Chris
2/21/90

UPPER ROGUE FISH DISTRICT

Jerry MacLeod
David Haight

1990

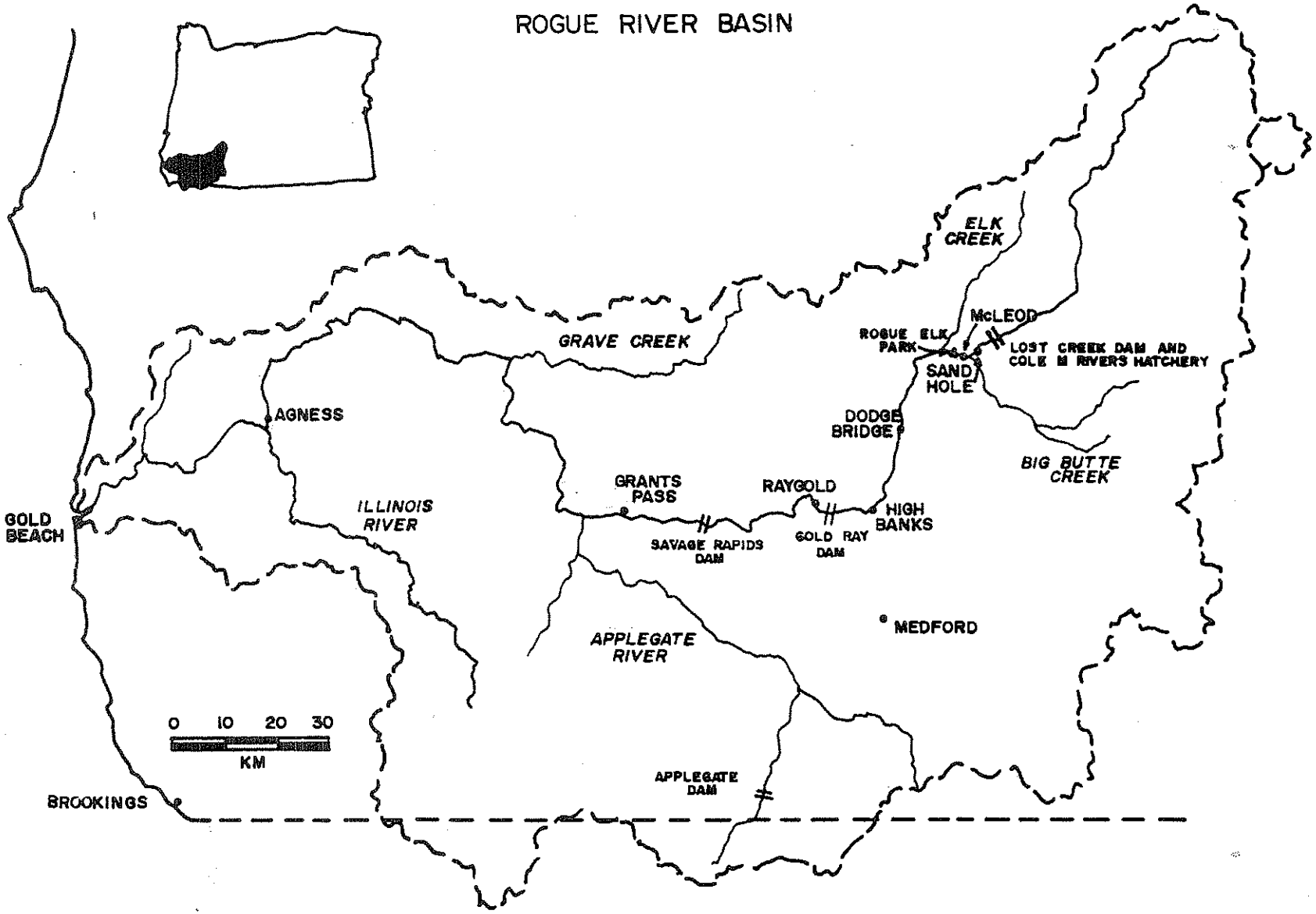


Figure 1. Map of the Rogue River basin

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

A. JENNY CREEK SUCKER

1. STATUS

a. In low numbers, but population is relatively stable.

2. MANAGEMENT

a. Fish is primarily distributed in the portion of Jenny Creek managed by the Klamath Fish District.

b. Habitat is protected from development impacts by the Jackson County Land Use Plan.

B. JENNY CREEK WILD TROUT

1. STATUS

a. BLM has electophoretic studies underway to determine if Redband Trout exist in the drainage. An OSU Coop Fishery Unit study concluded that some Jenny Creek populations most likely belonged to a previously unknown major evolutionary line, (possibly a new subspecies), of Rainbow Trout also found in the headwaters of Upper Klamath Lake Basin.

2. MANAGEMENT

a. Most of Jenny Creek is managed by the Klamath Fish District.

RESIDENT TROUT

I. STREAMS

A. STATUS OF WILD POPULATIONS

1. **Rainbow:** There are populations throughout the Rogue Basin; however, they are not found in large numbers below Cole Rivers Hatchery in the mainstem of the Rogue River. There is a unique population of Rainbow in the Jenney Creek System, (Klamath tributary), that is discussed in the endangered, threatened, and sensitive section.

2. **Cutthroat:** There are resident populations throughout the mainstem of the Rogue, Applegate, and Illinois Rivers and their major tributaries; and in the lower reaches and a few tributaries of the North, Middle, and South Forks of the Rogue River.

3. **Brook Trout:** There are populations throughout the Rogue Basin above Lost Creek Dam, in the Upper reaches of the Big and Little Butte Creek systems, (Rogue tributaries), in the upper reaches of Sucker Creek, (Illinois tributary), and a few of its major tributaries--and in the Keene Creek system, (Klamath tributary).

4. **Brown Trout:** There is a small population in the North Fork of the Rogue River and a few of its major tributaries.

B. MANAGEMENT

1. Inventory.

   a. Electrofishing.
   b. Random Creel Census

2. Hatchery Programs--legal Rainbow in the Rogue and Applegate Rivers, and a few of their major tributaries.

3. Habitat Projects.

   a. The Rogue River National Forest, Siskiyou National Forest, and Medford District of the Bureau of Land Management all conduct habitat enhancement projects, which consist primarily of instream structures and willow plantings that benefit Trout populations.
   b. With a new STEP position in the District, opportunities have increased to develop projects that will enhance Trout habitat.

4. Concerns.

   a. Trout angling in the anadromous reaches of the basin result in some mortality to juvenile Salmon and Steelhead.

b. Little information is available about the status of many of the trout populations within the district.
c. There is a lack of angler access on the Applegate River.

II. LAKES

A. STATUS OF WILD AND HATCHERY POPULATIONS

1. **Rainbow:** Occur in all of the major lakes within the district. Although there is some natural production, these populations are maintained primarily through stocking of hatchery fish.

2. **Cutthroat:** There are small populations of wild Cutthroat in many of the lakes in the district; however, only Squaw Lakes have a sufficient population to support a target fishery.

3. **Brook Trout:** There are good populations in Fish Lake and most of the high lakes. Although there is some natural production, these populations are maintained primarily through stocking of hatchery fish.

4. **Brown Trout:** There are small, wild populations in Lost Creek Reservoir and the North Fork Forebay.

5. **Kokanee:** There is a naturally reproducing population in Willow Lake, which is a remnant of a hatchery stocking program.

6. **Chinook, Coho, Steelhead:** Surplus fish are stocked in several district lakes to supplement the trout fisheries.

B. MANAGEMENT

1. Inventory.

   a. Gillnetting
   b. Electrofishing
   c. Random Creel Census

2. Hatchery Programs.

   a. Legal Rainbow are stocked in district lakes where conditions are not suitable for production of Trout and to accommodate high angling pressure.
   b. Fingerling Rainbow are stocked in most major lakes in the district that will produce trout.
   c. Fingerling Brook Trout are stocked in Fish Lake, Burma Pond, and the high lakes.

3. Habitat Projects.

   a. The Siskiyou National Forest is planning to enlarge Spalding Pond to enhance trout angling opportunities.

b. The Rogue River National Forest is planning to place structures and plant willows in several lakes and reservoirs in conjunction with ODFW.
c. District personnel are continuing to plant willows in the draw-down zone of Lost Creek Reservoir.

4. Concerns.

a. Decrease in angler success for Rainbow at Howard Prairie Reservoir in recent years.

5. Actions.

a. Need to investigate ways to enhance Cutthroat fishery at Squaw Lakes.

III. UNIQUE WATERS

A. HYATT LAKE

1. Chemically treated on October 12, 1989 to control a stunted Bullhead population. It will be restocked in 1990 with 20,000 legal and 250,000 fingerling Rainbow as well as Largemouth Bass.

B. HIGH LAKES

1. Status and Hatchery Program. Most high lakes in the Cascade and Siskiyou Mountains that will support fish are stocked by helicopter with Brook Trout fingerlings. Two lakes are also stocked with Rainbow fingerlings.

2. Management.

a. District and Forest Service personnel plan to conduct fish and habitat inventories of the lakes.
b. District and Forest Service personnel plan to investigate the feasibility of conducting habitat enhancement projects in some of these lakes.

3. Actions Needed.

a. Investigate the rate of harvest of Brook Trout in these lakes and determine if Cutthroat would provide a better fishery in some of the lakes. Installation of volunteer creel boxes is planned for 1990.

C. HOLY WATER

1. The impoundment between Lost Creek Dam and the barrier dam at Cole Rivers Hatchery provides a good Rainbow fishery--restricted to barbless flies and lures, very popular with fly fishermen.

a. Inventory--Random creel census and voluntary creel box.
b. Regulation--District personnel will work with local groups to attempt to resolve conflicting interests.
c. Habitat--District personnel will assist Rogue flyfishers with willow planting project.

