Lathrop 1
1952

Water Resources
Center Archives

Jan. 8, 1952

S. W. Cosby
U.S. Soil Conservation Service
209 S.W. Fifth Street
Portland, Oregon

Dear Sir:

Referring to my letter of September 17 and Mr. Christ's answer of October 3 regarding new mapping for this county I want to again bring the subject matter to the front but in a little larger scope and of a great deal more public importance which relates to the present urgent need for some very fine maps of the entire Klamath River Basin; the "upper basin" above Keno especially.

Any comprehensive study of the water problem in this water shed is very definitely tied to present use of water for irrigation, domestic, industrial, reclamation bird refuge, and power uses, as well as a very accurate estimate of the potential future demands for water, for more power and more irrigation. The soil scientists are the only reliable source as to what lands should be irrigated, which lands need drainage. There is also need for the very special service of the hydrologist because we know all too little regarding the underground sources of water. What has been just recently revealed in the underground report from the U.S.G.S. Portland office regarding Swan Lake and Yonna Valley indicates clearly that other areas should be similarly studied.

Calling your attention to the article appearing in Colliers showing how the Army map service makes their maps and the vast capacity that service has to create such maps it gave me the idea that possibly your office could at least set the necessary proceedures in motion to get a high priority for the mapping of this particular area by the army map service.

Perhaps your living in a wet state does not give you the impact we constantly have before us in California and the dangerous conflict between Federal, State, and private rights to water.

Klamath Basin is definitely in the minds of many people as an area of surplus. Such statements of course are falacious because no one to date has the facts to accurately predicate such a statement.

I presume that my accumulation of forty-five years of authenticated records in this particular basin are as extensive as any other agency, Federal, State, or private and I am increasingly urging a comprehensive factual analysis of the natural resources of the "upper basin".

May I ask you to discuss this with Mr. Christ, and let me know how it strikes you.

Sincerely yours,

Robert R. Smith

By

Lathrop 1
1952

Water Resources
Center Archives

UNITED STATES
DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Pacific Coast Region

209 S. W. 5th
Portland 4, Oregon
January 14, 1952

Mr. Robert R. Smith, Assessor
Siskiyou County
Yreka, California

Dear Mr. Smith: Attention: F. L. Lathrop

Thank you for your letter of January 8. We are holding it for Mr. Christ's review on his return from the field, January 21. You may expect a reply sometime after that date.

Sincerely yours,

S. W. Cosby
Regional Soil Scientist

cc: J. H. Christ

Lathrop 1
1952

K. Bacon
new method of mapping

UNITED STATES
DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Pacific Region

Water Resources
Center Archives

Portland, Oregon
January 21, 1952

Mr. Robert R. Smith
Assessor, Siskiyou County
Yreka, California

Attention: Mr. F. L. Lathrop

Dear Mr. Smith:

It is a pleasure to hear from you again and to note you are still studying local land and water problems. In regard to maps, we primarily utilize maps from existing private and Federal sources. By and large these, including air photos, have been quite adequate to fit our needs. We would be glad to assist, however, in interesting the Army Map Service in providing improved maps through any channels that might be open to us.

As you know, we recognize the need for factual analysis of land and water resources in all river basins. Our special efforts in such studies are primarily directed through two approaches. One, in small watersheds, such as commonly found within local soil conservation districts, we cooperate with these districts when requested, and with other local agricultural organizations in analyzing and planning water conservation projects on a watershed basis. No special funds are appropriated for this purpose. Therefore, our assistance is necessarily limited to the extent it can be provided from our local staffs who are primarily engaged in preparing farm and ranch conservation plans within the district. To some extent we have been able to augment this with some specialized assistance.

Other watershed operations are carried out through authorizations by Congress for comprehensive agricultural river basin planning, such as the Columbia in the Pacific Region and the Missouri in the Northern Great Plains. These authorizations provide appropriations for the various agencies in the Department of Agriculture having responsibility for participation.

You can readily see planning operations for river basins of the scope of the Klamath occupies an intermediate position, being too large for adequate assistance from local Soil Conservation Service personnel, but still not in a competitive position because of size for consideration at this time in the National scheme.

We have long felt the desirability of special Service appropriations for assisting local groups in water and land resource planning, and hope this need will get recognition at the National level some time in the future.

Many of the things you consider important objectives are common to both of us. I shall be glad for the opportunity to discuss these matters with you whenever you may have opportunity to get up this way.

Very truly yours,

J. H. Christ

J. H. Christ
Regional Director.

Lathrop I
1952

Water Resources
Center Archives

January 22, 1952

Honorable C. A. Griffith, Chairman
State Water Resources Board
Sacramento, California

Subject: Preliminary Survey of Siskiyou and Modoc Counties, and the Klamath River Basin
File 621.04, Item 6

Dear Mr. Griffith:

At the regular meeting of the State Water Resources Board on November 2, 1951, a letter was received from Senator Randolph Collier requesting that the Board make a preliminary survey with the objective of determining the scope and cost of an investigation of the water resources of Siskiyou and Modoc counties and the Klamath River Basin. Senator Collier's request was approved by the Board, and the Secretary was directed to make the preliminary survey and report to the Board. The data submitted herein were obtained largely from a preliminary reconnaissance of Siskiyou County in accordance with the directive, and from data available in the files of the Division of Water Resources obtained in connection with the State-Wide Water Resources Investigation and the Watermastering Service. This letter constitutes the report of the preliminary survey.

Area of Investigation

The Klamath River Basin embraces 15,715 square miles in northern California and Oregon, of which 5,695 square miles are in Oregon. The drainage basin includes the watersheds of the Klamath, Shasta, Scott, Salmon, and Trinity rivers. The estimated mean seasonal natural runoff (1894-1947) of the Klamath River Basin is 12,982,000 acre-feet, of which an estimated 1,861,000 acre-feet rises in Oregon. Portions of the Klamath River Basin in California are contained within Modoc, Siskiyou, Trinity, Humboldt, and Del Norte counties.

Present Irrigation Development

Presently irrigated land in the Klamath River Basin is located in the valley areas which include scott, Shasta, and Butte valleys, and Tule Lake and Lower Klamath Lake basins. In Scott and Shasta valleys the lands are irrigated by direct diversion from the Scott and Shasta rivers and tributaries, with conservation in Dwinnel Reservoir in Shasta Valley. In Butte Valley, a closed basin, considerable development of ground water has occurred. Irrigation in Tule Lake and Lower Klamath Lake basins is being developed by the Bureau of Reclamation as part of the Klamath Project, and is generally by diversion of surface waters.

Water Problems and Water Supply Potentialities

In Scott and Shasta valleys there is a deficiency of late summer water under present development, and supplementary water will be required for presently nonirrigated irrigable lands. Conservation works on the upper Scott River and on tributary streams would develop considerable additional water. The Klamath River and several small tributary streams are possible sources of supplemental water to Shasta Valley.

The feasibility of serving adequate water supplies to other irrigable lands in the Klamath River Basin would require study of yields from local sources, and consideration of other available sources.

No studies have been made of the yield or extent of ground water basins in the Klamath River Basin. A few wells of high yield have been completed in Scott and Shasta valleys. Some recession of ground water levels has occurred in recent years in Butte Valley, but it is not known whether this is due to an overdraft or to the present series of dry years. Investigations by several public agencies have indicated the Klamath River and its tributaries are an available source of supplementary water for other parts of the State.

Scope of Investigation

Only a portion of the Klamath River Basin is contained within Siskiyou and Modoc counties, and a bi-county investigation would be inadequate to provide for and enable the determination of ultimate water requirements. Any comprehensive plan for utilization of the waters of the Klamath River Basin would involve the rights

and requirements of the sovereign states of Oregon and California. An investigation of present and ultimate water use and requirements on the Klamath River and its tributaries in both California and Oregon will be necessary as a basis for studies leading to a solution of the interstate problem.

The foregoing investigation would include the determination of ultimate water requirements of basins of the Klamath River and its tributaries with reference to plans to convey Klamath River water into other parts of California. When joined with a similar survey by the State of Oregon, it would form the basis for an agreement and an interstate compact setting forth respective rights to water between the two states.

An investigation would be required which would include: (a) an inventory of the water resources of the Basin, both surface and underground; (b) classification of lands for agricultural use; (c) a survey of the location, extent, and type of water use under present conditions; (d) an estimate of water requirements under ultimate development; and (e) plans for the ultimate development of the water supplies of the Basin and estimates of cost thereof.

The investigation would be accomplished in two phases. The first would cover a two-year period, during which time the basic data on water supply, use, requirements, and land classification would be compiled and the preliminary plans for development investigated. The second stage would entail surveys of various plans, cost and yield studies, together with a report of the investigation, and would require approximately one year.

Estimated Cost

Estimates of the costs are given below, both for an investigation of the Klamath River Basin and for an investigation of the portion of the Klamath River Basin lying only within Siskiyou and Modoc counties. The estimates are exclusive of work which may be done in connection with the State-Wide Water Resources Investigation and the Watermastering Service.

Klamath River Basin Investigation, Including Interstate (California and Oregon) Considerations

First year	$ 58,000
Second year	59,000
Third year	59,000
TOTAL COST	$176,000

Bi-County (Siskiyou and Modoc Investigation)
(State Water Resources Board Activity)

Contribution by	First Year	Second Year	Third Year
County of Siskiyou	$10,000	$10,000	$11,000
County of Modoc	5,500	5,500	6,000
State Water Resources Board	15,500	15,500	17,000
Annual Costs	$31,000	$31,000	$34,000
TOTAL COST			$96,000

A breakdown of costs and personnel requirements is attached.

Conclusion

From the foregoing it is concluded that if an investigation of the Klamath River area is recommended by the Board, such investigation should include the entire basin and should be conducted in cooperation with the State of Oregon.

Respectfully submitted,

/s/ A. D. Edmonston
A. D. Edmonston
State Engineer

ESTIMATE OF COST TO ACCOMPLISH INVESTIGATION OF
KLAMATH RIVER BASIN IN SISKIYOU AND MODOC COUNTIES

		First phase		Second phase	
		Months:		Months:	
1. Salaries and general assistance					
Classification	Monthly salary[a]				
Senior Hydraulic Engineer	$556	3	$ 1,670	3	$ 1,670
Associate Hydraulic Engineer	481	8	3,850	6	2,880
Assistant Hydraulic Engineer	395	24	9,500	12	4,750
Junior Civil Engineer	341	24	8,200	12	4,100
Engineering Aid	295	24	7,100	12	3,550
Survey party	1,000	3	3,000	2	2,000
Technical assistance	500	8	4,000	3	1,500
Delineator	395	2	790	3	1,190
Stenographer	220	4	880	2	440
Subtotal for salaries, etc.			$38,990		$22,040
2. Equipment and expenses					
Travel, $50 per month		40	$ 2,000	20	$ 1,000
Automobile mileage, 5¢ per mile[b]		24	7,200	12	3,600
Retirement, 17% of payroll			6,000		3,740
Printing			-----		600
Equipment			2,000		-----
Contingencies and administrative overhead, 10%			5,630		3,100
Subtotal for equipment, etc.			$22,930		$12,040
Subtotal			$61,920		$34,080
TOTAL					$96,000

[a] Starting salary plus one in-grade.

[b] 3 cars at 2,000 miles per month

ESTIMATE OF COST TO ACCOMPLISH COMPREHENSIVE INVESTIGATION OF KLAMATH RIVER BASIN

	Monthly salary[a]	First phase Months		Second phase Months		
1. Salaries and general assistance						
Classification						
Senior Hydraulic Engineer	$556	24	$13,330	12	$ 6,670	
Associate Hydraulic Engineer	481	--	------	--	-----	
Assistant Hydraulic Engineer	395	24	9,500	12	4,750	
Junior Civil Engineer	341	48	16,400	24	8,200	
Engineering Aids	295	24	7,100	24	7,100	
Survey party	1,000	4	4,000	3	3,000	
Technical assistance	500	24	12,000	12	6,000	
Delineator	395	4	1,580	6	2,370	
Stenographer	220	6	1,320	4	880	
Subtotal for salaries, etc.			$65,230		$38,970	
2. Equipment and expenses						
Travel, $75 per month		100	$ 7,500	25	$ 2,500	
Automobile mileage, 5¢ per mile[b]		24	9,600	12	4,800	
Retirement, 17% of payroll			11,100		6,600	
Printing			------		1,000	
Equipment			5,000		-----	
Geologic exploration			8,000		-----	
Contingencies and administrative overhead, 10%			10,600		5,370	
Subtotal for equipment, etc.			$51,800		$20,070	
Subtotal			$117,030		$59,040	
TOTAL						$176,000

[a] Starting salary plus one in-grade.
[b] 4 cars at 2,000 miles per month.

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1952

Water Resources
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EARL WARREN
GOVERNOR

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SECRETARY

ADDRESS ALL COMMUNICATIONS TO THE SECRETARY

January 25, 1952

Honorable Randolph Collier, Senator
Second Senatorial District
Yreka, California

Dear Senator Collier:

In reference to your letter of October 31, 1951, to the State Water Resources Board, the Board authorized on November 2, 1951, a preliminary survey with the objective of determining the scope and cost of an investigation of the water resources of Siskiyou and Modoc counties and the Klamath River Basin.

R. R. Reynolds and R. T. Bean of this office made a preliminary reconnaissance of Siskiyou County on December 11 to 14, 1951, and talked with Mr. Frank Lathrop of the County Assessor's office, Mr. Gordon Jacobs, Chairman of the Board of Supervisors of Siskiyou County, and Mr. M. A. Gilmer, former Secretary-Treasurer of the Butte Valley Irrigation District. Unsuccessful efforts were made to contact the other Siskiyou County supervisors.

From the results of the preliminary survey it is concluded that an investigation of the entire Klamath River Basin is necessary to determine the amount of water which should be reserved to provide for the future water requirements of the northern counties in California and southern Oregon and the work required therefor. A bi-county (Siskiyou and Modoc) investigation would not be sufficiently comprehensive.

Enclosed is a copy of the report of survey together with a letter to Mr. C. A. Griffith, Chairman of the State Water Resources Board. This matter will be considered at the regular meeting of the State Water Resources Board on February 1, 1952.

Very truly yours,

A. D. Edmonston

A. D. Edmonston
Secretary

Enclosures

Lathrop 1952
Water Resources
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Memo to Senator Collier Jan 29, 1952

Comments on Edmontson's Letter of Jan. 25
and His Report to the Water Resources Board

He recommends that his investigation should cover the entire Klamath River Basin in order to make a comprehensive inventory of water resources.

I do not believe that his analysis of the runoff of only 13% coming from Oregon and the rest coming from California is a proper concept of the States rights.

The mere fact that the sovereign rights that were ceded in 1904 by both states was made for the reason that the waters were interstate and badly mingled so that a fair separation of rights cannot be reached without a very exaustive study of the physical facts as of that date. Such facts must be assembled and analyzed before any conclusions could be reached. Such facts, of course, would then have to be brought up to their proper status with the rights which have accrued both private and public during the last 47 years.

On page 2, Irrigation Development, I have with me and ready to deliver to them a complete map and schedules of the entire Siskiyou County. This part of his program, so far as Siskiyou County is concerned, will not require further study from the state.

The scope of investigation, I think, is well stated altho I think that both the cost and time elements are extravagant. From my intimate knowledge of the Klamath Basin over this 47 year period it is my considered judgment that the first work that should be done is a factual study mostly map work that will adequately portray the legal, legislative and political aspects of the rights ceded in 1904 and the agreements made by the Federal Government together with all pertinent facts taken place during the last 47 years with the second set of facts and maps showing physical conditions as they are today properly authenticated and documented.

Such a study should not take over six to eight months, should not cost over $25,000, and when that is finished the proper authorities in both states could sit down and really get the meat of the Klamath problem and thereafter direct the remaining studies necessary to complete a pattern for administration outlined above which is purely and simply an office job of compiling facts all ready completely developed by various Federal and State authorities during the 47 year period.

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JOINT FACT-FINDING COMMITTEE
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HIGHWAYS, STREETS AND BRIDGES

California Legislature

ROOM 214, STATE CAPITOL
SACRAMENTO 14

Klamath River

February 14, 1952

COPY

Mr. James H. Allen, Executive Secretary
Interstate Commission on the Delaware River Basin
Broad Street Station Building
Philadelphia 3, Pennsylvania

Dear Mr. Allen:

I want to thank you and Mr. Huie and Mr. Robert Moses for your efforts in sending me the material on the "Incodel" project.

After studying the material which you have so kindly sent me, I would like very much to have copies of consulting engineers' preliminary report of 1950 and the final report of August 17, 1950, together with the engineering maps of the entire Delaware Basin. It will be of particular interest to us to study how the engineers covered this project for you.

Again thanking you for your courtesy in this matter, I remain,

Very truly yours,

RANDOLPH COLLIER
State Senator

RC:ms

Delaware New Jersey New York Pennsylvania
THE COUNCIL OF STATE GOVERNMENTS

INTERSTATE COMMISSION
on the Delaware River Basin

BROAD STREET STATION BUILDING • PHILADELPHIA 3 · PENNSYLVANIA

January 31, 1952

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FORMER MEMBER
UNITED STATES CONGRESS

MR. FRANCIS A. PITKIN
DIRECTOR, STATE PLANNING BOARD

HON. CHARLES C. SMITH
MEMBER OF HOUSE OF REPRESENTATIVES

Hon. Randolph Collier
California State Senate
State House
Sacramento, California

Dear Senator Collier:

As you have been advised, your letter of January 23 to Mr. Robert Moses has been passed along to me for reply. I assure you it is a pleasure to give you the information requested.

Incodel was officially established in 1937 by, and as the joint agency of, the Commissions on Interstate Cooperation of New York, New Jersey, Pennsylvania and Delaware. Each of these parent organizations is affiliated with the Council of State Governments. The state Commissions derive their legislative authority by acts, reciprocal in nature, passed by the Legislatures of the respective states. I am enclosing for your information a copy of the Pennsylvania statute, Act No. 35, Laws of 1937. The acts of the other states are substantially similar.

While Incodel came into being pursuant to the provision in these acts authorizing the sponsoring commissions to establish "such committees, as it deems advisable, etc." (Section 5 of the Pennsylvania Act), it has since been given additional legislative sanction. For example, as the result of Incodel's operations in the field of stream pollution abatement, the four Delaware Basin states have enacted reciprocal agreements containing standards for the treatment of sewage, industrial waste and other polluting material. Each of these statutes stipulates that Incodel "is hereby recognized as the duly established agency of this state for intergovernmental cooperation * * * to develop integrated plans to conserve and protect the waters and other resources of the Delaware River Basin * * * ".

In 1949, the states of New York, New Jersey and Pennsylvania, by reciprocal legislation, directed Incodel to

make a special water project survey. The acts again referred to Incodel as the agency and instrumentality of the respective states.

I am also enclosing a copy of the Pennsylvania statute, Act No. 475, Laws of 1949, directing Incodel to make the water project survey.

It occurs to me that I should stress two points regarding Incodel: (1) Its functions are advisory only; it has no administrative powers. (2) It exists as the consequence of reciprocal legislation rather than under the terms of an interstate compact.

Under separate cover, I am sending you the two reports which you requested:

(1) Report on the Delaware River Basin Water Project, January 1951 - 24 pages.

(2) Incodel, a report on the activities and accomplishments of the Interstate Commission on the Delaware River Basin for the year ending June 30, 1948 - 47 pages.

Inserted in the flap on the inside of the back cover of the first report (the illustrated brochure) are the following additional material regarding Incodel:

(a) Reprint of article in January 5, 1946 issue of Colliers entitled "Cleanup on the Delaware."

(b) Reprint of article in the September 30, 1950 issue of the Saturday Evening Post entitled "Look What They're Doing to the Delaware!"

(c) Report to the Governors and Legislatures of New York, New Jersey, Pennsylvania and Delaware, January 15, 1951, on the proposed Incodel water project.

(d) Leaflet called Incodel.

(e) Leaflet, "The Delaware—Water For Millions."

(f) Reprint of column by Raymond Moley in December 17, 1951 issue of NEWSWEEK entitled "Incodel—The Right Way."

(g) Reprint of second column by Raymond Moley
in January 14 issue of NEWSWEEK,
"Incodel—The Right Way II."

If there is any additional information you would like on Incodel, we shall be pleased to make it available.

Sincerely yours,

James H. Allen

James H. Allen
Executive Secretary

JHA*mas

Encs. -2

CCs to: Mr. Irving V. A. Huie, President
New York City Board of Water Supply
120 Wall Street
New York 5, New York

Mr. Robert Moses
City Construction Coordinator
Randall's Island
New York 35, New York

Lathrop 1
1952

Water Resources
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Delaware New Jersey New York Pennsylvania

INTERSTATE COMMISSION
on the Delaware River Basin

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UNITED STATES CONGRESS

MR. FRANCIS A. PITKIN
DIRECTOR, STATE PLANNING BOARD

HON. CHARLES C. SMITH
MEMBER OF HOUSE OF REPRESENTATIVES

February 18, 1952

Hon. Randolph Collier
California State Senate
515 N. Main Street
Yreka, California

Dear Senator Collier:

This is to acknowledge and reply to your letter of February 14th.

We are pleased that the information and material which we recently sent to you has proved to be of interest. Complying with your request we are sending you, under separate cover, a copy of the final report dated August 17th, 1950, of our consulting engineers, Malcolm Pirnie Engineers - Albright & Friel, Incorporated, on "Utilization of the Waters of the Delaware River Basin". We are not sending you a copy of the preliminary report in view of the fact that the final report being sent to you is to a large extent a duplication of the preliminary study and completely supersedes the preliminary report.

If there is any further information you desire, please let us know.

Sincerely yours,

James H. Allen

James H. Allen
Executive Secretary

JHA:ff

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JOINT FACT-FINDING COMMITTEE
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California Legislature

ROOM 214, STATE CAPITOL
SACRAMENTO 14

February 23, 1952

COPY

Mr. James H. Allen, Executive Secretary
Interstate Commission on the Delaware River Basin
Broad Street Station Building
Philadelphia 3, Pennsylvania

Dear Mr. Allen:

I want to again thank you for your kindness in helping me to get material together to make a study of "Incodel". I have a problem on interstate waters between Oregon and California, and knowing how successful your Interstate Commission has been on this problem, I know that your experience can be of great assistance to us.

Sincerely,

RANDOLPH COLLIER
State Senator

RC:ms

Exhibit #2 A①

COPY

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STATE OF OREGON
Oregon Klamath River Commission
216 First National Bank Building
Klamath Falls, Oregon

Dec.9,1954

William G. Hagelstein, Chairman
California Klamath River Commission,
Butte Valley State Bank
Dorris, Cal.

Dear Bill:

I am enclosing herewith the proposed Bill for an Act to permit a Klamath River Compact that Mr. Stanley drew, which we propose to ask our Congressman Sam Coon to offer at the next session of Congress. Mr. Stanley gave the matter some study and considerable thought, having read several similar Bills. We have not submitted it to any Lawyer but presume it is in order.

After you have read it over, if you think it is what is wanted and it meets with the approval of your Commission, if you will return it to me I will send it to Sam Coon and ask him to present it.

Yours very truly,

/S/ Nelson Reed

Nelson Reed, Chairman

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Water Resources
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RANDOLPH COLLIER
STATE SENATOR
DEL NORTE AND SISKIYOU COUNTIES

California State Senate

To:

HONORABLE DOUGLAS MCKAY
GOVERNOR OF OREGON

Yreka, California
June 18, 1952

We have requested this conference because we feel there is urgent need for exchange of ideas on the water problems of the Klamath River Basin.

These problems, becoming more and more complex, now transcend state lines and require common solutions by both states working together in a unified program.

We think the time is propitious for the two states jointly to take appropriate steps to assert their sovereign rights and assume full responsibility over the water resources of the Klamath Basin.

The legislators of California and Oregon were, in 1905, sold the idea that the waters of the Klamath Basin were not States problems, but by reason of their being interstate and navigable, they could be solved at Federal level as a Reclamation project under the 1902 Reclamation Law.

Both states then surrendered their sovereign rights and ceded such rights to land and water to the Federal Government. Forty-sevey years later we find the responsibility is now very clearly that of both States jointly to take appropriate action to revest.

RANDOLPH COLLIER
STATE SENATOR
DEL NORTE AND SISKIYOU COUNTIES

California State Senate

If such policy and high purpose meets your approval we can proceed with formulating the machinery to make it effective.

The following outline of the scope of the joint undertaking is set forth herewith merely to facilitate discussion and reframing a plan that refledts the most direct approach to the assembly of existing knowledge and the taking of supplemental and more intimate engineering data to be taken as directed.

PURPOSE

(A) Assemble in one office all material, engineering studies, reports, and maps heretofore made at three levels:--

FEDERAL	STATE	COUNTY	
U.S. Army Eng. Corps	Eng. Oregon	Klamath	Oregon
U.S. Rec. Klamath Proj.	Eng. Calif.	Jackson	Oregon
U.S. Forest Service		Lake	Oregon
	Pub. Utility Comm. of both States	Modoc	California
		Siskiyou	California
		Trinity	California
		Humboldt	California
		Del Norte	California

By analyzing, digesting, comparing, and compiling this total available material, your study group will be able to reframe and

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re-state all the basic factual material relating to all the elements necessary to a comprehensive word and map picture of the present status of waters of the Klamath Basin. (upper basin above Keno) (lower basin Keno to ocean)

(B) Engineering Studies of :--

1- Potential Storage, and Flood control on basins or sub-basins not already investigated.

2- Underground water - To make detailed, intensive and extended survey of the geology and hydrology of the upper basin and parts of Siskiyou County to determine the occurrence, available quantity, chemical quality and perennial dependability.

There is urgency for taking prompt steps toward an adequate evaluation and equitable control of ground waters of the area.

These studies should be directed by the two State Engineers and the respective Water Resources Boards and their field staffs under a well-coordinated program of expediting field reconnaissance studies of the storage and flood control potentials, large and small, of each stream system that has not already been engineered.

It is becoming more and more evident that small storage, affording benefits of flood control and irrigation water are to be found on every small stream; their location and extent should be determined for each stream system.

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Any comprehensive study of Klamath Basin should include the taking of an inventory of water use and ultimate needs of each of the counties of origin. This should be the responsibility of each county of the Basin. In California, Siskiyou County has taken the lead and has completed the mapping and detail inventory of every parcel of land irrigated, surface, and sub-surface. Also the land classification to determine the lands that are irrigable and that can make beneficial use of water whenever water is made available.

The primary use of this factual material was at county level in creating a tax base for equalized assessment. The other California counties in the Klamath basin are actively at work on similar studies.

One prime objective is the conservation and maximum use of the Basin's water resources for all beneficial purposes - domestic, municipal, industrial, irrigation, power, recreation, and commercial fishery.

The elimination of all wasteful uses and practices.

The protection and reservation of sufficient water for the ultimate needs of the counties of origin.

A determination if there be any surplus; how much, where and when available for export.

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ULTIMATE OBJECTIVE

Creation of InterstateCompact

To administer water resources of entire Basin.

To negotiate the purchase of all Federal rights and facilities comprising the Klamath Project.

Repossessing, as it were, after 47 years, the sovereign rights ceded by Oregon and California in 1905 to the Federal Government, under written agreement, for the development and settlement of the Klamath Project under Reclamation laws of 1902.

The Interstate Compact Authority then becomes the agency to take over and administer the rights, properties and facilities of the Bureau of Reclamation now comprising the Klamath Project in its entirety.

The two states would be pledged to repay the Federal Government for the reimbursable capital cost, without interest and on the same 40-year terms and condition as the organized water and drainage districts would do if Reclamation Service continues to own and operate.

This agency could and should provide each land owner a water right certificate appurtenant to his land and not the substitute of water as a commodity without any evidence of proprietary ownership.

The people of Oregon and California need the wealth and strength which will be added by the full development of the latent resources

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STATE SENATOR
DEL NORTE AND SISKIYOU COUNTIES

California State Senate

of the Klamath River and its tributaries.

We need the full utilization of falling water for power, the productivity of added irrigated acres, the municipal and industrial water supplies, flood control and drainage, recreation, fishing, and other benefits that come from resource development.

We must recognize clearly that the full development and utilization of these waters is a prime responsibility shared by government on all levels in formulating sound natural resource policy and the discovery of workable and acceptable proceedures and the mechanism to translate established policy into effective action.

Senator RandolphCollier
F. L. Lathrop, Representing
Siskiyou County

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June 25, 1952

Soil Conservation Service
Regional Office
Portland, Oregon

Attention: Mr. J. H. Christ, Regional Director

Dear Mr. Christ:

May I ask you to review the correspondence between us of Sept. 17, 28, Oct. 3, and 4, and Jan. 8, 14, 21, regarding mapping procedures, and bring me up to date on the status of mapping on any part of the Klamath Basin as you know it.

For your information the Board of Supervisors have employed me to represent Siskiyou County in all matters relating to water and power development studies in the Klamath Basin.

Senator Collier and myself are now organizing various agencies at the County, State, and Federal levels so that we may together study all existing factual information; set up a program for obtaining vital information, which to date is lacking and so badly needed in formulating over all policies for the entire Basin. Such a program brings us to the realization that to date there are no adequate maps of the Upper Basin, which was the subject I brought up in the letters referred to between us.

Will you please, therefore, bring me up to date on the mapping situation as you see it and what may be possible in this matter in the area of the Klamath Basin above Keno.

I am enclosing you herewith a copy of our program and ask that you treat it as confidential material until it is released for publication.

With kindest personal regards,

Sincerely,

S.W.
C Clo Coby
Soil Scientist

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OPENING STATEMENT

F-2

Federal Power Commission Hearing on Project No. 2082

June 30, 1952

My name is E. K. Davis. I am Assistant Regional Counsel for Region 2 of the Bureau of Reclamation, Department of the Interior. Mr. Silverthorne and I are appearing for Oscar L. Chapman, Secretary of the Interior. Those Interior agencies having a particular interest in this case are the Fish and Wildlife Service, the Bureau of Indian Affairs, and the Bureau of Reclamation. Mr. Phil Dickinson, Assistant Regional Director for the Bureau of Reclamation, Region 2, Sacramento, California; Mr. Layton Stephens, Project Manager for the Klamath Project; and representatives of the Bureau of Indian Affairs and the Fish and Wildlife Service will testify for Interior.

As stated in our Petition for Intervention, in general, it is the position of the Secretary of the Interior that the application for license of The California Oregon Power Company should be denied or, alternatively, that action upon it should be suspended until the comprehensive investigations now being made by the Department of the Interior have been completed.

To support this position, we intend to show that the Federal Government through its various Interior agencies holds certain vested or inchoate rights to the waters of the Klamath River and Upper Klamath Lake under the laws of the United States and the States of Oregon and California. We will introduce evidence to show that after these rights have been satisfied there will not be a sufficient supply of unappropriated water from Klamath River below Upper Klamath Lake to meet the requirements of the applicant's proposed project. In fact, we believe the evidence will demonstrate that operation of the project planned by the applicant not only would interfere with any new irrigation or wildfowl but would impair the use of the water for the existing Klamath Project of the Bureau of Reclamation.

Essentially, our position on this phase of the matter will be the same as that presented in the protest of the United States to the application of The California Oregon Power Company to the Hydroelectric Commission of the State of Oregon for a license which would include the right to appropriate water for this same power project. As you undoubtedly know, the hearings in this matter were held June 11, 1951, here in Klamath Falls. A copy of this protest is attached to the letter of the Secretary of the Interior to the Federal Power Commission written in respect to the instant case. As of this date, the Oregon Hydroelectric Commission has not rendered a decision. Unless the request for license is granted, we believe The California Oregon Power Company will be unable to satisfy the provisions of Section 9(b) of the Federal Power Act requiring the applicant to show that it is able to proceed under the laws of the State of Oregon with respect "to the appropriation, diversion, and use of water for power purposes." Further, it is our position that the Oregon Hydroelectric Commission legally cannot and will not grant to The California Oregon Power Company the license requested and required for this power project.

In addition to strictly water right considerations, we will show that the Bureau of Reclamation, the Bureau of Indian Affairs, and the Fish and Wildlife Service now have under way an extensive investigation program purposed to find the best plan for the comprehensive development of the water resources of the area. The study is designed to indicate the extent to which additional lands on the Klamath Indian

F. L. LATHROP
Fact Finder and Consultant
Tax, Land and Water Problems
425 Yama St., Yreka, Calif.

Reservation may be brought under irrigation, the need for additional water for migratory waterfowl use, and to suggest possible extensions of the Klamath Project of the Bureau of Reclamation to serve additional areas in Oregon and California from the waters of the Klamath River and its tributaries. Also, the study will indicate the possibilities for economical development of power consistently with irrigation and other uses. Such power development would be proposed by the Bureau of Reclamation for irrigation pumping, for financial assistance to irrigation in the manner provided in the Reclamation Act of 1939, and for sale in the Upper Klamath Basin at the lowest possible cost.

It is the position of the Secretary of the Interior that waters in the Klamath Basin should be used for irrigation and for wildlife preservation to the maximum practicable extent. After plans for such usage have been solidified, additional power development should be planned as an integral part of a basin-wide multiple-purpose water resource development. Interior believes the investigations will show that the maximum amount of power and the maximum benefits to the area will derive through development of the remaining power sites on the Klamath River by the Federal Government. We will show that the Federal Government has spent and expects to spend substantial sums of money on these investigations, that they are now entering their final phase and will be completed within the next two years.

In connection with the intervention of the Department of the Interior in this case, there is a point I wish to make clear. We fully recognize that a power shortage exists in the Pacific Coast area, and we are aware that The California Oregon Power Company needs additional power in the immediate future. However, the construction of Big Bend No. 2 would not provide power for two or three years. We believe the will show that other adequate sources of supply will be available to meet the company's needs in the immediate future. In view of this, there appears no justification for making provision now for the development of the Big Bend project, which gives promise of prejudicing the whole future economic development in the area.

In sum, it is the position of the Department of the Interior that the proposal of The California Oregon Power Company for Project No. 2082 would impair valid existing water rights of the United States and that, in any event, no license should be granted until the extensive investigations now under way are complete, and not then except in light of a plan for the comprehensive development of the water resources of the Upper Klamath Basin for all beneficial public uses.

F. L. LATHROP
Fact Finder and Consultant
Tax, Land and Water Problems
425 Yama St., Yreka, Calif.

6/30/52
John Lounge
on Lead

Lathrop
1952

Water Resources
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BEFORE THE FEDERAL POWER COMMISSION

Hearing at Klamath Falls, Oregon

June 30, 1952

In the Matter of Application No._____

CALIFORNIA OREGON POWER CO., Klamath Falls, Oregon
Project: Big Bend No. 2, Klamath River

STATEMENT OF

OREGON DIVISION, IZAAK WALTON LEAGUE OF AMERICA

The Oregon Division of the Izaak Walton League of America appears herein for the purpose of informing the Commission that it has no objection to the granting of a lincense to the above applicant in relation to the construction of the above project.

The position of the Oregon Division at this hearing is that the granting of a license by the Federal Power Commission is for the purposes of the Federal Power Act only. An application by this applicant on this project is also pending before the Oregon Hydro-electric Commission and as the rights in the waters involved are subject to the laws of the State, the League will present matters with which it is concerned relating to protection of and provision for the natural resources affected to the appropriate state agencies.

The League desires to reiterate that it is not opposed to dams per se; that its position with respect to any particular project is on the merits of that particular project and all the circumstances surrounding it, and its relation to and affect upon the natural resources and human values involved.

The League believes that true conservation requires the wise and best reasonable use of the natural resources in relation to all aspects of human need and enjoyment, that in some places a project of this sort would destroy the highest values, while at other places with appropriate planning multiple or hydroelectric projects provide the highest beneficial use.

Having given careful consideration to all the factors and elements involved in the instant application, and the present status with respect to practical application of known methods in electric power production technology, the League takes the position that the present highest bene-

ficial use for human good of the waters in the Klamath River between the proposed point of diversion and the Oregon-California state line is the production of hydroelectric energy, for industrial, commercial and domestic use within the Klamath area now served by applicant, subject to reasonable provisions for the protection and development of fish, aquatic and wildlife habitat; that such utilization of the waters available at said proposed point of diversion is the highest economic and beneficial use to the people of the Klamath region to which such waters there may be put, and such development should be encouraged.

The League desires to make clear that its position herein is not to be applied to the waters of the Klamath River southerly and westerly of existing power installations in said river known as COPCO No. 1.

The League desires to emphasize that its position herein favoring such utilization of the waters at the point of the proposed diversion is on the assumption that the above application is intended to apply only to the use of such water as shall be available at such point of diversion after all agricultural requirements in the Klamath Basin above the point of diversion, present and future, shall have been satisfied.

The League further desires to make clear that its position herein is not to be taken, whether by said applicant or the public, as acquiescence in or condonement of the obstruction of the Klamath River by COPCO No. 1 installations, and it is expected, if license be granted to enable applicant to develope the hydro-power facilities applied for, that applicant will cooperate with the League, the appropriate state agencies in Oregon and California and the public, in an actual and practical manner, in making corrections at COPCO No. 1 and in so coordinating its plans and construction as to permit reasonable restoration of the valuable salmon and steelhead fishery resources primordial to this stream.

Respectfully submitted,

OREGON DIVISION,
IZAAK WALTON LEAGUE OF AMERICA

By KEN McLEOD, JR.
Vice-President

Prepared and presented by

JOHN B. ERINGER
U. S. National Bank Bldg
Klamath Falls, Oregon
Member National Board of Directors

Lethrop 1
1952

UNITED STATES DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

Washington 25, D. C.

Water Resources Center Archives

Leaflet WL-179
Revised July 1952

NATIONAL WILDLIFE REFUGES ADMINISTERED BY THE FISH AND WILDLIFE SERVICE

Compiled in the Branch of Wildlife Refuges

The number of national wildlife refuges administered by the Fish and Wildlife Service on July 1, 1952 was 272, with an aggregate of 17,409,968 acres. Of these, 254 (9,436,549 acres) are in the United States and 18 (7,973,419 acres) in Alaska, Hawaii, and Puerto Rico. All kinds of wildlife are protected on these refuges, but many refuges were especially established for the conservation of one or more species--202 (3,242,810 acres) for migratory waterfowl; 44 (129,080 acres) for colonial nongame birds; 16 (10,839,911 acres) for big game; and 9 (3,195,488 acres) for migratory birds other than waterfowl and miscellaneous forms of wildlife. One refuge, the Patuxent Research Refuge, Maryland (2,679 acres), is maintained for wildlife experimental purposes.

In most instances these refuges are on land controlled solely by the Fish and Wildlife Service; in others, by Executive order or otherwise, refuges are established on land primarily controlled by some other agency of the Federal Government. When this is the case, reference is made by footnote to the cooperating agency. Of the 202 refuges primarily for migratory waterfowl, 68 are on lands on which easements have been granted to the Service for use in protecting wildlife. Of these, 6, totaling 19,230 acres, are in Montana; 60, totaling 78,067 acres, are in North Dakota; 1, with 436 acres, is in South Dakota; and 1, with 360 acres, is in Wyoming. In the accompanying list are shown the correct designation, the location by State and county, the date established, the size, and principal wildlife species for which primarily maintained.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
ALABAMA:					
Petit Bois (see also Mississippi).	Mobile	5-16-13	134	C	Brown pelicans, herons, gulls, shorebirds.
Wheeler 3/	Morgan, Limestone, Madison.	7- 7-38	34,044	W	Geese, ducks, quail, mourning doves.
ALASKA:	Judicial divisions:				
Aleutian Islands	Third	3- 3-13	2,720,235	G	Sea otters, Emperor geese, ducks, seabirds, ptarmigans, brown bears, caribou.
Bering Sea	Second	2-27-09	41,113	C	Eiders, kittiwakes, auklets, puffins, McKay's snow buntings, Arctic foxes.
Bogoslof	Third	3- 2-09	390	C	Gulls, murres, puffins, sea lions.
Chamisso	Second	12- 7-12	641	C	Kittiwakes, murres, puffins.
Curry Bird, Game, and Fish Refuge.	Third	2-21-27	8,960	G	Grouse, ptarmigans, black bears, mink.
Forrester Island 4/ . . .	First	1-11-12	2,832	C	Murres, guillemots, auklets, puffins.
Hazen Bay	Fourth	12-14-37	6,800	W	Steller's eiders, cackling geese, pintails, brant, Emperor geese.
Hazy Islands 4/	First	1-11-12	42	C	Murres, auklets, puffins.
Kenai National Moose Range	Third	12-16-41	2,057,202	BG	Kenai moose, brown bears, Dall's sheep, mountain goats.
Kodiak	Third	8-19-41	1,957,002	BG	Kodiak bears, black-tailed deer, waterfowl.
Nunivak	Second	4-15-29	1,109,390	BG	Muskoxen, reindeer, ptarmigans, little brown cranes, shorebirds.
Pribilof Islands Reservation.	Third	4-21-10	50,163	C	Fur seals, seabirds.
St. Lazaria	First	2-27-09	65	C	Murres, auklets, puffins.
Semidi	Third	6-17-32	8,422	C	Murres, kittiwakes, eiders, fulmars.
Tuxedni	Third	2-27-09	6,439	C	Eiders, kittiwakes, gulls.
ARIZONA:					
Cabeza Prieta Game Range 5/	Yuma, Pima	1-25-39	860,041	BG	Desert bighorn sheep, Mexican antelope, peccaries, Gambel's quail, white-winged doves.
Havasu Lake (see also California) 6/	Mohave, Yuma . . .	1-22-41	26,656	W	Geese, ducks, Gambel's quail, white-winged doves, herons, desert bighorn sheep, muskrats.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
ARIZONA (Cont.):					
Imperial (see also California) 6/	Yuma	2-14-41	28,711	W	Ducks, geese, herons, Gambel's quail, desert bighorn sheep.
Kofa Game Range 5/ . . .	Yuma	1-25-39	660,041	BG	Desert bighorn sheep, white-winged doves, Gambel's quail.
Salt River 6/	Gila	2-25-09	21,060	W	Waterfowl, upland game birds.
ARKANSAS:					
Big Lake	Mississippi . . .	8- 2-15	9,522	W	Ducks, geese, quail, muskrats, raccoons.
White River	Arkansas, Desha, Monroe, Phillips	9- 4-35	116,390	W	Ducks, geese, woodcock, herons, black bears, wild turkeys.
CALIFORNIA:					
Clear Lake 6/	Modoc	4-11-11	34,616	W	White pelicans, geese, shorebirds.
Colusa	Colusa	3-31-45	2,385	W	Waterfowl.
Colusa National Wildlife Management Area.	Colusa	3-31-45	1,095	W	Waterfowl.
Farallon	Marin	2-27-09	91	C	Murres, auklets, guillemots, puffins, sea lions.
Havasu Lake (see also Arizona) 6/	San Bernardino .	1-22-41	19,105	W	Geese, ducks, Gambel's quail, white-winged doves, herons, desert bighorn sheep, muskrats.
Imperial (see also Arizona) 6/	Imperial	2-14-41	18,080	W	Ducks, geese, herons, Gambel's quail, desert bighorn sheep.
Lower Klamath (see also Oregon) 6/	Siskiyou	8- 8-08	21,460	W	Geese, ducks, herons, shorebirds, California quail.
Merced National Wildlife Management Area.	Merced	7-30-51	2,562	W	Waterfowl.
Sacramento	Glenn, Colusa . .	2-27-37	10,776	W	Snow geese, cackling geese, Ross's geese, whistling swans, ducks, pheasants, shorebirds.
Salton Sea 6/	Imperial	11-25-30	38,887	W	Geese, fulvous tree ducks, ibises, ducks, shorebirds, terns.
Sutter	Sutter	3-30-45	1,278	W	Waterfowl.
Tule Lake 6/	Modoc, Siskiyou .	10- 4-28	37,337	W	White-fronted geese, cackling geese, snow geese, Ross's geese, whistling swans, ducks, muskrats, shorebirds.
DELAWARE:					
Bombay Hook	Kent	6-22-37	13,810	W	Greater snow geese, black ducks, blue-winged teal, gadwall, shorebirds.
Cape Henlopen 7/ . . .	Sussex	12-21-48	212	C	Shorebirds.
Killcohook (see also New Jersey).	New Castle . . .	2- 3-34	580	W	Waterfowl.
FLORIDA:					
Anclote	Pasco, Pinellas .	4- 5-39	194	C	Herons, egrets, cormorants, terns, black skimmers.
Brevard	Brevard	10-21-25	12	C	Brown pelicans, cormorants, herons, egrets, black-necked stilts.
Cedar Keys	Levy	7-16-29	379	C	Brown pelicans, egrets, herons, cormorants.
Chassahowitzka	Hernando	6-15-43	11,016	W	Waterfowl, Florida cranes, limpkins, white ibises.
Chinsegut	Hernando	4-22-32	2,033	G	Quail.
Great White Heron . . .	Monroe	10-27-38	2,151	C	Great white herons, roseate spoonbills, brown pelicans, white-crowned pigeons, key deer.
Key West	Monroe	8- 8-08	2,019	C	Great white herons, roseate spoonbills, terns, white-crowned pigeons.
Loxahatchee 8/	Palm Beach, Broward	6- 8-51	141,336	W	Waterfowl, herons, egrets, Everglade kites, Florida cranes, limpkins.
Passage Key	Manatee	10-10-05	36	C	Gulls, terns, black skimmers, shorebirds.
Pelican Island	Indian River . .	3-14-03	3	C	Brown pelicans, white ibises, herons, egrets.
Pinellas	Pinellas	4- 1-51	91	C	Roseate spoonbills, herons, egrets, cormorants, man-o-war birds.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
FLORIDA (Cont.):					
Sanibel	Lee	12- 1-45	2,474	W	Waterfowl, herons, roseate spoonbills, shorebirds.
St. Marks	Jefferson, Taylor, Wakulla.	10-31-31	65,100	W	Canada geese, herons, ducks, limpkins, shorebirds, wild turkeys, deer.
GEORGIA:					
Blackbeard Island . . .	McIntosh	2-15-24	5,618	W	Sea turtles, waterfowl, shorebirds, herons, deer.
Okefenokee	Charlton, Clinch, Ware.	3-30-37	329,110	G	Florida cranes, herons, white ibises, ducks, limpkins, alligators, otters, black bears.
Piedmont	Jones, Jasper . . .	1-18-39	31,192	G	Quail, mourning doves, wild turkeys, beaver.
Savannah (see also South Carolina).	Chatham	4- 6-27	5,460	W	Waterfowl, herons, white ibises, otters, raccoons.
Tybee	Chatham	5- 9-38	100	C	Shorebirds.
Wolf Island	McIntosh	4- 3-30	538	W	Brown pelicans, shorebirds.
HAWAII:					
Hawaiian Islands	Honolulu	2- 3-09	623	C	Albatrosses, Laysan teal, man-o-war birds, shearwaters, petrels, boobies, terns, shorebirds, Laysan finches.
Johnston Island	Honolulu	6-29-26	100	C	Petrels, shearwaters, boobies, tropic birds, terns.
IDAHO:					
Camas	Jefferson	10- 8-37	10,535	W	Canada geese, whistling swans, ducks, sage hens, pheasants, long-billed curlews, antelope.
Deer Flat 6/	Canyon	2-25-09	10,267	W	Canada geese, ducks, white pelicans, pheasants, gulls.
Minidoka 6/	Cassia, Blaine, Power, Minidoka .	2-25-09	22,123	W	Canada geese, ducks, whistling swans, sage hens.
Snake River	Canyon	8-17-37	355	W	Canada geese, ducks.
ILLINOIS:					
Batchtown Wildlife Refuge	Calhoun	10- 6-47	4,140	W	Ducks, herons, egrets, muskrats.
Calhoun Wildlife Refuge.	Calhoun, Jersey . .	11- 8-46	3,565	W	Ducks, herons, egrets, muskrats.
Chautauqua	Mason	12-23-36	4,471	W	Mallards, wood ducks, bald eagles.
Crab Orchard	Williamson, Jackson, Union.	8- 5-47	44,000	W	Ducks, geese, quail.
Flannigan Island Wildlife Refuge.	Adams	11-19-46	668	W	Ducks, herons, egrets, muskrats.
Henderson Wildlife Refuge	Henderson	11-19-46	352	W	Ducks, herons, egrets, muskrats.
Keithsburg Wildlife Refuge	Mercer	11-19-46	1,448	W	Ducks, herons, egrets, muskrats.
Upper Mississippi River Wild Life and Fish Refuge (see also Iowa, Minnesota, and Wisconsin).	Rock Island, Whiteside, Carroll, Jo Daviess.	6- 7-24	3,016	W	Ducks, herons, egrets, muskrats.
IOWA:					
Louisa Wildlife Refuge	Louisa	11-19-46	3,890	W	Ducks, herons, egrets, muskrats.
Union Slough	Kossuth	9-19-38	2,075	W	Waterfowl, upland game birds.
Upper Mississippi River Wild Life and Fish Refuge (see also Illinois, Minnesota, and Wisconsin).	Scott, Clinton, Jackson, Allamakee, Clayton, Dubuque.	6- 7-24	20,406	W	Ducks, herons, egrets, muskrats.
KENTUCKY:					
Kentucky Woodlands . . .	Trigg, Lyon	8-30-38	64,829	W	Ducks, geese, wild turkeys, deer.

See footnotes at end of list.

State and Refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
LOUISIANA:					
Breton	Plaquemines	10- 4-04	7,512	C	Waterfowl, brown pelicans, shorebirds, gulls, terns, black skimmers.
Delta	Plaquemines	11-19-35	48,789	W	Blue geese, snow geese, ducks, egrets, shorebirds, alligators.
East Timbalier Island Reservation.	Terrebonne	12- 7-07	337	C	Brown pelicans, gulls, terns.
Lacassine	Cameron	12-30-37	31,125	W	Blue geese, snow geese, mottled ducks, fulvous tree ducks, herons, rails.
Sabine	Cameron	12- 7-37	142,717	W	Blue geese, snow geese, mottled ducks, roseate spoonbills, glossy ibises, herons, muskrats, raccoons, alligators.
Shell Keys	Iberia	8-17-07	77	C	Brown pelicans, royal terns.
MAINE:					
Moosehorn	Washington	7- 1-37	22,526	G	Woodcock, black ducks, ring-necked ducks, grouse, deer.
Widow's Island Migratory Bird Refuge.	Knox	12-22-32	12	C	Shorebirds.
MARYLAND:					
Blackwater	Dorchester	1-23-33	11,216	W	Canada geese, ducks, muskrats, quail.
Chincoteague (see also Virginia).	Somerset	5-13-43	95	W	Greater snow geese, American brant, ducks, shorebirds, gulls, terns.
Patuxent Research Refuge	Anne Arundel, Prince Georges.	12-16-36	2,679	Exp.	Experiment station.
Susquehanna 16/	Harford, Cecil	8-24-39	16,410	W	Whistling swans, canvas-backs, redheads, ruddy ducks, ring-necked ducks.
MASSACHUSETTS:					
Great Meadows	Essex	5- 3-44	210	W	Waterfowl.
Monomoy	Barnstable	6- 1-44	2,946	W	Black ducks, eiders, scoters, shorebirds.
Parker River	Essex	12-30-42	6,417	W	Black ducks, greater scaups, Canada geese, shorebirds.
MICHIGAN:					
Huron	Marquette	1-21-38	147	C	Cormorants, gulls, terns.
Lake St. Clair 9/ 17/.	St. Clair, Macomb,	9-21-43	4,200	W	Canada geese, ducks.
Michigan Islands	Alpena, Charlevoix.	4-18-47	12	C	Herons, gulls, terns.
Seney	Schoolcraft	12-10-35	93,835	W	Canada geese, ducks, sandhill cranes, spruce grouse, ruffed grouse, prairie chickens, deer, otters.
MINNESOTA:					
Mille Lacs	Mille Lacs	5-14-15	1	C	Gulls, terns, purple martins.
Mud Lake	Marshall	3-23-37	60,744	W	Geese, ducks, sharp-tailed grouse, moose.
Rice Lake	Aitkin	10-31-35	15,240	W	Waterfowl, muskrats, beaver.
Tamarac	Becker	5-31-38	29,108	W	Waterfowl, deer, ruffed grouse, muskrats, beaver.
Upper Mississippi River Wild Life and Fish Refuge (see also Illinois, Iowa and Wisconsin).	Houston, Winona, Wabasha.	6- 7-24	26,710	W	Ducks, herons, egrets, muskrats.
MISSISSIPPI:					
Noxubee	Winston, Noxubee, Oktibbeha.	6-14-40	38,933	G	Wild turkeys, deer, quail, wood ducks, mourning doves.
Petit Bois (see also Alabama).	Jackson	5- 6-13	596	C	Brown pelicans, herons, gulls, shorebirds.
MISSOURI:					
Mingo	Wayne, Stoddard	6- 7-44	21,609	W	Geese, ducks, herons, raccoons.
Squaw Creek	Holt	8-23-35	6,809	W	Blue geese, snow geese, ducks, white pelicans, muskrats.
Swan Lake	Chariton	2-27-37	10,675	W	Geese, ducks, prairie chickens
MONTANA:					
Benton Lake	Cascade, Chouteau	11-21-29	12,235	W	Geese, ducks, shorebirds.
Black Coulee	Blaine	1-28-38	1,480	W	Waterfowl, sage hens.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
MONTANA (Cont.):					
Bowdoin 6/	Phillips	2-14-36	15,437	W	Canada geese, ducks, white pelicans, herons, cormorants, sage hens, antelope.
Creedman Coulee	Hill	10-25-41	2,728	W-E	Waterfowl, prairie chickens, sage hens, shorebirds.
Fort Peck Game Range 5/7/	Valley, Garfield, Petroleum, Fergus, Phillips, McCone.	12-11-36	946,944	BG	Sharp-tailed grouse, sage hens, antelope, deer, mountain sheep, elk.
Hailstone	Stillwater	12-31-42	2,664	W-E	Waterfowl, sage hens.
Halfbreed Lake	Stillwater	5-19-42	3,097	W-E	Waterfowl, sage hens.
Hewitt Lake	Phillips	3- 7-38	1,360	W	Waterfowl, sage hens.
Lake Mason	Musselshell	6- 2-41	6,433	W-E	Ducks, sharp-tailed grouse, sage hens, muskrats.
Lake Thibadeau	Hill	9-23-37	3,508	W-E	Ducks, sharp-tailed grouse, sage hens.
Lamesteer	Wibaux	5-19-42	800	W-E	Waterfowl, sharp-tailed grouse.
Medicine Lake	Roosevelt, Sheridan	8-19-35	31,457	W	Geese, ducks, sandhill cranes, sharp-tailed grouse, shorebirds, gulls, terns, muskrats.
National Bison Range	Sanders, Lake	5-23-08	18,541	BG	Buffalo, elk, deer, bighorn sheep.
Nine-Pipe 10/	Lake	6-25-21	2,020	W	Geese, ducks, shorebirds, pheasants, muskrats.
Pablo 10/	Lake	6-25-21	2,868	W	Geese, ducks, pheasants, shorebirds, muskrats.
Pishkun 6/	Teton	12-17-12	8,195	W	Ducks, sharp-tailed grouse, Hungarian partridge, shorebirds.
Red Rock Lakes Migratory Waterfowl Refuge.	Beaverhead	4-22-35	40,008	W	Trumpeter swans, Shiras moose.
Willow Creek 6/	Lewis, Clark	2-25-09	3,119	W	Geese, ducks, sharp-tailed grouse, shorebirds.
NEBRASKA:					
Crescent Lake	Garden	3-16-31	46,540	W	Geese, ducks, sandhill cranes, long-billed curlews, antelope.
Fort Niobrara	Cherry	1-11-12	19,122	BG	Buffalo, Texas long-horned cattle, elk, prairie chickens, sharp-tailed grouse, beaver.
North Platte 6/	Scottsbluff, Sioux	8-21-16	5,107	W	Sandhill cranes, waterfowl, quail, pheasants.
Valentine	Cherry	8-14-35	70,401	W	Ducks, geese, sharp-tailed grouse, pheasants, shorebirds, muskrats.
NEVADA:					
Anaho Island	Washoe	9- 4-13	248	C	White pelicans, cormorants, gulls.
Charles Sheldon Antelope Range(see also Oregon) 5/	Washoe, Humboldt	12-21-36	548,373	BG	Antelope, mule deer, sage hens, waterfowl.
Desert Game Range 5/	Clark, Lincoln	5-20-36	2,204,201	BG	Bighorn sheep, mule deer, Gambel's quail, mourning doves.
Fallon 6/	Churchill	4-22-31	17,902	W	Waterfowl, California quail, pheasants.
Ruby Lake	Elko, White Pine	7- 2-38	35,618	W	Canada geese, ducks, sage hens, sandhill cranes, shorebirds.
Sheldon National Antelope Refuge.	Washoe	1-26-31	34,091	BG	Antelope, mule deer, sage hens, waterfowl.
Stillwater National Wildlife Management Area 15/	Churchill	11-26-48	204,633	W	Whistling swans, geese, ducks, herons, shorebirds, muskrats.
Winnemucca 6/	Pershing, Washoe	8-19-36	9,806	W	Waterfowl, white pelicans, gulls.
NEW JERSEY:					
Brigantine	Atlantic	10- 5-39	12,094	W	American brant, ducks, shorebirds, gulls, terns, rails.
Killcohook (see also Delaware).	Salem	2- 3-34	905	W	Waterfowl, muskrats.
NEW MEXICO:					
Bitter Lake	Chaves	10- 8-37	23,923	W	Waterfowl, little brown cranes, scaled quail.
Bosque del Apache	Socorro	11-22-39	57,191	W	Ducks, geese, New Mexico ducks, Gambel's quail, scaled quail.
Burford Lake 11/	Rio Arriba	2-28-48	1,845	W	Waterfowl, dusky grouse, sage hens, wild turkeys.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
NEW MEXICO (Cont.):					
San Andres 4/ 5/ . . .	Dona Ana	1-22-41	57,215	BG	Bighorn sheep, mule deer, white-winged doves, Mearns's quail, Gambel's quail, scaled quail.
NEW YORK:					
Montezuma	Seneca	9-12-38	6,174	W	Geese, ducks, muskrats.
Wertheim 18/	Suffolk	6- 7-47	1,799	W	Waterfowl.
NORTH CAROLINA:					
Mattamuskeet	Hyde	12-18-34	50,178	W	Canada geese, whistling swans, ducks, herons, deer, reccoons.
Pea Island	Dare	4- 8-38	5,880	W	Greater snow geese, American brant, Canada geese, ducks, shorebirds, gulls, terns, otters.
Swanquarter	Hyde	6-23-32	15,501	W	Whistling swans, scaups, bufflheads.
NORTH DAKOTA:					
Appert Lake	Emmons	5-10-39	1,163	W-E	Waterfowl.
Ardoch	Walsh	6-12-39	2,761	W-E	Whistling swans, geese, ducks, white pelicans, muskrats.
Arrowwood	Stutsman, Foster	9- 4-35	15,934	W	Whistling swans, geese, ducks, prairie chickens, sharp-tailed grouse, pheasants.
Billings Lake	Cavalier	5-10-39	760	W-E	Waterfowl, upland game birds.
Bone Hill	LaMoure	5-10-39	640	W-E	Waterfowl.
Brumba	Towner	6-12-39	1,977	W-E	Waterfowl.
Buffalo Lake	Pierce	5-10-39	2,085	W-E	Ducks, sharp-tailed grouse, prairie chickens, pheasants.
Camp Lake	McLean	5-10-39	1,225	W-E	Waterfowl.
Canfield Lake	Burleigh	5-10-39	453	W-E	Waterfowl.
Charles Lake	Hettinger . . .	5-10-39	800	W-E	Waterfowl, upland game birds.
Chase Lake	Stutsman . . .	8-28-08	375	W	White pelicans, ducks, upland game birds, shorebirds, gulls.
Clearwater	Mountrail . . .	12-21-48	144	W-E	Waterfowl, sharp-tailed grouse, shorebirds.
Cottonwood Lake	McHenry	6-12-39	1,048	W-E	Waterfowl.
Dakota Lake	Dickey	5-10-39	2,768	W-E	Waterfowl.
Des Lacs	Burke, Ward . . .	8-22-35	18,841	W	Ducks, geese, grebes, sharp-tailed grouse, deer, muskrats.
Flickertail	Emmons	5-10-39	640	W-E	Waterfowl.
Florence Lake	Burleigh	5-10-39	669	W-E	Waterfowl.
Half-Way Lake	Stutsman	5-10-39	160	W-E	Waterfowl, pheasants.
Hiddenwood	McLean, Ward . .	6-12-39	568	W-E	Waterfowl, pheasants.
Hobart Lake	Barnes	6-12-39	1,840	W-E	Waterfowl, muskrats.
Hutchinson Lake	Kidder	5-10-39	477	W-E	Waterfowl.
Johnson Lake	Nelson, Eddy . .	5-10-39	2,007	W-E	Geese, ducks, sharp-tailed grouse, prairie chickens.
Kellys Slough	Grand Forks . .	3-19-36	1,620	W	Geese, ducks, Hungarian partridge, sharp-tailed grouse, muskrats.
Lac Aux Mortes	Ramsey	12-21-48	5,882	W-E	Geese, ducks, sharp-tailed grouse, prairie chickens, Hungarian partridge, muskrats.
Lake Elsie	Richland	6-12-39	635	W-E	Waterfowl.
Lake George	Kidder	6-12-39	3,119	W-E	Waterfowl, grouse.
Lake Ilo	Dunn	6-12-39	3,139	W	Ducks, sharp-tailed grouse, Hungarian partridge, pheasants.
Lake Moraine	Burleigh	5-10-39	320	W-E	Waterfowl.
Lake Nettie	McLean	6-12-39	1,800	W-E	Waterfowl, gulls.
Lake Zahl	Williams	6-12-39	3,561	W-E	Waterfowl, upland game birds, shorebirds, muskrats.
Lambs Lake	Nelson	6-12-39	1,287	W-E	Waterfowl, sharp-tailed grouse, Hungarian partridge.
Legion Lake	Mountrail . . .	6-12-39	1,038	W-E	Waterfowl, shorebirds.
Little Goose	Grand Forks . . .	5-10-39	359	W-E	Waterfowl, Hungarian partridge, pheasants, shorebirds.
Little Lake	Emmons	5-10-39	480	W-E	Waterfowl.
Long Lake	Burleigh, Kidder	2-25-32	22,732	W	Geese, ducks, Franklin's gulls, pheasants, Hungarian partridge, sharp-tailed grouse, shorebirds.
Lords Lake	Bottineau, Rolette	5-10-39	1,915	W-E	Waterfowl.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
NORTH DAKOTA (Cont.):					
Lost Lake	McLean	5-10-39	960	W-E	Waterfowl.
Lostwood	Burke, Mountrail	9- 4-35	26,107	W	Waterfowl, Sharp-tailed grouse, sandhill cranes, shorebirds, muskrats.
Lower Souris	Bottineau, McHenry	9- 4-35	58,571	W	Geese, ducks, grebes, white pelicans, prairie chickens, sharp-tailed grouse, deer, muskrats.
Maple River	Dickey	6-12-39	1,120	W-E	Waterfowl, prairie chickens, pheasants.
McLean	McLean	6-12-39	480	W-E	Waterfowl.
Minnewastena	Benson	5-10-39	144	W-E	Waterfowl, upland game birds.
Painted Woods	McLean	5-11-49	2,181	W-E	Waterfowl.
Pioneer Lake	Walsh	6-12-39	640	W-E	Waterfowl, Hungarian partridge, shorebirds, muskrats.
Pleasant Lake	Benson	6-12-39	1,001	W-E	Waterfowl, upland game birds.
Prairie Lake	Nelson	2- 3-41	320	W-E	Waterfowl.
Pretty Rock	Grant	2- 3-41	800	W-E	Waterfowl, upland game birds.
Rabb Lake	Rolette	12-21-48	261	W-E	Waterfowl.
Rock Lake	Towner	6-12-39	5,587	W-E	Waterfowl, muskrats.
Rose Lake	Nelson	12-21-48	1,280	W-E	Waterfowl, upland game birds.
School Section Lake	Rolette	12-21-48	680	W-E	Waterfowl.
Shell Lake	Mountrail	6-12-39	1,678	W-E	Waterfowl.
Sheyenne Lake	Sheridan	12-21-48	802	W-E	Waterfowl, prairie chickens.
Sibley Lake	Griggs	6-12-39	1,087	W-E	Geese, ducks, sharp-tailed grouse, prairie chickens, pheasants.
Silver Lake	Benson, Ramsey	12-21-48	3,348	W-E	Geese, waterfowl.
Slade	Kidder	10-10-44	3,000	W	Waterfowl, sharp-tailed grouse, prairie chickens, deer.
Snyder Lake	Towner	2- 3-41	1,550	W-E	Waterfowl.
Springwater	Emmons	2- 3-41	640	W-E	Waterfowl.
Stewart Lake	Slope	2- 3-41	2,230	W-E	Waterfowl, sharp-tailed grouse.
Stoney Slough	Barnes	2- 3-41	1,908	W-E	Ducks, Hungarian partridge, pheasants.
Storm Lake	Sargent	12-21-48	687	W-E	Waterfowl, muskrats.
Stump Lake	Nelson	3- 9-05	27	C	Whistling swans, geese, ducks, white pelicans.
Sullys Hill National Game Preserve.	Benson	6-30-14	994	BG	Buffalo, elk, deer, geese.
Sunburst Lake	Emmons	2- 3-41	495	W-E	Waterfowl.
Tewaukon	Sargent	6-26-45	4,710	W	Waterfowl, pheasants, muskrats.
Tomahawk	Barnes	2- 3-41	440	W-E	Waterfowl.
Upper Souris	Renville, Ward	8-27-35	32,045	W	Geese, ducks, sharp-tailed grouse, prairie chickens, pheasants, sandhill cranes, shorebirds, muskrats, deer.
White Lake	Slope	2- 3-41	960	W-E	Waterfowl.
Wildfang Lake	Burleigh	12-21-48	560	W-E	Waterfowl.
Wild Rice Lake	Sargent	12-21-48	779	W-E	Waterfowl.
Willow Lake	Rolette	12-21-48	2,848	W-E	Waterfowl, sharp-tailed grouse.
Wintering River	McHenry	2- 3-41	399	W-E	Waterfowl.
Wood Lake	Benson	12-21-48	280	W-E	Waterfowl, muskrats.
OHIO:					
West Sister Island	Lucas	8- 2-38	82	C	Great blue herons, black-crowned night herons.
OKLAHOMA:					
Salt Plains	Alfalfa	3-26-30	31,129	W	Geese, ducks, white pelicans, quail, Franklin's gulls, herons, shorebirds.
Tishomingo	Johnston, Marshall	1-24-46	13,449	W	Geese, ducks, herons, shorebirds, quail.
Wichita Mountains Wildlife Refuge.	Comanche	2- 2-05	59,099	BG	Buffalo, elk, antelope, Texas long-horned cattle, deer, wild turkeys, quail, ducks, Mississippi kite.
OREGON:					
Cape Meares	Tillamook	8-19-38	139	C	Shorebirds, band-tailed pigeons, black-tailed deer.
Charles Sheldon Antelope Range(see also Nevada) 5/	Lake	12-21-36	627	BG	Antelope, mule deer, sage hens, waterfowl.
Cold Springs 6/	Umatilla	2-25-09	2,618	W	Waterfowl, herons, shorebirds.
Hart Mountain National Antelope Refuge.	Lake	12-21-36	240,664	BG	Antelope, mule deer, sage hens, valley quail.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
OREGON (Cont.):					
Lower Klamath (see also California) 6/	Klamath	8- 8-08	1,340	W	Geese, ducks, herons, shorebirds, California quail.
Malheur	Harney	8-18-08	165,276	W	Whistling swans, ducks, sage hens, valley quail, sandhill cranes, white pelicans, herons, ibises, shorebirds, antelope, mule deer.
McKay Creek 6/	Umatilla	6- 7-27	1,813	W	Waterfowl, herons, shorebirds.
Oregon Islands	Curry	5- 6-35	21	C	Cormorants, gulls, murres, puffins.
Three Arch Rocks . . .	Tillamook	10-14-07	17	C	Cormorants, gulls, murres, puffins, sea lions.
Upper Klamath 6/ . . .	Klamath	4- 3-28	8,140	W	Geese, ducks, herons, cormorants.
PUERTO RICO:					
Culebra	Humaceo District	2-27-09	3,000	C	Bahama ducks, herons, gulls, terns.
SOUTH CAROLINA:					
Cape Romain	Charleston . . .	6- 6-32	34,016	W	Geese, ducks, wild turkeys, brown pelicans, shorebirds, rails, terns, deer, sea turtles, alligators.
Carolina Sandhills . . .	Chesterfield . .	3-17-39	40,518	G	Quail, wild turkeys, wood ducks.
Santee 12/	Clarendon, Berkeley	7-31-41	78,364	W	Waterfowl, herons, raccoons, otters.
Savannah (see also Georgia)	Jasper	4- 6-27	7,225	W	Waterfowl, herons, white ibises, otters, raccoons.
SOUTH DAKOTA:					
Bear Butte	Meade	12-21-48	436	W-E	Waterfowl.
Belle Fourche 6/ . . .	Butte	2-25-09	13,680	W	Herons, waterfowl, shorebirds, gulls.
Lacreek	Bennett	8-26-35	9,442	W	Geese, ducks, sandhill cranes, pheasants, sharp-tailed grouse, shorebirds, muskrats.
Lake Andes	Charles Mix . .	2-14-36	443	W	Geese, ducks, shorebirds.
Sand Lake	Brown	9- 4-35	21,451	W	Geese, ducks, pheasants, prairie chickens, Franklin's gulls, Hungarian partridge, white pelicans, cormorants, muskrats.
Waubay	Day	12-10-35	4,651	W	Ducks, geese, pheasants, Franklin's gulls, shorebirds, muskrats, deer.
TENNESSEE:					
Lake Isom	Lake, Obion . .	8-12-38	1,850	W	Ducks, herons, mourning doves.
Reelfoot 13/	Lake, Obion . .	8-28-41	9,273	W	Ducks, geese, herons, quail, mourning doves, muskrats, raccoons, mink.
Tennessee 3/	Henry, Benton, Humphreys, Decatur	12-28-45	49,510	W	Geese, ducks, herons.
TEXAS:					
Aransas	Aransas, Refugio	12-31-37	47,261	W	Whooping cranes, sandhill cranes, roseate spoonbills, egrets, herons, geese, ducks, wild turkeys, shorebirds, hawks, deer, peccaries.
Hagerman	Grayson	2- 9-46	11,429	W	Geese, ducks, herons, shorebirds, quail.
Laguna Atascosa	Cameron	3-29-46	38,759	W	Geese, ducks, herons, ibises, shorebirds, gulls, terns, doves.
Muleshoe	Bailey	10-24-35	5,809	W	Canada geese, ducks, sandhill cranes, scaled quail, shorebirds.
Santa Ana	Hidalgo	9- 1-43	1,981	G	Tree ducks, mottled ducks, herons, egrets, ibises, Mexican grebes, doves, red-billed pigeons, chachalacas, green jays.
UTAH:					
Bear River Migratory Bird Refuge.	Box Elder	4-23-28	64,899	W	Whistling swans, Canada geese, ducks, grebes, white pelicans, shorebirds, muskrats.
Locomotive Springs . . .	Box Elder	9-29-31	1,031	W	Waterfowl.
Strawberry Valley 6/ .	Wasatch	2-25-09	14,080	W	Waterfowl, sage hens.
VERMONT:					
Missisquoi	Franklin	12-21-48	1,941	W	Canada geese, ducks, woodcock.

See footnotes at end of list.

State and refuge 1/	County	Date established	Acreage	Class 2/	Primarily for--
VIRGINIA:					
Back Bay	Princess Anne	6- 6-38	4,589	W	Whistling swans, greater snow geese, ducks, shorebirds, muskrats.
Chincoteague (see also Maryland).	Accomac	5-13-43	8,827	W	Greater snow geese, American brant, ducks, shorebirds, gulls, terns.
Presquile	Chesterfield	6-12-52	1,250	W	Geese, ducks.
WASHINGTON:					
Columbia	Adams, Grant	9- 6-44	9,761	W	Waterfowl.
Columbia River	Walla Walla, Benton	8-28-28	8	W	Waterfowl, herons, terns.
Conconully 6/	Okanogan	2-25-09	933	W	Waterfowl, ruffed grouse.
Copalis	Grays Harbor	10-23-07	5	C	Cormorants, petrels, murres, auklets, guillemots, puffins.
Dungeness 14/	Clallam	1-20-15	235	W	Black brant, ducks, shorebirds.
Flattery Rocks	Clallam	10-23-07	125	C	Auklets, petrels, guillemots, puffins, shorebirds.
Jones Island	San Juan	3-30-37	179	C	White-winged scoters, band-tailed pigeons, guillemots.
Lenore Lake 6/	Grant, Douglas	3-10-32	6,201	W	Waterfowl, California quail, shorebirds.
Little Pend Oreille	Stevens	5- 2-39	42,716	BG	Franklin's grouse, blue grouse, ruffed grouse, deer, black bears.
Matia Island	San Juan	3-30-37	145	C	Cormorants, guillemots, harlequin ducks, band-tailed pigeons.
Quillayute Needles	Clallam, Jefferson	10-23-07	117	C	Petrels, auklets, puffins, cormorants, shorebirds.
Smith Island	Island	6- 6-14	65	W	Waterfowl, shearwaters, gulls.
Turnbull	Spokane	7-30-37	15,964	W	Ducks, geese, ruffed grouse, valley quail, shorebirds.
Willapa	Pacific	1-22-37	7,123	W	Black brant, Canada geese, ducks, shorebirds, blue grouse, black bears, black-tailed deer, raccoons.
WISCONSIN:					
Gravel Island	Door	1- 9-13	27	C	Herons, gulls, Caspian terns.
Green Bay	Door	2-21-12	2	C	Herring gulls, Caspian terns.
Horicon	Dodge	7-16-41	20,683	W	Canada geese, ducks, whistling swans, muskrats.
Long Tail Point	Brown	10-23-36	103	W	Waterfowl.
Necedah	Juneau, Wood	3-14-39	39,672	W	Canada geese, ducks, deer, ruffed grouse, sharp-tailed grouse, prairie chickens, beaver, muskrats, mink.
Trempealeau	Trempealeau	8-22-36	707	W	Waterfowl, American egrets.
Upper Mississippi River Wild Life and Fish Refuge (see also Illinois, Iowa, and Minnesota.	Crawford, Buffalo, Vernon, Trempealeau, Grant, LaCrosse.	6- 7-24	67,141	W	Ducks, herons, egrets, muskrats.
WYOMING:					
Bamforth	Albany	1-29-32	1,166	W	Waterfowl, shorebirds, antelope.
Evanston	Uinta	1-21-41	360	W-E	Waterfowl.
Hutton Lake	Albany	1-28-32	1,969	W	Waterfowl, shorebirds, antelope.
National Elk Refuge	Teton	8-10-12	23,648	BG	Elk, trumpeter swans, sandhill cranes, sage hens, mule deer, beaver, muskrats.
Pathfinder 6/	Natrona, Carbon	2-25-09	46,341	W	Waterfowl, shorebirds, antelope.

1/ Unless otherwise designated, add "National Wildlife Refuge" to the name of each area.
2/ C = Colonial, G = General, BG = Big Game, W = Waterfowl, W-E = Waterfowl - Easement.
16/ Area closed by Presidential Proclamation.
17/ 4,195 acres closed by Presidential Proclamation.
18/ 1,788 acres bequeathed the Service in life estate.

The following footnotes show the agencies on lands of which certain refuges of the Fish and Wildlife Service have been established:

3/ Tennessee Valley Authority.
4/ Forest Service, United States Department of Agriculture.
5/ Bureau of Land Management, United States Department of the Interior.
6/ Bureau of Reclamation, United States Department of the Interior.
7/ Department of the Army, Department of Defense.
8/ Central and Southern Florida Flood Control Districts control part of the land.
9/ Michigan Conservation Department.
10/ Bureau of Indian Affairs, United States Department of the Interior.
11/ Jicarilla Tribal Council and the Bureau of Indian Affairs.
12/ South Carolina Public Service Authority.
13/ Tennessee Department of Conservation.
14/ Coast Guard, Department of the Treasury.
15/ Truckee-Carson Irrigation District and Nevada Fish and Game Commission.

*CUSTODIAL WILDLIFE AREAS

State and area	County	Date established	Acreage	Primarily for--
MINNESOTA:				
Beltrami	Beltrami, Roseau, Lake of the Woods	3- 6-42	81,700	Upland game birds, deer, caribou.
Talcot	Cottonwood	6-15-39	805	Geese, ducks, white pelicans, pheasants.
MISSISSIPPI:				
Yazoo	Washington	1938	2,440	Waterfowl, upland game.
MISSOURI:				
Missouri	Boone	8- 8-40	2,250	Research in upland game, rodents, fur animals, and fish.
NEVADA:				
Railroad Valley	Nye	5- 2-34	133,397	Waterfowl, sage hens, shorebirds.
NEW YORK:				
New York . . . . . (10 sites)	Jefferson, Oswego, Schuyler, Tompkins, Chautauqua, Allegany, Livingston, Ontario, Yates, Madison, Delaware, Albany.	8-31-42	47,187	Upland game birds, fur animals.
NORTH CAROLINA:				
**North Carolina	Moore, Richmond, Scotland.	9-24-40	5,964	Quail, wild turkeys, deer.
SOUTH CAROLINA:				
Carolina Sandhills	Chesterfield, Darlington.	8- 8-40	44,550	Quail, deer, wild turkeys.
WISCONSIN:				
Necedah	Jackson, Monroe, Juneau, Wood.	5-28-41	58,098	Deer, grouse, fur animals.

*These custodial wildlife areas are Government-owned properties on lease to the various States. Part of them consists of lands purchased by the Resettlement Administration and the Soil Conservation Service in their land retirement program. Since the best use of these areas was for wildlife production, they were transferred to the Department of the Interior by Executive order and placed under the supervision of the Fish and Wildlife Service. All of these lands are actively administered for wildlife by responsible State agencies under long-term leases on the basis of plans approved by the Fish and Wildlife Service.

**The North Carolina area is under permit to the Department of the Army.

Interior--Duplicating Section, Washington, D. C. 27158

Lathrop 1
1952

K mf file

UNITED STATES
DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Pacific Region

Water Resources
Center Archives

209 S. W. Fifth Avenue
Portland 4, Oregon
July 2, 1952

Mr. Frank L. Lathrop
c/o Ray S. Smith
County Assessor
Yreka, California

Dear Mr. Lathrop:

It is indeed stimulating to have your letter of June 25, and the news of your current activities. The road ahead may be rough in spots, but your zeal and your experience in these situations will carry you through.

As far as our own situation is concerned: Soil conservation survey and land-capability classification has been completed in the Klamath SCD, and is nearly complete in Poe Valley and Langell Valley SCDs. Coverage, as of January 1, 1952, in these districts is shown on the attached Klamath County map. This represents the total extent of our surveys in this area.

I will be much interested in your progress and hope that you will keep us advised of developments.

Best wishes.

Sincerely yours,

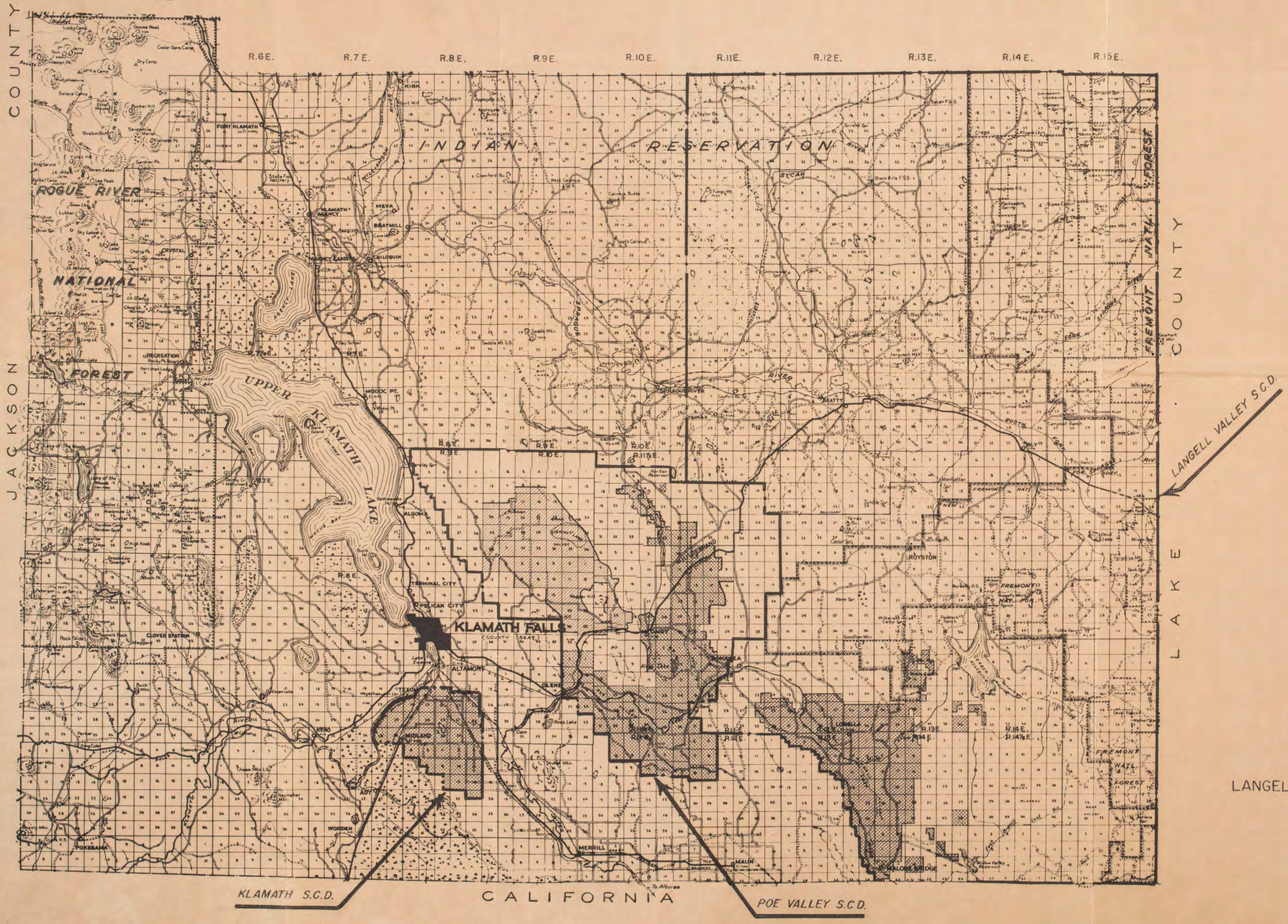
J. H. Christ

J. H. Christ
Regional Director

cc: J. S. Barnes
F. K. Muceus
F. A. Mark
S. W. Cosby

Surveyed during last calendar year.

Surveyed prior to last calendar year.



ACREAGES SURVEYED

LANGELL VALLEY S.C.D.

TYPE	A	B	OTHER*	TOTAL
Past year		46,328		
Previously				
Total to date		46,328		

*Explain

ACREAGES SURVEYED

POE VALLEY S.C.D.

TYPE	A	B	OTHER*	TOTAL
Past year	30,570			
Previously	51,890			
Total to date	82,460			

*Explain

ACREAGES SURVEYED

KLAMATH S.C.D.

TYPE	A	B	OTHER*	TOTAL
Past year				
Previously	20,440			
Total to date	20,440			

*Explain

ACREAGES SURVEYED

OUTSIDE S.C.D.

TYPE	A	B	OTHER*	TOTAL
Past year				
Previously				
Total to date				

*Explain

SOIL CONSERVATION SURVEYS

For farm and ranch planning

LANGELL VALLEY, POE VALLEY AND KLAMATH S.C. DISTRICTS

KLAMATH COUNTY

OREGON

As of December 31, 1951

(SOUTH HALF)

SOUTH HALF KLAMATH CO. ORE. 7-0-13633-18

U.S. DEPARTMENT OF AGRICULTURE

PACIFIC REGION

SOIL CONSERVATION SERVICE

Transcript of the State Water Resources Board meeting held July 18, 1952, pertaining to the Klamath River Basin Investigation.....

CHAIRMAN GRIFFITH: The "Klamath River Basin Investigation" you will find under Tab 5.

This is a letter addressed to me by the Secretary:

"At the June 6th, 1952 meeting of the State Water Resources Board the Secretary was directed to prepare a proposed work program for the Klamath River Basin investigation authorized pursuant to item 268.5 of the Budget Act of 1952.

"There is transmitted herewith a proposed work program together with budget proposals for the fiscal years 1952-53, 1953-54, and 1954-55. I concur in the conclusions and recommendations, and recommend approval by the Board."

Do you care to discuss this, or have you all read this?

MR. SWING: I haven't. I think it is pretty important.

CHAIRMAN GRIFFITH: Very important.

MR. SWING: It is a short report, isn't it? Maybe Mr. Edmonston can give it to us.

CHAIRMAN GRIFFITH: It is about seven pages -- eight pages. If we read the suggestion as to the scope and then the conclusion that might be ---

MR. SWING: Yes.

SECRETARY EDMONSTON: The authority for the investigation is given on page 3. It is a $50,000 budget item.

VICE CHAIRMAN ETCHEVERRY: That is just for the one year.

SECRETARY EDMONSTON: That is for the one year. A pre-

Water Resources Center Archives

vious report had been made last year recommending a three year investigation for $167,000. But this appropriation is just for the one year, $50,000. Mr. Berry is here and has charge of this investigation and report and he can speak on it.

CHAIRMAN GRIFFITH: Will you discuss this a little bit with us, Mr. Berry?

MR. BERRY: At the direction of the Board at the last meeting we conducted a further preliminary investigation of the Klamath River basin and made a field trip up there and visited the local interested public agencies. As a result of that investigation and the study that went with it we have prepared this report which outlines what we consider to be the proper scope of the investigation, the objective end of the scope of the investigation.

Now, I am going to, in effect, read portions of this report. In the first place there is a statement here on page 4:

> "The magnitude of the Klamath River Basin and the complexity of the questions involved in the objectives of the investigation, coupled with the fact that many of the basic data are lacking on which the answers to these questions must be founded, make it apparent that no comprehensive survey capable of leading to adequate answers to these problems can be completed in one or even two years. Therefore, the work program proposed assumes an investigation of the water resources of the Klamath River Basin covering

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three years, and requiring the following:"
Now, in the first place, we are going to have to collect, compile and review a great mass of data which is already available on the water resources of the Klamath River Basin. Prior reports and the other agencies, local and public agencies, and the United States Bureau of Reclamation have available a large volume of data as has the Division of Water Resources. We propose then a complete inventory of the water resources of the basin, which will be, because of the more detailed scope, permissible under this special investigation, be more detailed than we have been able to effect in connection with the state-wide investigation. That will require possibly the establishment of stream gauging stations, a comprehensive stream gauging program, aimed particularly at determining stream flow in those locations that are pertinent to possible development work.

The Klamath River Basin has several valleys that are potential or existing ground water areas, and we will have to conduct ground water investigations in these valleys -- one in Butte Valley, one in Shasta Valley and one in Scott Valley. Incidental to or, perhaps, as a part of, the inventory of the water resources we will conduct determinations of the quality of the surface and ground water with respect to their potential uses.

Now, one other phase of the investigation will be classification of all lands within the basin to determine

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such country done more than all other basin together

1 their suitability for irrigated agricultural and other
2 potential uses. A great deal of work has been done along
3 this line by the United States Bureau of Reclamation in
4 the upper Klamath River Basin where they are involved with
5 the Klamath project. It may be necessary for us to supplement
6 the line classification work they have done, and certainly
7 there will be additional work to do in other parts of the Klamath
8 River Basin.

such done

9 Now, we also, of course, will conduct cultural surveys
10 with the objective of determining present use of water in
11 the area, and with these basic data we will make an estimate
12 of the present water utilization and the ultimate require-
13 ments; and in this determining of the ultimate requirements
14 we will, of course, consider not only irrigation but the re-
15 quirements necessary for development of the other natural
16 resources of the basin, such as lumber and mineral resources
17 and fishing and reclamation, which are of considerable
18 importance in that area. So far as is necessary we will
19 study flood flow and means for their control. There are
20 local flood problems with the present development up there and
21 we will consider that. Finally, we will make surveys and
22 prepare plans, preliminary plans, and cost estimates for
23 development works and for the control of floods. We will
24 prepare a report on the Klamath River Investigation at the
25 conclusion of the three year study and will prepare an
26 interim report as of December 1, 1953, which will be largely

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limited to a consideration of the problems of the upper Klamath Basin. We estimate that an investigation of this scope will require, as I said, three years, and that it will cost in the total of about $117,000. This contemplates the $50,000 which was appropriated by the Legislature for the first year, about $75,000 for the second year, about $55,000 for the third year. We have an item, I think, of $5,000 in assessment for publishing the final report.

CHAIRMAN GRIFFITH: Mr. Berry, would there be any cooperative funds?

MR. BERRY: No, sir, not as I understand it. Now, I don't know of any cooperative funds that are available.

MR. HILL: Siskiyou County?

VICE CHAIRMAN ETCHEVERRY: Siskiyou County has on their own gathered a lot of data themselves.

MR. BERRY: That is correct.

MR. MEIKLE: The State of Oregon isn't interested in providing some funds?

CHAIRMAN GRIFFITH: May I call on Mr. Lathrop? Are you there, Bill?

MR. LATHROP: I am sorry, Senator Collier could not be here this morning. He is in Santa Barbara today. But he did stop here yesterday and talked to Bob over the telephone.. Since we saw you last we have had the pleasure of preliminary discussions with Governor McKay and State Engineer Stricklin at Salem last month in which both of them were very

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1 favorable to our present program of studying the entire
2 basin. He said, however, that whatever Klamath County --
3 which is the dominant County in the upper basin -- wanted
4 politically they could have, and they would have his full
5 support. So we returned the following day to Klamath Falls
6 and we had discussions with some of the Legislators and
7 others interested in the upper basin, including the manager of
8 the United States Reclamation Project. Monday of this
9 week Mr. Collier and I went before the Board of Supervisors
10 and told them of our program and invited them to a meeting to
11 be held in Klamath Falls in August next, somewhere between
12 the 17th and the 26th of the month, in which all of the five
13 counties in Klamath Basin Watershed would be present to go
14 with all of the Legislators from both States to see if we
15 can't establish an over-all policy for this study. As you
16 are both familiar, the basin is like your Tia Juana problem,
17 it is interstate, and we can't do much on our side of the
18 boundary. It is meaningless unless we have the full coopera-
19 tion of the Oregon side. The upper basin is where all the
20 water is produced --
21 MR. SWING: Say that again.
22 MR. LATHROP: The upper basin is where most of the water
23 is produced. I won't say "all" of it. However, when it
24 comes from California and goes around through Oregon and gets
25 back into California -- I am talking about most of the water
26 that is used agriculturally. Those waters, as you remember,

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were all ceded by the two States in 1905 to the Reclamation Service for a definite purpose which they have been 47 years today developing and have not finished.

MR. SWING: What is the significance of the word "ceded"?

MR. LATHROP: They ceded their sovereign rights.

MR. SWING: Under what form of assignment?

MR. LATHROP: Legislative enactment. Actual ceding the sovereign rights of the two states, went out in 1905 for all the water of the lower Klamath Lake, Clear Lake, Goose Lake, Upper Klamath, Lower Klamath -- joint actions at the request of the Federal Government to do specific things which to date have not been completed. We think they should have been completed a long time ago properly.

Now, that brings us to the problem: When you get in the upper basin the dominant owner up there is the Indian service under treaty rights to a vast area. They set ~~aside~~ ASTRIDE the Williamson River and the Sprague River, the dominant position for storage on the upper basin. That, however, promises to be corrected this year. Of course, Congress has seen fit to give the Indian his citizenship, and within the next 90 days they promise that all the agricultural lands in ~~North~~ FORT Klamath will be patented to individuals and they, in turn, can do as they see fit. Then they will probably sell it so it will get in hands that are progressive and hands that will do the development work and it will not be a Tribal Council saying "We are not ready to move, and until we are your hands are tied."

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The other thing we find a great shortage of on the Oregon side: There are no United States topog maps, there are no adequate maps because Oregon has not joined cooperatively as California has in that kind of mapping. There is being flown today, by a private firm ~~in~~ of Texas, for the State of Oregon Tax Commission all of the timbered areas in the upper basin. There has already been flown all of the agricultural lands, and that is the same basis Siskiyou County has used in its classification of its land and also the base we have used to map and compute all of our irrigated areas and the areas which can make beneficial use of water.

CHAIRMAN GRIFFITH: Mr. Devins:

MR. DEVINS: The Manager of the Klamath Reclamation Project told us two weeks ago that his department now contemplates the completion of their full basin report by May 30, 1954. They have stepped up their program considerably since we started to work.

CHAIRMAN GRIFFITH: Is this the report they started 37 years ago?

MR. DEVINS: Yes. They also started last year to make underground water studies by themselves in both states. We think those underground studies to be useful and it certainly should be a cooperative undertaking. There is no use of two agencies making underground studies with no correlation. We are very much in hope that we can find some underground water for Butte Valley and Red Rock Valley.

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As I say, the two counties having the most interest are Klamath County in Oregon and Siskiyou County in California, which have the largest areas of agricultural land. They have completed their studies of the lands which are already irrigated, and those lands which can make beneficial use of water. The Reclamation Service, of course, have completed that as to the lands within the project. The sad part about the Klamath Project as far as California is concerned is that to date there is only 16,000 acres in Siskiyou County that has gone to patent. The rest of it has gone into ~~game~~ GRAIN leases and bird refuges, still off the tax roll, and that is an extravagant use of water wherever it is. We would like to see that some arrangement could be made as soon as possible by Mr. Edmonston with the State Engineer of Oregon looking to some method of expediting mapping on the upper basin, particularly on the Oregon side.

CHAIRMAN GRIFFITH: Any questions?

MR. DEVINS: Well, we will be happy to work closely.

MR. SWING: What is the date of this meeting?

MR. DEVINS: It is somewhere between the 17th and 26th of August, next August, in Klamath Falls.

VICE CHAIRMAN ETCHEVERRY: Mr. Lathrop, are there large areas in Klamath County that --

MR. LATHROP: Agricultural lands?

VICE CHAIRMAN ETCHEVERRY: Yes, that are still not irrigated?

MR. LATHROP: Yes, particularly the Indian reservation land.

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VICE CHAIRMAN ETCHEVERRY: Well, they use quite a lot of water on some of their land, don't they?

MR. LATHROP: They use it the way nature uses it; they have not used it any other way. They have not used the small reclamation project that the Government put in for them, they have not made use of it.

VICE CHAIRMAN ETCHEVERRY: And then the project included the reclamation of Lower Klamath Lake, but that was abandoned.

MR. LATHROP: Yes, it was abandoned because they set a fire to it and they burnt it up. The lower Klamath Lake has the best lands in the basin.

MR. SWING: What was it that burnt up?

MR. LATHROP: They started to reclaim it and somebody touched a match to it to get rid of the tules. But the best land is still in the lower end of the lake bed.

VICE CHAIRMAN ETCHEVERRY: I thought they finally decided the best use of the land was for birds, ducks.

MR. LATHROP: The Wildlife people did that. The Reclamation don't agree with it and I don't agree with it.

VICE CHAIRMAN ETCHEVERRY: The Bureau of Reclamation agrees with it.

MR. LATHROP: No, no they don't. They do, maybe, as far as Washington is concerned, but they don't locally. Their soil man will tell you that's some of the best soil they had. I am speaking about the lower parts of the lower Klamath Lake. Upper Klamath Lake, of course, is marvelous agricultural lands

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and those have been dyked out. That was dyked out by the Power Company after 1917 when they made the contract with the Federal Government on control of the upper lake.

VICE CHAIRMAN ETCHEVERRY: I was under the impression that when the Government originally undertook to reclaim lower Klamath Lake that they saw a big body of tule land and they presumed that it was the same kind of tule land that we have in the Sacramento and San Joaquin Delta, and that when they investigated they found out there was a big difference, in that at this delta here we have the waters of the Sacramento and San Joaquin and silt are mixed up with the tules. But there was no silt. Practically all of the silt, if any, coming down the Williamson river, for instance, was deposited in the upper Klamath and then just clear water got down to the lower Klamath Lake. I was under the impression they gave it up because they found out those tule lands were no good.

MR. LATHROP: A very large volume of land down in the lower basin there that is now presently leased for grazing.

MR. HILL: Mr. Lathrop, I realize Senator Collier got that appropriation. When he talked to us he was very much interested in speed. He undertands, does he, the time that is going to be involved in getting and completing an adequate study of this?

MR. LATHROP: Yes. I think we will all agree on that program; the purpose of it, and the scope of it seems very adequate. We do feel, however, that we can expedite it materially.

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1 There have been two reports by the United States Army Engineers,
2 there has been one or two reports by the Forestry Service,
3 there has been one by the Federal Power Commission and there
4 has been numerous ones by the Reclamation Service which are
5 unpublished. When that data is all compiled and put together
6 I think it will show a very intelligent picture. That is why
7 I like that part of it to be expedited, so we might take a
8 look at what we need to do physically from an engineering
9 standpoint and a geological standpoint to fill in the gaps.
10 We find that there have been ground water studies completed
11 last December on the Oregon side, and that is as yet un-
12 published. It is very enlightening what it shows. We would
13 like to see more of them, especially on our side of the State
14 line.

15 CHAIRMAN GRIFFITH: Mr. Berry, you suggest that a program
16 would contemplate the use of all these data from the various
17 reports of -- that Mr. Lathrop refers to.

18 MR. BERRY: Certainly. That will be the first thing we
19 do, is to compile and evaluate the available studies to date.

20 MR. HILL: Isn't it true that in spite of all these reports
21 and so on there are a lot of those streams in which the flow
22 has never been consistently measured?

23 MR. BERRY: That is correct.

24 MR. LATHROP: That is on the upper basin?

25 MR. BERRY: Both the upper and the lower. Of course, the
26 upper basin has been more thoroughly investigated, far more

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thoroughly investigated than the lower basin.

MR. SWING: By the Reclamation Bureau?

MR. BERRY: That is correct.

MR. LATHROP: On both sides, or just on the California side?

MR. BERRY: I can't answer that.

MR. SWING: At the time of this ~~cessation~~ cession in the Federal Government, which is the word that sticks in my craw, was there any representation as to how much of the project was to be located in California?

MR. LATHROP: Yes. The acreages were all given in each valley and what they were going to do.

MR. SWING: How much of the project was to be in California?

MR. LATHROP: Most of it.

MR. SWING: Well, how much of it have we got now operating?

MR. LATHROP: I think their latest figure is 190,000 acres under irrigation in the entire project, and that takes in all of the lands along the LostRiver and its system as well as those around Upper Klamath Lake, Lower Klamath Lake and Tule Lake.

MR. SWING: How much is in California?

MR. LATHROP: Well, I haven't the figures in front of me.

MR. HILL: 73,000 acres.

SECRETARY EDMONSTON: These figures are given in the report.

MR. LATHROP: Their original project contemplated creation of power and the pumping of water out of Lower Klamath Lake to Butte Valley to irrigate 100,000 acres. To date nothing

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has been done in that regard except an engineering study.

MR. LATHROP: I happen to be rather familiar with this whole Klamath Basin because I made a study for the two States and the Federal Government in 1932 on these bird refuges. At that time I had the benefit of all of the documents that went with the establishment of every one of those refuges. I had President Hoover's aid in that regard and it was quite a thorough study as far as that particular purpose went.

MR. SWING: Has there been given away any California rights on Goose Lake or Pit River that you know of?

MR. LATHROP: Goose Lake was one of those ceded properties.

MR. SWING: What was the Federal Government going to do with Goose Lake? Was that to be part of a project?

MR. LATHROP: It was all to be put into the reclamation project under the 1902 Reclamation Law, which at that time --

MR. SWING: That was in connection with this Shasta Dam?

MR. LATHROP: Shasta Dam? No, no, that wasn't dreamed of in those days.

MR. SWING: It is a question as to whether California and Arizona are going to have to quarrel over the bones if the Federal Government has all the best meat and drumsticks and everything else. How much is left after you takeout what the Federal Government --

MR. LATHROP: We think there is ample water in the upper basin if it is properly used. It is a question of whether its natural flow or artifical controls is the thing we are shy of facts on.

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CHAIRMAN GRIFFITH: For the correction of the record you said California and Arizona.

MR. SWING: Well, I meant Oregon. I have in mind the feeling that I desire to avoid allowing to develop is another interstate feud as we have on the Colorado River with Arizona.

The local people in the north and the State Legislature of this State, the local people of Oregon, the State Legislature of Oregon, will take time by the forelock before a bitter controversy arises. We will have to have the Government sit in on it, of course, and ask the two Legislatures -- that is the ultimate -- each to appoint a Water Commission to negotiate an interstate treaty to which the Federal Government has to give its consent and probably they will have a representative sit in on the Commission as they have for the Federal Reclamation project. I compliment you and your people in taking the lead to try to get this set up and worked out as diplomatically as you can. As far as my one vote on this Board is concerned I shall vote consistently in favor of first putting in the hands of our negotiators all the cards that they can have to trade on, which means "What are the physical facts as to water, as to land, the things that this calls for", and that should be gotten as rapidly as possible. There is no use going into trade. Suppose you had cattle on your side of the line and I had cattle on mine and you didn't know how much cattle you had, and I didn't know how much cattle I had and we talked about trading. We wouldn't know what we are going to trade.

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The first thing to do is find out what the facts are on both sides, the resources of the water, where they come from, what land can be used. That's what we propose to do here. We should recommend to the Legislature to support Collier, in my opinion; we should recommend that they adopt this as a program and continue these appropriations until this thing is completed, and that they invite the State of Oregon to appoint a water Commission to deal with the Water Commission appointed by us, unless it can be done through the State Engineers up to a certain point. Finally, to negotiate a treaty the practice has been to appoint a Commission for the purpose of negotiating a treaty.

MR. LATHROP: Oregon is familiar with that because they sit on the Columbia Basin ~~border~~ COMMISSION.

CHAIRMAN GRIFFITH: That procedure has been suggested in your conferences, has it not?

MR. LATHROP: Yes. We find them most friendly and co-operative. We just find they have been backward in certain things.

CHAIRMAN GRIFFITH: Well, now, gentlemen, the matter of this report is before you with conclusions and recommendations that the report be adopted and, I presume, transmitted --

SECRETARY EDMONSTON: Here is the resolution here.

VICE CHAIRMAN ETCHEVERRY: Wouldn't the Legislature appropriate $50,000? Wasn't the Legislature under the impression that would complete the study?

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MR. LATHROP: No. Collier made the presentation, and he had full knowledge that this was only a commencement.

VICE CHAIRMAN ETCHEVERRY: How much of this work is already included in the studies for the State Water Plan? Haven't you made some studies regarding land classification?

SECRETARY EDMONSTON: That is correct.

VICE CHAIRMAN ETCHEVERRY: And Water Resources and water requirements?

SECRETARY EDMONSTON: That is true, but this supplements that work.

CHAIRMAN GRIFFITH: This is the suggested resolution. Let's read it:

"WHEREAS, pursuant to Item 268.5 of the Budget Act of 1952, the State Water Resources Board was authorized and directed to make a comprehensive survey of the water resources of the Klamath River Basin; and

"WHEREAS, at its meeting held July 18, 1952, the Board received and considered a report from its Secretary entitled 'Proposed Work Program for Klamath River Basin Investigation';

"NOW, THEREFORE BE IT RESOLVED by the State Water Resources Board that the report entitled 'Proposed Work Program for Klamath River Basin Investigation' is hereby approved for the Fiscal Year 1952-53 and for other years contingent upon

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appropriation of funds made therefor; and

"BE IT FURTHER RESOLVED that the Chairman is hereby authorized and directed to make transfer in the amount of $50,000.00 to the Division of Water Resources for use during the Fiscal Year 1952-53 in conduct of the work program of said report."

MR. HILL: I so move.

CHAIRMAN GRIFFITH: Do I have a second?

MR. COZZENS: Seconded.

MR. MEIKLE: Would you like to start this investigation before you know what cooperation you will have with Oregon?

MR. Hill: There is a tremendous amount to be done in California too.

MR. SWING: I think without regard to Oregon -- if we assume she was going to be hostile, which I do not at all, I think we should fortify Oregon negotiators, whomever they finally turn out to be, whether it be the State Engineer, or whether it be the Oregon-California Boundary Commission, we should get this data and get it ready in such shape that we can use it on negotiations and on trades. They have got to know the facts before they can enter into any negotiations.

CHAIRMAN GRIFFITH: Aside from that this carries out the will of the State Legislature.

MR. SWING: And the fact that it does it will encourage Oregon to take similar action.

CROCKER 181

MR. MEIKLE: California is just undertaking the investigation then?

MR. SWING: To start it, yes.

SECRETARY EDMONSTON: Mr. Meikle, it is planned -- at least I have in mind -- to get in touch with the engineers to see what can be worked out in getting the data in Oregon.

MR. MEIKLE: I understand that. I was wondering whether you want to pass that resolution before you did that or not. We have to have authority from the Board to --

MR. SWING: The Legislature has made the appropriation for that purpose.

SECRETARY EDMONSTON: That is a budget item, an appropriation to the Water Resources Board for this work.

MR. SWING: We were told to do it.

MR. MEIKLE: I understand.

SECRETARY EDMONSTON: So the State Engineer or the Secretary can't proceed to spend any of these funds without authority from the Board.

CHAIRMAN GRIFFITH: You heard the resolution. It has been moved and seconded. Those in favor signify by saying "Aye".

(Chorus of "Ayes".)

Contrary? The resolution is carried.

Thank you, Mr. Lathrop.

CROCKER 101

ADDRESS ALL
COMMUNICATIONS TO:
THE REGIONAL DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
REGIONAL OFFICE, REGION 2
P. O. BOX 2511
SACRAMENTO, CALIFORNIA

IN REPLY REFER TO:

2-730

AUG 13 1952

Lathrop 1
1952

Water Resources
Center Archives

Mr. Gordon Jacobs, Chairman
Siskiyou County Board of Supervisors
County Courthouse
Yreka, California

Dear Mr. Jacobs:

Since our July 17 meeting at Eureka, I have been thinking about the point you made that water has many uses in the Klamath Basin. As you indicated, one of the most important of these, particularly in Siskiyou County, is irrigation for the five arable areas located in the northern part of the county. I refer to the Oklahoma District, Red Rock Valley, Shasta Valley, Scott Valley, and Butte Valley. Since I was unable then to discuss the progress of our investigations in the Upper Klamath, I am taking this opportunity to outline their nature and scope.

We have identified 10 subareas in the Upper Klamath Basin containing irrigable lands. The work is nearing completion in the classification of lands for all these major areas. A more detailed type of land survey has been completed for Butte Valley than in the other areas of the Upper Basin. Some of this area, as you know, is now irrigated from wells. Field work is being conducted to survey the ground water resource as an alternative or supplement to an imported supply. By the end of this calendar year, this work will be completed. Our work on this valley is further along than any other of the identified areas outside of the Klamath Project. Sufficient engineering field surveys have been completed or are in progress for rough estimates on location and costs of conduits to furnish water to the irrigable areas in Siskiyou County. This technical information is available at our Klamath office for the use of your county in your own studies.

We have divided the Klamath Basin into two regions for the purpose of our investigations. The Upper Basin, on which a report is scheduled for the spring of 1954, is that part of the basin above Copco Dam but also includes the above five areas of Siskiyou County. In the Upper Basin water is presently used for wildfowl, irrigation, and power. The Klamath River from Copco Dam to its mouth, the Eel to the Smith

Rivers, and the intervening basins are covered in our Lower Klamath investigation. The land and water resources of this region are relatively undeveloped. Our report on this area is tentatively programmed for 1956. Thus, while we have divided the area into two parts, we are carrying on the same type of studies in both.

As you emphasized in your statement at Eureka, plans for the development of the Klamath Basin must consider all of the possible uses for water. An investigation of such scope, and covering such varied interests, obligates us to tap all available assistance from both public agencies and private groups. It is imperative that a full assessment of all the natural resources and the potentialities of these resources as they relate to the economic development of the areas be made. To assist us in this task, we hope to receive the advice of federal, state, and local agencies and private groups having special skills in their respective fields.

These cooperative studies will furnish the base for determining present and ultimate water requirements for all purposes. Once this base has been established, plans for water resource development keyed to the projected resource and industrial requirements can be proposed for consideration of official agencies and private organizations. It is my belief that such plans must recognize the balanced requirements for agricultural, industrial, mineral, recreational, and commercial purposes and the preservation and enhancement of the fishery and wild life resources of the Basin. We are investigating such resources as timber, minerals, water, and recreation of the area, but we do not know now what course the development of these resources might take if an abundant supply of energy at an attractive price were available to aid in the processing of timber and the smelting of ores known to exist in the Basin. Perhaps this is the ingredient necessary to release the commercial potentialities of the region.

I want to emphasize that in the Lower Basin the use of water for industry, including water for the usual purposes of irrigation and power, must not adversely affect its very important uses for recreational and commercial fisheries. In the upper part of the Basin, of course, we must balance an additional use not so evident in the Lower--that of the enhancement of the waterfowl resource. The two major purposes of irrigation and wildfowl enhancement and preservation, found in the Upper Basin, must be satisfied both as to immediate and future requirements as a basis for estimating the amount of stream flow remaining for power production below Keno. In this regard we are now working with the Indian Service and the Fish and Wildlife Service on a joint plan to take care of the present and future needs of waterfowl and the full irrigation requirements of the Klamath Indian Reservation.

Same

Since our knowledge of the Lower Klamath Basin and related streams is less than that of the upper area, we are depending heavily upon joint studies of such federal agencies as the Fish and Wildlife Service, the Bureau of Mines, the Department of Commerce, the Bureau of Public Roads, and the Geological Survey in the preparation of our report. We are also enlisting the assistance of corresponding State agencies and local interest groups. Recently, representatives of our planning staff met with the California State Division of Water Resources to exchange information both agencies now have on the full Klamath Basin. Since our investigations of the upper reaches of the Klamath Basin are fairly far along, we feel that we can contribute this to the State's investigation and thereby prevent duplication of effort. On the other hand, State agencies have much information on the Lower Basin that they are making available to us in our studies. At this meeting, we instituted methods of exchange of data in assignment of work at the field level to the benefit, we hope, of both investigations.

I am attaching a map delineating the Upper Klamath Basin which identifies in a preliminary fashion the 10 areas of possible development. We are still working on a similar map for the Lower Basin and related streams.

1 - 5 - Oregon
5 - Calif

I shall be glad to discuss this matter further with you whenever you wish, either in Yreka or here in Sacramento.

Sincerely yours,

Richard L Bolt

Regional Director

Enclosure

Lathrop 1
1952

Water Resources
Center Archives

Sept 12-1952

UNITED STATES OF AMERICA

Federal Power Commission

In the Matter of
THE CALIFORNIA OREGON POWER COMPANY

Project No. 2082

APPLICANT'S OPENING BRIEF

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1917

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UNITED STATES OF AMERICA

Federal Power Commission

In the Matter of THE CALIFORNIA OREGON POWER COMPANY	Project No. 2082

APPLICANT'S OPENING BRIEF

I.

STATEMENT OF FACTS

This brief is directed to the application of The California Oregon Power Company (hereinafter sometimes called "Copco" or "applicant") for a license for a proposed major project under Section 4(e) of the Federal Power Act, 16 U.S.C. Sec. 797(e).* The Application for License for Proj-

*The application proceeding, Project No. 2082, was consolidated for the purposes of a hearing with a show-cause proceeding, Docket No. E-6390, by Commission order dated May 1, 1952, issued May 13, 1952. At the hearing the Presiding Examiner instructed the applicant to direct its opening brief solely to the issues presented by the application. Official Stenographers' Report (hereinafter "R. .....") pp. 794-95.

ect No. 2082, known as Big Bend No. 2, located on the Klamath River in Oregon, is in evidence as Item A by Reference (R. 62-63). Its formal parts are not disputed; it shows that the applicant is a corporation organized under California law, authorized to do and doing business in Oregon as well as in California. Its Board of Directors authorized the filing of the Application for License (Item A, Ex. B).

1. The Klamath River Region.†

The Klamath River system has its headwaters in the Williamson River, whose source is in a spring located on the Klamath Indian Reservation. About twelve miles upstream from its mouth in Upper Klamath Lake, the Williamson receives its principal tributary, Sprague River. The Williamson also receives the flow of a number of smaller streams. Its total watershed is about 3000 square miles, of which some 1600 square miles are drained by the Sprague.

Upper Klamath Lake is a shallow body of water about twenty miles long and six miles wide with a surface area of approximately 70,000 acres. Its drainage area of approximately 3750 square miles produces an average annual runoff of about 1.6 million acre feet. The lake discharges at the city of Klamath Falls into a one-mile long connection known as Link River, which in turn discharges into Lake Ewauna, a body of water about two miles long and a half mile wide, which gradually narrows at its lower end and becomes Klamath River. The Klamath flows thence in a general

†The description of the basin and the irrigation project is taken in large part from the Klamath River "308" Report, Item C by Reference, R. 484.

southwesterly direction into California, and on to the Pacific Ocean.

Approximately 18 miles below Klamath Falls is Keno, which is a natural dividing point of the topography of the river basin. Above Keno is a high plateau, composed of some 8,000 square miles of broad, flat valleys separated by low mountain ranges. The area above Upper Klamath Lake includes some marshland. Below Keno and practically to the ocean, the river bed is in a rugged and winding canyon through mountainous country. The upper basin thus presents agricultural possibilities, while there is comparatively little tillable land in the 7500 square miles of the lower section.

2. The Klamath Irrigation Project.

The Bureau of Reclamation of the Department of the Interior established the Klamath Reclamation Project nearly 50 years ago. In 1905 the Oregon legislature ceded to the United States the waters of the Klamath to the extent necessary for the operation of the project as disclosed by plans filed with the State Engineer of Oregon. The project works were thereafter placed under construction, other project works were purchased and the project has since been operated by the use of water from Upper Klamath Lake and other waters in the region. Its presently irrigated acreage is 210,000 acres, of which 190,000 acres were irrigated in 1951 (R. 428), and it is estimated that there is a total irrigable acreage within the project of 233,000 (R. 428-29, 509).

3. The Contract of February 24, 1917 and Link River Dam.

The predecessors of the applicant owned various rights to the use of the waters of the Klamath for power purposes. It became apparent rather early in the history of the irrigation project that there would not be sufficient water to satisfy the power rights and also insure an adequate supply for irrigation unless storage facilities were created in Upper Klamath Lake. Accordingly, on February 24, 1917, a contract was made between California-Oregon Power Company, applicant's predecessor corporation, and the United States (Exhibit 1, in evidence R. 125), for the purpose of adjusting the water rights in the Lake and River between power and irrigation and providing the necessary storage. It provided that most of the company's water rights would be subordinated for the 50-year term of the contract to the needs of the irrigators; that Copco would build a dam on Link River, and convey the land upon which it was situated to the United States; and that Copco would regulate the level of the Lake between elevations 4143.3 and 4137. The applicant thereupon built Link River Dam, completing it in 1921 (R. 126) and caused the land to be conveyed to the United States (R. 126; Exhibit 1, Item 6).

In pursuance of the contract the applicant has, by use of the dam, regulated the water level of Upper Klamath Lake between the elevations specified in the contract. The purpose of lake regulation is to store the heavy spring run-offs in the Lake and use them for the operation of the downstream power plants in the low-yield months during the summer and autumn (R. 128). The plants on Link River itself are streamflow plants (R. 69, 128-29) but there is a regulating dam just below Keno used for better timing of

releases from Upper Klamath Lake for use at the peaking plants at Copco 1 and 2 just over the California line (R. 129).

In addition to assuring a water supply for irrigation in the Klamath Reclamation Project, the contract provides to project water users extremely economical power rates for pumping purposes for irrigation and drainage (Exhibit 1, par. 9) which power must be furnished by the applicant for the full term of the contract.

The contract expires in 1967. Unless its terms are extended by contract or otherwise, upon its expiration the parties, including the applicant, the United States and the irrigators, will be remitted to the same positions in which they were prior to 1917 with respect to power rates and water rights. It is obvious that doubt will be cast upon the water rights of project landowners, a subject upon which they have expressed grave concern (R. 632-667).

4. The Applicant's Electric System.

Copco is a public utility operating in seven counties in Southern Oregon and five counties in Northern California (R. 70; map following p. 5, Item A). It operates an integrated hydroelectric and fuel-electric generating system as follows: (1) five streamflow hydroelectric plants on the Rogue River in Oregon, total capacity 58,960 kilowatts; (2) five weekly-pondage hydroelectric plants on the North Umpqua River in Oregon, total capacity 85,000 kilowatts; (3) four streamflow plants and two annual storage hydroelectric plants on the Klamath River and its tributary, Fall Creek, in Oregon and California, total capacity 53,760 kilowatts; (4) a steam plant at Coos Bay, Oregon, capacity

15,000 kilowatts; (5) a series of four diesel plants in California, total capacity 885 kilowatts, used only in emergencies (R. 65-70, 121). In addition two pondage plants with a total capacity of 40,000 kilowatts are under construction on the North Umpqua River (R. 66-67).

NEED FOR ADDITIONAL CAPACITY.

This total capacity, approximating a quarter of a million kilowatts with its recent additional construction, has been insufficient in eleven out of twelve years in the recent past to meet system peaks (Ex. 50, col. 4), even as supplemented by such power as has been available for purchase. Demands have increased annually in the Klamath Falls area, and Copco has had to depend upon small plants and purchased power in order to meet demands (R. 185). Additional construction is justified, and indeed required, in this area to meet system peaks (R. 186) as well as to utilize the available water power resources.

It is estimated that in the near future system peak demands will rise so sharply that they will be doubled within seven years (Exhibit 50, lines 13, 221); and Copco will be able to supply this consumption growth only by a program of construction of new capacity, including Big Bend No. 2 (id. line 18) and within eight years some 120,000 kilowatts of additional hydroelectric capacity.

Copco has been able to purchase some dump power in recent years (R. 71-73, 200) and has recently arranged for 15,000 kilowatts of firm power from Pacific Gas & Electric Company (R. 199). Some "if, as and when" energy has been available at peak hours and has therefore assisted in meeting critical demands, but even it is not available on a long-

term basis (R. 764-768). In fact, no additional firm power is available at all for purchase on economical terms (R. 199) from any producers in the region, including Pacific Gas & Electric Company, Bonneville Power Administration and the Bureau of Reclamation (R. 203-05, 763, 765, 769-70, 771-72).

Nor does a fuel-electric plant offer an economical alternative to the construction of new hydroelectric capacity (R. 174). The value of hydroelectric energy at Big Bend No. 2 would greatly exceed that of any fuel-powered alternative source (Exhibits 52, 53, 55; R. 748).

5. Present Utilization of Water Resources.

The principal purpose of lake regulation is to furnish annual storage for the operation of the Copco 1 and 2 plants (R. 128) and the waters released at Link River Dam have been sufficient for this purpose in most years of record. They are also utilized on the small streamflow plants on Link River and at Keno. However, there has been no development whatever of the 1460 feet of available head between Keno and Copco, and the waters released at Keno regulating dam flow unused into Copco Lake.

6. The Comprehensive Plan of Development.

The Big Bend No. 2 project is a part of a proposed comprehensive development of the waterpower resources of the river between Keno, Oregon and Copco, California, at both of which places the applicant owns and operates existing hydroelectric plants.

The proposed plan is that best adapted to develop, conserve and utilize in the public interest the water resources

of the region. The comprehensive plan proposed by the applicant will, by means of a series of seven plants, develop all the available head on the Klamath River between elevations 4084′ and 2625′ (Item A, p. 2; R. 132-34). Applicant will begin construction of Big Bend No. 2 as soon as a license is issued (id. p. 4), complete it within 18-24 months (R. 196) and proceed with the remainder of the comprehensive plan as soon as it can be integrated into applicant's system (R. 197). This development will result in the fullest possible utilization of the water power of the stream between applicant's existing plants (R. 135), and will develop a greater head of power than that proposed to be utilized in the Klamath River "308" Report (R. 685-86, 688-89).

Alternative plans of development comprising fewer power sites were considered by the applicant but rejected because longer conduits would adversely affect the economics of the project (R. 197-98). The project will adequately develop both the head and flow available (R. 686).

Not only is the Big Bend No. 2 project an integral part of a comprehensive plan for the development of the Klamath, but it also dovetails into the existing developments both above and below its site and will be operated by the use of the same waters without diminution of the flow (R. 130, 131, 187); the proposed project, in effect, is but another step in a comprehensive development already initiated by the applicant's existing plants (R. 710).

7. Big Bend No. 2 Project.

LOCATION AND GENERAL DESCRIPTION.

Big Bend No. 2, for which a license is now sought, consists as proposed of a concrete gravity-type diversion dam

approximately 310 feet long to divert the waters of the Klamath at elevation 3628′; a water conduit 4440 feet long consisting in part of steel pipe and in part of concrete lined tunnel; a steel penstock 600 feet long; a surge chamber; and a powerhouse with tailwater elevation 3330′. The site is in Sections 12 and 13, T4OS R6E, W.M., near the city of Klamath Falls, Oregon.

The proposed electrical equipment consists of two 25,000 kilowatt generators with 37,000 horsepower turbines at elevation 3338′, six 10,000 kva transformers for converting the generator output to transmission voltage, a spare transformer, a control house, and a short transmission line to applicant's existing Line No. 18 (Item A, pp. 2-4; R. 136-37).

PUBLIC LANDS AFFECTED.

The proposed project is located in part upon 1380 acres of public lands of the United States in T40S, R6E and T40S, R7E, W.M. (Exhibit F to Item A). The value of these public lands is $10-$15 an acre (R. 138).

FINANCIAL ABILITY.

The cost of construction of the project would be in the neighborhood of $9 million (Exhibit N to Item A; R. 706). The applicant has an authorized capital stock of $65 million and is well able to finance the Big Bend No. 2 project by security sales supplemented by bank loans (Exhibit G to Item A).

ENGINEERING FEASIBILITY.

The proposed project is entirely feasible from the engineering standpoint (R. 687, 706). The spillway capacity is

25,000 cubic feet per second, or more than three times the highest flood of record (R. 683-84) and the proposed structures are adequate with respect to safety, including stability against sliding or overturning under both normal and flood water conditions (ibid.). No other power site would be adversely affected (R. 686).

The hydraulic turbine and generator system proposed to be installed is also adequate from the engineering standpoint (R. 686-87). The preliminary designs conform to good engineering practice (R. 702) and the equipment is appropriate (R. 703).

The design is not unique or unusual (R. 707) and in fact there are numerous projects on the Pacific Coast of similar type (R. 706).

II.

EFFECT OF BIG BEND NO. 2 ON STREAMFLOW

The applicant proposes to divert a *maximum* of 2500 cubic feet per second of water (Item A, p. 4) at the diversion dam. Of course, that amount of water is rarely available in continuous flow at the site of the project (Chart accompanying Exhibit I to Item A). However, 1250 second feet has historically been available half the time (ibid.) and the applicant's plan is to store this flow for use on a full capacity, 50% load factor basis (R. 130) for meeting system peak demands; the result would be that the volume of streamflow would remain unaffected (R. 131).

The applicant proposes to release at the diversion dam a minimum continuous flow of 50 second feet (Exhibit H to Item A; R. 145). The Oregon State Game Commission has requested a larger release (Petition for Leave to Intervene,

par. 10; R. 326). Copco is willing to cooperate with the Game Commission in determining what releases and stream improvements are necessary to protect fish life (R. 148) and this position appears to be satisfactory to the Game Commission, which has never had any difficulty in reaching agreement with Copco on such questions (R. 329-30). The applicant is also willing to make the other improvements requested by the Game Commission (R. 145-48), which will remove that Commission's objections to the project (R. 327).

The proposed project will in no way affect any possible utilization of the water resources of the region for navigation, irrigation, reclamation, flood control or municipal water supply since such uses are not feasible in the Big Bend area (R. 149-50).

III.

COMPLIANCE WITH STATE LAWS

The right to appropriate and use water in Oregon for generation of electricity is governed, so far as state law is applicable, by the Hydroelectric Act of 1931, Oreg. Comp. Laws Anno. Title 119, chap. 1.* Sec. 119-102. The Act creates a Hydroelectric Commission, empowers it to issue licenses for the securing of water rights and the construction of hydroelectric projects, and provides for the filing of applications for preliminary permits and licenses, in terms obviously modelled upon the Federal Power Act. Secs. 119-104, 106(b), 107, 109.

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*Copies were submitted to this Commission in connection with Project No. 1927 (Exhibit C to Item A).

Of course, it is not a prerequisite to the issuance of a federal license that the applicant actually secure an Oregon license, for this would lead to the duality of control condemned by the Supreme Court in *First Iowa Co-op. v. Federal Power Commission,* 328 U.S. 152 (1946). Applicant has complied with Oregon law "with respect * * * to the appropriation, diversion and use of water for power purposes * * *" (F.P.A. Sec. 9(b), 16 U.S.C. Sec. 802(b)) by filing an application for the Big Bend No. 2 project with the Oregon Hydroelectric Commission (Exhibit 14 in evidence, R. 185). Although there is no evidence in the record that the Oregon Commission has issued an order granting a license pursuant to that application, it is not necessary, nor indeed would it even be material, under the *First Iowa* case, to show what action any state agency has taken. The Supreme Court there said,

> "To require the petitioner to secure the actual grant to it of a state permit * * * as a condition precedent to securing a federal license for the same project * * * would vest in the [state agency] a veto power over the federal project * * *" (328 U.S. at 164).

In essence the Supreme Court's view was that Section 9(b) of the Federal Power Act requires the applicant for a federal license to show that it has done all that it can do toward fulfilling the import of the state law; but it does not require applicant to show any action by any other person or body, including the state agency. Applicant by filing its application before the Oregon Hydroelectric Commission has done all that the state statute requires or permits it to do, and has thereby fulfilled the requirement of Sec. 9(b),

F.P.A., with respect to appropriation, diversion and use of water for power purposes.

The application here (Item A by reference) sufficiently demonstrates compliance with state law in the other respects mentioned in Section 9(b).

Ownership of Water Rights.

There are in evidence ten documents* showing applicant's ownership of water rights for its existing hydroelectric plants on the Klamath River at Eastside, Westside, Keno, Copco No. 1 and Copco No. 2. The Oregon Hydroelectric Act is somewhat unusual in its provision that the Hydroelectric Commission, primarily a licensing and regulatory body, also has power to issue licenses "to appropriate * * * waters within the state * * * [for] the generation * * * of electricity." (Sec. 119-106(b)).

Before the year 1909 water was appropriated for hydroelectric purposes in Oregon by the posting of a notice and the recordation of the notice and a map, the right being actually acquired when the ditch was surveyed and located and the notice posted and recorded. B. & C. Comp. Secs. 5022-5030; see *Grande Ronde Electric Co. v. Drake,* 78 Pac. 1031 (1905). Or the appropriator could make a common-law appropriation simply by diverting the water and actually applying it to beneficial use. See *State ex rel. Van Winkle v. People's etc. Hydro. Corp.,* 278 Pac. 583 (1929).

In 1909 Oregon adopted its Water Code (O.C.L.A. Title 116, chap. 4) as the exclusive method of appropriation of water. Sec. 116-402. An application was to be filed with the State Engineer, the date of filing fixing the priority, and

*Exhibits 3 through 13, less 11.

the completion of the work perfected the right. Secs. 116-402, 419, 421, 426.

The 1931 Hydroelectric Code now provides that it furnishes the exclusive method for acquiring rights to appropriate water for hydroelectric purposes. Sec. 119-102. The date of filing the application determines the priority. Sec. 119-107. Copco's application has been on file for more than a year. Exhibit 14 in evidence, R. 185.

In the *First Iowa* case, 328 U.S. 152 (1946) the Supreme Court carefully compared the provisions of Section 27 of the Federal Power Act with those of Section 9(b) of that Act. In summary, the Court held: (1) Section 27 expressly saves certain state laws relating to use of water ("* * * laws of the respective states relating to the control, appropriation, use or distribution of water *used in irrigation or for municipal or other uses* * * *") (Emphasis added.) As to such laws, final authority rests with the states; but all laws not so saved are superseded by the Federal Act. (2) A state license cannot be required as a prerequisite to a federal license since there must be no duality of control. (3) The requirements of Section 9(b) ("* * * laws of the State * * * with respect to * * * the appropriation, diversion and use of water for power purposes * * *") are merely for the information of this Commission; and the applicant need show compliance only so far as practicable to it.

The *First Iowa* case is thus interpreted in the Commission's regulations, Sec. 4.41, requiring the applicant to show "the nature, extent and ownership of water rights * * * together with satisfactory evidence that the applicant has proceeded *as far as practicable* in perfecting its rights * * *" (Emphasis added.)

Manifestly, under the Oregon Hydroelectric Code (as contrasted with the prior law of Oregon) an applicant for a license for a hydroelectric project has complied with state law to the farthest practicable extent when it files its application. All that remains to be done, even under state law, is for the Hydroelectric Commission to issue the certificate; its function is thus ministerial only, for in all respects in which the Hydroelectric Commission has discretion, the provisions of the state statute are superseded by the Federal Power Act.

Rights of Irrigators and Indians.

Various testimony was adduced at the hearing in expressed opposition to the granting of a license based on considerations of possible future water use in areas in or adjacent to the southeasterly portions of the Klamath Reclamation Project. R. 627, 632, 637, 639, 640, 645, 649, 655, 657. We are not concerned here with such testimony so far as it relates to lands removed from the project area, for such lands are without any right or priority to the use of water from the Klamath River; there is no evidence in the record of any steps taken to acquire any such right by contract, appropriation or otherwise.

not correct or complete

So far as lands presently irrigated are concerned, as well as nonirrigated lands within the project, the irrigators are fully protected in their water supply, for the contract of February 24, 1917 (Exhibit 1) provides that the applicant shall not use water for power purposes when it is required for irrigation use upon project lands (item 4, par. 10). The present and historical supply of water in the Klamath system is and has been sufficient for irrigation of all present

and future lands in the project as well as for economically feasible operation of the Big Bend project even in the most adverse water year of record (R. 428-29, 509, 775-783; Exhibit 51).

There is no intimation in any of the testimony presented on behalf of the Klamath Indians that there ever has been or now is any interference between the water uses made by the Indians and the existence of a sufficient supply of inflow into Upper Klamath Lake, there to be stored by Link River Dam. The Indians are, of course, entitled under their treaty to the right to reasonable uses of water on the Reservation for their own purposes; on the other hand, they are not entitled to make unreasonable uses or uses which are beyond the purposes of an Indian Reservation; nor are they entitled to lay claim to fantastic amounts of water for future purposes and forever withdraw such waters from beneficial use. E.g., *United States v. Wightman,* 230 Fed. 277 (D. Ariz. 1916). There is no testimony in the record that any usage of water on the Reservation is planned, or even proposed, which would materially affect the downstream supply.

IV.

ECONOMIC FEASIBILITY

It has already been shown that the applicant is in dire need of peaking capacity and will have no difficulty in marketing the output of the Big Bend No. 2 project (supra, pp. 6-7). The value of the energy produced by Big Bend will result in a profitable operation (R. 749).

The capacity of the proposed project was placed by the applicant's consulting engineers at 50,000 kilowatts, based

on considerations of available water and head and capacity vs. energy costs (R. 175; Exhibit 11). While the unit cost of the output would be nearly a mill more in a 50,000-kilowatt plant than a plant of 40,000-kilowatt capacity, the additional capacity will be attained at an increment cost of only $77 a kilowatt (R. 297; Exhibit 11, Col. 2) and the applicant's need is for peaking capacity (R. 186). A new plant of this capacity, together with the additional construction now authorized or planned, will greatly assist in carrying system peaks for the next few years (Exhibit 50, lines 16-18).

The water supply available is ample for the proposed use. Big Bend No. 2 simply represents an additional utilization of the same water resource which the applicant has used for many years at its Copco plants in California (R. 130, 187) and which it possesses a legal right to continue to use (Exhibits 12, 13). Availability studies used by company engineers conservatively assumed only a 70% normal year as a basis for planning construction (R. 177) based on historical irrigation uses—i.e., based on actual flow data which automatically took such uses into account (R. 280). So conservative is this estimate that if all irrigable lands in the Klamath Project are put under water (about 233,000 acres—R. 428-29, 509) there will still be a sufficient supply of water to make the Big Bend No. 2 project economically feasible (R. 778-83).

V.

THE POSITION OF THE BUREAU OF RECLAMATION

Availability of Water.

Testimony offered on behalf of the intervener Chapman (Bureau of Reclamation) and related to water supply avail-

able in the Klamath region falls into two categories: historical and projected uses in the Klamath Irrigation Project*, and possible future uses on non-project lands.†

With respect to the first question, the Bureau's own evidence is that the history of the Project has been one of drainage problems and disposal of excess water (R. 340-41, 349) to at least as great a degree as it has been one of irrigation problems; that it has been necessary to set aside a portion of the project area as a "sump" and even to construct a diversion channel so that excess water could be dumped into the Klamath River (R. 350). Nor has water usage on the project exceeded expectations: when the project was authorized in 1905 it was anticipated it would cover 236,000 acres (R. 338, 339); to date 210,000 acres have been placed under water (R. 428) and the ultimate limit is now placed at 230,000 to 233,000 acres (R. 429, 509) of which only 90% will be irrigated in any one year (R. 450). Thus the annual use of water will be upon some 207,000 acres (R. 711, 716, 749, 775). Even after fulfilling all irrigation needs applicant's Copco plants have been profitably operated for some 30 years with a water capacity of 2600 second-feet (R. 130, 182, 190) and the Big Bend No. 2 project will also be economically feasible on a high capacity, low load factor basis, even in adverse years and after having met the future irrigation needs (R. 190, 743-44, 746-47, 748, 749).

Bureau Power Development Plans.

The second principal point to which Bureau testimony was directed is the Bureau's future plans for possible de-

*E. L. Stephens, Project Manager, R. 335 et seq., 428 et seq.

†P. D. Dickinson, Assistant Regional Director, R. 494 et seq., 538 et seq.

velopment of the water resources of the Klamath region. We use the word "plans" for lack of a better; the Bureau has in fact no real plans, even after 47 years in the Klamath Basin, for comprehensive development of its river resources (R. 539-40, 542, 546, 548, 550, 551, 555, 561, 563-64). On the contrary the record shows affirmatively that the Bureau *may never undertake any development whatever of these unused water resources.* The statements made by Bureau officials represent nothing more than "possibilities". So far as appears from this record, Congressional authorization for any further development has never been asked (R. 540-41), much less received. The "possibilities" which the Bureau urges on the Commission do not even take into account prior rights which would have to be left intact (R. 557-58).

Standards for Evaluating Bureau Testimony.

It is apparent from the Bureau's evidence that any development to be undertaken by it is indefinitely far in the future, and is contingent on many uncertainties, not the least of which are Congressional authorization and appropriation of funds. The applicant, unlike the Bureau, is financially able to proceed and equipped with a detailed plan for Big Bend No. 2, a comprehensive plan of development, and a willingness to proceed at once.

Moreover, there is nothing in this record which enables the Commission to determine the economic or engineering feasibility of the Bureau's development; no showing as to when the consumers in the area will get the benefit of power developed on the Klamath; nothing to indicate that the Bureau even has a market for power, while the applicant's

critical need for peaking capacity has been shown. The net result is that all of the factors of public interest and prompt and economical development of the water resources of the region point squarely to the granting of the license. If the views of the Bureau are acquiesced in, the result is indefinite delay in utilization of the waters, and, if the project is ever built, a single-purpose, non-integrated project with a limited market and wholly lacking in economic justification.

VI.

THE OPERATION OF LINK RIVER DAM

The Big Bend No. 2 project will use the same water supply as that now used at the applicant's Copco plants in California, namely, the water released by the applicant from Upper Klamath Lake in the exercise of its contractual right to operate Link River Dam (R. 710). The continuance of this historical method of regulation at Link River Dam is necessary in order to make possible the operation of the Big Bend No. 2 development (R. 190) as well as to assure a continued supply of water for the present operations of the Copco 1 and 2 plants. It would be idle for this Commission to issue a license for the Big Bend project without at the same time making provision for the continuance of that regulation for the period of the license.

Benefits of Lake Regulation.

The operation of Link River Dam by the applicant is beneficial to every interest concerned with the waters of the Klamath. It protects the United States in that the water rights of the applicant are subordinated to those of the

United States for the term of the contract, and no question can arise between the parties as to priorities of use for power on the one hand and for irrigation, the sole purpose of the Klamath Reclamation Project, on the other. The existence of the contract assures the continued existence and eventual completion of the project by providing for furnishing of water to all project lands. Lake regulation especially benefits irrigators in the project, not only by assuring them a continuing supply of water but also by furnishing to them cheap power for use in connection with irrigation and drainage of project lands; it virtually guarantees to them that their water rights will not be drawn in question. It benefits the public by effecting the most efficient distribution of a valuable public resource and assuring the production both of farm products and electric energy. Operation of the dam permits the applicant, not only to use the Lake for storage in periods of normal runoff, but also to use it as a power reservoir to ameliorate the effect of a low water supply. Through applicant's experience in this operation, when water supply forecasts indicate below-normal availability, low cost power can be purchased and water which would otherwise be released from Upper Klamath Lake can be conserved for production of peaking energy when needed (R. 188-89). Economies can thus be effected, also, in the public interest by obviating the necessity of calling into use high-cost fuel-electric capacity (R. 189).

In addition, the States of Oregon and California are beneficiaries of this arrangement, since it makes an equitable apportionment of the water resources of the River between uses in the two States, and prevents disputes between the States or their citizens.

If this present beneficial allocation of the water resources is continued, all interests will be fully protected as in the past.

Detriments Resulting from Discontinuance.

On the other hand, if the present method of operation of Link River Dam by the applicant is discontinued, no one can possibly benefit; all will be losers.

The applicant owns a number of water rights along the Klamath River at its various hydroelectric plants, including 205 second-feet at Westside on Link River, the so-called "Moore Rights" (Exhibits 3, 4; R. 154-55); 1000 second-feet at Eastside on Link River (Exhibits 5, 6, 7; R. 157-60); 812 second-feet at Keno on the Klamath River in Oregon (Exhibits 8, 9, 10; R. 162-64); and 2600 second-feet at Copco 1 and Copco 2 in California (Exhibits 12, 13; R. 130, 178-82, 301). Most of these rights were subordinated to irrigation use for the term of the contract with the United States (Exhibit I, Supplemental Contract of Dec. 10, 1920, par. 10).

The Copco plant water rights are governed by California law (Exhibits 12, 13) which requires that the water resources of that State be put to beneficial use to the fullest extent of which they are capable and limits both riparians and appropriators to reasonable and beneficial use of water (Const. Cal. Art. XIV, Sec. 3, L. 1951 xc). While Oregon has ceded to the United States the right to use the waters of the Klamath (Exhibit 25) to the extent that such waters were actually put to beneficial use within the time and in the manner provided by the ceding statute (Exhibit 2), California has made no such cession. California as parens patriae is entitled to an equitable division of the waters of

the Klamath River, reflecting the appropriations made in California, and protecting the established economy at Copco based on existing use of water. *Hinderlider v. La Plata River etc. Co.,* 304 U.S. 92 (1938); *Nebraska v. Wyoming,* 325 U.S. 589 (1945).

The waters of the Klamath are presently flowing unused between Keno and Copco, and no one except the applicant has any present plans for putting them to beneficial use. The applicant is prepared to commence immediately a project for the complete utilization of such waters in the public interest; other interests are sufficiently protected by the contract (Exhibit 1). If the beneficial allocation of the waters made by the contract is disturbed, not only will the water rights of irrigators in the Klamath Project be jeopardized from the point of view of assertion of private priorities, but also the State of California would be compelled to assert the rights of all of its citizens, including applicant, whose economy depends on continued river flow (e.g., R. 95-96, 100-101, 107-09, 266-270). The outcome could only be prolonged dispute and eventually litigation, which would delay indefinitely the development, conservation and utilization of these water resources, and result in lessening the rights now enjoyed by irrigators.

threat

Applicant's Willingness to Continue the Arrangement.

Applicant has a contractual right to continue to operate Link River Dam until February 24, 1967 (Exhibit 1, par. 1). Applicant has always believed, and now believes, that a wise policy of water conservation for beneficial use will require a continuance of that operation after the expiration of the contract (Item B by Reference, p. 50). In that con-

nection applicant is willing to comply with the terms of the contract for an additional full period of 50 years, whether the beneficiary of the arrangement be the United States (R. 190-91) or any group of water users which may succeed to the United States (R. 191, 252-53). Further, Copco is willing to abide for such extended period by the clauses of the present agreement which offer extremely economical pumping rates to irrigators (R. 191) and which subordinate certain of the company's water rights to the United States for the benefit of those to whom it supplies water (R. 191-92, 253). Thus the irrigators in the project would be in the same position as they now are with respect to water rights (R. 192) while if the arrangement for regulation at Link River Dam is terminated, their priorities will be placed in doubt. In this connection it may be pointed out that the rights of the United States, and therefore of the purchasers of the water, which are fully protected by the contract, are themselves in doubt aside from the contract; applicant has prior rights of its own; and the most that can be said for the rights of the United States is that they are limited to the 1909 filings with the State Engineer of Oregon and the beneficial uses to which the water has been with due diligence put upon the project as so delimited (Exhibit 2).

Jurisdiction of the Commission.

The Federal Power Commission has jurisdiction "to issue licenses * * * for the purpose of * * * operating and maintaining dams * * * upon any part of the public lands and reservations of the United States * * *" (Federal Power Act, Sec. 4(e), 16 U.S.C. Sec. 797(e)). Link River Dam is located upon lands to which title has been conveyed to the

United States, and the Commission has, therefore, power to license its operation and maintenance by applicant.

Furthermore, the Commission has power "to issue licenses * * * for the purpose of * * * operating and maintaining * * * reservoirs * * * or other project works necessary or convenient * * * for the development * * * and utilization of power * * * upon any part of the public lands and reservations of the United States * * *" (ibid.). "Project" means complete unit of development, consisting of all dams and all storage or forebay reservoirs directly connected therewith, and all dams and reservoirs the use and occupancy of which are necessary or appropriate in the maintenance and operation of the development; "Project works" means the physical structures of a project. Federal Power Act, Sec. 3 (11, 12), 16 U.S.C. Sec. 796 (11, 12). Link River Dam is accordingly a project work which is not only appropriate but vitally necessary to the operation and maintenance of the Big Bend No. 2 project, and over which the Commission has licensing jurisdiction.

this does not apply to lands ceded by a state

The applicant therefore submits that this Commission should issue a license for the Big Bend No. 2 project which incorporates the terms of paragraph 3 of the contract of February 24, 1917, as amended and supplemented, authorizes and directs the applicant to carry out that term of the contract, and directs that upon the expiration of the contract the applicant shall continue to maintain and operate Link River Dam for the full period of a 50-year license, in the manner provided by that paragraph (Exhibit 1), thus continuing the present operation of the dam during the period of the license.

VII.

CONCLUSION

The applicant meets all the qualifications required of a licensee under the Federal Power Act. The proposed project is feasible from both the economic and engineering standpoints, and is an integral part of a comprehensive plan, part of which is already in existence and being profitably operated by the applicant, for the complete conservation and utilization of the water resources of the Klamath Basin. One of the features of the comprehensive development is Link River Dam, built and operated by the applicant and now the property of the United States. This Commission, as the organ appointed by Congress to regulate the water power resources of the Nation, has jurisdiction to order the continuance for the period of a 50-year license of the historical operation of Link River Dam. That operation has proved to be beneficial and necessary in the public interest by distributing the available water in the most useful possible manner between irrigation and public utility users. Copco is financially able and willing to proceed at once with construction of Project No. 2082 as applied for, and to develop the total available power in the region as soon as practicable. It is therefore submitted that a 50-year license on the terms heretofore stated should be issued to the applicant for the Big Bend No. 2 project.

Respectfully submitted,

HERMAN PHLEGER
GREGORY A. HARRISON
MALCOLM T. DUNGAN
BROBECK, PHLEGER & HARRISON
Attorneys for Applicant,
The California Oregon
Power Company

(Appendices follow)

Appendix A

PROPOSED FINDINGS AND CONCLUSIONS

(1) On April 19, 1951, The California Oregon Power Company (Applicant) filed an application for a license under the Federal Power Act for a proposed hydroelectric development, designated as Project No. 2082, to be known as the Big Bend No. 2 development, located in or along the Klamath River in Oregon and approximately 223 miles above the mouth of the river.

(2) The proposed project would consist of (i) a concrete gravity type diversion dam approximately 310 feet long and 52 feet high with an intake incorporated in the west abutment, with normal water level behind the dam at elevation 3628′, located in the SW¼ NE¼ of S12 T40S, R6E, Willamette Meridian; (ii) a steel pipe 16 feet in diameter and 1520 feet long, a concrete lined tunnel 16 feet in diameter and 2920 feet long and a steel penstock 16 feet in diameter and 600 feet long, branching into two smaller penstocks near the powerhouse, connecting the intake structure with the powerhouse, with a surge chamber near the lower tunnel portal; (iii) a powerhouse with tailwater elevation 3330′ in the SW¼ NW¼ S13 T40S R6E, W.M., comprising two 25,000 kw outdoor type generating units with 37,000 hp turbines at elevation 3338′, six 10,000 kva transformers, a spare transformer, a control house, and a transmission line approximately ¼ of a mile long; (iv) a temporary needle type regulating dam in the NE¼ SE¼ S31 T39S R7E, W.M., with approximately 1150 af of pondage.

(3) On July ..... 1951 the Klamath County Court and others filed a protest against the granting of a license for

Project No. 2082. On June 10, 1952 a petition was filed by the State of Oregon for leave to intervene and the petition was granted on June 17, 1952. On June 19, 1952 a petition for leave to intervene was filed by the Secretary of the Interior and the petition was granted on June 25, 1952. On June 17, 1952 a petition for leave to intervene was filed by the State of California, and this petition was granted on August 12, 1952. On July 31, 1952, a joint petition for leave to intervene was filed by Tulelake American Legion Post 164, Tulelake Farm Center, Farm Bureau Federation; Tulelake Grange; Tulelake Chamber of Commerce; and Tulelake Water District, and this petition was granted on August 12, 1952.

(4) By its order of May 1, 1952 the Commission consolidated the application proceeding for hearing purposes with a show cause proceeding, Docket No. E-6390, and after appropriate notice to all parties a hearing was held on the consolidated proceedings at Klamath Falls, Oregon, June 30 through July 3, 1952.

The Commission, having considered the application, the record and the briefs of the respective parties, *finds* that:

(5) The applicant is a corporation organized under the laws of the State of California, duly authorized to do business in the States of California and Oregon, and has submitted satisfactory evidence of compliance with the requirements of all applicable state laws insofar as necessary to effect the purposes of a license for the project.

(6) No conflicting application is before the Commission, and no protests have been filed except as hereinabove noted.

(7) Public notice has been given as required by the Federal Power Act.

(8) The project affects public lands of the United States.

(9) The issuance of a license for the project will not affect the development of any water resources for public purposes which should be undertaken by the United States itself.

(10) The issuance of a license for the project will not interfere or be inconsistent with the purposes of any reservation or withdrawal of public lands of the United States.

(11) The proposed project is best adapted to a comprehensive plan for the development, conservation and utilization of the water resources of the region for beneficial public use, i.e., for power purposes. No other present or potential public uses are affected by the proposed project.

(12) On February 24, 1917 the applicant's predecessor corporation entered into a contract with the United States concerning the construction and operation of a dam on Link River at the outlet of Upper Klamath Lake. The contract, as amended and supplemented, is now in force between the applicant and the United States and will continue in force until February 24, 1967. Pursuant to the contract the applicant built a dam on Link River, which was completed in 1921, and thereafter caused the land upon which the dam is situated to be conveyed to the United States. Ever since completion of the dam the applicant has maintained and operated it in accordance with the terms of the contract. The purpose of building and operating Link River Dam is to regulate the level of Upper Klamath Lake so as to store water on an annual basis for operation of the applicant's existing downstream power plants at peak capacity. The principal source of water for the proposed project is Upper Klamath Lake and the proposed project

will be operated by the use of the same waters now being utilized at the existing downstream plants. It is necessary that Link River Dam be operated by the applicant in the same manner as provided in the contract for the full period of the license in order to render the proposed project economically feasible, and in order to fully develop, conserve and utilize the water resources of the region.

(13) The horsepower capacity to be installed in the project is 67,000 horsepower, and the energy generated thereby will be used for public-utility purposes.

(14) The proposed project is feasible from the economic and engineering points of view and would not conflict physically with any other power site.

(15) The applicant has agreed to make stream bed improvements and other improvements which will compensate the State of Oregon for damage to fish propagation facilities. The question of the amount of water to be released into the stream bed between the dam and the powerhouse should be determined after experimentation and study.

Appendix B

PROPOSED ORDER

The Commission *orders* that:

(A) A license be issued to the applicant under section 4(e) of the Federal Power Act for a period of 50 years from July 1, 1952 for the construction, operation and maintenance of major project No. 2082, subject to the usual conditions and provisions of the Act for licenses for such projects and the rules and regulations thereunder.

(B) The applicant be and is hereby authorized and directed to comply with the terms of paragraph 3 of the contract dated February 24, 1917 between the United States of America and California-Oregon Power Co., as amended January 28, 1919, April 27, 1920 and December 10, 1920 and as supplemented September 10, 1931 and April 22, 1941 and to maintain and operate Link River Dam as provided in said contract, until the expiration of the contract.

(C) The license incorporate the terms of paragraph (B) of this order and provide that upon the expiration of said contract of February 24, 1917, as amended and supplemented, the licensee continue to maintain and operate Link River Dam as provided in paragraph 3 of said contract, and comply with the terms of paragraph 3 of the contract, for the period of the license.

Set up in parallel form, a convenient comparison of each of the 43 orders

Only are this proposed —, the amended, the original, the revised 1956

the proposed is by Co/co the others are by FPC

Certificate of Service

I hereby certify that I have this day served the foregoing document upon all parties of record in this proceeding, by mailing copies thereof properly addressed to:

JOSEPH B. HOBBS, *Esquire,*
Staff Counsel,
Federal Power Commission,
Washington 25, D. C.

CHARLES LEDERER, *Esquire,*
Attorney at Law,
Alturas, California.

RALPH W. SCOTT, *Esquire,*
Deputy Attorney-General,
600 State Building,
San Francisco, California.

ARTHUR G. HIGGS, *Esquire,*
Assistant Attorney-General,
1634 South Alder Street,
Portland, Oregon.

E. K. DAVIS, *Esquire,*
Assistant Regional Counsel,
Bureau of Reclamation,
Sacramento, California.

Dated: San Francisco, California,
September 12, 1952

.....

Of Counsel for
The California Oregon Power Company.

Water Resources
Center Archives

Lathrop 1
1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

REGION II
Klamath Project
P. O. Box 312
Klamath Falls, Oregon

October 1, 1952

Senator Randolph Collier

Yreka, California

Dear Senator Collier:

During his visit to this office on September 17, Mr. F. L. Lathrop asked that we furnish to you a large scale print of a chart prepared by the Bureau of Reclamation showing present and future conditions of stream flow in the Upper Klamath Basin. He also requested that we send to you a tabulation of stream flow quantities supporting this chart and a copy of the report appendix material on water supply studies of the Upper Klamath Lake.

Enclosed is the tabulation of stream flow quantities as requested. A small scale drawing of the requested stream flow chart was handed to Mr. Lathrop during his visit here. Inasmuch as we have only one print of this chart on a large scale at the Klamath Falls office, we have asked our Sacramento office to send one directly to you.

The water supply study appendix material which Mr. Lathrop requested, is still incomplete and in typewritten form with only a few copies made to date. We have only one copy on file at the Klamath Falls office and we regret that we do not have a copy available for you. However, it is my understanding that a copy of this tentative appendix material, as thus far prepared, has previously been furnished to the office of the California State Engineer. Perhaps you can borrow that copy for your use at this time. At such time as this part of our Upper Klamath Basin report is complete and reproduced, we shall be very glad to send a copy to you.

Very truly yours,

E. L. Stephens

E. L. Stephens
Project Manager

Enclosure 1

Data for Stream Flow Diagram

Stream Flow or Canal Diversion	Mean of Flow during 1944-45 and 1945-46 - 1000 A.F.	
	Present Conditions	Future Conditions
Williamson River below Klamath Marsh	58	18
Spring Creek	212	212
Williamson River above Sprague River	270	230
Sycan River near Beatty	86	70
Sprague River near Beatty	160	140
Sprague River at Chiloquin Damsite	363	221
Williamson River below Sprague River	685	500
Wood River near Fort Klamath	168	148
Miscellaneous springs and creeks flowing into Upper Klamath Lake	543	543
Total Flow into Upper Klamath Lake	1396	1191
"A" Canal at Klamath Falls	212	312
Link River at Klamath Falls	912	620
Diversion from Klamath River to Lost River	10	30
Diversion from Klamath River at Ady	43	100
Klamath Straits Drain	33	75
Flow to Klamath River via Lost River Diversion Channel	155	155
Diversion to Butte Valley, Oklahoma, etc.	0	175
Klamath River at Keno	1047	545
Lost River at Clear Lake Dam	133	133
Miller Creek at Gerber Dam	65	65
Flow from Bonanza Springs	54	54
Flow of Lost River at Diversion Dam near Olene	201	201
Flow of Lost River below Diversion Dam near Olene	46	46
Spencer Creek	20	20
Shovel Creek	15	115*
Klamath River above Fall Creek near Copco	1200	800
Fall Creek	28	28
Shasta River near Yreka	100	50
Scott River near Fort Jones	375	275
Klamath River below Scott River	1650	1100

* Includes return flow from Butte Valley.

Explanation of Data given in tables prepared for
Copco Water Right Application Hearings, June 30, 1952

1. Natural Flow of Klamath River at Keno. This table gives the estimated natural monthly flow of Klamath River at Keno, Oregon, for the 40-year period, 1909-10 to 1948-49. It was computed from historical records and data.

2. Estimated Flow of Klamath River at Keno under Present Conditions. This table gives the estimated annual flow of Klamath River at Keno under present conditions of development for the 40-year period 1909-10 to 1948-49. The values shown are based on present diversion demands on Upper Klamath Lake determined from records for recent years (not including 1951) and reflect the operation of Upper Klamath Lake and the existing units of the Klamath Project.

3. Estimated Flow of Klamath River at Keno under Future Conditions. This table gives the estimated annual flow of the Klamath River at Keno under future conditions of development for the 40-year period 1909-10 to 1948-49. The values given in the table reflect estimated future development in the Klamath Indian Reservation and other areas above Upper Klamath Lake, additional use in the existing Klamath Project, and new use in Swan Lake, Yonna, Red Rock and Butte Valleys and in the Oklahoma District.

4. Maximum, Average and Minimum Natural Flows at Keno. This table gives the monthly natural flows of Klamath River at Keno for the year of maximum runoff, 1913-14, the year of minimum runoff, 1930-31, and an average year. The "average" year values are the means of the monthly values for the 40-year period given by the natural flow table.

5. Data for Stream Flow Diagram. The values in this table are the average of values for the years 1944-45 and 1945-46. These particular years were chosen because the mean of the flow into Upper Klamath Lake for these years is approximately equal to the mean for the period of record, 1904-05 to 1949-50. Data for present conditions were taken from historical U.S.G.S. records or U.S.B.R. records in nearly all cases. Flows under future conditions of development were estimated in accordance with the best information available concerning future developments in the area above Upper Klamath Lake, the existing Klamath Project, and in other areas such as Swan Lake, Yonna, Red Rock, Butte, Shasta and Scott Valleys and in the Oklahoma District.

Lathrop 1952

Water Resources
Center Archives

ADDRESS ALL
COMMUNICATIONS TO:
THE REGIONAL DIRECTOR

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
REGIONAL OFFICE, REGION 2
P. O. BOX 2511
SACRAMENTO, CALIFORNIA

October 9, 1952

Hon. Randolph Collier
Senator from 2nd District
551 North Main Street
Yreka, California

My dear Senator Collier:

At the request of Mr. F. L. Lathrop of Yreka, California, I am sending you, under separate cover, a copy of Stream Flow Diagram, Upper Klamath Basin, Drawing No. 615-207-9, dated June 24, 1952, scale 1" = 300,000 acre-feet. A copy of the stream flow data supporting the diagram is enclosed for your information.

We shall be glad to furnish you any other data concerning the Upper Klamath Basin that is available in our files.

Sincerely yours,

RSCalland

R. S. Calland
Acting Regional Director

Enclosure

S/C Stream Flow Diagram, Upper Klamath Basin

10/16
acknowledge receipt & ask if rest of K Basin - Salem & Tenley
Brocean ever made & so would like copy

Data for Stream Flow Diagram

Stream Flow or Canal Diversion	Mean of Flow during 1944-45 and 1945-46 - 1000 A.F.	
	Present Conditions	Future Conditions
Williamson River below Klamath Marsh	58	18
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Williamson River below Sprague River	685	500
Wood River near Fort Klamath	168	148
Miscellaneous springs and creeks flowing into Upper Klamath Lake	543	543
Total Flow into Upper Klamath Lake	1396	1191
"A" Canal at Klamath Falls	212	312
Link River at Klamath Falls	912	620
Diversion from Klamath River to Lost River	10	30
Diversion from Klamath River at Ady	43	100
Klamath Straits Drain	33	75
Flow to Klamath River via Lost River Diversion Channel	155	155
Diversion to Butte Valley, Oklahoma, etc.	0	175
Klamath River at Keno	1047	545
Lost River at Clear Lake Dam	133	133
Miller Creek at Gerber Dam	65	65
Flow from Bonanza Springs	54	54
Flow of Lost River at Diversion Dam near Olene	201	201
Flow of Lost River below Diversion Dam near Olene	46	46
Spencer Creek	20	20
Shovel Creek	15	115*
Klamath River above Fall Creek near Copco	1200	800
Fall Creek	28	28
Shasta River near Yreka	100	50
Scott River near Fort Jones	375	275
Klamath River below Scott River	1650	1100

* Includes return flow from Butte Valley.

Lathrop 1
1952

Water Resources
Center Archives

UNITED STATES
DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

1515 Clay Street 7th Floor
Oakland 12, California
October 13, 1952

Mr. Ray Smith
Siskiyou County Assessor
Yreka, California

Dear Mr. Smith:

Attached are two copies of Reconnaissance Land-Capability Data for the California portion of the Klamath River Basin which was discussed in your office on September 24. One copy is for your files and the second is for Mr. Lathrop. We are sending this information through your office because of our official cooperative working relations.

The publication "Know California's Land" contains a description of classes and subclasses that are applicable to this data.

Very truly yours,

Leonard R. Wohletz
State Soil Scientist

Attachments

cc: F. O. Tumelson - Red Bluff

RECONNAISSANCE LAND-CAPABILITY DATA
LOST RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscellaneous barren, desert, etc.
	Class	Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	59,580	e	10,080	9,150	930		
		w	49,500	39,600	9,900		
III	10,650	e	660	150	510		
		w	5,040	4,800	240		
		s	4,950	4,800	150		
IV	10,250	e	350		310	40	
		s	9,900	4,950	4,950		
V	3,630	w	3,630		3,630		
VI	161,250	e	161,250		133,530	27,720	
VII	395,890	e	33,280		400	32,880	
		s	365,610		235,800	126,810	
VIII	100,600	w	5,700				5,700
		s	94,900			50,200	44,700
Unclassified	34,150						* 34,150
Total	776,000		741,850	63,450	390,350	237,650	84,550

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 300 Roads and railroads 12,600 Other 21,250 .

RECONNAISSANCE LAND-CAPABILITY DATA
SHASTA RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscellaneous barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	31,050	e	19,550	12,500	7,050		
		w	6,000	3,300	2,700		
		s	5,500	3,300	2,200		
III	43,450	e	15,950	10,800	5,150		
		w	11,000	6,600	4,400		
		s	16,500	7,700	8,800		
IV	29,750	e	24,250	6,450	17,000	800	
		s	5,500	1,100	4,400		
V	27,460	w	27,460	2,200	25,260		
VI	47,670	e	47,670	1,150	25,710	20,810	
VII	254,250	e	166,050		46,110	119,940	
		s	88,200		46,800	41,400	
VIII	60,070	s	60,070			38,000	22,070
Unclassified	8,300						* 8,300
Total	502,000		493,700	55,100	195,580	220,950	30,370

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns --- Roads and railroads 8,300 Other 000 .

RECONNAISSANCE LAND-CAPABILITY DATA
SCOTT RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I	800		800	800			
II	16,400	e	4,400	3,360	1,040		
		w	7,600	5,440	2,160		
		s	4,400	3,360	1,040		
III	25,800	e	10,600	6,040	4,560		
		w	5,200	2,560	2,640		
		s	10,000	6,000	4,000		
IV	8,400	e	2,800	560	2,240		
		s	5,600	1,120	2,240	2,240	
V	1,200	w	1,200		1,200		
VI	44,500	e	41,700		12,080	29,620	
		s	2,800		1,120	1,680	
VII	312,500	e	306,660		64,460	242,200	
		s	5,840		3,040	2,800	
VIII	104,800	s	104,800			73,600	31,200
Unclassified	3,600						* 3,600
Total	518,000		514,400	29,240	101,820	352,140	34,800

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns --- Roads and railroads 3,600 Other ---.

RECONNAISSANCE LAND-CAPABILITY DATA
SALMON RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II							
III	3,800	e	3,800		3,800		
IV	2,500	e	2,500		2,500		
V	500	w	500		500		
VI	49,000	e	49,000		5,500	43,500	
VII	323,700	e	323,700		34,500	289,200	
VIII	98,000	s	98,000			55,500	42,500
Unclassified	2,500						* 2,500
Total	480,000		477,500		46,800	388,200	45,000

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns _____ Roads and railroads 2,500 Other _____

RECONNAISSANCE LAND-CAPABILITY DATA
TRINITY RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	5,450	e	3,350	1,640	1,570	140	
		w	200	100	100		
		s	1,900	830	1,070		
III	14,100	e	8,250	2,230	5,730	290	
		w	300		300		
		s	5,550	2,140	3,260	150	
IV	9,900	e	8,150	570	5,510	2,070	
		s	1,750	420	1,120	210	
V	1,750	w	1,750		1,750		
VI	262,320	e	259,520		33,050	226,470	
		s	2,800		700	2,100	
VII	1,074,020	e	462,320		37,980	424,340	
		s	611,700		10,100	601,600	
VIII	454,150	w	1,400				1,400
		s	452,750			337,750	115,000
Unclassified	67,550						* 67,550
Total	1,889,240		1,821,690	7,930	102,240	1,595,120	183,950

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 620 Roads and railroads 43,580 Other 23,350 .

RECONNAISSANCE LAND-CAPABILITY DATA
KLAMATH RIVER SUBWATERSHED
(MAIN STEM AND MINOR TRIBUTARIES)
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I	2,650		2,650	2,500		150	
II	27,950	e	22,050	12,550	9,400	100	
		w	3,250	650	2,500	100	
		s	2,650	1,850	700	100	
III	79,010	e	54,710	24,520	27,290	2,900	
		w	10,800	4,600	5,800	400	
		s	13,500	4,200	9,300		
IV	56,400	e	44,400	9,320	26,720	8,360	
		s	12,000		12,000		
V	11,400	w	11,400		11,400		
VI	293,700	e	281,850	1,800	48,600	231,450	
		s	11,850		11,850		
VII	1,309,850	e	1,129,700		189,650	940,050	
		s	180,150		94,750	85,400	
VIII	340,290	w	2,450				2,450
		s	337,840			225,040	112,800
Unclassified	29,750						* 29,750
Total	2,151,000		2,121,250	61,990	449,960	1,494,050	145,000

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 1,100 Roads and railroads 27,050 Other 1,600 .

RECONNAISSANCE LAND-CAPABILITY DATA
TOTAL KLAMATH RIVER BASIN IN CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscellaneous barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I	3,450		3,450	3,300		150	
II	140,430	e	59,430	39,200	19,990	240	
		w	66,550	49,090	17,360	100	
		s	14,450	9,340	5,010	100	
III	176,810	e	93,970	43,740	47,040	3,190	
		w	32,340	18,560	13,380	400	
		s	50,500	24,840	25,510	150	
IV	117,200	e	82,450	16,900	54,280	11,270	
		s	34,750	7,590	24,710	2,450	
V	45,940	w	45,940	2,200	43,740		
VI	858,440	e	840,990	2,950	258,470	579,570	
		s	17,450		13,670	3,780	
VII	3,670,210	e	2,421,710		373,100	2,048,610	
		s	1,248,500		390,490	858,010	
VIII	1,157,910	w	9,550				9,550
		s	1,148,360		780,090		368,270
Unclassified	145,850						* 145,850
Total	6,316,240		6,170,390	217,710	1,286,750	4,288,110	523,670

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 2,020 Roads amd railroads 97,630 Other 46,200 .

1515 Clay Street 7th Floor
Oakland 12, California
October 13, 1952

Mr. Ray Smith
Siskiyou County Assessor
Yreka, California

Dear Mr. Smith:

Attached are two copies of Reconnaissance Land-Capability Data for the California portion of the Klamath River Basin which was discussed in your office on September 24. One copy is for your files and the second is for Mr. Lathrope We are sending this information through your office because of our official cooperative working relations.

The publication "Know California's Land" contains a description of classes and subclasses that are applicable to this data.

Very truly yours,

Leonard R. Wohletz
State Soil Scientist

Attachments

cc: F. O. Tumelson - Red Bluff

RECONNAISSANCE LAND-CAPABILITY DATA
LOST RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscellaneous barren, desert, etc.
	Class	Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	59,580	e	10,080	9,150	930		
		w	49,500	39,600	9,900		
III	10,650	e	660	150	510		
		w	5,040	4,800	240		
		s	4,950	4,800	150		
IV	10,250	e	350		310	40	
		s	9,900	4,950	4,950		
V	3,630	w	3,630		3,630		
VI	161,250	e	161,250		133,530	27,720	
VII	395,890	e	33,280		400	32,880	
		s	365,610		235,800	126,810	
VIII	100,600	w	5,700				5,700
		s	94,900			50,200	44,700
Unclassified	34,150						* 34,150
Total	776,000		741,850	63,450	390,350	237,650	84,550

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 300 Roads and railroads 12,600 Other 21,250.

RECONNAISSANCE LAND-CAPABILITY DATA
SHASTA RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscellaneous barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	31,050	e	19,550	12,500	7,050		
		w	6,000	3,300	2,700		
		s	5,500	3,300	2,200		
III	43,450	e	15,950	10,800	5,150		
		w	11,000	6,600	4,400		
		s	16,500	7,700	8,800		
IV	29,750	e	24,250	6,450	17,000	800	
		s	5,500	1,100	4,400		
V	27,460	w	27,460	2,200	25,260		
VI	47,670	e	47,670	1,150	25,710	20,810	
VII	254,250	e	166,050		46,110	119,940	
		s	88,200		46,800	41,400	
VIII	60,070	s	60,070			38,000	22,070
Unclassified	8,300						* 8,300
Total	502,000		493,700	55,100	195,580	220,950	30,370

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns --- Roads and railroads 8,300 Other 000 .

RECONNAISSANCE LAND-CAPABILITY DATA
SCOTT RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I	800		800	800			
II	16,400	e	4,400	3,360	1,040		
		w	7,600	5,440	2,160		
		s	4,400	3,360	1,040		
III	25,800	e	10,600	6,040	4,560		
		w	5,200	2,560	2,640		
		s	10,000	6,000	4,000		
IV	8,400	e	2,800	560	2,240		
		s	5,600	1,120	2,240	2,240	
V	1,200	w	1,200		1,200		
VI	44,500	e	41,700		12,080	29,620	
		s	2,800		1,120	1,680	
VII	312,500	e	306,660		64,460	242,200	
		s	5,840		3,040	2,800	
VIII	104,800	s	104,800			73,600	31,200
Unclassified	3,600						* 3,600
Total	518,000		514,400	29,240	101,820	352,140	34,800

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns --- Roads and railroads 3,600 Other --- .

RECONNAISSANCE LAND-CAPABILITY DATA
SALMON RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II							
III	3,800	e	3,800		3,800		
IV	2,500	e	2,500		2,500		
V	500	w	500		500		
VI	49,000	e	49,000		5,500	43,500	
VII	323,700	e	323,700		34,500	289,200	
VIII	98,000	s	98,000			55,500	42,500
Unclassified	2,500						* 2,500
Total	480,000		477,500		46,800	388,200	45,000

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns _____ Roads and railroads 2,500 Other _____

RECONNAISSANCE LAND-CAPABILITY DATA
TRINITY RIVER SUBWATERSHED
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I							
II	5,450	e	3,350	1,640	1,570	140	
		w	200	100	100		
		s	1,900	830	1,070		
III	14,100	e	8,250	2,230	5,730	290	
		w	300		300		
		s	5,550	2,140	3,260	150	
IV	9,900	e	8,150	570	5,510	2,070	
		s	1,750	420	1,120	210	
V	1,750	w	1,750		1,750		
VI	262,320	e	259,520		33,050	226,470	
		s	2,800		700	2,100	
VII	1,074,020	e	462,320		37,980	424,340	
		s	611,700		10,100	601,600	
VIII	454,150	w	1,400				1,400
		s	452,750			337,750	115,000
Unclassified	67,550						* 67,550
Total	1,889,240		1,821,690	7,930	102,240	1,595,120	183,950

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 620 Roads and railroads 43,580 Other 23,350 .

RECONNAISSANCE LAND-CAPABILITY DATA
KLAMATH RIVER SUBWATERSHED
(MAIN STEM AND MINOR TRIBUTARIES)
KLAMATH RIVER BASIN, CALIFORNIA

Land Capability Classification				Land in crops, fallow, hay and pasture	Dominantly grazing use	Dominantly forest and watershed use	Miscell. barren, desert, etc.
Class		Subclass					
Symbol	Acres	Symbol	Acres	Acres	Acres	Acres	Acres
I	2,650		2,650	2,500		150	
II	27,950	e	22,050	12,550	9,400	100	
		w	3,250	650	2,500	100	
		s	2,650	1,850	700	100	
III	79,010	e	54,710	24,520	27,290	2,900	
		w	10,800	4,600	5,800	400	
		s	13,500	4,200	9,300		
IV	56,400	e	44,400	9,320	26,720	8,360	
		s	12,000		12,000		
V	11,400	w	11,400		11,400		
VI	293,700	e	281,850	1,800	48,600	231,450	
		s	11,850		11,850		
VII	1,309,850	e	1,129,700		189,650	940,050	
		s	180,150		94,750	85,400	
VIII	340,290	w	2,450				2,450
		s	337,840			225,040	112,800
Unclassified	29,750						* 29,750
Total	2,151,000		2,121,250	61,990	449,960	1,494,050	145,000

* Breakdown on the unclassified miscellaneous acreage as follows:

Cities and towns 1,100 Roads and railroads 27,050 Other 1,600 .

Lathrop 1
1952

RANDOLPH COLLIER
STATE SENATOR
DEL NORTE AND SISKIYOU COUNTIES

Water Resources
Center Archives

California State Senate

October 14, 1952

Bureau of Reclamation
Regional Office, Region 2
P. O. Box 2511
Sacramento, California

Attention: R. S. Calland

Gentlemen:

I wish to thank you for the map and statistics you sent me on October 9.

In this connection I would like to know if similar charts and stream flow have been made on the remainder of the river, and the principle tributaries, the Salmon and Trinity, to the coast.

If such information is available, I would appreciate having a copy, even though it be subject to revision by present contemplated studies.

Sincerely yours,

Randolph Collier

RC:jh

Small chart / Mr Gray - mgr. K Project K. Falls. 9/17/52
this chart & schedule & gave to Bond today 10/14/52
for State records

Date for Stream Flow Diagram

Stream Flow or Canal Diversion	Mean of Flow during 1944-45 and 1945-46 - 1000 A. F. Present Conditions	Future Conditions
Williamson River below Klamath Marsh	58	18
Spring Creek	212	212
Williamson River above Sprague River	270	230
Sycan River near Beatty	86	70
Sprague River near Beatty	160	140
Sprague River at Chiloquin Damsite	363	221
Williamson River below Sprague River	685	500
Wood River near Fort Klamath	168	148
Miscellaneous springs and creeks flowing into Upper Klamath Lake	543	543
Total Flow into Upper Klamath Lake	1396	1191
"A" Canal at Klamath Falls	212	312
Link River at Klamath Falls	912	620
Diversion from Klamath River to Lost River	10	30
Diversion from Klamath River at Ady	43	100
Klamath Straits Drain	33	75
Flow to Klamath River via Lost River Diversion Channel	155	155
Diversion to Butte Valley, Oklahoma, etc.	0	175
Klamath River at Keno	1047	545
Lost River at Clear Lake Dam	133	133
Miller Creek at Gerber Dam	65	65
Flow from Bonanza Springs	54	54
Flow of Lost River at Diversion Dam near Olene	201	201
Flow of Lost River below Diversion Dam near Olene	46	46
Spencer Creek	20	20
Shovel Creek	15	115*
Klamath River above Fall Creek near Copco	1200	800
Fall Creek	28	28
Shasta River near Yreka	100	50
Scott River near Fort Jones	375	275
Klamath River below Scott River	1650	1100

* Includes return flow from Butte Valley.