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A CONSERVATION OPPORTUNITY

Report on
California Salmon and Steelhead Trout

A
CONSERVATION
OPPORTUNITY

State of California
Report Authorized by
Assembly Concurrent Resolution
#64/1970 Session
Citizens Advisory Committee on
Salmon and Steelhead Trout
Departmental Staff Working Committee
California Department of Fish and Game
The Resource Agency

May 15, 1972



ACR # 64/1970 SESSION

Assembly Concurrent Resolution No. 64

RESOLUTION CHAPTER 124

ASSEMBLYWOMAN PAULINE DAVIS

*Assembly Concurrent Resolution No. 64 — Relative to creating an
Advisory Committee on Salmon and Steelhead Trout.*

[Filed with Secretary of State July 9, 1970.]

Whereas, The salmon and steelhead trout resources are a priceless and irreplaceable resource of this state; and

Whereas, The survival of these resources is now threatened; now, therefore, be it

Resolved by the Assembly of the State of California, the Senate thereof concurring, As follows:

1. The Director of the Department of Fish and Game shall appoint an Advisory Committee on Salmon and Steelhead Trout which shall ascertain, study and analyze all facts relating to the preservation, protection, restoration and enhancement of salmon and steelhead trout resources of this state, including, but not limited to, the operation, effect, administration, enforcement and needed revision of any and all laws in any way bearing upon or relating to the subject of this resolution, and to report thereon to the director, who shall submit such report to the Legislature, including in the report its recommendations for appropriate legislation.

2. The Advisory Committee on Salmon and Steelhead Trout shall consist of persons having practical knowledge and experience from the following fields:

(a) Four commercial representatives from salmon fishermen and commercial salmon processors.

(b) Four organized sportsmen representatives from salmon and steelhead fishermen and party boat operators.

(c) One public member.

3. The advisory committee shall cooperate with and secure the cooperation of county, city, city and county, and other local law enforcement agencies in investigating any matter within the scope of this resolution.

4. The members of the advisory committee shall serve without compensation.

5. The advisory committee shall study and investigate all relevant matters, in order to provide for and develop a program for the preservation, protection, restoration, and enhancement of the salmon and steelhead trout resources of this state, including, but not limited to, the following matters:

(a) The conduct of hatchery and stocking operations such as to achieve maximum contribution to the fishery and to spawning escapement.

(b) The rehabilitation, protection, enhancement, and preservation of all salmon and steelhead trout spawning areas and the maintenance of such areas in optimum condition.

(c) The expansion of hatchery and related artificial propagation facilities where necessary and feasible to achieve maximum production of salmon and steelhead trout.

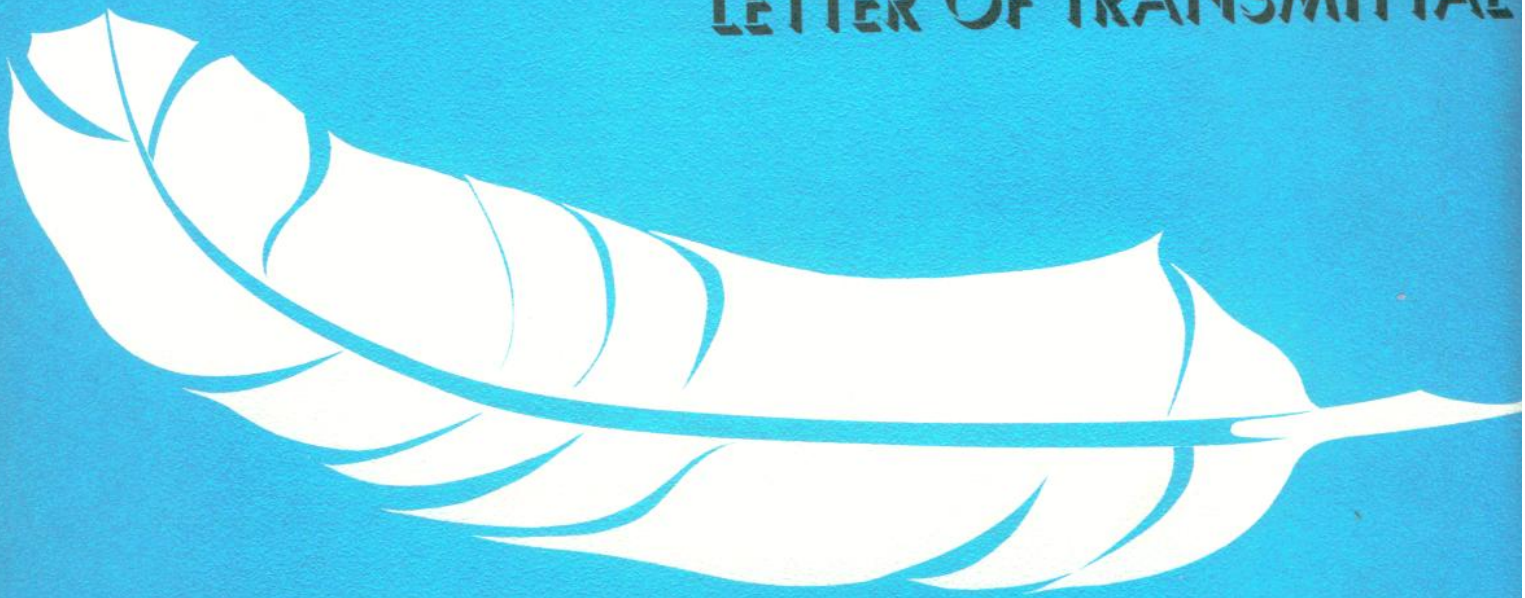
(d) The screening of all existing major diversions on salmon and steelhead trout streams.

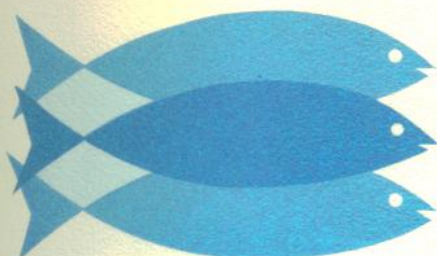
(e) The development and conduct of rehabilitation, enhancement, the restocking programs to achieve maximum production in all streams with historic populations of salmon and steelhead trout.

(f) The coordination of state programs and activities with federal agencies so as to promote maximum contribution to the salmon and steelhead trout resources by the federal government.

6. The advisory committee shall submit a progress report, together with any suggested legislation, to the director, who shall submit such report to the Legislature not later than the fifth calendar day of the 1971 Regular Session of the Legislature.

LETTER OF TRANSMITTAL





ADVISORY COMMITTEE ON SALMON & STEELHEAD TROUT / 1416 - 9TH ST. / SACRAMENTO, CA. 95814

May 15, 1972

Mr. G. Ray Arnett, Director
California Department of Fish and Game
1416 Ninth Street
Sacramento, California 95814

Dear Director Arnett:

Pursuant to ACR 64 (1970), it is a pleasure to submit to you for transmittal to the California Legislature, the second report of your Advisory Committee on Salmon and Steelhead Trout.

The Committee was gratified by the response of the California Legislature, the Department, and Governor Reagan to its recommendations for actions necessary to save California's valuable salmon and steelhead resources. Eight of nine legislative measures recommended were passed.

This second report stresses positive steps that can and must be taken to seize opportunities not only to protect but to maximize our salmon and steelhead fishery.

The Committee is confident that with continued legislative support at both State and Federal levels, these important resources can not only be saved, but increased to provide great recreational and economic benefits to California.

We appreciate the assistance that George Warner and others of your staff have provided to the Committee.

Sincerely,

W. F. GRADER,
Chairman Salmon and Steelhead
Advisory Committee

Advisory Committee on Salmon and Steelhead Trout

Appointed by the Director of the
California Department of Fish and Game
pursuant to ACR/64, 1970

Committee:

WILLIAM F. GRADER, Chairman of Committee
Fish Processor
Secretary, Salmon Unlimited

VERN SMITH, Vice Chairman
Sportsman
President, California Wildlife Federation

EARL CARPENTER
Fisherman
President, Bodega Bay Fisherman's Marketing Association

GEORGE AGOSTINI
Fish Processor
President, A. Paladini, Incorporated

JOHN PELNAR
Sportsman
Retired Manager, Coleman Fish Hatchery

EDMUND KOLHAUF
Party and Charter Boat Operator
Golden Gate Sportfishers

JOSEPH PAUL (deceased)
Sportsman
President, California Trout, Incorporated

WILLIAM HILL
Fisherman
Secretary, Humboldt Fisherman's Marketing Association

WILLIAM E. ALLEN
Public Member

RICHARD HUBBARD
Sportsman Representative

Advisors:

RAY E. WELSH
President, Salmon Unlimited

JOHN GILCHRIST
Secretary, California Seafood Institute

MILBURN ZELL
Sportsmen Council of the Redwood Empire

PAUL McKEEHAN
Associated Sportsmen of California

DAVID M. DANBOM
Commercial Fisherman

EVERETT WATKINS, DDS
Sportsmen Representative

GEORGE DIFANI
Sportsmen Representative

RUDY URBANI
Commercial Fisherman

LOUIS VITALE
President, Los Angeles Smoking
and Curing Company

JAMES MANTER
Sportsmen Representative

AUGUST AVILA
Supervisor, Mendocino County

MARTIN R. BRITTAN
Department of Biological Science
Sacramento State College

CHARLES COOLEY
Sportsmen Representative

ALLEN C. CURTIS
Sportsmen Representative

DON DODSON
Commercial Fisherman

MICK FAIRCHILD
Sportsmen Representative

JOHN GREENWOOD
Commercial Fisherman

ED HAGUE
Sportsmen Representative

FRANK HAUN
Commercial Fisherman

HERBERT L. JOSEPH, MD
Sportsmen Representative

GENE MERCER
Sportsmen Representative

SAM MITCHELL
Sportsmen Representative

JOSEPH PATTEN
Director, Water Resources
CH2M/HILL

JOHN REGINATO
Sportsmen Representative

MARTIN SELDEN
Sportsmen Representative

JOHN VanASSEN
Sportsmen Representative

JAMES F. ADAMS
Sportsmen Representative

WILLIAM MAAHS
Commercial Fisherman

HAROLD AMES
Commercial Fisherman

Committee Consultants:

JONES & STOKES
ASSOCIATES, INC.
AND D.W. KELLEY

Design Consultant:

GEORGE LOUIE, designer

California Department of Fish and Game



G. RAY ARNETT
Director

E. C. "CHARLIE" FULLERTON
Deputy Director

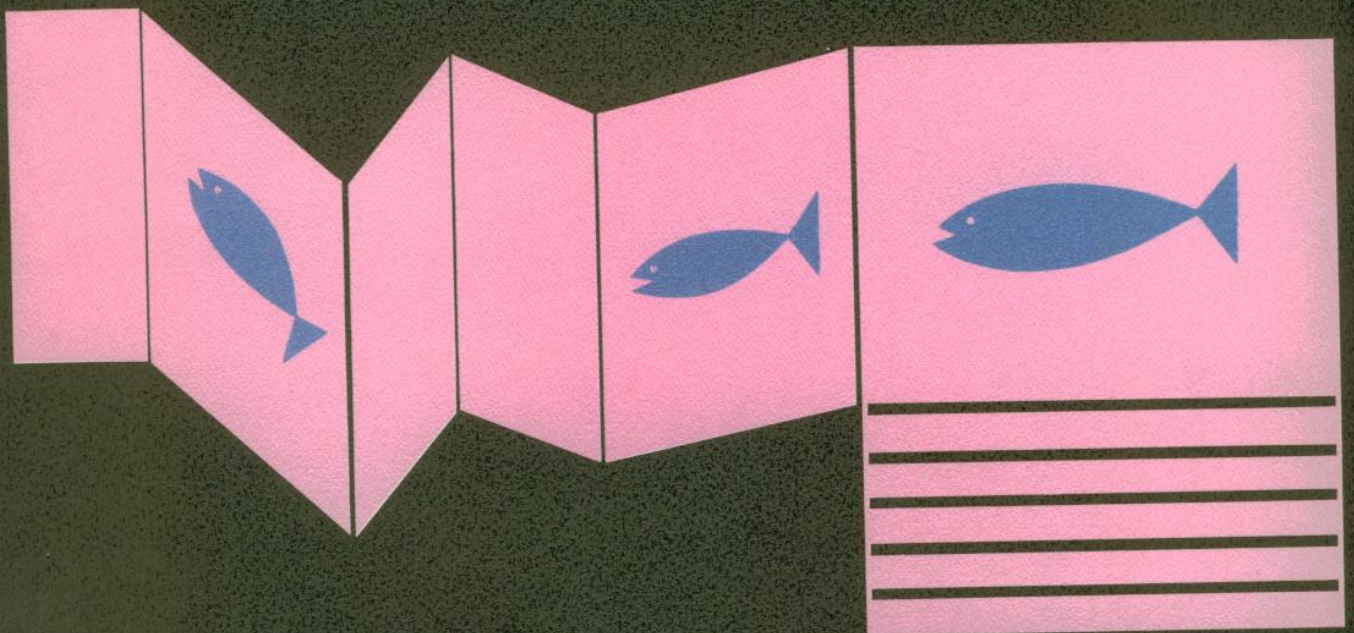
CHET HART
Chief of Operations

GEORGE H. WARNER
Chief, Anadromous Fisheries Branch

PAUL T. JENSEN
Senior Fishery Biologist



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INTRODUCTION

Our 1971 report documented the rapid decline of salmon and steelhead populations in California.

The Legislature responded by passing eight of nine measures introduced to resolve problems affecting salmon and steelhead.

The response of the salmon and steelhead populations to management measures when and where properly done are proof that this resource can be improved and return big dividends to the people of California.

The opportunities are great. Habitat protection and restoration, combined with artificial propagation and research, have never been more compatible with the public's social concerns and needs.

The realization of many opportunities needs primarily additional funds for the management agencies and some changes in the present laws.

COMMITTEE ACTIVITIES

The Advisory Committee on Salmon and Steelhead Trout was established by the California Legislature by ACR 64 (Davis, 1970).

The committee was charged with developing and recommending to the Director, Department of Fish and Game and the Legislature, programs for the preservation, protection, restoration and enhancement of salmon and steelhead resources of California.

The committee's initial progress report ("An Environmental Tragedy") was issued March 15, 1971. This report provided startling evidence of declining trends in salmon and steelhead populations. The report concluded that these resources were headed

COMMITTEE IN ACTION



toward ultimate disaster if aggressive action was not taken.

The report stated that California's spawning and rearing streams for salmon and steelhead have been lost at an alarming rate and that planned future developments threaten the quality and quantity of those remaining.

Water development was identified as the major contributor to habitat destruction, but logging, mining, road construction, gravel extraction, grazing, pollution and other activities of man were listed as also causing habitat destruction and degradation.

The committee's first report made 20 recommendations for action. These were directed toward the federal government, the California Legislature, the California Department of Fish and Game, and the California Fish and Game Commission. Nine measures were introduced in the 1971 California legislative session to carry out committee recommendations.

Strong legislative support was received for the committee's report and its legislative program. Eight of the legislative measures introduced were passed:

AB 2637 (Belotti) directed the Department of Fish and Game to inform the Fish and Game Commission of the state's comments including those of the Department on all environmental impact statements of possible projects which affect salmon and steelhead resources.

AB 2147 (Davis) required all new diversions from salmon and steelhead streams to be screened by the diverter if the Department determines the diversion could be detrimental to salmon and steelhead. All construction and maintenance costs would be borne by the diverter.

AJR 27 (Belotti) requests the President and Congress to annually provide maximum funding under the Federal Anadromous Fisheries Act.

AJR 40 (Dunlap) memorializes the Federal Council on Environmental Quality to disapprove any proposed federal project unless the environmental impact statement clearly demonstrates that the project will not have a substantial deleterious effect on salmon and steelhead. The Corps of Engineers was requested to take similar action regarding the issuance of waste discharge permits.

SB 1215 (Marler) required the State Lands Commission to determine the ownership of salmon spawning areas in Central Valley rivers. While the ownership is being determined, the Director of the Department of Fish and Game may disapprove any streambed alteration if such work would be deleterious to fishlife. None of the spawning beds which are found to be state property would be leased or disposed of except the Director may allow easements or leases for public utility facilities.

SJR 29 (Marler) memorializes Congress to direct the Secretary of Interior to correct deficiencies in existing Central Valley Project fish facilities at Coleman Hatchery, Nimbus Hatchery and Keswick Fish Trap.

SCR 64 (Collier) directs the Department of Fish and Game to develop a series of reports on programs to restore salmon and steelhead populations which have been depleted or destroyed because of federal water development projects.

SCR 72 (Collier) directs the Department of Fish and Game to prepare plans to enhance Feather River salmon and steelhead populations in conjunction with the operation of the State Water Project. The costs of such plans would be payable from the Recreation and Fish and Wildlife Enhancement Fund.

SB 887 (Collier) failed to pass during the 1971 legislative session. This bill established state policy requiring the agencies or persons responsible for damaging salmon and steelhead resources to share the cost of correcting the damage. If the responsibility for damage could not be fixed, the General Fund would share one-half the cost of restoration and the Fish and Game Fund the remaining cost. The Department of Fish and Game would be responsible each year to recommend in its budget needed restoration projects. The committee strongly believes that general public funds should share in the cost of restoration of salmon and steelhead habitat damaged or destroyed by the past activities of all government and private activities whenever responsibility cannot be identified. Legislation to accomplish this should be enacted.

SALMON AND STEELHEAD MANAGEMENT PHILOSOPHY

In California, salmon and steelhead management by the Department of Fish and Game has been of necessity, an ad hoc effort to "mitigate" the losses caused by relentless environmental change. A rear guard of dedicated but poorly armed professionals, sportsmen, and commercial fishermen assisting the Department of Fish and Game, have fought an extended series of defensive actions against environmental destruction. They have slowed the attrition of these resources, but they have not and cannot succeed with only a defensive philosophy.