IV. GENERAL ACTIONS NEEDED

A. DEVELOP INVENTORIES FOR WILD TROUT--PARTICULARY IN STREAMS.

B. IMPROVE ENFORCEMENT OF ANGLING REGULATIONS.

C. INCREASE THE AMOUNT OF CREEL CENSUS CONDUCTED.

D. RESOLVE IHN ISSUE AS IT RELATED TO DISTRIBUTION OF TROUT FROM COLE RIVERS HATCHERY.

WARMWATER SPECIES

A. HYATT LAKE

1. STATUS

a. Chemically treated with Rotenone on October 12, 1989 to remove a very large population of stunted brown Bullhead, (approx. four million). About 1,000 Trout, 50 Bass, and a few thousand small crappie were also killed.

b. Gillnets set in November found no fish.

2. MANAGEMENT

a. Lake will be restocked with 250,000 Rainbow fingering and 20,000 legal Rainbow this spring.

b. About 15,000 Largemouth Bass fingering from St. Paul Ponds, and several older age classes of Bass will be stocked to provide a predator base and develop a sport fishery.

c. A management plan has been completed.

B. SMALLMOUTH BASS

1. STATUS

a. Now found in expanding numbers in Lost Creek, Applegate, and Emigrant Lakes.

b. A growing fishery has developed as the average size has increased.

c. There is one unconfirmed report of a Smallmouth caught in the Applegate River.

2. MANAGEMENT

a. Inventory.

1) Gillnetting
2) Electrofishing
3) Random creel census

b. Stocking--none authorized.

c. Habitat--no habitat improvement projects are planned specifically for Smallmouth Bass.

d. Concerns.

1) Smallmouth Bass may drop out of the reservoirs and populate Bear Creek, Applegate, and the Rogue Rivers.
2) Smallmouth Bass predation on salmonids in the mainstem rivers could impact rearing Steelhead fingering and smolts.

C. LARGEMOUTH BASS

1. STATUS

a. Healthy and relatively stable population of Largemouth Bass exist in Lost Creek, Applegate, Selmac, Emigrant, and Willow Lakes.

b. A growing population of relatively small Bass exist in Squaw and Agate Lakes.

c. Bass exist in unknown numbers in most of the public and private ponds in the Rogue Valley.

d. Strong Bass fisheries occur in the lakes listed in "a" above. The interest in Bass fishing is growing rapidly. Lost Creek hosts a number of Bass tournaments throughout the year.

2. MANAGEMENT

a. Inventory.

1) Gillnetting
2) Electrofishing
3) Random creel census
4) Bass Tournaments

b. Stocking.

1) Hyatt Lake will be stocked with adult and fingering Largemouth Bass to establish a multi-age class population that will control unwanted fish that will probably be introduced. The Bass will also generate a sport fishery.

c. Habitat.

1) Willows, shrubs and sedges have been planted annually in Lost Creek and Applegate Lakes for the past six years with help from the Southern Oregon Bass Club. Brush piles have been placed in Applegate Lake (USFS) and Selmac Lake (OYCC Crew) for warmwater fish habitat.
2) The USFS and District Staff are planning additional willow planting and structure placement in Lost Creek, Applegate, Squaw, Willow, and Fish Lakes in 1990.
3) An independent group of Bass fisherman proposes to place logs, stumps, and brush at four locations in Hyatt Lake.

4) An R&E Project proposal is being developed with the USFS for an expanded Lake Habitat Improvement Project on several District lakes.

d. Basin Plan.

1) Work will begin in March on the Rogue Basin Plan. Goals and objectives for management of all Warmwater species in the basin will be developed.

e. Concerns.

1) No specific concerns have been identified.

D. OTHER WARMWATER FISH SPECIES

1. STATUS

a. Strong population of Crappie, Bluegill, and Brown Bullhead exist in most District lakes. A few lakes contain small numbers of Pumpkinseed as well.

b. Crappie in Emigrant, Willow, Agate, and Selmac Lakes are providing the most poplar fisheries.

c. A small population of Yellow Perch exist in Squaw Lakes and the first Perch in Agate Lake was found in 1989.

d. Brown Bullhead fishing is popular in Lost Creek, Selmac, and Howard Prairie Lakes.

2. MANAGEMENT

a. Inventory.

1) Gillnetting
2) Electrofishing
3) Random creel census

b. Habitat.

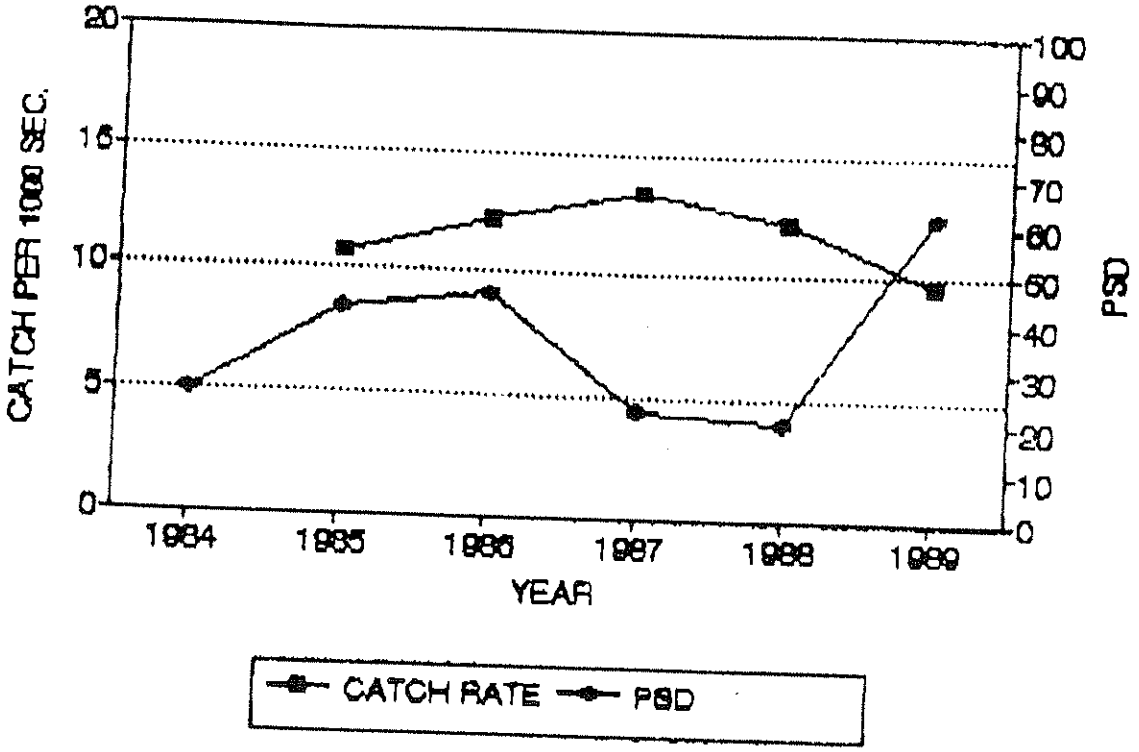
1) ODFW & USFS Lake Habitat Improvement Projects have been benefiting all warmwater species.
2) An expanded willow planting and structure placement program is being planned that will benefit all warmwater species.

c. Concerns.

1) No specific concerns have been identified.

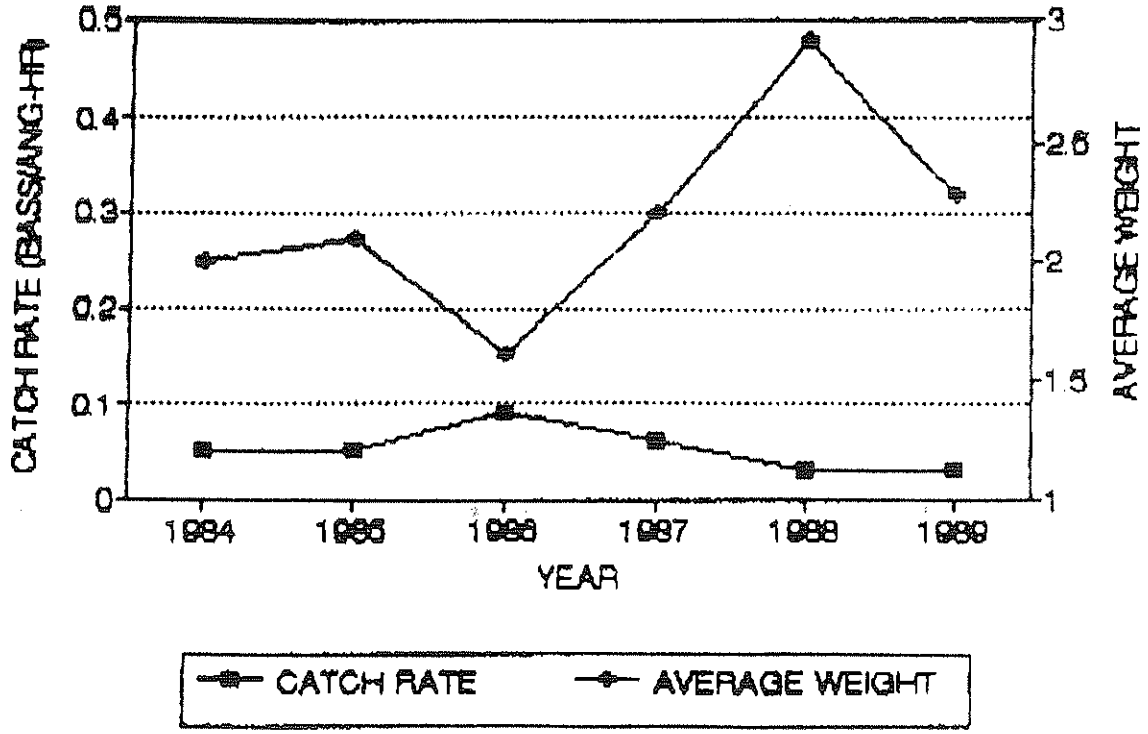
LOST CR. RES. ELECTRO. SAMPLES

OF LARGEMOUTH BASS, 1984-89



LOST CR. RES. BASS TOURNAMENTS

(12 & 13 INCH MINIMUM LENGTH)



SUMMER STEELHEAD

A. STATUS

1. ADULTS

a. The combined wild and hatchery run of adults over Gold Ray Dam has been on the increase since the 1960s. However, most of the wild production occurs below Gold Ray so the increase consists primarily of hatchery fish.

b. Spawning surveys and seining results indicated a decline in the wild adult population.

c. Salmon-Steelhead tag returns show a relatively stable catch of summer Steelhead adults since catches peaked in the late 1970s and early 1980s.

d. Adults spawn primarily in the smaller Rogue tributaries between Grants Pass and Medford, but are found in most streams above the Rogue Canyon. Few, if any, summers spawn in the Illinois system.

