Source(s) of the Trinity River Restoration Program's Spawner Escapement Goals.

Attached are excerpts for three documents that refer to the TRRP spawning escapement goals. The first one is the letter from CDFG to Thomas Meehan. The other two are some of the supporting documents for the previous TRRP. It is unclear why the natural spawning escapement goals identified in the Frederikson, Kamine, and Associates report are different when they cite the CDFG letter as the source.

Attachments:

1. CDFG letter to Thomas Meehan of VTN. January 22, 1979.
2. Frederikson, Kamine and Associates. 1980. Proposed Trinity River Basin Fish and Wildlife Management Program October. Prepared for USDOI Water and Power Resources Service. Contract # 8-07-02-V0035.
3. USFWS. 1983. Trinity River Basin Fish and Wildlife Management Program. Final Environmental Impact Report.

STATE OF CALIFORNIA—RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF FISH AND GAME

1416 NINTH STREET
SACRAMENTO, CALIFORNIA 95814

(916) 445-3531

January 22, 1979

Thomas Meehan Ph. D.
Project Manager
VTN
P. O. Box C-19529
Irvine, CA 92713

Dear Mr. Meehan:

Your letter of January 10 requested information regarding long term escapement goals and fishery yields for anadromous fish populations in the Trinity River.

It is my understanding that Paul Hubbell of my staff has contacted you by telephone and provided goals for escapements to Trinity River Hatchery and to the river for the salmon species, and a run size goal at both locations for steelhead.

The salmon escapement goals, exclusive of fishery catch, are as follows:

Adult king salmon, fall-run - 71,000 to the Trinity System, including 9,000 at Trinity River Hatchery.

Adult king salmon, spring-run - 9,000 to the Trinity System, including 3,000 at Trinity River Hatchery.

Adult silver salmon, 3,500 to the Trinity System, including 2,100 at Trinity River Hatchery.

The steelhead run size goal for the system is 50,000 adults. Of these, the escapement goal at Trinity Hatchery is 10,000 adults. The escapement goal for natural spawners in the system outside of the hatchery is undefined, and will vary with the angler catch that is achieved on the initial run of 50,000 adult steelhead.

So that we keep our terminology straight, please note that the term "escapement" is used to describe that portion of the potential spawning population that escapes the fisheries. That portion of the potential spawning population that is eventually caught by the fisheries is commonly referred to as the "catch" or "yield."

For several reasons, we are reluctant to establish yield or catch goals for the various fisheries operating on Trinity stocks. The harvestable surplus available from one year to the next is subject to variation caused by a multitude of factors, many of which are uncontrollable.

Streamflow and habitat in the upper Trinity are to a large degree manageable, and the restoration and maintenance of flows and habitat capable of supporting the indicated escapements is a realistic goal. Beyond that, the system becomes less manageable, and completely so by most of the agencies involved in the upper river.

Natural mortality among juvenile fish, in the lower rivers and in the ocean, is not only variable but largely uncontrollable. When the juvenile fish reach a size where fishing mortality becomes significant, regulatory management passes to a variety of other hands, including the Pacific Fishery Management Council, the California Legislature, the California Fish and Game Commission, and the Bureau of Indian Affairs and/or the Indians themselves.

Because of variation in survival from year to year, the harvestable surplus available to all fisheries could conceivably vary from one to three times the escapement goal. The management agencies involved in fishery regulation are generally aware of this fact, but the methods available for assuring that the total catch equals the harvestable surplus are imperfect.

Because of this imperfection, it is reasonable to expect actual escapement to fluctuate about the goal. For these reasons our immediate objective on the upper Trinity should be to maintain the amount and quality of habitat necessary to accommodate the escapement goal, recognizing that in any year we may fall short of or exceed it, depending upon our regulatory success elsewhere.

