in the park where practical explanation is given. One trip is to Watchman Lookout where fire detection is explained; another to the fire dispatching office at park headquarters where fire dispatching is explained; and another to an imaginary fire in the field where fire suppression is explained. The general procedure of instruction is outlined as follows:

I. Detection

- A. Lookouts
 - 1. Primary
 - 2. Secondary
- B. Lookout patrolmen
- C. The Watchman Lookout (Used for training this season)
 - 1. Physical structure
 - 2. Forest museum room
 - 3. Equipment
 - a. Firefinder
 - 1'. Osborne
 - 2'. Orienting and leveling instrument
 - 3'. Explanation of operating instrument
 - a'. Horizontal angles
 - b'. Vertical angles
 - 1''. Minus or plus
 - 2''. Reading the angle of dip
 - 3''. Relation to panoramic photographs
 - c'. Scaling distances from lookout to fire
 - d'. Locating in terms of physical features
 - e'. Individual practice in using the fire finder
 - f'. Report
 - b. Binoculars
 - 1'. Explanation
 - 2'. Uses
 - c. Radio
 - d. Telephone
 - e. Lightning ground system
 - f. Fire weather station
 - 1'. Rain gauge
 - 2'. Fan psychrometer
 - 3'. Fuel moisture sticks
 - 4'. Anemometer
 - 5'. Wind vane

- g. Explanation and study of each
- D. Duties of the lookout
- E. Review and questions
- II. Dispatching
 - A. Location--Park Headquarters
 - B. Equipment
 - 1. Protractor board
 - 2. Fire Atlas
 - 3. Fire Danger Meter
 - 4. Panoramic photographs
 - 5. Fire Control Plan
 - 6. Radio
 - C. Complete discussion of the duties of the dispatcher
 - D. Review and discussion
- III. Smoke Chasing
 - A. Obtaining full and accurate information and directions from dispatcher
 - B. Topographic map
 - C. Protractor
 - D. Compass
 - 1. Orienting
 - 2. Reading
 - a. Foresight
 - b. Backsight
 - c. Locating lookout's line of sight
 - 3. Offset
 - E. Pacing
 - F. Practice, discussion and questions
- IV. Fire Suppression
 - A. Causes
 - 1. Lightning
 - 2. Man-caused
 - B. Prevention of man-caused fires
 - 1. Precautionary measures for self
 - a. Smoking
 - b. Relative dangers from smoking
 - c. Extinguishing smokes
 - d. Extinguishing matches
 - e. Camp fires
 - f. Slash burning
 - g. Incendiary
 - 2. Impressing others
 - a. Through action
 - b. Through words
 - C. Elements of fire behavior
 - 1. Forest fire fuels
 - 2. Raising the temperature of fuels to produce fire
 - 3. Broad methods of extinguishing fire
 - 4. Natural factors effecting the spread of fire
 - a. Temperature
 - b. Humidity
 - c. Wind
 - d. Relation to forest fuels
 - 5. Types of forest fires

- D. Initial Action
1. Corral
 2. Control and patrol
 3. Mop up
 4. Dismission men
 5. Special problems in fire suppression
 6. Dummy fire
 7. Special equipment
 - a. Radio
 - b. High speed motor pumpers
 - c. Truck pumper
 8. "One lick" method of fire fighting
 9. The project fire
 10. Review and discussions

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DEPARTMENT OF THE INTERIOR
National Park Service
Crater Lake National Park

April 21, 1939

ADMINISTRATIVE ACTION TO BE TAKEN IN CRATER LAKE NATIONAL PARK
BASED ON FIRE WEATHER DATA
(REVISED)

CLASS 1 and 2 DAYS

No special action

CLASS 3 DAYS

A. Based on Burning Index.

*1. Regular Lookout stations manned.

- a. Watchman Lookout
- b. Mt. Scott Lookout
- c. Headquarters Ranger Station manned.

2. On duty weekends and holidays

1 CCC crew of 20 men with foreman, leaders and assistant leaders.

B. Based on Risk (lightning).

In addition to action outlined in Plan A.

1. 4 Ranger stations fully manned.
2. 3 Highway patrol cars to cover blind areas. 1 CCC enrollee to accompany each patrol.

C. Based on Risk (Visitor Use).

In addition to action outlined in Plan A.

1. 2 Highway patrol cars concentrated on coverage of man-caused fire occurrence zones. 1 CCC enrollee to accompany each patrol.

D. Based on Visibility.

In addition to action outlined in Plan A.

1. 2 Secondary lookouts (union Peak and Crater Peak) manned.
2. 2 Highway patrol cars

* These stations manned from Class 3 through Class 7 Days.

CLASS 4 DAYS

- A. Based on Burning Index.
1. 3 highway patrol cars.
 2. Burning operations: burn no new piles; chunking existing fires permitted with no addition of fuel.
 3. "No smoking" except in designated areas.
 4. On duty weekends and holidays,
1 CCC crew of 20 men, foreman and leaders, in camp and on telephone
- B. Based on Risk (Lightning).
- In addition to action outlined in Plan A.
1. 4 Ranger stations fully manned.
 2. 2 Secondary lookouts (Union Peak and Crater Peak) manned. Two (2) CCC enrollees to accompany each lookout.
 3. 4 Highway patrol cars concentrated on coverage of blind areas.
One (1) CCC enrollee to accompany each patrol.
 4. On duty weekends and holidays,
Two (2) CCC crews of 20 men each, foreman & leaders in camp and on telephone.
- C. Based on Risk (Visitor Use).
- In addition to action outlined in Plan A.
1. 3 Highway patrol cars concentrated on coverage of man-caused fire occurrence zones. One (1) CCC enrollee to accompany each patrol.
- D. Based on Visibility.
- In addition to action outlined in Plan A.
1. 2 Secondary lookouts (Union Peak and Crater Peak) manned.
One (1) CCC enrollee to accompany each lookout.
 2. 3 Highway patrol cars. One (1) CCC enrollee to accompany each patrol.

CLASS 5 DAYS

- A. Based on Burning Index.
1. 4 Ranger stations fully manned.
 2. 4 Highway patrol cars. Two (2) CCC enrollees to accompany each patrol.
 3. One (1) 20 man suppression crew, fully equipped, with foreman, leader and assistant leader, to be held in each CCC camp immediately available for fire duty.
 4. Six (6) CCC enrollees assigned to Fire Hall for duty on the Fire Pumper Truck.
 5. No burning operations.
 6. All transportation not in use held in Utility Area for fire duty.

(Class 5 DAYS cont'd)

7. One (1) regular storehouse man and one (1) mechanic held in the Utility Area during extra hours and weekends and holidays.
8. One regular member of the park clerical force held in Headquarters Area during extra hours, weekends and holidays.
9. No smoking rule.
10. On duty weekends and holidays
Two (2) CCC crews of 20 men each, foreman and leaders, in camp and on telephone.

B. Based on Risk (Lightning).

In addition to action outlined in Plan A.

1. 2 Secondary lookouts (Union Peak and Crater Peak) manned. Two (2) CCC enrollees to accompany each lookout.
2. 5 Highway patrol cars to cover blind areas. Five (5) CCC enrollees to accompany each patrol.
3. Dispatcher's and Fire Hall offices manned 24 hours per day.
4. On duty weekends and holidays
Three (3) CCC crews of 20 men, foreman and leaders, in camp and on telephone.

C. Based on Risk (Visitor Use)

In addition to action outlined in Plan A.

1. 4 Highway patrol cars concentrated on coverage of man-caused fire occurrence zones. Five (5) CCC enrollees to accompany each patrol.
2. On duty weekends and holidays
Three (3) CCC crews of 20 men, foreman and leaders, in camp and on telephone.

D. Based on Visibility.

In addition to action outlined in Plan A.

1. 2 Secondary lookouts (Union Peak and Crater Peak) manned. Two (2) CCC enrollees to accompany each lookout.
2. 4 Highway patrol cars. Three (3) CCC enrollees to accompany each patrol.

CLASS 6 and 7 DAYS

1. All ranger stations fully manned.
2. All park personnel on standby at Headquarters and immediately available by telephone.
3. All CCC personnel on standby in camps and immediately available by telephone.
4. Dispatcher's, Fire Hall, Mechanic's, Chief Clerk's and Messhall offices manned on 24 hour basis.
5. Two Secondary lookouts (Union Peak and Crater Peak) manned. Five (5) CCC enrollees to accompany each lookout.
6. Five Highway patrol cars operating on 24 hour schedule. Five (5) CCC enrollees to accompany each patrol by day and two (2) by night.
7. Twelve (12) CCC enrollees assigned to Fire Hall for duty on Pumper Truck.