2. HALF-POUNDERS

a. About 97 percent of all summer Steelhead make a false spawning run as "half-pounders."

b. Few half-pounders pass Gold Ray Dam so the Lower River seining and angler reports are the only methods to measure abundance.

c. Half-pounder abundance has varied considerably in recent years but the 1988 and 1989 runs were unusually low.

3. WILD AND HATCHERY POPULATION

a. Studies conducted from 1967-73 found wild fish comprising 80 percent of the Summer Steelhead run.

b. Lower river seining results in recent years show that wild fish now comprise only 40 percent of the run.

4. FISHERY

a. The catch of adults appears to be relatively stable since 1983. The half-pounder catch, however, has been very poor the past two years.

b. An early run of adults pass quickly through the lower river in June. Few are caught then but they provide a very popular Upper River fishery in August-October.

c. The half-pounders and late run adults enter the river in August and support the Lower River and canyon fishery from September through November.

d. Angler effort has increased significantly in recent years. Over 100 guides regularly fish the river with most utilizing the Canyon fishery.

e. Exploitation rate of early run adults is 0.3 percent. Late run about is 1.2 percent and half-pounders is 4.0 percent.

B. MANAGEMENT

1. INVENTORY

a. Seining at Huntley Park (r.m. 9)

b. Redd counts

c. Gold Ray Dam counts

d. Creel census

1) Statistical sampling program (1990)
2) Random
3) Guides' Log Book

e. Salmon-Steelhead tag returns

f. Juvenile sampling

2. HATCHERY PROGRAM

a. Cole Rivers Hatchery releases 150,000 Smolts annually.

b. Smolt releases have been below the 150,000 fish target the last two years due to excessive losses in the hatchery's incubation facility.

c. About 350,000 eggs are incubated in STEP hatchboxes each year.

d. Surplus adults at the hatchery are recycled past the sport fishery.

3. HABITAT

a. Habitat Improvement Projects.

1) STEP projects have been completed and are being planned that benefit Summer Steelhead habitat.

2) USFS and BLM habitat projects are being targeting on Summer Steelhead habitat.

b. Flow and Water Management

1) Rogue and Applegate Flows are manipulated at the dams to primarily benefit Salmon. There is considerable speculation that current flow strategies may be impacting Summer Steelhead distribution.

2) Water withdrawals on many prime Summer Steelhead spawning tributaries appear to be drying the streams up before the fry can emigrate to the main river.

4. SUMMER STEELHEAD TASK FORCE

a. The commission recently appointed a task force of representatives from various user groups to develop recommendations to the department regarding management of the Rogue Summer Steelhead.

b. The task force will concentrate on flow management, hatchery production and regulations.

5. REGULATIONS

a. In 1990 anglers must tag all Steelhead over 16 inches. This will provide a better record of adult catch. There is some concern by anglers about this regulation but no major opposition.

b. In 1991 anglers will be required to release all wild Steelhead. This will protect the dwindling wild stock. There is little objection to releasing wild summers but considerable opposition to releasing wild winter steelhead.

6. CONCERNS

a. Wild Summer Steelhead numbers have declined significantly in the past 20 years.

b. Angler catch, particulary half-pounders, has declined in recent years.

c. Half-pounders may be entering the river later and holding below the traditional canyon fishery in October and November.

7. ACTIONS

a. Inventory.

1) Continue Huntley Park seining.
2) Continue Gold Ray counts
3) Conduct a statistical sampling program in 1990

4) Conduct a flow tagging program in 1990
5) Investigate implementation of a radio tagging program
6) Expand redd counts from 10 streams to 15 streams and count them annually to obtain trends. Utilize sportsman's groups to monitor other Summer Steelhead spawning streams.
7) Implement a log book for the guides.
8) Conduct juvenile out migration studies on 2-3 summer Steelhead spawning streams.
9) Conduct physical and biological stream surveys on most summer Steelhead spawning streams.

b. Hatchery Program

1) Rebuild hatchery incubation facility.
2) Collect wild stock to mix with hatchery broodstock.
3) Initiate some off-station releases to reduce number of fish returning to the hatchery.
4) Evaluate feasibility of increasing smolt production.
5) Determine impacts of releasing additional hatchery smolts on the wild population.
6) All returning Rogue Steelhead will be marked in 1991.

c. Water Management

1) Modify flow strategies based upon task force recommendations that will benefit summer Steelhead angling without impacting other species.

2) Identify major water diversions requiring screening.

3) File for instream water rights on all possible streams.

d. Complete the Rogue Basin Plan.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Southwest Region Office Oregon

GOLD RAY DAM COUNTING STATION - ROGUE RIVER

Fish Counts Through December 31, 1989

Year	Period Dec 16-31	Total through Dec 31	Total Count	Percent run by Dec 31
		SUMMER STEELHEAD		
1980	1,514	7,484	7,484	100.0
1981	2	11,929	11,929	100.0
1982	154	13,654	13,654	100.0
1983	20	7,581	7,581	100.0
1984	50	7,397	7,397	100.0
1985	0	7,511	7,511	100.0
1986	77	14,598	14,598	100.0
1987	232	24,955	24,955	100.0
1988	25	19,283	19,283	100.0
1989	64	12,411		

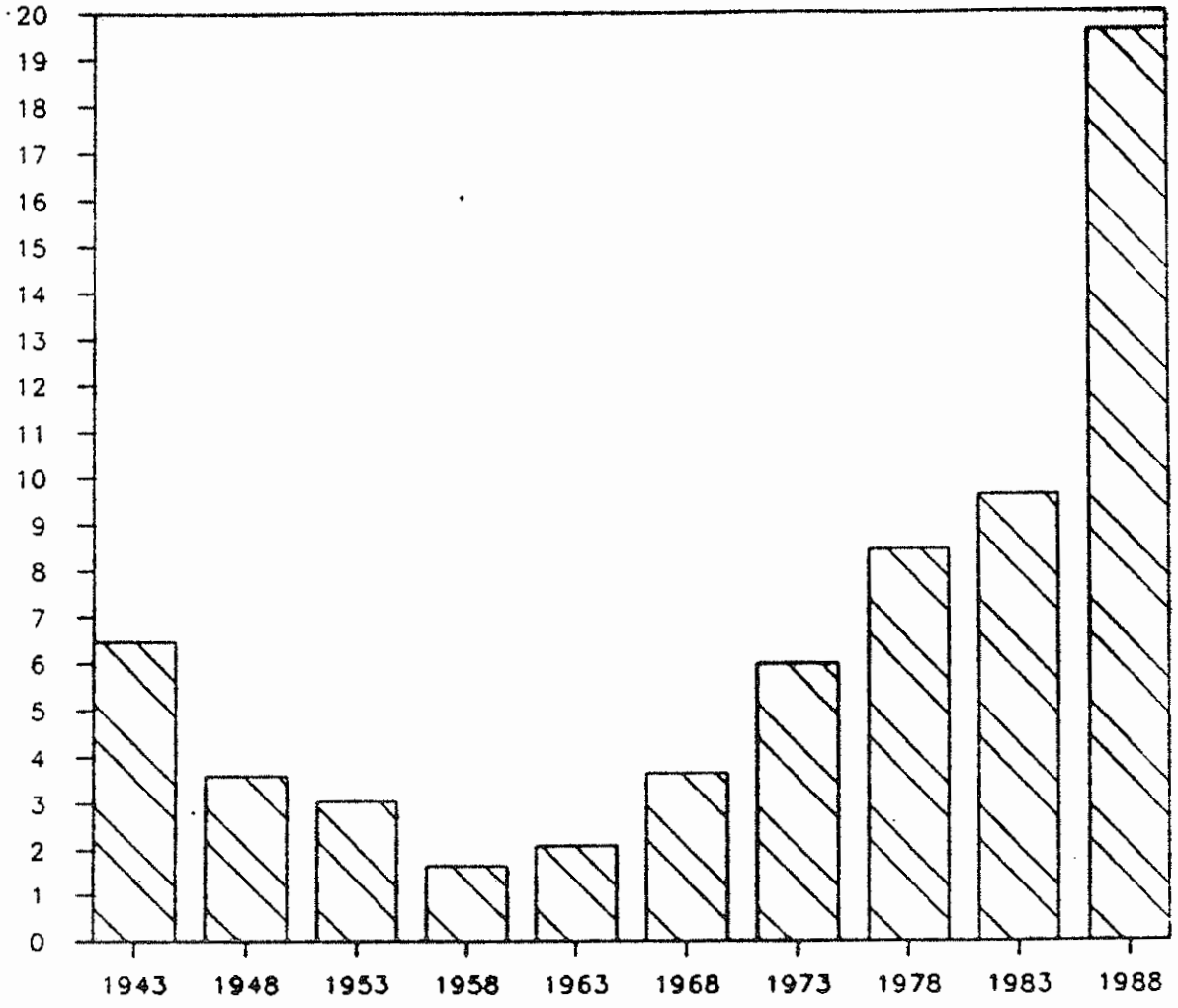


Figure 4. Five-year average counts (in thousands) of summer steelhead (hatchery and wild) at Gold Ray Dam, 1943 to 1988.

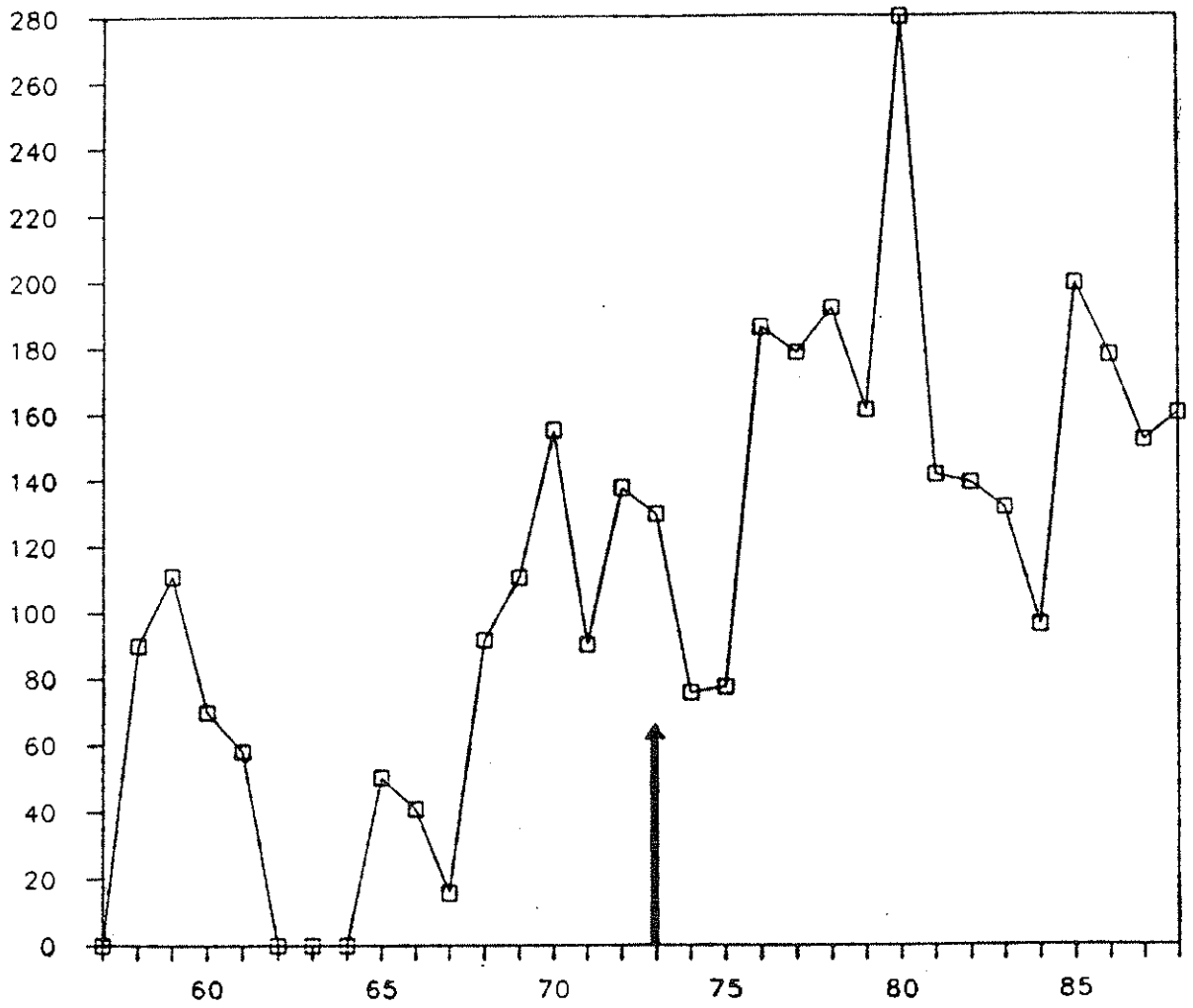


Figure 2. Summer steelhead smolts (in thousands) released from Butte Falls Hatchery (1957-1973) and Cole Rivers Hatchery (1974-1988).

SUMMER STEELHEAD REDD COUNTS

YEAR	Redds/Mile FOOTS CREEK	KANE CREEK
1976	270.7	261.6
1977	80.0	-
1978	103.3	122.4
1979	165.3	80.0
1980	136.7	288.0
1981	120.7	81.6
1982	14.0	24.0
1983	38.0	68.4
1984	66.7	38.8
1985	48.0	44.4
1986	64.0	50.8
1987	98.0	50.0
1988	30.0	17.6
1989	90.0	34.0

TABLE 5. Estimates of adult summer steelhead and half-pounder steelhead abundance (in 1,000's) for the Rogue River basin based upon ODFW seining conducted at Huntley Park, 1976 to 1988.

	Adult Summer Steelhead			Half-Pounder Steelhead		
Year	Hatchery	Wild	Total	Hatchery	Wild	Total
1976	3	10	13	12	34	47
1977	5	18	23	20	105	125
1978	3	25	28	37	51	89
1979	5	22	27	18	25	43
1980	11	13	24	92	67	159
1981	15	24	39	88	150	239
1982	10	26	36	66	48	113
1983	3	6	9	34	40	73
1984	2	11	13	12	35	47
1985	6	37	43	72	136	208
1986	9	41	50	99	115	214
1987	6	26	32	123	73	196
1988	9	24	33	30	24	54
1989	4	16	20	33	26	59
AVERAGE	7	22	28	54	69	124

4

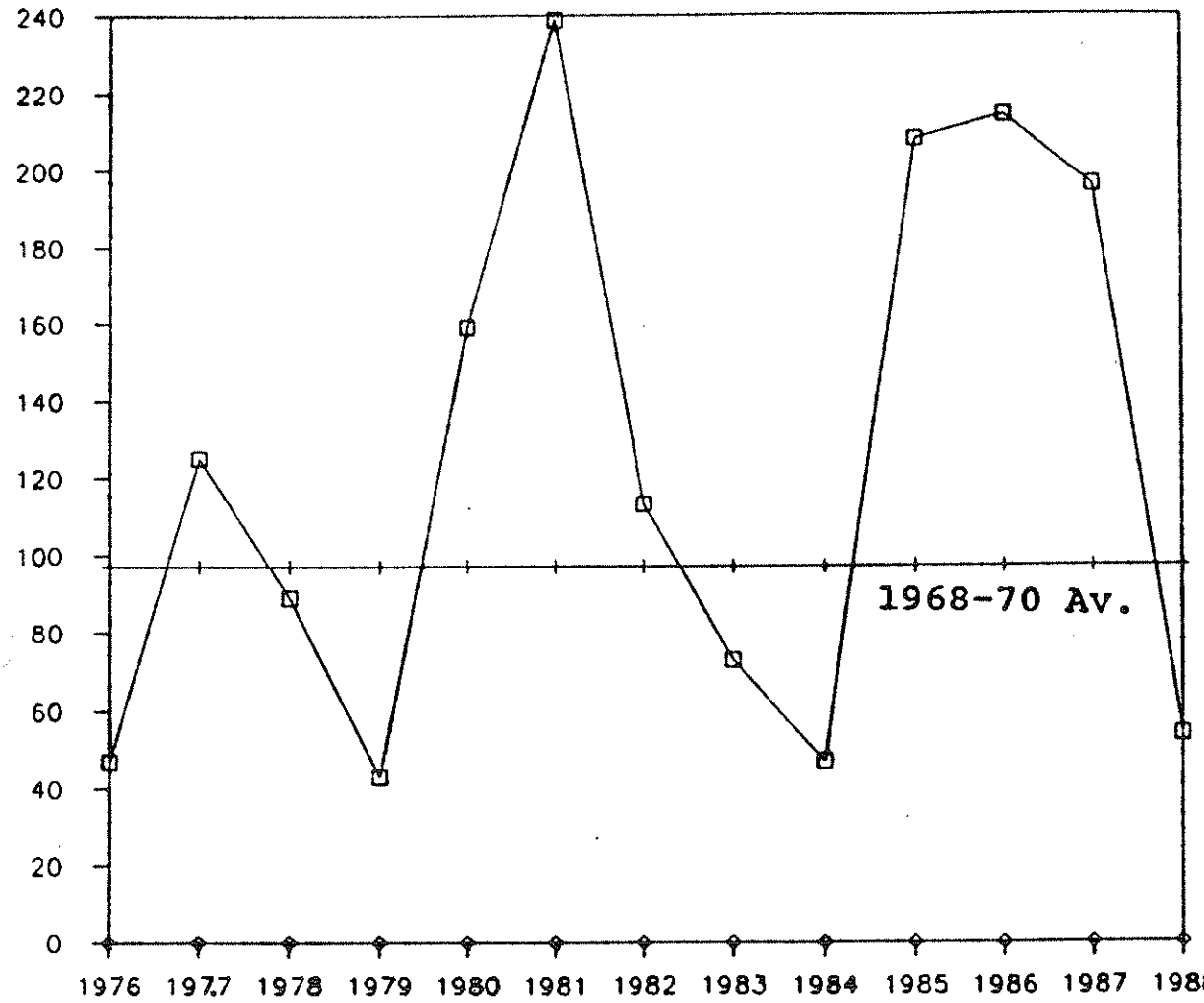


Figure 5. Estimated abundance of half-pounder steelhead (in thousands) entering the Rogue River based upon ODFW Huntley Park seining data, 1976 to 1988.

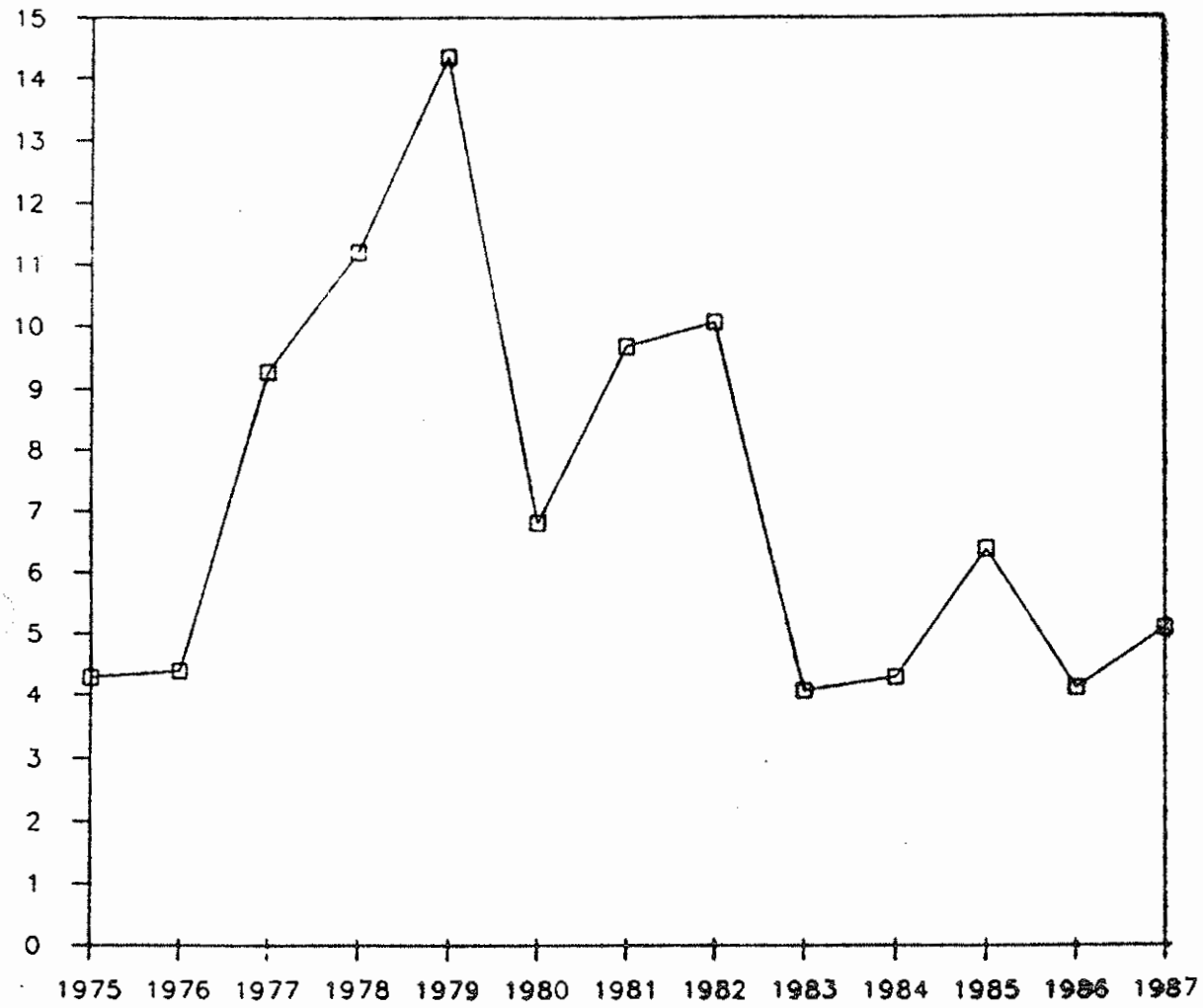


Figure 7. Adult summer steelhead catch estimates (in thousands) for Rogue River based upon ODFW analysis of punchcard data, 1975 to 1987.

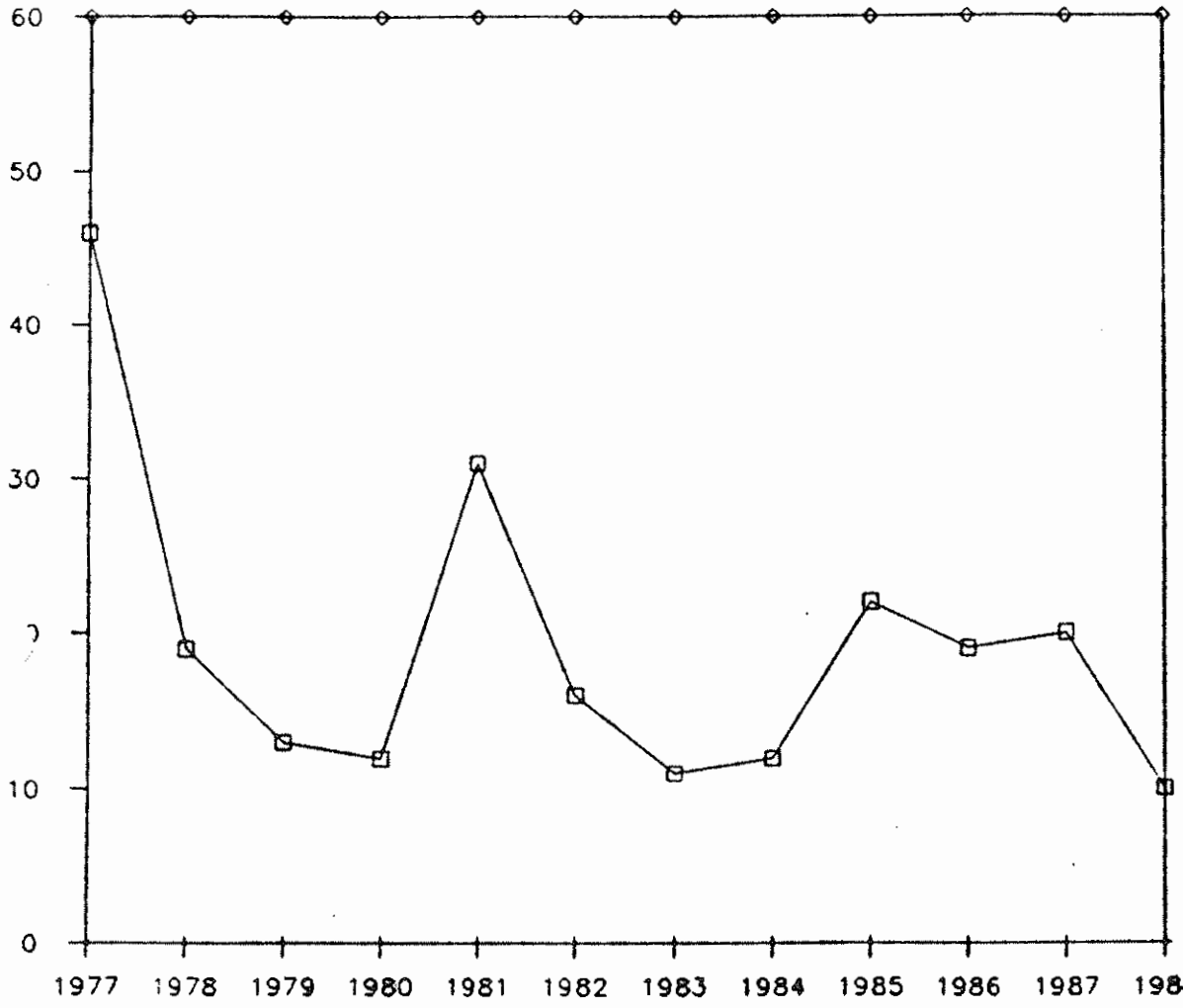


Figure 8. Half-pounder catch per boat based upon guided angler trips through the canyon portion of the Rogue River, 1977 to 1988.

WINTER STEELHEAD

A. STATUS

1. ROGUE

a. Steelhead run in the mainstem and most tributaries appears in good shape. Trend has been up, but dropped off a bit in 1988-89.

b. An estimated average of 43,300 wild adults, and 3,200 hatchery adults returned to the river annually from 1977-80.

c. The operation of Lost Creek Dam did not significantly effect the abundance of wild adults.

d. Some wild fish spawn in the mainstem above Gold Ray Dam, but most spawn in tributary streams throughout the basin.

e. About 31 Percent of the wild adults make a half-pounder run.

2. APPLEGATE

a. Run is fairly stable because most fish spawn in the mainstem.

b. Tributaries are impacted by extensive water withdrawals and logging. Spawning and rearing is limited.

3. ILLINOIS

a. Run has steadily declined since 1975 due to dramatic loss of habitat quality.

b. Several drought years, extensive water withdrawals and mining has severely reduced habitat, particularly for rearing juveniles.

c. This is a unique wild stock.

4. WILD AND HATCHERY POPULATIONS

a. Rogue--studies in the late 1970s found that hatchery fish comprised 7 Percent of the run. From 1982-1987 Gold Ray counts show that hatchery fish comprised 20 Percent of the run.

b. Applegate--from 5-20 Percent of the run are hatchery fish.

c. Illinois--This is a wild run.

5. FISHERY

a. Anglers harvested an average of 7,900 winter Steelhead annually during 21 run years, (1966-87).

b. The annual harvest rate averages 26 Percent on wild fish and 34 Percent on hatchery fish.

c. Sport fishery is generally good on the Rogue and Applegate, but on the Illinois the catch has dropped from 3,627 fish in 1971 to only 405 fish in 1987.

B. MANAGEMENT

1. INVENTORY

a. Salmon-Steelhead tag data.

b. Gold Ray counts.

c. Creel census.

1) Statistical--Elk Creek Dam evaluation
2) Random
3) Guide's log books

d. Snorkel surveys--potential.

2. HATCHERY

a. Smolt releases.

1) Rogue--150,000
2) Applegate--150,000
3) Part are released as one year olds and part as two year olds

b. STEP--there is no hatchbox program for winter Steelhead at present.

c. Surplus adults at the hatchery are recycled through the sport fishery.

d. Smolt releases from Cole Rivers Hatchery increased angler harvest by an average of 1,200 adults and 3,600 half pounders annually, (1978-1987).

e. Hatchery fish pass Gold Ray Dam later than wild fish. The effects on the fishery is unknown.

3. HABITAT

a. Condition.

1) Rogue and most tributaries--generally good.
2) Applegate--fairly good but deteriorating.
3) Illinois--poor and deteriorating.

b. Habitat improvement projects.

1) USFS working extensively on eight streams and plan to expand.
2) Step projects improving stream habitat have been completed on several streams. In 1990 additional work is planned for Bear and Wolf Creeks.

c. Flow management.

1) Flows from Lost Creek and Applegate Dams impacted angler catch to some extent. Impacts are more significant on the Applegate River.
2) Reductions in flow during reservoir filling increased harvest by an average of 405 adults annually.
3) Operations of the dams enhanced angler opportunities when river tributaries were high in downstream areas, but reduced opportunities when the river was low.
4) Eggs and fry of mainstem spawners were occasionally dewatered during rapid reductions in outflow from the Dam.

4. REGULATIONS

a. The regulations requiring tagging 16 inch Steelhead in the Rogue will have little impact on the winter fishery.

b. In 1991 anglers will be required to release all wild fish. This has already generated considerable opposition from lower river anglers.

5. CONCERNS AND ACTION

a. Illinois River wild Steelhead.

1) Population is depressed.
2) Habitat is badly degraded from water withdrawals and mining.
3) The mainstem Illinois has been historically warm so most rearing has been in the tributaries.
4) Except for Silver and Indigo Creeks, most historical winter Steelhead tributaries are nearly dry in the summer, consequently there is very little juvenile habitat.
5) Redside Shiner population is dominating much of the available habitat.

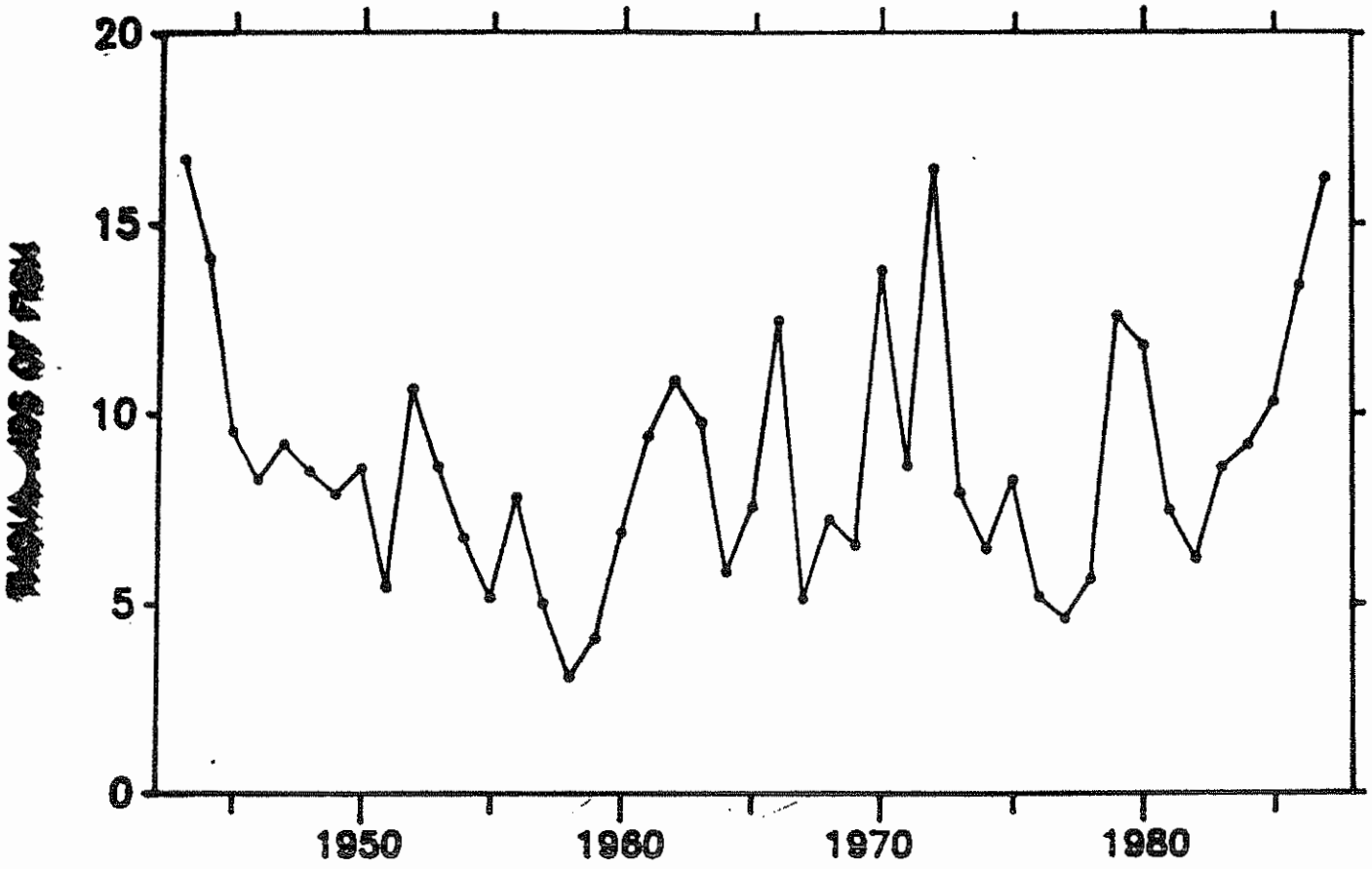


Figure 12. Estimated number of winter steelhead that passed Gold Ray Dam, 1963-87. Wild and hatchery fish combined.

6) Solutions include obtaining water rights, developing water storage sites in the upper tributaries, reducing mining impacts, and protecting the wild stock.

b. Hatchery production.

1) Percent return of hatchery fish is lower than desired.
2) Improve hatchery returns by producing a larger smolt and utilize more wild fish in the Hatchery Program.

c. Habitat Degradation.

1) Assist the USFS and BLM, plan additional habitat improvement projects that will benefit winter Steelhead particulary on the Illinois.
2) Expand the STEP Program to include habitat work on those tributaries with depressed stocks.
3) Complete instream water right applications on all streams possible.
4) Identify water diversions needing screening.

d. Inventory

1) Establish index areas to monitor juvenile winter Steelhead production.
2) Expand creel census efforts to better evaluate catch throughout the basin.

e. Complete Rogue Basin Plan.

Appendix Table A-7. Estimated harvest of winter steelhead in the Rogue River, 1966-67 through 1986-87 run years. Catch estimated from salmon-steelhead cards returned by anglers to ODFW (includes some summer steelhead).

Run year	December	January	February	March	April[a]	Total
1966-67	1,684	1,586	958	925	--	5,153
1967-68	1,970	2,081	1,559	1,458	--	7,068
1968-69	1,771	705	1,258	2,087	--	5,821
1969-70	1,399	1,569	2,516	1,406	--	6,890
1970-71	2,103	1,385	2,318	1,222	--	7,028
1971-72	3,096	2,715	2,949	665	--	9,425
1972-73	1,433	2,308	3,508	2,009	--	9,258
1973-74	1,080	1,141	1,354	596	--	4,171
19[illegible]-75	3,739	4,797	2,466	2,438	1,016	14,456
1975-76	3,033	2,475	2,221	2,704	614	11,047
1976-77	1,839	1,571	1,269	882	227	5,788
1977-78	1,704	3,727	2,569	2,313	750	11,063
1978-79	3,552	3,150	2,795	3,419	772	13,688
1979-80	3,163	2,173	2,529	2,068	856	10,789
1980-81	1,446	1,716	2,047	1,697	710	7,616
1981-82	321	1,025	891	1,032	385	3,654
1982-83	1,145	1,066	778	1,459	894	5,342
1983-84	382	150	149	499	424	1,604
1984-85	1,959	1,499	2,414	2,081	755	8,708
1985-86	1,435	1,320	1,191	1,393	735	6,074
1986-87	948	1,563	4,353	3,672	1,067	11,603

[a] *Season closed during April 1967-74.*

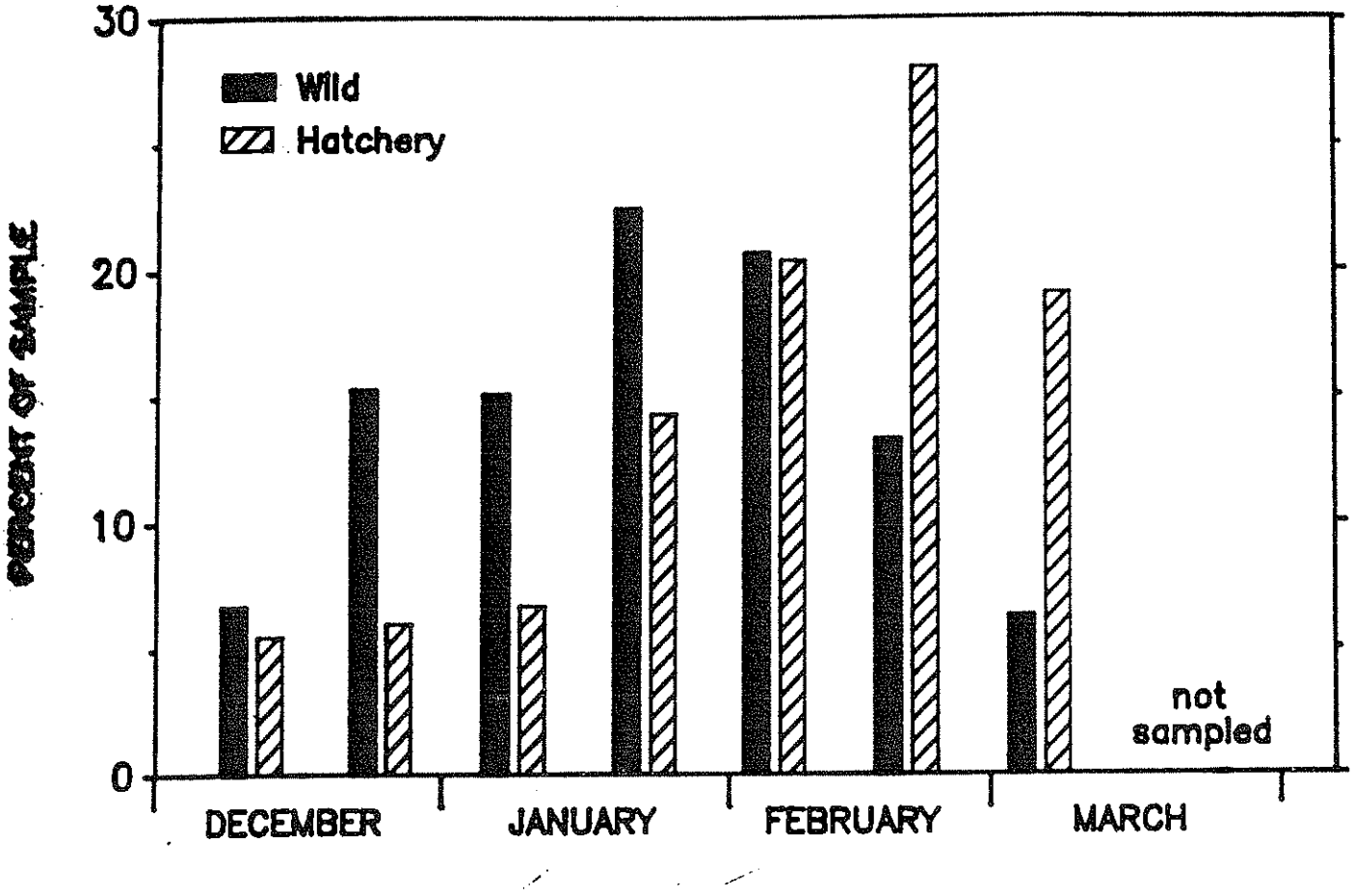
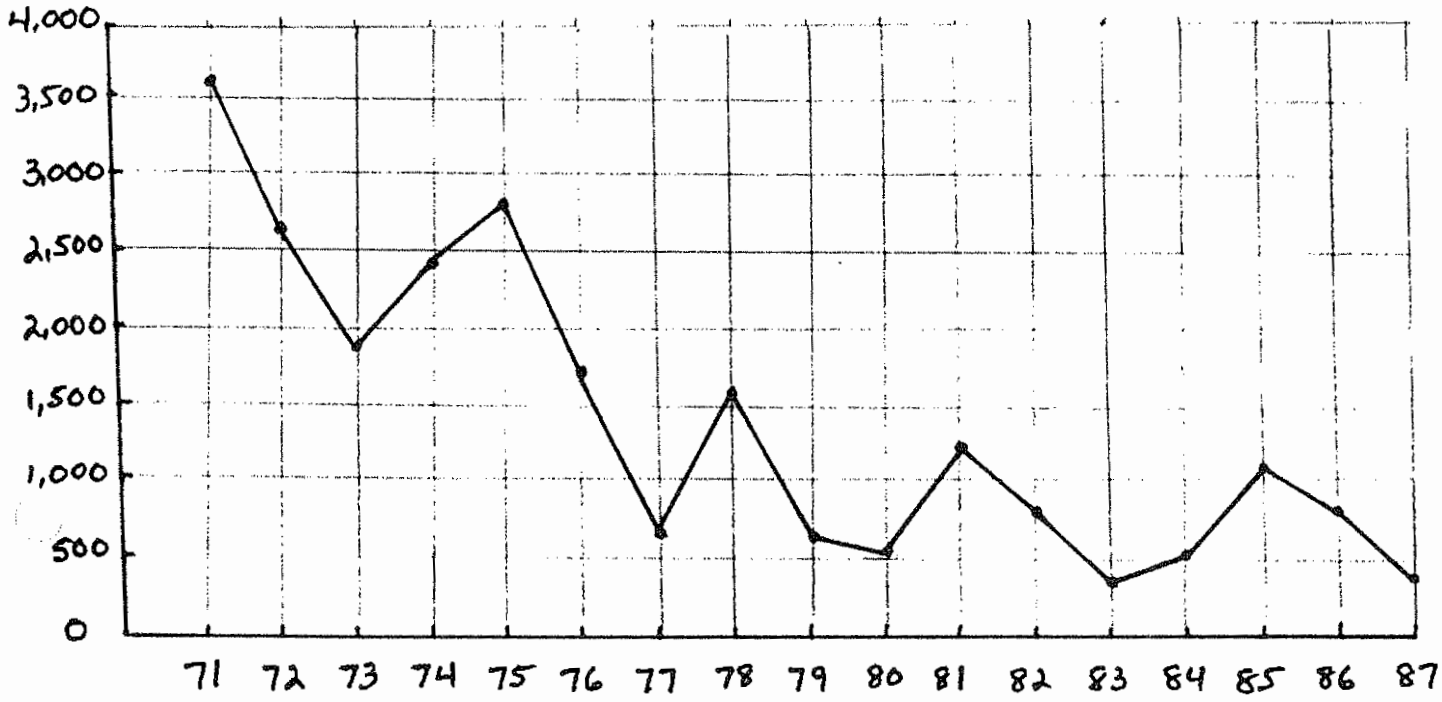


Figure 8. Timing of freshwater entry for winter steelhead collected by electrofishing in the lower river, averaged for the 1977-78 through 1979-80 run years.



ILLINOIS RIVER SALMON-STEELHEAD
TAG RETURNS - WINTER STEELHEAD

COHO

A. STATUS

1. DISTRIBUTION

a. Historically Coho were found throughout the mainstem Rogue, Applegate, and Illinois Rivers and most of their tributaries. Coho probably did not use the North, Middle, and South Forks of the Rogue.

b. From 1870-1920 the Hume Cannery at the mouth of the Rogue harvested more Coho than Chinook.

c. Currently, habitat degradation, particularly lack of water, has significantly limited wild Coho distribution to the Illinois and Applegate systems and some of the larger Rogue tributaries below Savage Rapids Dam.

d. Coho above Gold Ray Dam are almost entirely hatchery stock.

e. Lost Creek Dam blocked little, if any, Coho spawning habitat. The mitigation level for Coho as a result of Lost Creek and Applegate Dams is 2,060 adults.

2. ABUNDANCE

a. Wild fish trend is down due to habitat loss. Hatchery fish populations are stable but varies with ocean survival.

b. Wild fish (from 1970-1985).

1) Freshwater escapement--3,600 adults, 800 jacks
2) Ocean catch--2,700 adults

c. Hatchery fish (from 1970-1985).

1) Freshwater escapement--3,200 adults, 800 jacks.
2) Ocean catch--3,600 adults.

d. The hatchery-wild ratio from 1979-1986 is about 50/50.

e. Average return of wild fish from 1979-1986 was 2 Percent of freshwater escapement.

3. FISHERY

a. Exploitation rate is similar to the OPI conglomerate based upon set harvest rates.

b. No significant sport fishery in the river.

c. From late 1970s to mid 1980 freshwater angler catch was 40 wild fish and 220 Hatchery fish annually.

B. MANAGEMENT

1. INVENTORY

a. Gold Ray Counts.

b. Random creel census.

c. Juvenile Sampling--Potential Trend Information.

d. Spawning Surveys--Potential Trend Information.

2. HATCHERY PROGRAM

a. 200,000 smolts annually.

b. 42,000 STEP eggs to schools.

c. The survival rate for Rogue hatchery Coho is 4.5 Percent.

3. HABITAT

a. Habitat Improvement Projects.

1) The USFS has installed numerous structures in Taylor Creek during the past three years. Coho use has increased by 50 Percent since structures were installed.
2) Projects have been completed on eight other tributaries by the USFS and BLM that benefit Coho.
3) Several STEP projects have been conducted on Gilbert and Bear Creeks with GWEB funding.

b. Condition

1) Coho habitat has deteriorated dramatically in the past 20 years due to extensive water withdrawals.
2) The Illinois system was the primary wild Coho producer but major tributaries, such as Draper and Deer Creek are now dry during the summer.
3) Elk Creek (Illinois), still maintains good habitat condition and is probably the best wild Coho producer.
4) Coho production on the mainstem Applegate River has increased due to increased flows from Applegate Dam.

4. CONCERNS AND ACTIONS

a. Lack of water has severally reduced Coho production and distribution.

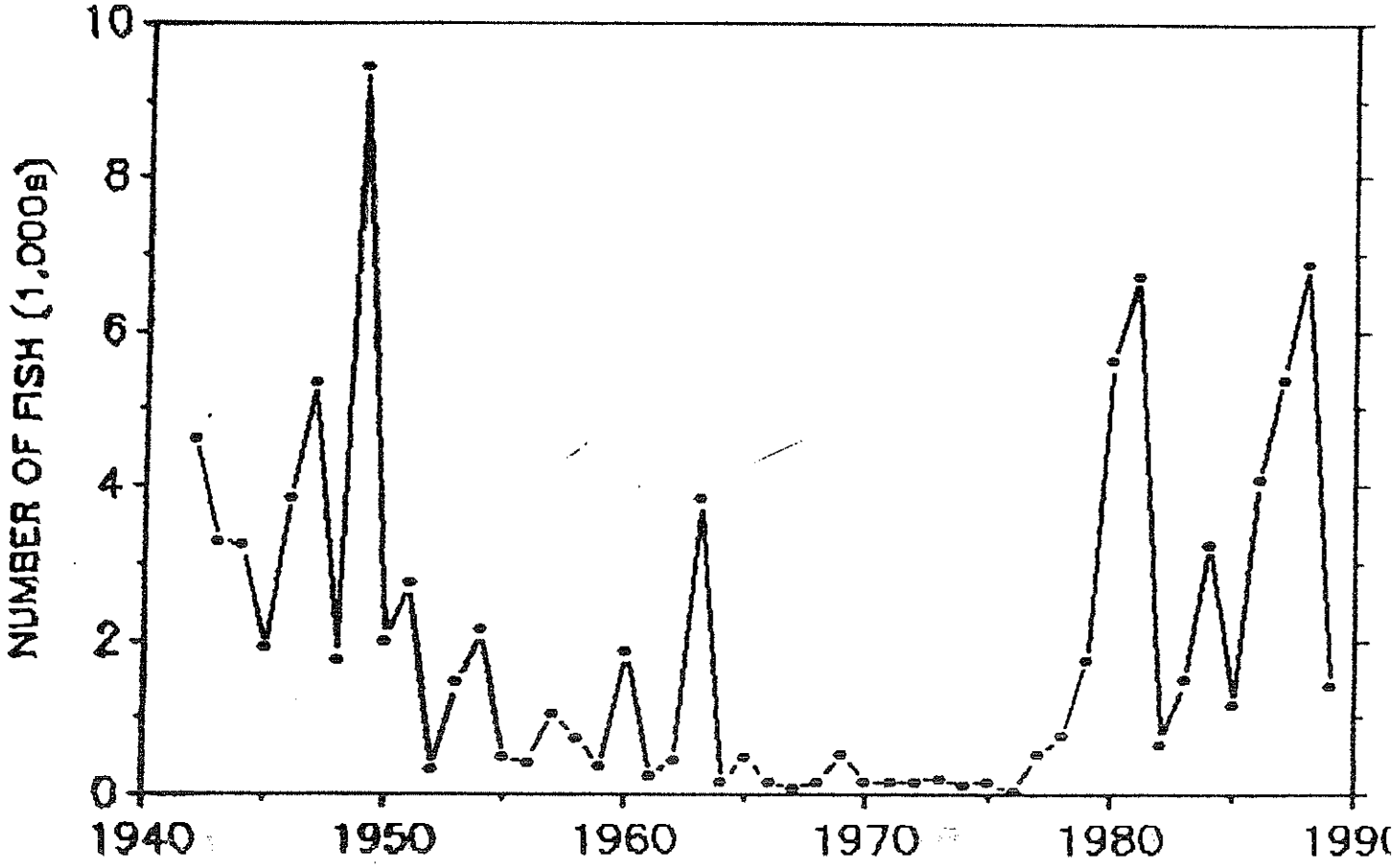
b. Instream water rights need to be established on as many streams as possible. Early priority water rights must be acquired to maintain water in the streams.

c. Juvenile or adult surveys need to be established to develop population trends.

d. Habitat conditions will be identified and classified during stream survey program beginning in 1990.

e. Instream water rights will be established on all streams possible.

f. Water diversions needing screens will be identified.



PASSAGE OF COHO SALMON AT GOLD RAY DAM

Appendix Table B-5. Estimated freshwater escapement of coho salmon of wild and hatchery origin, 1976-86.

Year	Wild[a]		Hatchery[b]	
	Jacks	Adults	Jacks	Adults
1976	--	167	--	0
1977	--	--	--	--
1978	312	--	0	--
1979	490	792	713	1
1980	959	1,096	3,636	4,494
1981	992	4,625	198	7,903
1982	506	1,980	446	168
1983	390	453	711	975
1984	531	19,226	201	3,983
1985	221	3,075	290	794
1986	2,678	1,045	353	3,838

[a] *Escapement of wild fish estimated by seining at Huntley Park.*

[b] *Escapement of hatchery fish based on expansions of returns to Cole Rivers Hatchery.*

Appendix Table B-6. Estimated ocean harvest of age 3 coho salmon originating from the Rogue River basin, 1976-86. Estimates developed from estimates of freshwater escapement (Appendix Table B-5) and catch/escapement ratios (Table 2, page 13).

Fishery year	Ocean harvest			Fishery year	Ocean harvest		
	Wild	Hatchery	Total		Wild	Hatchery	Total
1976	1,184	0	1,184	1982	6,098	517	6,615
1977	--	--	7,779	1983	1,943	4,183	6,126
1978	--	--	11,156	1984	4,999	1,036	6,035
1979	2,542	3	2,545	1985	1,630	421	2,051
1980	1,097	5,482	6,939	1986	345	1,267	1,612
1981	7,030	12,013	19,043				

FALL CHINOOK

A. STATUS

1. ROGUE

a. The Rogue Fall Chinook run appears to be in good condition. Excellent ocean rearing conditions contributed significantly to the run size. The 1989 run was below the five year average but was still substantial.

2. APPLEGATE

a. Enormous runs returned to the Applegate during the mid-late 1980s. This can be attributed to good in-stream rearing conditions and high ocean survival.

3. ILLINOIS

a. Little is known about Fall Chinook in the Illinois. Spawning surveys in the East and West Forks of the Illinois indicate fish are present in fairly good numbers, but population is probably dependant upon flows.

4. DISTRIBUTION

a. Rogue.

1) Most of the run spawns below Gold Ray Dam.
2) Prior to the mid-1970s almost all Salmon passing Gold Ray Dam were Spring Chinook.
3) Spawning escapement from 1974-86 ranged from 20,000 to 100,000 fish.
4) From 1971-78 Fall Chinook comprised 11 Percent of the Chinook past Gold Ray Dam.
5) From 1981-85 Fall Chinook comprised 25 Percent of the Chinook past Gold Ray Dam.
6) More Fall Chinook are spawning in areas traditionally used by Spring Chinook.
7) Increased Fall Chinook numbers above Gold Ray may be due to increased flows from Lost Creek as well as warmer water temperatures.

b. Applegate.

1) Increased flows from Applegate Dam have allowed Fall Chinook to distribute up to the Dam. Prior to 1980, fish stopped at Murphy. This more than doubled their available habitat.
2) In 1989 up to 30 Percent of the females died from Dermocystidium. This outbreak probably was a result of large numbers of fish and high water temperatures.

c. Illinois.

1) Fall Chinook are known to spawn well up the East and West Forks and the Lower end of most of the major tributaries.
2) Low water years may limit distribution to the mainstem.

5. WILD AND HATCHERY POPULATIONS

a. Since 1986 no hatchery fish have been released into the Upper Rogue. The Upper Rogue is being managed exclusively for wild fish.

b. Between 1980 and 1986 hatchery fish contributed about 6 Percent of the freshwater escapement.

6. FISHERY

a. The Rogue Fall Chinook stock turns south upon reaching the ocean and contributes heavily to the Oregon and Northern California fisheries.

b. From 30 to 70 Percent of the annual ocean catch in the Klamath Management Zone consist of Rogue stocks.

c. About 9 Percent of the run is harvested in freshwater. This amounts to an average of 2,700 fish per year.

d. The middle river fishery increased dramatically in recent years due to increased flows in August.

B. MANAGEMENT

1. INVENTORY

a. Huntley Park seining.

b. Carcass counts.

c. Gold Ray counts.

d. Creel census.

1) Random
2. Guides' log book

e. Salmon-Steelhead tag returns.

f. Spawning ground counts.

2. HATCHERY PROGRAM

a. The hatchery program was suspended in 1986.

b. The STEP Hatchbox Program was dropped in 1990 due to the IHN outbreak. About 35,000 eggs were distributed annually to school programs. These eggs were replaced with Coho.

3. HABITAT

a. Fall Chinook habitat is generally in good shape. Mining in the Illinois and Applegate systems probably has the most impact.

b. Habitat Improvement Projects.

1) USFS and BLM Projects on several of the larger tributaries, such as Little Butte and Slate Creeks is benefitting Fall Chinook.
2) Step Projects completed and planned for the Bear Creek System will enhance Fall Chinook habitat.

c. Flow Management.

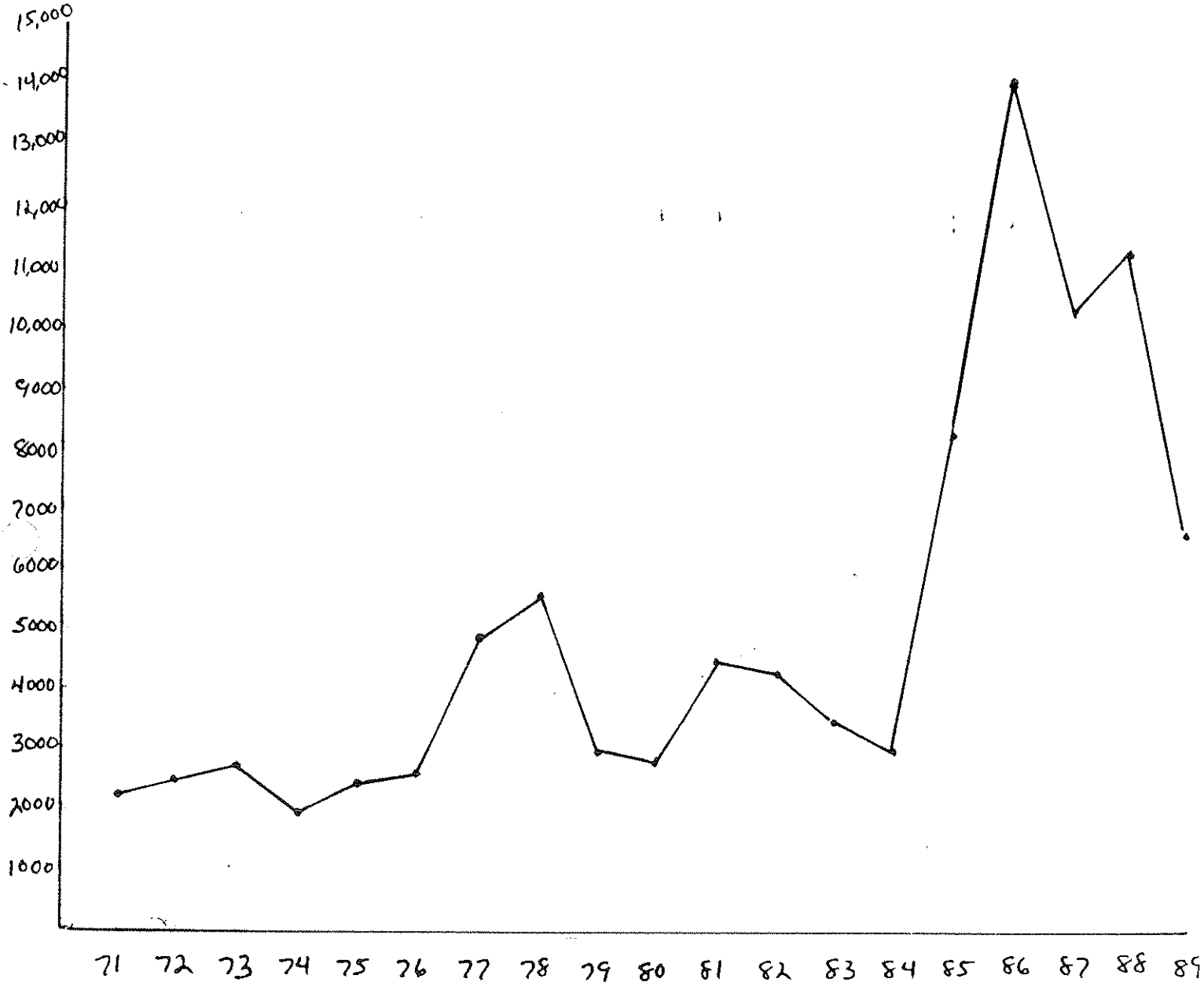
1) Increased flows from Lost Creek has moved Fall Chinook further up into the system. It has provided a fishery in the middle river but is moving them into traditional Spring Chinook spawning areas.
2) