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United States Department of the Interior

NATIONAL PARK SERVICE

WESTERN REGION

450 GOLDEN GATE AVENUE, BOX 36063
SAN FRANCISCO, CALIFORNIA 94102

May 6, 1977

Mr. Charles Fullerton, Director
California Department of Fish and Game
1416 Ninth Street
Sacramento, California 95814

Dear Chas:

The meeting of your representatives, George McCannon and Al Cordone, with our personnel on April 27 to discuss various aspects of our joint review of the fishery management practices in the lakes in the National Parks of California was a meaningful opportunity to explore ways and means of accomplishing the task in a productive fashion.

Based upon these discussions, the Study Plan has been prepared and is enclosed for your review. Also, we are enclosing a statement of the areas of agreement and differences in the current policies of each agency and an outline of the options and alternatives in fishery management in these parks. The two statements will serve as background for the study plan. We recognize that field investigations and tabulations must be directed toward providing the factual data required to fully analyze and evaluate the impacts of the Service's recreational fishing use and aquatic resources management policies upon the Statewide trout resources.

Most of the basic information relating to the conditions in Lassen Volcanic is now available and is being compiled. Additional information on the status of the lakes and trout resources in Yosemite and Sequoia and Kings Canyon National Parks is required. To secure this information, we have authorized the Superintendents of these parks to employ seasonal personnel to conduct the necessary field investigations with appropriate professional assistance from your field personnel.

We appreciate your participation in this joint endeavor. It will provide information and an evaluation that will prove to be mutually beneficial

LASSEN VOLCANIC NATIONAL PARK
Resource Inventory

LAVO - Denniston
see Nature Bxp (#568021) →

California DFG (Joint)

in our cooperative efforts to manage recreational fishing and aquatic resources in these areas administered by the National Park Service.

Sincerely yours,

(Sgd) Howard H. Chapman

Howard H. Chapman
Regional Director
Western Region

Enclosures

cc:

Director, National Park Service w/enc.

Superintendent, Yosemite w/enc.

Superintendent, Sequoia/Kings Canyon w/enc.

Superintendent, Lassen Volcanic w/enc.

bc:

Park Representatives:

YOSE: Harms w/enc.

SEKI: Zardus w/enc.

LAVO: Denniston w/enc.

JOINT STUDY ON FISHERY MANAGEMENT
IN NATIONAL PARKS IN CALIFORNIA

California Department of Fish and Game
National Park Service - Western Region

May 5, 1977

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JOINT STUDY ON FISHERY MANAGEMENT
IN NATIONAL PARKS IN CALIFORNIA

California Department of Fish and Game
National Park Service - Western Region

OBJECTIVE:

To identify and evaluate and report upon the biological, recreational and economic impacts upon the high lake trout fishery resources in Lassen Volcanic, Yosemite, Sequoia and Kings Canyon National Parks in California that will result from the application and implementation of the National Park Service general fishery management policies that provide for recreational angling based upon trout populations maintained entirely by natural reproduction and that eliminate the stocking of hatchery reared trout to maintain or supplement trout populations at a fishable level in waters in which recruitment by natural reproduction is limited or lacking.

BACKGROUND:

A recently approved National Park Service policy reaffirms that recreational angling is an appropriate visitor-use activity in park waters but that trout populations will no longer be sustained by stocking of hatchery trout. Fishing in National Parks will be totally dependent upon trout populations that are maintained entirely by natural reproduction. (Stocking may continue to serve as a management tool to maintain fish populations for fishing in reservoir recreational areas, administered by the National Park Service, such

as: Whiskeytown National Recreation Area, Lake Mead National Recreation Area, etc., where the provision for recreational pursuits has priority over the restoration and maintenance of natural ecosystems.)

The policy provides for the continuance of recreational fishing because it is recognized as a traditional use provided for under the intent of Congress in the establishment of the National Parks and the intent of the California Legislature when areas comprising the four National Parks in California were ceded to the United States.

The policy that precludes artificial replenishment of trout populations by the stocking of hatchery fish is based upon the following principles. Over the years trout have been introduced and stocked into all park lakes that were naturally fishless but that were believed to be suitable for the perpetuation of self-supporting populations of trout by natural reproduction or for the survival and rearing of planted trout on a maintenance basis. This introduction of trout disrupted the natural ecological balance in these waters by the interjection of the predation factor that did not exist under the fishless condition.

The following conditions have resulted from the introduction and the restocking of lakes in the National Parks in California:

1. In certain lakes, trout became established and naturalized and perpetuated populations entirely by natural reproduction.

2. In waters containing suitable biological, physical, and chemical conditions but lacked spawning conditions adequate to maintain self-supporting populations, planted trout survived and populations can be maintained only by periodic stocking. Continued reintroduction of non-native fishes in these waters prevent each lake from returning to a natural fishless ecosystem and the restoration of the natural aquatic ecological system.
3. Hatchery trout were initially introduced and subsequently restocked into lakes in which they could not and cannot survive even on a temporary basis because the lakes lack suitable biological, physical, and chemical conditions and/or because of the competition of another species of trout that was established in the particular water. Further stocking of such waters has not proven beneficial to recreational fishing but does disrupt, at least temporarily, the natural ecological conditions by preying upon native aquatic organisms.

The recently approved National Park Service Policy, then, is to perpetuate trout populations only in waters in which this could be accomplished by natural reproduction and to preclude the use of hatchery fingerling trout to maintain trout populations in lakes in which natural conditions were suitable for survival but in which replenishment by natural reproduction was limited or lacking. The

appropriateness of the application of this policy to the high lakes of the National Parks in California was questioned by the California Department of Fish and Game, various sportsmen's groups, and concerned citizens since trout did not originally occur prior to the introduction by man a century ago. Concerns were also expressed for the impacts this policy would have upon opportunities for recreational fishing in the high, backcountry lakes.

An exception to this general policy for the lakes in the National Parks in California that would provide for the continuation of the program of systematically restocking of fingerling trout in suitable lakes in the National Parks in California was requested by Regional Director Howard Chapman, Western Region. Upon review of this request for an exception, the National Park Service Policy Council recommended that such an exception should not be granted. Director Gary Everhardt approved this recommendation but provided for a two-year moratorium that permitted the continuation of stocking of trout in these parks at a level not to exceed that practiced in 1974. He directed that during this two-year period a joint study should be conducted, in cooperation with the California Department of Fish and Game, to determine the biological, recreational and economic aspects of this policy in California.

This subject was discussed in detail on January 29, 1976, during an all-day symposium entitled "Management of High Mountain Lakes in California's National Parks." Representatives from various state

and federal agencies and others participated in the symposium, jointly sponsored by the American Fisheries Society and California Trout, Inc. The situation is discussed in further detail in the attached paper, "Management of High-County Lakes in the National Parks of California," that was presented at this symposium. Subsequently, representatives of the California Department of Fish and Game and the National Park Service participated in two workshops, on April 13 and June 1, at which the status of the fishery resources in the four parks and possible means of achieving the objective of this cooperative study were discussed and analyzed.

INITIAL STUDIES, 1976:

Initial phases of the study were undertaken during 1976. These consisted of:

1. Resurvey of lakes in Lassen Volcanic National Park by graduate students John R. West and Jesse M. Purvis, Humboldt State University, hired as seasonal employees under the direction of Al Denniston.

This study resulted in a reexamination of all lakes previously planted in the Park; and identification of all lentic bodies in the Park; and a survey of 131 lakes and ponds. A final report has been drafted and is being revised. It provides an up-to-date status of the lakes in the Park and recommendations for management. Individual lake inventory information folders have been prepared.

2. Paper Inventory of the Lakes of Sequoia and Kings Canyon National Parks was completed by Biologist Peter Stickle under the supervision of Maurice Zardus during 1976. This survey consisted of securing all information available from aerial photographs, topographic maps, reports and National Park Service and California Department of Fish and Game records regarding the lakes, their size and location, and the species planted in each.

Personnel of the California Department of Fish and Game at the various District and Hatchery offices cooperated in working with Mr. Stickle during his visits to these stations.

This inventory resulted in the establishment of a card file with information on each lake; a tabulation of lakes by size; and a series of overlay maps that identifies each lake and the species found in it. An administrative report that will present a synopsis of existing fisheries information is being prepared.

3. In Yosemite National Park, lists of lakes and species they contain have been prepared based upon a series of studies done over the years. In addition, overlay maps have been prepared to show the lakes and species of fishes found in each.

4. Backcountry Angler Contact Records were maintained by National Park Service personnel in the backcountry of each park. This involved the recording of information relating to the species and size ranges of fishes caught in individual lakes that was secured during visits with fishermen. This information provides data of a supplementary nature about the fish populations - especially those in isolated waters.

CURRENT STATUS OF STUDY:

Al Cordone and O. L. Wallis met on February 9, 1977 to review the status of the study, to identify additional elements and information that were needed to fulfill the study objective and to explore ways and means to undertake these projects. It was determined that our final report, in essence, would be an Environmental Assessment and that existing data must be compiled and some new information must be secured to provide the basis for an evaluation of various options and the impacts (or consequences) of each action. This information includes, but is not limited to, the following:

1. Description and Identification of the High Lake Trout Resources and their Current Status. For comparative purposes, this study should include those within the four National Parks and those elsewhere in the state.
2. Status of Recreational Angling Use in the Parks and Elsewhere in the State. This includes the characteristics of the anglers and their attitudes. The role of fishing as back-country use and as roadside or near-road use. Number of people involved.

3. Review of Past Stocking Records for Lakes stocked in each park within the past 15 years to determine the relationship with current status of fish population in each of these lakes.
4. Economic Factors should be identified and analyzed. Such as cost for trout stocking; license revenue for trout stamps; cost of services and supplies and equipment used by anglers.

Subsequently, a draft of a proposed study plan was reviewed and discussed at a meeting in San Francisco with representatives from the California Department of Fish and Game; Lassen Volcanic, Yosemite, and Sequoia and Kings Canyon National Parks; and Western Region, National Park Service. Based upon this meeting, the draft has been revised into the current plan.

PROPOSED ACTIVITIES, 1977:

1. Identification, Description and Classification of Lakes in Each Park.
2. Summary of Status of Trout Populations in Lakes in Each Park, with special emphasis on each lake that was stocked within the past 15 years.

Methods: (1) Use existing information on hand.

(2) Information secured from ranger/angler contacts -- expand program over 1976 level.

(3) Field lake/trout surveys.

Responsibility: Each park representative, assisted by field personnel from California Department of Fish and Game in field investigations.

Status: (1) Lassen Volcanic has completed summary for the past 10 years including a current field survey and will complete data for the earlier 5 year period.

(2) Yosemite will hire two seasonal employees to conduct re-check field lake/trout investigations with professional assistance by California Department of Fish and Game, as appropriate.

(3) Sequoia and Kings Canyon will field four seasonal employees to conduct field lake/trout investigations with professional participation by California Department of Fish and Game personnel, as appropriate and available.

3. Status of California Lake/Trout.

Methods: Existing data

Responsibility: California Department of Fish and Game will provide up-to-date data from state records on numbers of lakes, size of lakes, species, etc., to use for comparative purposes.

4. Angler Attitudes.

Methods: (1) Information/data from angler/use studies conducted by California Department of Fish and Game and elsewhere.

(2) Yosemite Questionnaire and Workbook Analysis.

Responsibility: California Department of Fish and Game (with cooperation of Yosemite Planning Team).

5. Angler Use.

Methods: Backcountry use figures, each park.

Responsibility: Each park representative.

6. Economic Study.

Methods and Responsibility: California Department of Fish and Game to use existing data and services of department economists.

7. Review of Regulations (as complementary or supplementary tool for management of aquatic resources and recreational use).

Methods and Responsibilities: Review and evaluate current regulations and effectiveness of each: Each Park and Western Region Division of Resources Management.

8. Complete Final Report (complete with recommendations).

Outline:

- Summary of status of aquatic resources and angler/use in each park.
- Assessment of the biological, recreation and economic impacts of various fishery management options for the lake resources in National Parks in California in relation to Statewide trout/lake resources.
- Recommendations.

Methods: (1) Analysis and evaluation of information secured from each park.

(2) Use data, etc., secured from California Department of Fish and Game.

Responsibility: Joint-effort of all task force members participating with a data compiler and report writer (to be secured).

Time Table:

1. Draft of study statement to CDF&G and each park	April 15	Completed
2. Meeting of representatives	April 27	Conducted
3. Revision of Plan Completed and Distributed	May 6	
4. Plan Implementation		Underway
5. Narrative Progress Report on each activity from CDF&G and each park representative	July 1	
6. Draft Attitude Study, CDF&G	August 1	
7. Draft Economic Factors, CDF&G	August 1	
8. Status Report - each park	September 1	
9. Final Data - each park	October 1	
10. First Draft of Final Report out for review	November 1	
11. Final Report Completed	December 15	

12. Washington and Interior Review (To be set by WASO)
and Action

13. Implementation of Management Summer 1978

Task Force:

National Park Service:

1. Western Regional Office: O. L. Wallis (Natural Science Research)
2. Yosemite - Dale Harms
3. Sequoia/Kings Canyon - M. Zardus
4. Lassen Volcanic - Al Denniston

California Department of Fish and Game:

1. George McCannon, Coordinator
2. Al Cordone
3. Other representatives as appointed

Project Leaders: Francis Jacot (Resources Management)

Data Compiler/Report Writer: (To be selected)

MANAGEMENT OF HIGH LAKES IN
NATIONAL PARKS IN CALIFORNIA

- Areas of Agreement and Differences -

- o National Park Service
- o California Department of
Fish and Game

AREAS OF AGREEMENT -

1. Fishing in the backcountry is a healthful and desirable activity.
2. Fishery resources should be managed to provide a quality angling experience in keeping with the high aesthetic character of the environment in which these resources are found.
3. Backcountry fishing should not be expanded by promotional publicity although factual information should be made available to fishermen who request it.
4. Waters that are pristine and fishless and have never had trout introduced into them and lakes that have reverted to a fishless condition because of the absence of suitable natural conditions should not be stocked.
5. Stocking should not be done in waters in which "naturalized" populations of trout can maintain a fishable level of trout.
6. Rainbow and golden trout, alone, should be considered for stocking in high lakes in National Parks in California.
7. Selective, restrictive angling regulations may be required to perpetuate wild trout populations and fishing opportunities in certain waters.
8. Only fingerling trout should be considered for stocking in park lakes.
9. Catchable-size trout, designed for "put-and-take" fishing should not be considered for stocking in park lakes.
10. When trout are stocked in high lakes, not adjacent to roads, aerial distribution should be employed as this method is less disruptive to the environment, more economical and more efficient than use of pack animals.

AREAS OF DIFFERENCE -

California Department of Fish and Game:

1. Supplemental stocking of fingerling trout in high lakes in National Parks in California is desirable to provide for a fishable level trout population in lakes in which natural recruitment is limited.
2. Maintenance stocking of fingerling trout in high lakes in National Parks in California is desirable to provide for recreational angling in waters in which natural reproduction is lacking but other natural conditions are suitable for trout survival and growth.

National Park Service:

1. Recreational fishing should depend entirely upon trout that have resulted from "self-supporting" populations.
2. Trout populations should not be maintained nor supplemented by artificial stocking in lakes in which natural reproduction is limited or lacking. (If a population of artificially introduced trout cannot survive without maintenance or supplemental stocking, it should be allowed to return to an original fishless state.)

OPTIONS/ALTERNATIVES

Issues: Recreational Fishing

Trout Stocking

WRO: 5/5/77

RECREATION FISHING - OPTIONS

A. No fishing.

B. Managed Fishing on Parkwide Basis or on Lake-by-Lake Basis.

1. Fishing for wild trout on an entirely catch-and-release or Fishing-For-Fun basis and the return of all trout caught. Emphasis upon the recreational aspects of the activity rather than the "take."
2. Fishing for wild trout on a partial catch-and-release basis with low retained catch limits, restrictive lure regulations, etc.
3. Fishing for wild trout with same maximum limits permitted by the state in waters outside park.
4. Fishing for artificially-maintained trout with reduced limits.
5. Fishing for artificially-maintained trout with same maximum limits provided by state laws for waters outside the park.

RECREATIONAL FISHING - CONSEQUENCES

A. No Fishing

1. Recreational fishing opportunities would be eliminated.
2. Aquatic resources would be managed with as full protection as terrestrial resources are protected from hunting.

B-1. Fishing for Wild Trout on Entire Catch-and-Release Basis

1. Recreational aspects of angling for wild trout would be encouraged.
2. Trout would not be killed but returned to the waters.
3. Anglers would retain no fish for eating.
4. Need for additional regulations and subsequent increased law enforcement.

B-2. Fishing for Wild Trout on Partial Catch-and-Release Basis

1. Recreational aspects of angling for wild trout would be encouraged.
2. Fewer fishes would be taken.
3. Anglers could retain and eat a few trout.
4. Need for additional regulations and subsequent increased law enforcement.

B-3. Fishing for Wild Trout with Maximum Limits Provided by State

1. Encourages fishing "for the limit" and the potential taking of more trout than can be used -- thus waste of trout.
2. Some wild trout populations can not sustain such a heavy take of trout without artificial replenishment and thus could be perpetuated better with lower limits.

B-4. Fishing for Artificially-maintained Trout with Reduced Limits

1. Encourage fishing for the recreational aspects of the activity rather than for the catch-and-kill.
2. Spreads the available trout amongst greater numbers of anglers (although a minority of the anglers catch the majority of trout despite regulations).
3. Discourage "meat-fishermen."
4. Requires special regulations, increased law-enforcement.

B-5. Fishing for Artificially-maintained Trout with State Limits

1. Encourages fishermen to fish for "limits" that may exceed the sustained yield of waters in which populations are not supplemented by artificial replenishment.
2. Creates uniformity between fishing regulations within and outside parks.

TROUT STOCKING - OPTIONS

- A. No stocking.
- B. Stocking Program on Parkwide Basis or on Lake-by-Lake Basis.
- 1. Stocking limited to planting of native endemic species for sole purpose of restoring endemic populations.
- 2. Stocking of fingerlings of "native" species on a cyclic periodic basis in waters in which trout can not maintain populations by natural reproduction or in which natural reproduction is so limited as to maintain a "desired level" of recreational fishing. Planted at a size and frequency that will insure that the fishes are essentially "wild" in color, form, and wariness when caught.
- 3. Stocking of sub-legal size trout of "native" species on an annual basis to increase opportunities to catch trout.
- 4. Stocking of fingerling or sub-legal trout of non-native species for the enhancement of fishing opportunities.
- 5. Stocking of catchable-size trout for immediate return on a put-and-take basis for the support of artificially maintained fishing opportunities.

TROUT STOCKING - CONSEQUENCES

A. No Stocking

1. Waters in which current populations of trout have been maintained entirely by artificial replenishment because natural reproduction of trout is lacking will eventually revert to an original, fish-less condition. After current trout populations disappear, there will be no opportunities for recreational fishing in these waters.
2. Waters in which trout populations are maintained entirely by natural reproduction will continue to provide fish for recreational fishing; however, increased angling pressures may be directed toward these self-sufficient wild populations as fishing opportunities are diminished in lakes that revert to a fish-less (or greatly reduced trout population) state following cessation of artificial replenishment by stocking. The transfer of fishing pressures may be directed toward other park water but, also, may be directed toward waters outside the park.

This increased fishing pressure may be detrimental to the populations of wild trout; consequently, special regulations such as lower catch-and-retain limits or special lure restrictions or provisions for catch-and-release programs may be required on certain waters to combat the increased impact of fishing.

B-1. Stocking Limited to Restoration of Native Endemic Trout

1. Native trout populations will be restored, maintained and perpetuated.
2. This action may or may not result in increased fishing opportunities. Reintroduced trout may become firmly established so as to eventually provide a level of recreational fishing.

B-2. Stocking of "Native" Fingerling Trout in Lakes

1. Provides for the continuation of our recent program to maintain or supplement trout populations in lakes in which natural reproduction is limited or lacking and for

the enhancement of opportunities for recreational angling. This program was based upon the development and implementation of a long-range aquatic resources management plan based upon biological evaluations of the biological and visitor-use characteristics of the lake,

2. Perpetuates the practice of introducing trout into natural ecosystems in which they did not occur naturally or in which they can not maintain populations by natural reproduction.

B-3. Stocking of "Native" Sub-legal Trout in Lakes

1. Less beneficial in the maintenance of trout for long-term results that stocking of fingerlings in remote high montaine lakes. Trout of this size are more difficult to stock by plane.
2. Provides opportunities for catching in second season.

B-4. Stocking of Fingerling or Sub-legal "Non-native" Trout in Lakes

1. Introduces exotic species into specific waters and provides the danger of dispersing non-native species into water now containing only endemic or native species to detriment of the native forms.
2. Provides opportunity for fishing for "non-native" species.

B-5. Stocking of Catchable-size Trout

1. Provides immediate fishing opportunities on a put-and-take basis under extremely artificial conditions.
2. Encourages vast numbers of fishermen who are primarily interested in catch-and-take fishing rather than in a quality fishing experience.