(Class 6 and 7 DAYS cont'd.)

8. On duty weekends and holidays
All CCC and regular Park personnel on standby.

The Chief Ranger or his designated representative will notify all concerned as to the Class of Day.

Note: RISK will remain "3" (HEAVY) for 72 hours after all lightning storms in the protective area.

Revised: April 14, 1939

By-Wilfrid T. Frost and
Breynton R. Finch,
Park Rangers.

Recommended:

J. Carlisle Crouch,
Chief Ranger

Approved: April 26, 1939

E. P. Leavitt,
Superintendent

1870-1871

OLD BRIVOTE ROAD

Handwritten signature

TOPIC 8FOREST DISEASE AND INSECT PROTECTION

This part of the text is to be studied by the student before attending the lectures and field trips on July 19. A general knowledge of forest disease and insects is to be gained by the student through the lectures and field trips.

FOREST DISEASE AND INSECT PROTECTION

Instruction of forest disease and insect protection is also covered by several field trips. The trips are made for the purpose of studying the evidence of forest disease and insect infestations in the park. The general procedure of instruction is outlined as follows:

FOREST DISEASE PROTECTION

I. White Pine Blister Rust

A. History

1. Believed to have originated in Asia
2. Discovered in European Russia in 1854
3. Introduction into the United States
4. Introduction to the western United States
5. Spread of blister rust in western United States
6. Measures taken to prevent the spread of blister rust
 - a. Quarantine laws
 - b. Eradication of cultivated black currant bushes

B. Hosts for blister rust attacks in Crater Lake

1. White of 5-needle pines
 - a. White pine (*Pinus monticola*)
 - b. Sugar pine (*Pinus lambertiana*)
 - c. Whitebark pine (*Pinus albicaulis*)
2. Ribes
 - a. Currant bushes
 - b. Gooseberry bushes

II. Life Cycle of blister Rust

A. Definition of the disease

B. Sequence of attacks

1. From currant or gooseberry to pine
2. From pine to currant or gooseberry
3. Does not spread from pine to pine

C. Evidences of attack

1. Pines
2. Ribes

III. Control

A. Elimination of Ribes

B. Special cases of eradicating disease from trees

C. Ribes producing pine infecting spores in Crater Lake

1. Ribes lacustre
2. Ribes binominatum
3. Ribes erythrocarpum
4. Ribes visossisimum
5. Ribes cereum

D. Control measures instituted in Crater Lake

FOREST INSECT PROTECTION

- I. Insect Infestations
 - A. Endemic-normal
 - B. Epidemic-abnormal

- II. Destructive Insects of Crater Lake National Park
 - A. Primary
 - B. Secondary
 - C. Cambium feeders (Girdlers)
 - 1. Western Pine beetle (*Dendroctonus brevicomis*)
 - 2. Mountain pine beetle (*Dendroctonus monticolae*)
 - 3. Oregon engraver beetle (*Ips oregoni*)
 - 4. Fir engraver beetle (*Scolytus ventralis*)
 - D. Defoliators
 - 1. California pine scale (*Aspidiotus pini*)
 - 2. Pine leaf scale (*Chionaspis pinifoliae*)
 - 3. Pandora moth
 - E. Wood borers

- III. Hosts and Evidences of Attack
 - A. Western pine beetle
 - 1. Host-Western yellow pine (*Pinus ponderosa*)
 - 2. Evidences of attack
 - B. Mountain pine beetle
 - 1. Hosts
 - a. Lodgepole pine (*Pinus contorta*)
 - b. White pine (*Pinus monticola*)
 - c. Yellow pine (*pinus ponderosa*)
 - d. Sugar pine (*pinus lambertiana*)
 - e. Whitebark pine (*Pinus albicaulis*)
 - f. Engelman spruce (*Picea engelmanni*)
 - 2. Evidences of attack
 - 3. Most destructive in Crater Lake
 - C. Oregon engraver beetle
 - 1. Hosts
 - a. Yellow pine
 - b. Sugar pine
 - c. White pine
 - d. Whitebark pine
 - 2. Evidences of attack
 - D. Fir engraver beetle
 - 1. Hosts
 - a. Douglas fir
 - b. White fir
 - c. Red fir
 - d. Mountain hemlock
 - 2. Evidences of attack
 - E. California pine scale
 - 1. Hosts
 - a. Yellow pine
 - b. Lodgepole pine

- 2. Evidences of attack
 - F. Pine leaf scale
 - 1. Hosts
 - a. Yellow pine
 - b. Sugar pine
 - c. White pine
 - 2. Evidences of attack
 - G. Pandora moth
 - 1. Hosts
 - a. Yellow pine
 - b. Lodgepole pine
 - 2. Evidences of attack
 - H. Discussion of the life cycle of the insects
 - I. Study and discussion of the work of wood borers
 - J. Study and discussion of the beneficial insects of the forests
- IV. Field trip to study insects and their methods of attack
- V. Study and discussion of control measures
- VI. History of control operations in Crater Lake National Park
- VII. Review and questions

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FIELD RANGER SCHOOL EXAMINATION

No. 2.

An examination of this sort will be given all rangers attending the Field Ranger School on the evening of July 22. This examination will cover all material in training school text, class discussions, and field trips covered thus far in Ranger School since the last school examination.

NAME: FIELD RANGER SCHOOL EXAMINATION
Number 2.

GRADE:

1. Name two types of fire lookouts_____
2. Give the names of four fire weather instruments and indicate what each is used for-

3. Discuss briefly the value of the "Administrative Plan of Action Based on Fire Weather Data."

4. The magnetic declination in Crater Lake National Park is _____degrees. Explain-

5. Name the two general causes of forest fires-

6. State the two general methods of extinguishing fire-

7. Name three natural factors which affect the spread of fire-

8. A fire is said to be corralled when_____
9. Controlled when_____
10. Out when_____
11. A log lying with the contours on a hillside is on fire at one end. The log can be moved. State briefly how you would handle it-

12. Describe briefly the "one-lick" method of fire fighting-
13. The extreme dimensions of a burn are 200 feet long by 100 feet wide and 1178 feet long by 20 feet wide. Give the area of the burn in square feet_____
14. Why is a Pulaski tool so called-
15. Give the common names of three forest insects of Crater Lake which are classified as cambium feeders-_____
- _____
16. Give the common names of two defoliators found in the park
- _____
17. What is meant by cambium-
18. Name two methods used in the control of insect epidemics
- _____
19. Where is it believed blister rust originated_____
20. What general type of pine is most susceptible to blister rust_____
21. Give the sequence of blister rust attacks-
22. How is blister rust controlled_____
23. Name three causes of infestations of insects_____
- _____

TOPIC 9FIRST AID


First aid instruction is one of the more important phases in the training course. This is one thing that every ranger must know thoroughly. Knowledge of treatment of the following must be obtained: bleeding, shock, unconsciousness, fainting, epilepsy, heat exhaustion, transportation of injured, artificial respiration, burns, fractures, dislocations and sprains, and bandages and dressings.

A first aid examination will be given on completion of the first aid topic. Each ranger passing with a grade above 80% will be issued a First Aid Card as shown on the next page.

FIRST AID

First aid instruction is one of the more important phases in the entire ranger training course. First aid is one thing that every ranger must know thoroughly. Due to its importance one entire week is given to its study. The instructors are the two rangers trained and approved by the American Red Cross to instruct such a course. The American Red Cross First Aid Text is to be used as text during the instruction. Each ranger is to obtain such a book and to keep it ready for reference in case of such a need. At the end of this week of instruction, an examination will be given by the American Red Cross. A grade of 80% or more is required to pass the examination, and a regulation Red Cross First Aid Card is issued if a passing grade is obtained.

THE AMERICAN NATIONAL RED CROSS



THIS CERTIFIES THAT

Keith Hancock

HAS COMPLETED THE Standard COURSE
OF INSTRUCTION IN FIRST AID TO THE INJURED UNDER THE
AUSPICES OF Douglas County Chapter
Roseburg, Oregon

September 10, 1937 *Harold F. Coulson*
DIRECTOR, FIRST AID AND LIFE SAVING

The following outline of the text, American Red Cross First Aid Book, is to be followed in study.

- I. Introduction
 - A. Importance
 - B. Definition

II. Bleeding

- A. Arteries
- B. Veins
- C. Controlling bleeding
 - 1. Coagulation
 - 2. Pressure method
 - 3. Pressure points
 - a. Wrist
 - b. Temple
 - c. Throat
 - d. Arm
 - e. Groins
 - f. Knee
 - 4. Tourniquet
 - 5. Demonstration and individual practice

III. Shock

- A. Definition and explanation
- B. Causes
- C. Symptoms and diagnoses
- D. Treatment
- E. Prevention

IV. Unconsciousness

- A. Characteristics
- B. Cause
- C. Treatment

V. Fainting

- A. Characteristics
- B. Treatment

VI. Epilepsy

- A. Diagnosis
- B. Treatment

VII. Heat Shock or Heat Exhaustion

- A. Diagnosis
- B. Treatment

VIII. Transporting Injured or First Aid Patients

- A. Two man arm carry
- B. Fireman's carry
- C. Stretchers

IX. Artificial Respiration

- A. Schaeffer method
- B. Uses
 - 1. Drowning
 - 2. Carbon monoxide gas
 - 3. Electric shock
 - 4. Asphyxia
- C. Method

X. Burns

- A. First degree
- B. Second degree
- C. Third degree
- D. Treatment

XI. Fractures

- A. Simple
- B. Compound
- C. Symptoms
- D. Treatment
 - 1. Splints
 - 2. Wrapping
 - 3. Slings
- E. Fractured Skull
- F. Broken Back
- G. Broken Neck

XII. Dislocations and Sprains

- A. Jaw
- B. Ankles
- C. Fingers
- D. Shoulders
- E. Knees
- F. Treatment

XIII. Bandages and Dressings

- A. Explanation of each
- B. Difference between the two
- C. Triangular bandage

XIV. Review and Questions

- XV. Examination put out by American Red Cross given at completion of study.

SCHOOL CERTIFICATE

On completion of this ranger school training course a certificate similiar to the one shown on the next page will be issued to each ranger. Any ranger possessing one such certificate will not have to attend the course for that season. Advance training will be given to such certificate holders.

CERTIFICATE FROM LAST YEARS RANGER TRAINING SCHOOL--


Field Ranger School


CRATER LAKE NATIONAL PARK



This certifies that **Keith O. Hancock**
of **Portland, Oregon** successfully completed the
Field Ranger Training Course conducted at Crater Lake
National Park from **July 3 to August 2 1939**

Certificate issued **August 15, 1939**


Superintendent


Chief Ranger

APPENDIX

Flora, fauna, and geological features as listed in this text should be known by all rangers. Diversity of interest on part of our many visitors calls for additional knowledge on these features. The following appendix will give such information. Each ranger is urged to study these listings and even to do additional study from other sources to fulfill this part of his work.

A P E N D I X

CONTENTS

Common Mammals of Crater Lake National Park

Common Trees and Shrubs of Crater Lake National Park

Fish Liberations in Crater Lake

Elevations of Prominent Points of Crater Lake National
Park.

COMMON MAMMALS OF CRATER LAKE NATIONAL PARK

Rocky Mountain Elk.....	<i>Cervus canadensis nelsoni</i>
Olympic Black Bear.....	<i>Euaretos americanus alti-</i> <i>frontalis</i>
Rocky Mountain Mule Deer.....	<i>Odocoileus homionus hemionus</i>
Columbian Black-tail Deer.....	<i>Odocoileus columbianus</i>
Cascade Red Fox.....	<i>Vulpes fulvus cascadenis</i>
Northwestern Coyote.....	<i>Canis lartans lestes</i>
Oregon Mountain Lion.....	<i>Felis concolor oregonensis</i>
Pacific Marten.....	<i>Martes caurina caurina</i>
California Badger.....	<i>Taxidea taxus neglecta</i>
Yellow-bellied Marmot.....	<i>Marmota flaviventris flavien-</i> <i>tris</i>
Golden-mantled Ground Squirrel....	<i>Callospermophilus chrysodeirus</i> <i>chrysodeirus</i>
Yellow-haired Porcupine.....	<i>Erethizon opixanthus epixanthum</i>
Mazama Pocket Gopher.....	<i>Thomomys monticola mazama</i>
Klamath Chipmunk.....	<i>Eutamias amoenus amoenus</i>
Cascade Cony.....	<i>Ochotona princeps brunnescens</i>
Pine squirrel.....	<i>Sciurus douglasii cascadenis</i>
Mazama Mole.....	<i>Scapanus latimanus alpinus</i>

COMMON TREES AND SHRUBS
OF
CRATER LAKE NATIONAL PARK

Trees

White fir.....	Abies concolor
Alpine fir.....	Abies lasiocarpa
Shasta fir.....	Abies magnifica shastensis
Engelmann spruce.....	Picea engelmannii
White-bark pine.....	Pinus albicaulis
Lodgepole pine.....	Pinus contorta
Sugar pine.....	Pinus lambertiana
Western White pine.....	Pinus monticola
Ponderosa pine.....	Pinus ponderosa
Douglas fir.....	Pseudotsuga taxifolia
Mountain hemlock.....	Tsuga mertensiana
Incense cedar.....	Libocedrus decurrens
Black cottonwood.....	Populus trichocarpa
Aspen.....	Populus tremuloides

Shrubs

Snow brush.....	Ceanothus velutinus
Service berry.....	Amelanchier florida
Mountain laurel.....	Kalmia polifolia microphylla
Antelope brush.....	Purshia tridentata
Naked-fruit rose.....	Rosa gymnocarpa
Waxy currant.....	Ribes cereum
Siskiyou gooseberry.....	Ribes binominatum
Crater Lake currant.....	Ribes erythrocarpum
Western raspberry.....	Rubus leucodermis
Trailing raspberry.....	Rubus ursinus
Bitter cherry.....	Prunus emarginata
Pine-mat manzanita.....	Arctostaphylos nevadensis
Green-leaf manzanita.....	Arctostaphylos patula
Yellow heather.....	Phylledoce glanduliflora
Turtled huckleberry.....	Vaccinium caespitosum
Big huckleberry.....	Vaccinium membranaceum
Broom huckleberry.....	Vaccinium scoparium
Sierra willow.....	Salix orestera
Scouler's willow.....	Salix scourleriana
Bright-green alder.....	Alnus sinuata
Ocean spray.....	Holodiscus glabrascens

FISH LIBERATIONS IN CRATER LAKE

Judge William Gladstone Steel planted the fish in Crater
Pake in 1888.

<u>YEAR</u>	<u>RAINBOW</u>	<u>GERMAN BROWN</u>	<u>SILVERSIDES</u>	<u>CUTTHROAT</u>	<u>STEELHEAD</u>
1910	50,000	-	-	-	-
1914	2,000	15,000	-	-	-
1922	25,000	-	3,500	-	-
1923	-	-	-	14,000	11,000
1924	24,000	-	-	-	-
1925	-	-	22,500	-	-
1926	-	-	-	-	-
1927	46,000	-	-	-	-
1928	64,000	-	-	-	-
1929	-	-	-	-	-
1930	3,000	-	7,500	-	-
1931	-	-	-	-	98,000
1932	156,000	-	-	-	163,000
1933	-	-	200,000	-	150,000
1934	-	-	54,000	-	-
1935	-	-	100,000	-	20,000
1936	-	-	25,000	-	25,000
1937	100,000	-	50,000	-	-
1938	-	-	-	-	-

ELEVATIONS OF PROMINENT POINTS
CRATER LAKE NATIONAL PARK

	<u>Elevation Above Sea Level</u>	<u>Elevation Above Sur- face of Crater Lake</u>
Mt. Scott	8938 Feet	2776
Hillman	8156	1994
Dutton	8150	1988
Applegate	8135	1973
Cloudcap	8070	1908
Llao	8046	1898
Watchman	8025	1884
Dyar Rock	7880	1864
Union Peak	7689	1718
Red Cone	7372	1536
Timber Crater	7360	1210
Crater Peak	7265	1198
North Entrance	7250	1103
Head Lake Trail	7100	1088
Wizard Island	6940	938
Wineglass	6750	778
Kerr Notch	6700	588
Desert Cone	6651	538
Headquarters	6475	589
Bald Crater	6474	313
Annie Spring	6116	145 BELOW
Lost Creet Station	5900	261 BELOW

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