Sincerely,

E C Fullerton

Director

cc: Paul Hubbell

CONTRACT NO.
8-07-02-V0035

PROPOSED TRINITY RIVER BASIN FISH & WILDLIFE MANAGEMENT PROGRAM

MAIN REPORT

FINAL

October 1980

Frederiksen, Kamine and Associates
SACRAMENTO, CALIFORNIA

prepared for
UNITED STATES DEPARTMENT OF THE INTERIOR
WATER AND POWER RESOURCES SERVICE

V. FISH AND WILDLIFE MANAGEMENT GOALS AND OBJECTIVES

Basic management goals and objectives for fish and wildlife in the Trinity River Basin are enumerated herein consistent with those outlined by the Task Force in the Framework Guide in June 1977; however, this listing is more specific where appropriate and possible. Additionally, consideration was given to objectives as set forth by Trinity and Humboldt Counties.[1] These goals and objectives provide the framework for the formulation of the specific actions that comprise the management program.

ANADROMOUS FISH

GOALS

The basic management goal formulated for anadromous fish in the Trinity River Basin is stated as follows:

> To manage the land and water resources and take the actions needed to establish and maintain the anadromous fishery in the Trinity River Basin at the 1950-60 level.

Accordingly, total population levels or adult production goals were established for the basin drawing on the available data and stated escapement goals of the California Department of Fish and Game.[2] The production goals for king salmon, silver salmon, and steelhead trout are presented in Table 17.

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1 Letter of January 15, 1979, from Supervisor Jim Smith to Francis E. Borcalli and letter of August 10, 1977, from Donald C. Tuttle to Ernest M. Sasaki.

2 Letter of January 22, 1979, from CDFG Director E. C. Fullerton to Thomas Meehan of VTN.

TABLE 17

TRINITY RIVER BASIN FISH AND WILDLIFE MANAGEMENT PROGRAM

ANNUAL ADULT PRODUCTION GOALS FOR ANADROMOUS FISH
AND SPAWNING ESCAPEMENT TO MEET GOALS FROM NATURAL PRODUCTION

Species	Production Goals				Spawning Escapement for Natural Production
	Trinity Hatchery	Lewiston Dam to the North Fork	Remainder of Trinity River System	Total	
King Salmon					
Spring race	6,000	4,000	6,500	16,500	8,400
Fall race	70,000	60,000	66,000	196,000	74,000
Silver salmon	7,500	---	5,000	12,500	3,400
Steelhead trout	22,000	18,000	15,000	55,000	25,000

Table III. Trinity River adult spawning runs, escapement goals and gains in escapement with management program. [1]

Species	Recent Spawning Runs			Escapement Goal			Projected Escapement Gains		
	Hatchery	Natural	Total	Hatchery	Natural	Total	Hatchery	Natural	Total
Chinook– spring run (79-82)	1400	4200	5600	3000	6000	9000	1600	1800	3400
Chinook – fall run (79-82)	2500	8700	11200	9000	62000	71000	6500	53300	59800
Coho (79-82)	2100	2050	5150	2100	1400	3500	0	0	0
Steelhead (80-81)	2000	19400	25200[2]	10000	40000	50000[3]	8000	16900	24800[4]

October 1983

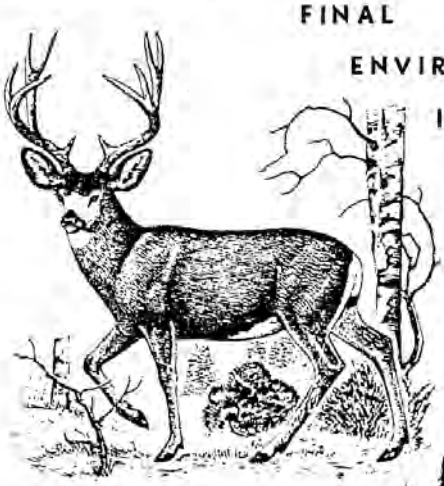
INT/FES 83-53

FINAL

ENVIRONMENTAL

IMPACT

STATEMENT



TRINITY RIVER BASIN FISH AND WILDLIFE MANAGEMENT PROGRAM

prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Cooperating Agencies Bureau of Reclamation

TABLE III

TRINITY RIVER ADULT SPAWNING RUNS, ESCAPEMENT GOALS AND GAINS IN ESCAPEMENT WITH MANAGMENT PROGRAM 1/

SPECIES	RECENT SPAWNING RUNS			ESCAPEMENT GOAL			PROJECTED ESCAPEMENT GAINS		
	HATCHERY	NATURAL	TOTAL	HATCHERY	NATURAL	TOTAL	HATCHERY	NATURAL	TOTAL
CHINOOK (1979-82)									
SPRING RUN	1400	4200	5600	3000	6000	9000	1600	1800	3400
FALL RUN	2500	8700	11200	9000	62000	71000	6500	53300	59800
COHO (1979-82)	2100	2050	5150	2100	1400	3500	0	0	0
STEELHEAD (1980-81)	2000	19400	25200 2/	10000	40000	50000 3/	8000	16900	24800 4/

1/ Run data in table are an estimate of general conditions. Many values are based on limited and presently unpublished DFG Trinity River Project data. Goals (including undefined steelhead catch) are as developed by California Department of Fish and Game for a fully restored Trinity River System.

2/ Includes estimated catch of 3800 adult fish in Trinity River above Willow Creek. Comparable run data not available for other recent years however, 1980-81 run was believed exceptionally large.

3/ Goal is for an equivalent run of 50,000 adult steelhead (inclusive of catch) in the Trinity River with a run of 10,000 at Trinity Hatchery.

4/ California Department of Fish and Game goal includes an undefined catch on an equivalent run of 50,000 adult steelhead.

Dam construction on Grass Valley Creek would result in the inundation or disturbance of approximately 70 acres in that watershed. The vegetation in the area that would be affected or destroyed by the project consists mainly of hardwoods, conifers, and brush. The conifers are, for the most part, mature, second-growth Douglas fir and ponderosa pine.

The wildlife management program will alter vegetation types where burning is prescribed to improve deer habitat. The production of grasses and forbs will generally be increased by burning decadent brush stands.

Other Alternatives

Soils and vegetation will be similarly impacted by Alternatives Groups Numbers 1 and 3. Under Alternative Group No. 2 and the no action alternative, changes from existing conditions would be limited to natural healing and potential further disruption from other land-uses.

FISH AND WILDLIFE

Salmon and Steelhead

Proposed Program

Escapement goals for the major anadromous species in the Trinity River are shown in Table III. These goals have been developed by the California Department of Fish and Game and are based on gains anticipated to be achieved with the Management Program. The goals are stated in terms of spawning adult fish. Grilse (precociously returning fish) would add to the total run size.

The Management Program would provide spawning and rearing habitat and hatchery production capacity to meet the goal for a minimum spawning run of 80,000 adult fall and spring chinook salmon within the Trinity River Basin above Willow Creek (Table III). Although, not included in the escapement goal, it is estimated that an additional 2,000 to 5,000 spawning fall run chinook salmon could be accommodated in the Trinity River and tributaries below Willow Creek, largely within the Hoopa Reservation.

The program goal for steelhead is 50,000 adult fish inclusive of catch (with a minimum of 10,000 fish to Trinity Hatchery). The goal would be reached by increasing the existing population of steelhead by about 25,000 more adult fish.

The escapement goals for fall run chinook salmon are based on implementation of the Management Program and differ substantially from those currently established by PFMC for the Klamath-Trinity River Basin. The PFMC goals are for a spawning run of 115,000 adult chinook to the Klamath-Trinity system based on considerations of biological capacities and lesser levels over the next 20 years based on more immediate socio-economic concerns (i.e., adverse impacts to the commercial fishing industry associated with reducing fish harvest to increase the spawning run).

The PFMC's 115,000 long-term "biological" goal is based on an escapement of approximately 52,000 chinook salmon to the Trinity River under existing conditions. Habitat capacity and hatchery production gains to be achieved with implementation of the Management Program would provide for an escapement of 80,000 chinook salmon. This would presumably permit the PFMC's escapement goals to be adjusted upward by 28,000 fish (to a total of 143,000).

The progeny produced by additional spawning fish would be available to help meet the various sport, commercial and Indian fisheries needs and to sustain future spawning runs (Table XIV). At existing harvest rates the increased spawners would provide nearly 250,000 additional salmon and 17,400 steelhead for harvest. The annual economic value of these fish would be approximately 30.7 million dollars (Table XIV). Coastal fishing port committees would benefit notably from increased landings with nearly 5 million dollars in benefits alone to the Eureka/Humboldt Bay area (Table XV).

Other Alternatives

The other alternatives would achieve lesser levels of salmon and steelhead restoration. The no action alternative would result in maintenance of fish and wildlife populations and maximum harvest potentials near existing levels. Alternative Group No. 1 would provide restoration of natural anadromous fish escapements of up to 55,100 chinook salmon, and 16,900 steelhead trout. Projected increased harvests (from the production resulting from increased spawners) would be approximately 221,000 salmon and about 12,000 steelhead. However, full achievement of these populations and harvests could be difficult since habitat restoration would not be undertaken in the South Fork Trinity Basin. Wildlife benefits would likely be similar to the proposed program but also would be constrained by the exclusion of opportunities to work in the South Fork watershed.

Alternative Group No. 2 would emphasize the hatchery production components of the Task Force restoration goals. Because hatchery operations require relatively few spawners to maintain production, hatchery stocks are able to withstand higher harvest rates than are natural runs. Projected gains in escapement to the hatchery under this alternative are estimated at 8,100 chinook, and 8,000 steelhead. Estimated potential increased harvest from these escapement gains would be 30,200 salmon and 5,600 steelhead.

No wildlife benefits would be realized under Alternative Group 2. The fish and wildlife impacts of Alternative Group No. 3 would be similar to those described for Alternative Group No. 1. The difference in this alternative is that monitoring studies would be conducted to evaluate the effectiveness of the restoration program elements with respect to fish and wildlife harvests and other resource uses.

TABLE XIV

ANNUAL BENEFITS FOR ADDITIONAL HARVEST
OF TRINITY RIVER SALMON AND STEELHEAD

HARVEST COMPONENT	PERCENT 1/	NO. FISH	NO. ANGLER DAYS	ADDED ($) VALUE 2/
CHINOOK SALMON FALL RUN 3/				
OCEAN COMMERCIAL	63	154,480		16,407,000
OCEAN SPORT	2	4,090	5,300	686,000
IN-RIVER SPORT	13	31,880	95,640	8,608,000
IN-RIVER NET	22	53,940		1,753 000
SUBTOTAL	100	245,200	100,940	27,454,000
CHINOOK SALMON SPRING RUN 4/				
OCEAN COMMERCIAL	55	2,420		257,000
OCEAN SPORT	2	90	120	15,000
IN-RIVER SPORT	17	750	2,250	203,000
IN-RIVER NET	26	1,140		37,000
SUBTOTAL	100	4,400	2,370	512,000
STEELHEAD TROUT 5/				
IN-RIVER SPORT	98	17,050	40,920	3,683,000
IN-RIVER NET	2	350		2,000
SUBTOTAL	100	17,400	40,920	3,685,000
TOTAL 6/			144,230	$31,651,000

1/ Based on calculated existing harvest distribution.

2/ OCEAN COMMERCIAL: Estimated from table XV.
OCEAN SPORT : Calculated at a value of $129/day at 1.3 days/fish.
IN-RIVER SPORT : Calculated at a value of $90/day at 3.0 days/fish for salmon and $90/day at 2.4 days/fish for steelhead.
IN-RIVER NET : Minimum value based on 13 lbs./fish at $2.50/lb. for chinook, and 5.0 lbs./fish at $1.36/lb. for steelhead.

3/ Assumes an increase of 59,800 adult spawners will produce 245,200 additional harvestable fish (4.1:1 total per adult spawner similar to calculated existing ratio).

4/ Assumes 3,400 additional adult spawners will produce 4,400 additional harvestable fish (1.3:1 total per adult spawner based on calculatd existing ratio).

5/ Assumes 24,900 additional adult spawners will produce 17,400 additional harvestable fish (0.7:1 total per spawner based on calculated existing ratio.

6/ No additional coho would be produced since escapement goals are being met. Total value is additional to calculated existing value.