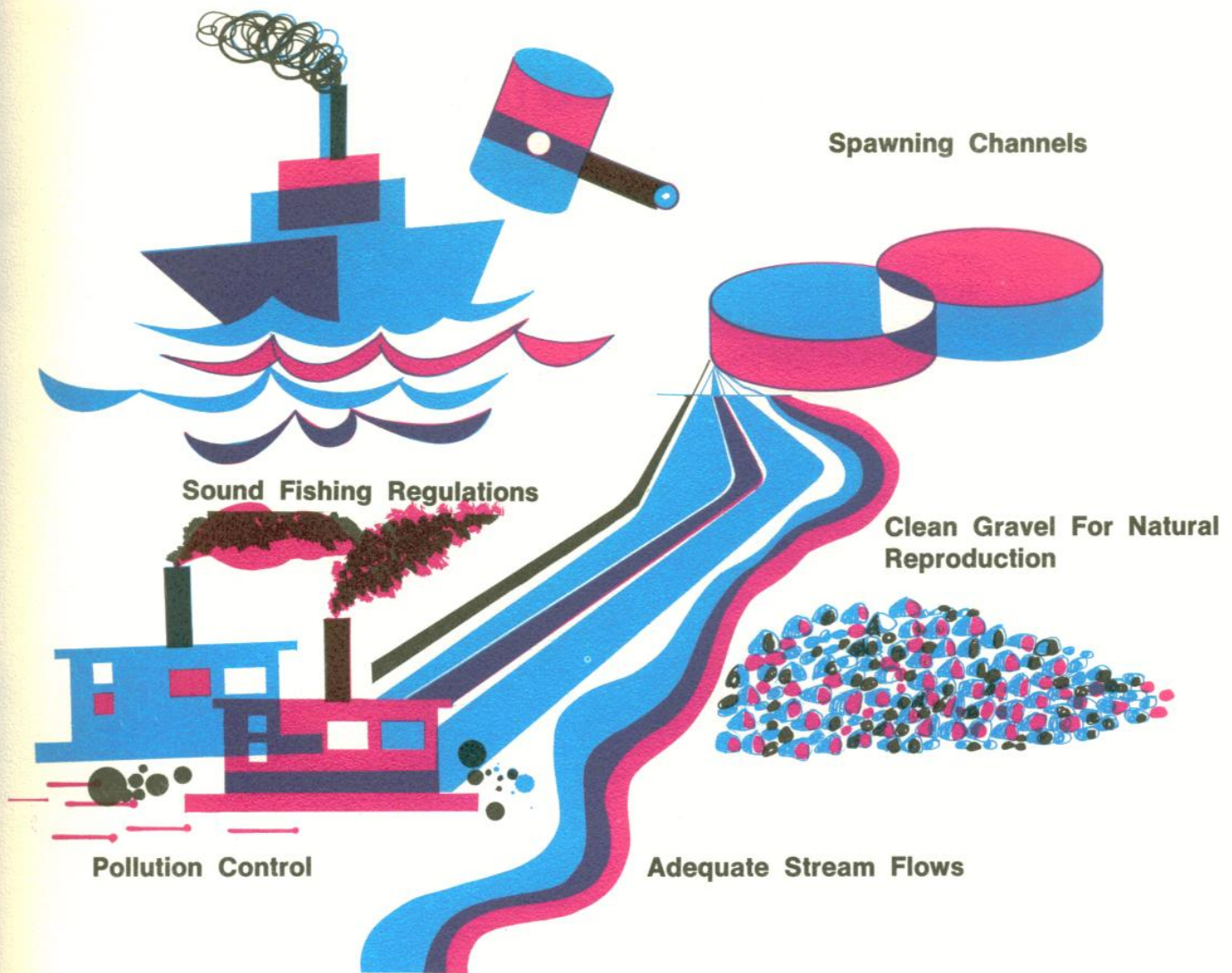
The agencies responsible for salmon and steelhead resources urgently need to seize every available environmental opportunity not to "mitigate" or lessen losses, but to fully protect and enhance salmon and steelhead resources.

There needs to be a marriage of environmental protection and restoration with the wise use of hatcheries and artificial spawning channels and the proper management of water and gravel resources for fisheries production. The experience in both fields over the past years is clear evidence that it is usually not practical to restore spawning streams and nursery grounds to their original condition, nor is it possible to maintain this huge resource with artificial methods alone. Enough has been learned about the many techniques in both fields to combine them for maximum production of both fish and fishing opportunity.

Each stream should be managed for optimum production of young and to produce maximum angling opportunity.

Each stream should be the subject of a plan describing its potential and how to achieve it!

Each stream should have action programs to implement the plan. This should include programs to monitor the



**"GOOD SALMON AND STEELHEAD
MANAGEMENT IS A MARRIAGE OF
ENVIRONMENTAL PROTECTION
AND RESTORATION, ARTIFICIAL
PROPAGATION, AND
SOUND FISHING REGULATIONS."**

size of the salmon and steelhead run and the environmental conditions affecting it! Water developers, waste dischargers and others influencing the environment must be informed of that plan and of their role in making it succeed.

The history of fish and wildlife resources in this country leads us to one universal principle. Attempts to maintain the status quo result in gradual attrition and eventual loss of the resource. Federal and state mitigation policies have been a failure and are no longer acceptable to meet society's needs.

The environment has and will continue to change. Those responsible for management of the resource, for its harvest and for the environmental changes that threaten it must cooperate in a positive effort not only to protect, but to *maximize* the salmon and steelhead fishery!

THE STATUS OF RESOURCES

Last year's report documented the declining salmon and steelhead habitat. The 1971 ocean catch and the increased numbers of spawners in the San Joaquin River tributaries are good evidence that the resource will respond to proper management and environmental opportunities when they can be applied.

In 1971, ocean sport salmon anglers enjoyed an improved season by landing a total of 209,000 salmon. The previous high occurred in 1956 when 199,000 salmon were caught. Commercial salmon catch records also demonstrate a good season. Preliminary estimates indicate that 8 million pounds of kings and silvers were landed at California ports. King salmon catches showed a decline, but this was more than offset by an increase in catch of silver salmon produced primarily in Oregon and Washington streams and hatcheries.

Almost 40,000 salmon spawned in the San Joaquin River tributaries in the fall of 1971 as a result of timely action by the Departments of Fish and Game and Water Resources and the U.S. Bureau of Reclamation. Several times during the past seven years and again in October 1971 these agencies cooperated in the installation of a temporary flow control structure at the head of Old River, forcing most of the San Joaquin River flow down the main channel to eliminate a pollution block below Stockton. In 1963, the San Joaquin River tributaries supported only 320 salmon spawners and it appeared that the runs were threatened with extinction. However, with the cooperation of water developers, the salmon restoration program in the San Joaquin system is paying dividends — although the runs are still well below historic numbers of over 200,000 fish.

The yearling king salmon rearing program at Feather River Hatchery is making an outstanding contribution to the ocean sport and commercial salmon fisheries. Ten percent of the 100,000 marked yearlings (1968 brood year) have been taken in the ocean catch as 3- and 4-year-old fish. This is probably the best return ever achieved with hatchery-produced king salmon.



Friant Dam

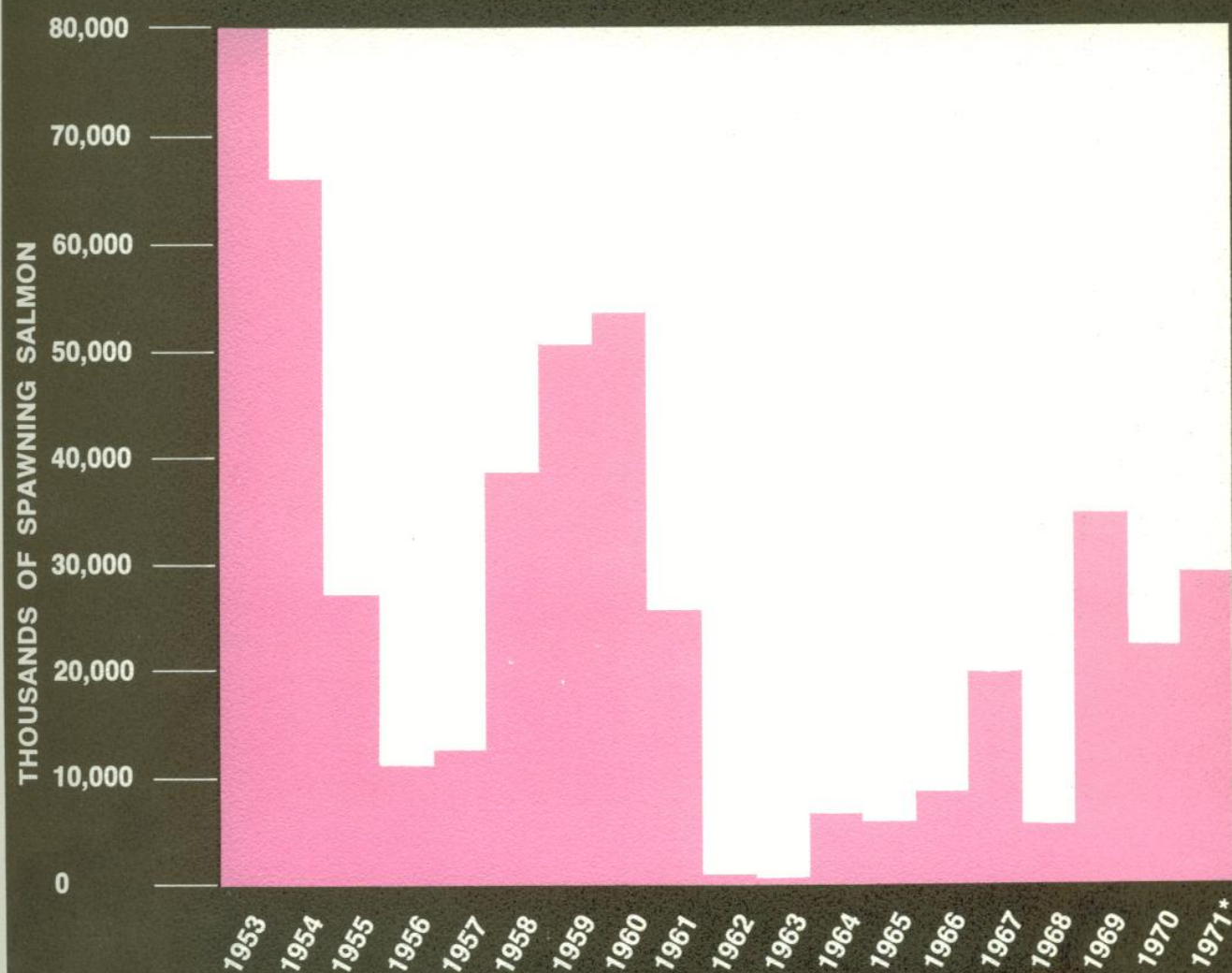
"The reestablishment and maintenance of the salmon fishery at this time is not in the public interest."

— *State Water Resources Control Board
Decision 935, June 1959*

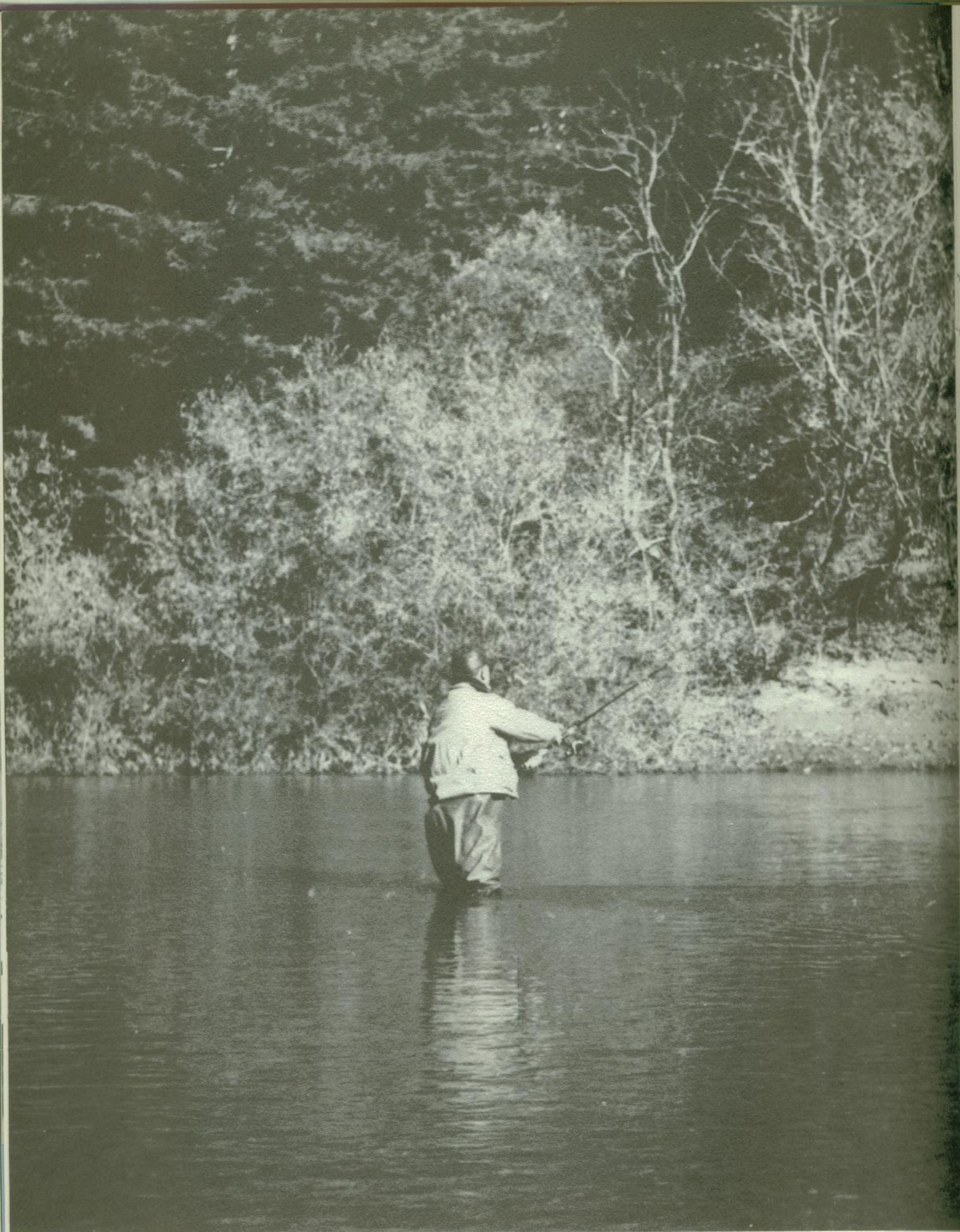
"It is inconceivable to me that anyone in this audience could subscribe to those words penned little more than a decade ago."

— *Ronald B. Robie, State Water
Resources Control Board
in a speech before the Los Angeles
Chamber of Commerce, February 14, 1972*

COOPERATION BY STATE, FEDERAL & LOCAL AGENCIES IS REBUILDING SALMON RUNS IN THE SAN JOAQUIN RIVER TRIBUTARIES.



* Preliminary Estimate



The maintenance of salmon and steelhead resources is compatible with public concern for the protection and enhancement of our natural environment.

As a result of this success, yearling production was increased and in 1971, a total of 900,000 yearlings was released at the hatchery.

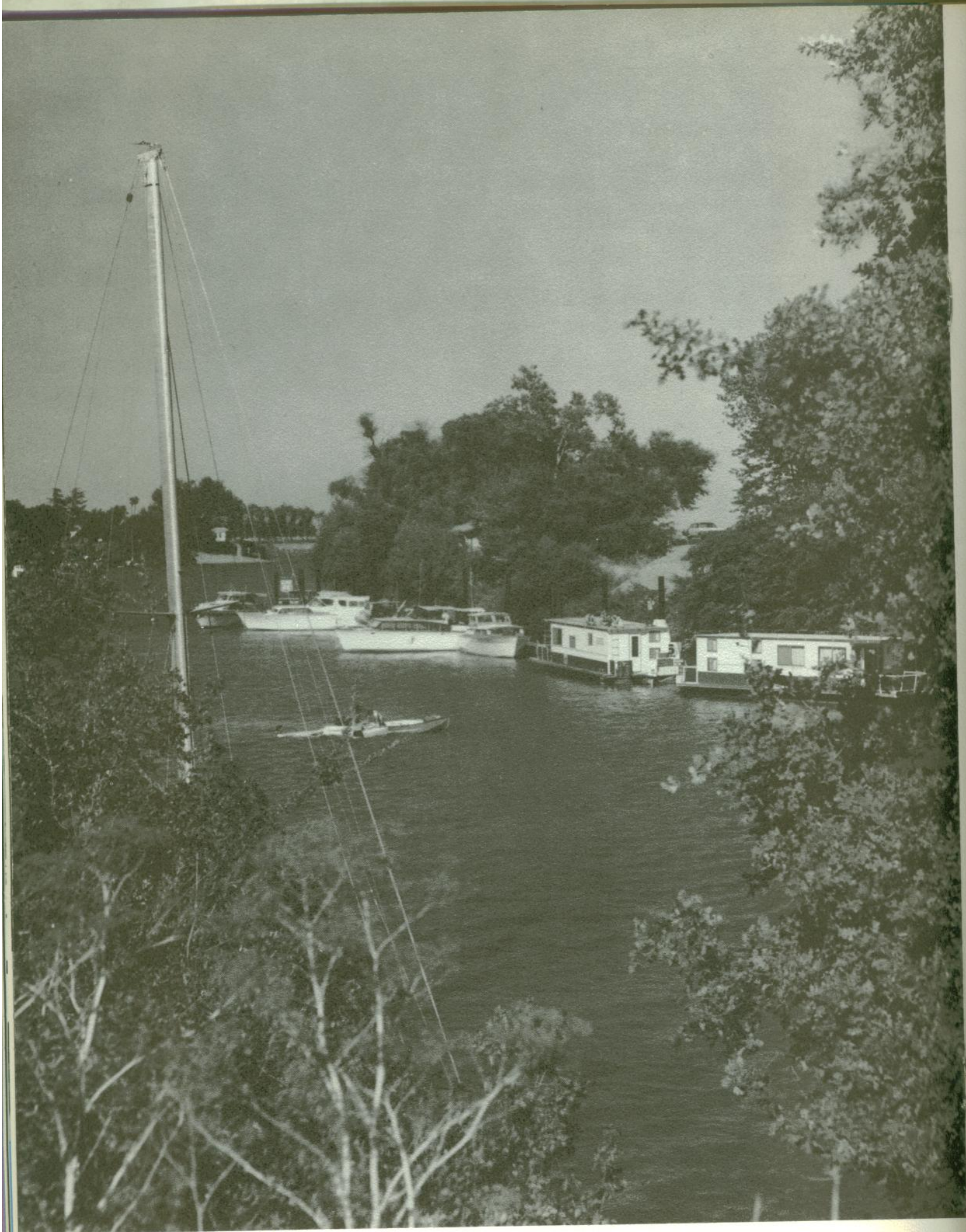
There was a substantial increase in the numbers of king salmon arriving at Trinity River Hatchery during 1971, compared to the runs of past seasons. Unfortunately, the steelhead count at the hatchery was little better than the dismal runs of recent years. Only 242 steelhead entered the holding ponds during the season. The specific causes for poor returns of hatchery-produced yearling steelhead have not been determined. This project is an outstanding example of serious damage by a water development to an important fishery and the failure of present mitigation policies to compensate.

The steelhead count at Red Bluff Diversion Dam on the Sacramento River during 1971-72 was only half (4,957) that of the previous year (10,473). This reduction can be attributed to the cutback in steelhead production at the federal Coleman Hatchery three years previously. Because of a federal budget cut at that time, only 650,000 yearlings were reared in contrast to the 1,500,000 usually produced. As could be expected, steelhead fishing was relatively poor in the Sacramento River during 1971. Fortunately, Coleman Hatchery steelhead production has been restored to the normal level and fishing should improve.

Since 1965 the Department of Fish and Game has worked cooperatively with the Merced Irrigation District to construct salmon production facilities on the Merced River.

During the first season of operation, a king salmon rearing pond on the Merced River proved its value in producing yearlings of excellent quality. From the original 105,000 fry (1970 brood year) placed in the pond, a total of 86,000 yearlings was released into the Merced River in October. The Merced Irrigation District has completed a second pond with funds supplied by the Department of Fish and Game.

If opportunities are seized and proper action taken, the resource will respond!



"— it is incumbent on the Board to protect fish and wildlife in the Delta."

— State Water Resources Control Board Decision 1379, July 1971

OPPORTUNITIES NOW!

The basic opportunities are these:

1. Protect and improve water quality, the condition of spawning gravel, and flows at the proper times in salmon and steelhead streams throughout the state.
2. Add to this a well-planned program of stocking young salmon and steelhead from hatcheries and spawning channels.
3. Maintain and enforce scientifically sound and equitable regulations on catch — the final product.

Here are some specific examples:

THE DELTA

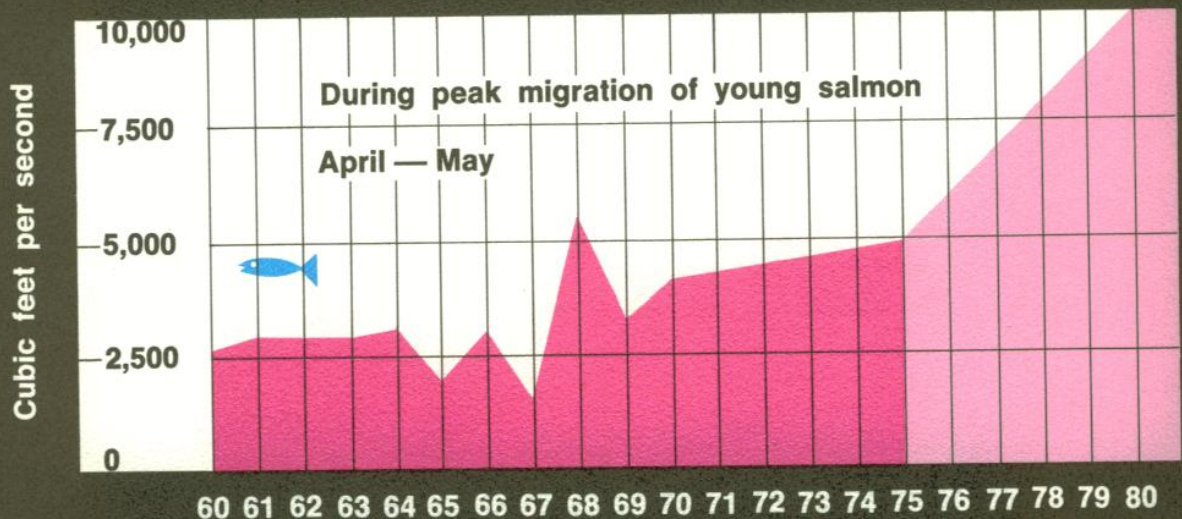
Protection of the Sacramento-San Joaquin Delta is essential. The State Water Resources Control Board has clearly declared state policy to do so. Other state, federal and local agencies are cooperating in various programs to do so.

The most serious problems for salmon and steelhead in the Delta are now caused by the U.S. Bureau of Reclamation and the California Department of Water Resources' giant pumping plants. These plants suck large volumes of water across the Delta for export to the San Joaquin Valley and southern California. In doing so, they cause flow reversals that impede the upstream migration of adult salmon, and the downstream migration of the young.

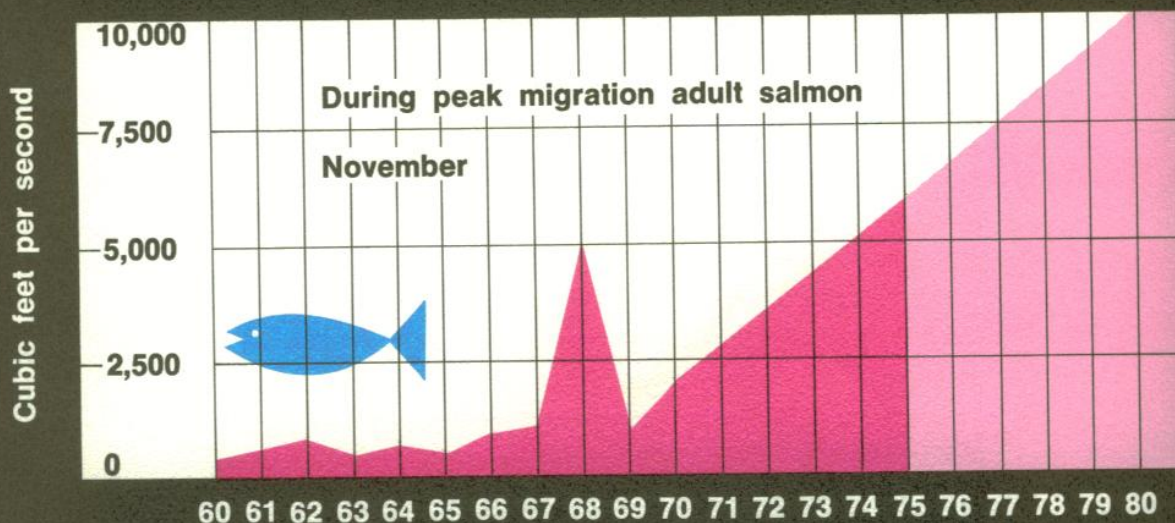
Until recently, the problem during the major salmon migration periods was relatively small and few fish were affected. With construction of the new state pumping plant and San Luis Reservoir, pumping rates have increased. They *will continue to grow*. Scientists and engineers predict that all anadromous fish stocks will suffer if proper action is not taken.

The only acceptable solution thus far advanced to meet this problem is to properly construct and operate the Peripheral Canal. Until the canal is built, various

PUMPING RATES / U.S. BUREAU OF RECLAMATION AND CALIFORNIA STATE PUMPS IN SOUTH DELTA



**Serious damage
to all anadromous
fish stocks**



**Increased pumping from the south Delta creates
cross Delta flows that harm all anadromous fish.**

temporary ways of coping with the flow reversal problems must be continued. They are the subject of an agreement among the California Departments of Fish and Game and Water Resources, and the U.S. Bureau of Sport Fisheries and Wildlife and Bureau of Reclamation. As pumping rates increase, however, the effectiveness of these measures will be reduced — and at some point in time they will fail.

Before that occurs we predict a major confrontation between environmentalists and water diverters. We strongly urge that it be avoided by early construction and proper operation of the Peripheral Canal. Decision 1379 of the State Water Resources Control Board must be aggressively implemented. Peripheral Canal operations must prevent flow reversals or pollution blocks which would be detrimental to salmon and steelhead resources.

GRAVEL RESTORATION AND PROTECTION

The compaction of spawning gravels by sedimentation, algae growth, and invasion of plants into the streambed, is an almost universal problem where streamflows are reduced and controlled by water development and where a greater proportion of the flow is domestic or agricultural waste discharge. Various attempts have been made to loosen and clean the gravel with high flows or with machinery, but success has been limited. A well-funded and persistent research and development effort is needed now.

The remaining prime spawning gravels on all salmon and steelhead streams must be protected against removal or encroachment.

ARTIFICIAL PRODUCTION

Basically, we need a continuous evaluation of the success of each hatchery and of each kind and size of fish being raised and planted. The Department of Fish and Game's present evaluation of planting just



This machine was designed to clean spawning gravel. It works well under some conditions, but cannot cope with the tons of sediment washed into streams by poor land use practices.

below the hatchery versus trucking fish into the Delta and of raising them to a larger size are good examples of the kind of evaluation that will be needed over a long period of time.

A new salmon and steelhead hatchery must be constructed soon to rebuild the depleted salmon and steelhead runs of the central coastal streams.

Studies are also needed to determine the most economical and efficient size of salmon and steelhead hatchery units.

STREAM SURVIVAL

Measures of spawning and hatching success and survival of young in important salmon and steelhead rivers should be incorporated into a regular monitoring program. Indices of important environmental conditions should be developed.

NORTH COAST RIVERS

New technology of water development and use, reduced estimates of future water needs, the new values society has placed on the natural environment, and past experience with the compatibility of conflicting uses — all combine to make past plans for water development on the North Coast to a major degree obsolete. The opportunity now exists for good analysis and wise public decision on how these rivers will be used in the future.

First priority must be given to the protection of the salmon and steelhead resources of these rivers and their maintenance as free-flowing streams. Programs which are designed to meet other needs must be shaped to maximize salmon and steelhead production.

Adequate financing must be made available to the Department of Fish and Game from sources other than the Fish and Game Preservation Fund to enable them to study north coast anadromous rivers.



We need continuous evaluation of management methods. Here marked fish are stocked to evaluate a new technique.

DISEASE AND NUTRITION

The increased role of artificial propagation in maintaining salmon and steelhead resources in a changing environment increases the importance of attacking the disease and nutrition problems in earnest. The U.S. Government should play a significant role here and fund the necessary studies.

THE IDENTIFICATION OF SALMON STOCKS AT SEA

A very important part of the management program is to determine what portion of each run is being caught at sea by commercial fishermen. Present estimates are very inaccurate because there is no way to identify the ocean-caught fish. Minor efforts are being made, but the program requires a larger input.

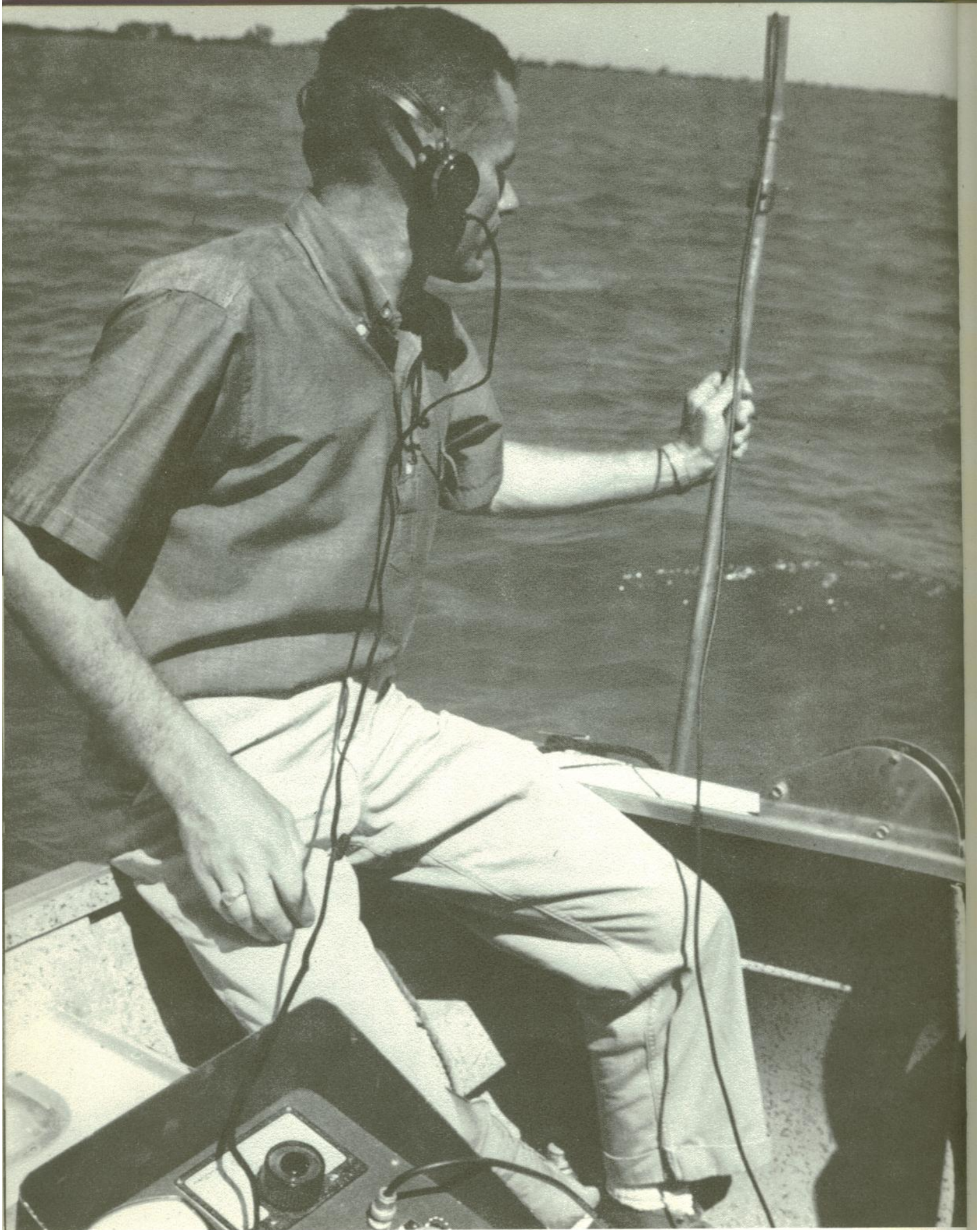
TRINITY RIVER RUNS

The U.S. Bureau of Reclamation should accelerate action to identify and correct the problems facing anadromous fish in the Trinity River below the Bureau's Trinity Project.

WATERSHED MANAGEMENT

The deposition of sediment in streambeds is a major problem for North Coast salmon and steelhead. The prime man-made cause is accelerated erosion from logging and road building. Major efforts to develop and implement plans for effective erosion control are needed. Such a move would do more than anything else to protect, restore and enhance the North Coast salmon and steelhead resources.

Major attention must be given to the development of management plans for all watersheds to better shape all land uses to the capability of each area. Hazard classification and soil and vegetative mapping on all watersheds must be completed.



The changing environment and its effect on stream survival of young salmon and steelhead must be monitored.

BENBOW DAM

This dam has delayed and blocked salmon and steelhead runs on the South Fork of the Eel for years. It is now owned by the California Department of Parks and Recreation, who are unable to repair the ladder for lack of funds. The area now has limited recreational value due to siltation. This dam should be removed to restore this river for the spawning of many thousands of salmon and steelhead.

SUMMER DAMS

Small dams constructed for short-time summer use on many coastal streams should be removed prior to the movement of salmon and steelhead both up and downstream.

FISH SCREENS

Even the best water quality, clean gravel, and hatchery production fail to produce adult fish if the young are drawn into irrigation ditches or power diversions. The Department of Fish and Game has screened the last of the major diversions in recent years. Continued monitoring is required and research should be devoted to developing new concepts for the screening and guidance of fish.

SMALL COASTAL STREAMS

The new emphasis on environment provides a new and better opportunity to save many small coastal streams that once seemed doomed to destruction by subdivisions, road building, logging and water developments. Salmon and steelhead protection and enhancement are compatible with the maintenance of scenic beauty and the aesthetic needs of urban populations. These streams must be protected to maximize salmon and steelhead production.



Disease and nutrition research is necessary as artificial methods supplant nature.

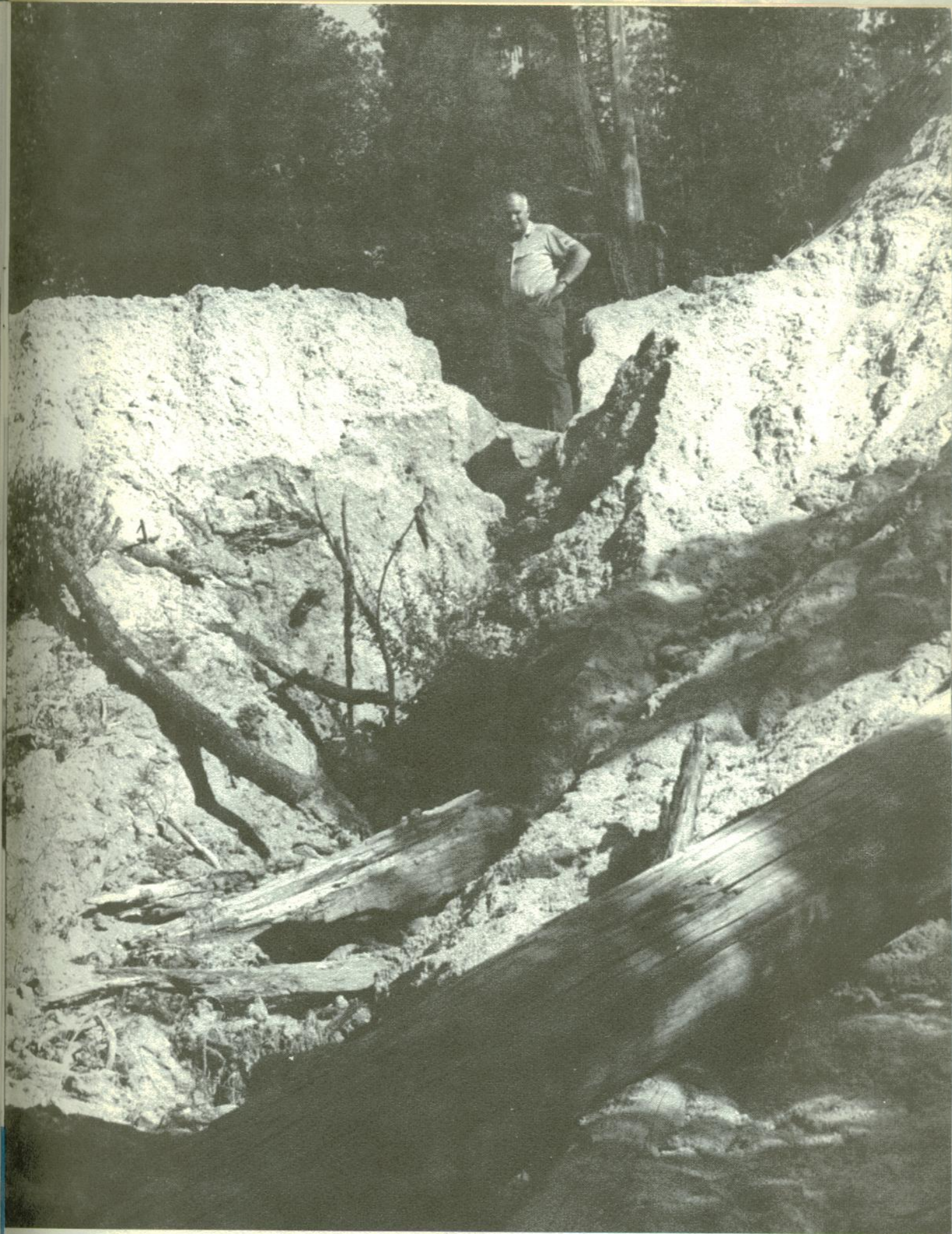
CONTINUED EVALUATION OF WATER DEVELOPMENT PROJECT

The setting of flow regimes below dams and the construction and use of ladders, fish screens, hatcheries, and spawning channels, and the regulation of catch are examples of management. Even if management procedures are based upon sound research, some method must be developed to regularly monitor their success. Sedimentation, pollution or downstream water uses will change the success of a flow release designed to maintain salmon and steelhead below a dam. The stocking of a fall spawning strain of fingerlings may become useless if water development changes the river environment to favor a different strain. To succeed we must continuously understand what is happening in our rapidly changing environment, and adjust our management procedures accordingly.

This will require continuous monitoring of the resource and of key environmental factors, and some changes in present laws.

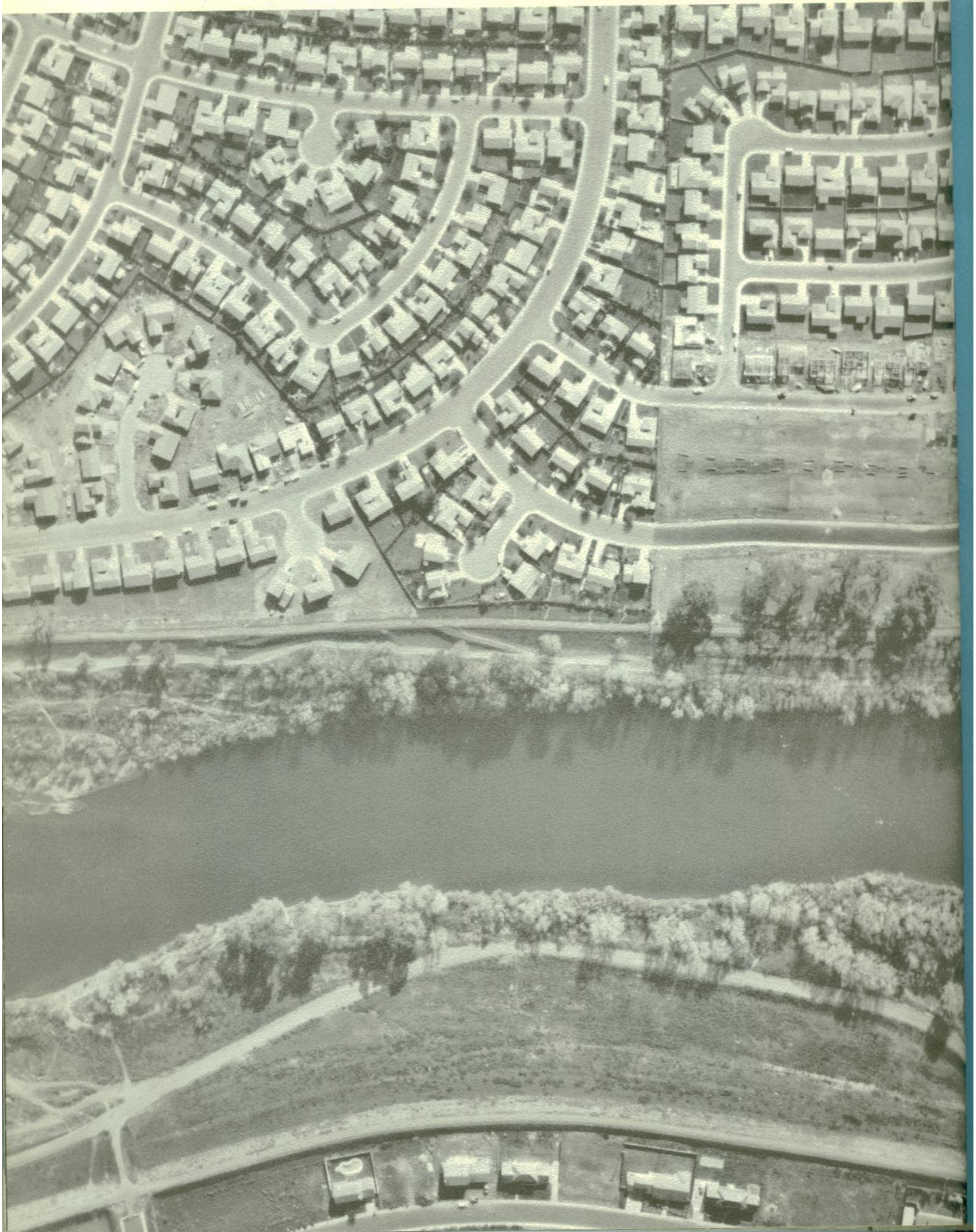
Who catches what fish? It is important to identify the origin of ocean caught fish.





Erosion — the worst enemy of North Coast salmon and steelhead. When will we act?

Development — even of subdivisions, need not destroy Salmon and Steelhead resources.



SALMON AND STEELHEAD

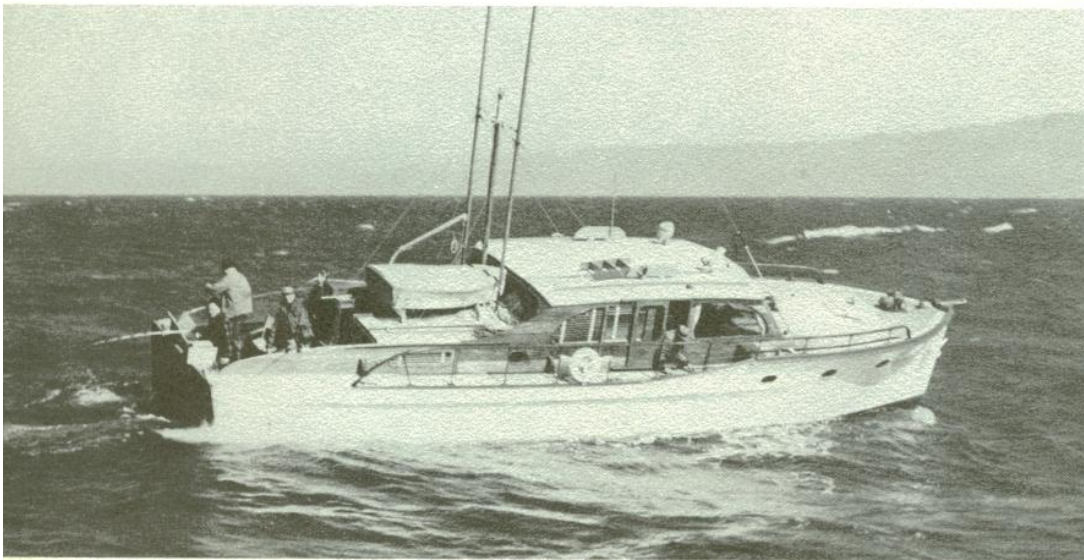
BRING HOME

THE

RESOURCES

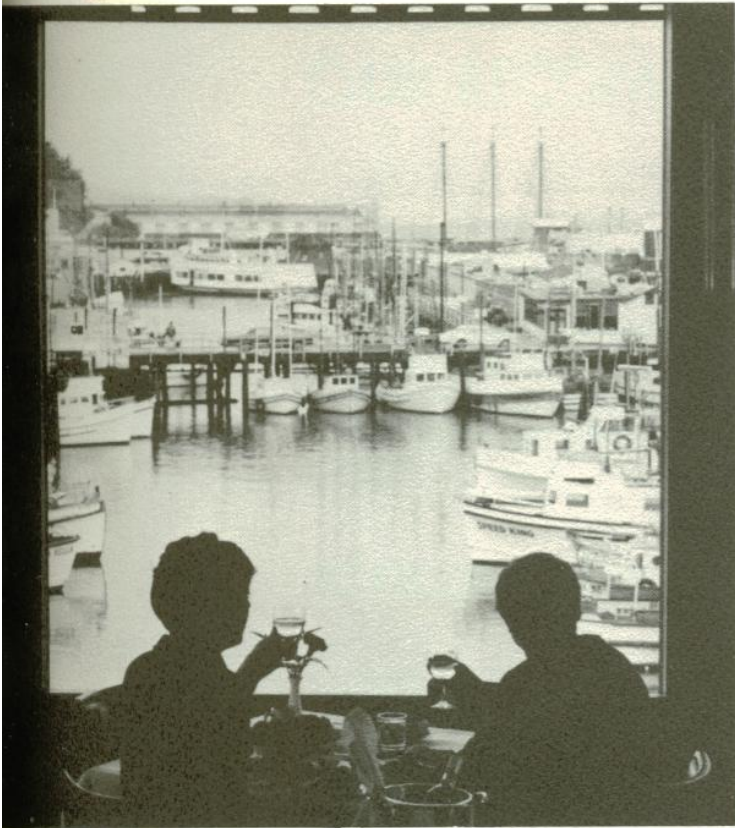
OF THE SEA





*"Salmon and steelhead
resources pay."
They are among
California's more
important natural
resources."*







PROBLEMS VS. OPPORTUNITIES— OUR RECOMMENDATIONS

The maintenance of a healthy salmon and steelhead fishing industry in this changing world depends largely upon an ability to respond to opportunities. Many now go unused for lack of legal authority or money. The Salmon and Steelhead Advisory Committee recommends the following action:

AT FEDERAL LEVEL ...

WATER PROJECT RECREATION ACT

The Federal Water Project Recreation Act provides that the federal government will assume the cost of those project-related fishery improvements “appropriate for operation by a federal agency”. The peculiarly narrow language of the Act has, however, left the responsibility question unresolved in discussions between state and federal conservation officials.

Amend the Federal Water Project Recreation Act to provide that all project and operational costs for anadromous fish enhancement programs in conjunction with federal water projects shall be borne by the federal government.

The Federal Water Project Recreation Act authorizes the Secretary of Interior to initiate salmon and steelhead improvements at early-day projects, to a total of no more than \$100,000 at each such project. The expenditure ceiling is unreasonable and must be removed. Further, the use of the funds should not be limited to project reservoirs, but should apply throughout the project area.

Amend the Federal Water Project Recreation Act to remove the \$100,000 ceiling on the cost of measures which may be taken by the Secretary of Interior to include anadromous fishery improvements at projects authorized prior to 1965 where no such improvements were included in the original plan of development. Broaden the authority to apply anywhere in the project impact area.

ANADROMOUS FISHERIES ACT

California has a backlog of projects suitable for 50 percent federal financing under the Anadromous Fisheries Act, but will have difficulty to provide necessary matching funds. Federal budgets are not firmed up until halfway through the fiscal year and some of the grants under this Act must be used during what is left of the fiscal year. There needs to be a larger federal commitment to anadromous fisheries. All grant funds should have a useful life of two years, similar, for example, to the Land and Water Conservation Fund.

Amend the Anadromous Fisheries Act to increase the federal grant from 50 to 75 percent of project costs and to increase the annual expenditure authorization from \$5 million to \$20 million. Additionally, provide that such grants may be utilized within two years, rather than one year, of their allocation date.

FEDERAL POWER ACT

At new FPC-licensed projects, project owners will finance multi-year studies of their project's actual impact on fisheries and will make project adjustments as needed based on those studies. Efforts to expand

the concept to all major project agencies in California are thwarted by the fact that the federal Bureau of Reclamation and Corps of Engineers are not subject to the licensing provisions of the Federal Power Act.

Amend the Federal Power Act to subject federal agencies to its licensing provisions, in order to assure adequate, continuing project responsibility to fisheries protection.

CENTRAL VALLEY FISHERY REHABILITATION PROGRAM

Salmon and steelhead resources have suffered terrible losses from development of the federal Central Valley Project, just as they have from federal water development in the Columbia River basin of Oregon and Washington. In the Columbia region, however, Congress has recognized the damage as a federal responsibility and authorized federal agencies to undertake fishery restoration projects. No such recognition has been given the equally tragic conditions resulting from federal water activities on the San Joaquin River at Friant Dam, the Trinity River and elsewhere in the Central Valley Project area.

Obtain congressional approval for a Central Valley fishery rehabilitation program granting the Secretary of Interior specific authority to undertake projects for the restoration of salmon and steelhead resources heretofore damaged through the development of Central Valley water projects under the control of the Secretary.

AT STATE LEVEL

FOREST PRACTICE ACT

The State Forest Practice Act has occupied the field of logging control in California for more than two decades without adequately recognizing the need to protect fish-producing streams from logging damage. Recent court action raises the need to amend the Act and presents an opportunity to overcome its historic policy deficiencies.

Amend the Forest Practice Act to require the preparation of detailed logging plans to be approved by the Department of Fish and Game. A streamside buffer strip should be a requirement in the law to protect all salmon and steelhead streams. The Act should also require adequate monitoring and enforcement to assure total stream protection.

PROTECTION OF STREAM FLOWS

While fisheries conservation is legally recognized as a beneficial use of water and the State Water Resources Control Board may order a storer or diverter of water to make downstream releases for fisheries protection, such releases may be diverted at any point below, thus destroying the purpose of the release.

Amend the Water Code to provide that streamflows required for the preservation of fisheries are not subject to further appropriation.

SPAWNING AREAS

Until ownership of disputed areas can be legally determined, the Fish and Game Director should be empowered to restrain damaging activities in prime fish-producing areas. His present authority over a few Central Valley sites needs to be expanded to include the invaluable salmon and steelhead spawning areas of the North Coast region.

Amend the Fish and Game Code to extend the Department's authority over critical streambed spawning areas to key North Coast and Central Valley streams where such authority is now lacking.

PROJECT RESPONSIBILITY

Past policy has been to negotiate firm conditions of water flow, hatchery construction, etc., needed to "mitigate" fish losses associated with project construction. Too often such conditions must be based on incomplete knowledge and they subsequently fail to protect the resource. A more flexible approach is needed.

Direct the Commission and Department to seek conditions in all future power licenses, water permits and similar grants of public authority to require project agencies to be responsible for fish and wildlife throughout the life of the project. They should finance pre- and post-construction studies of fishery conditions and make project adjustments, where needed. Such project-agency responsibilities should not terminate until all parties have determined the fisheries to be successfully protected.

**GENERAL FUND SUPPORT OF
COMMERCIAL FISHERIES**

California's commercial salmon fishery is of major importance to the general welfare of the people of California. This fishery contributes significantly to California's economy.

Legislation should be passed to clearly establish a general fund responsibility for the protection, restoration and enhancement of the salmon resources related to commercial fisheries. Such a contribution should be viewed as an investment to the present and future economy of the State.



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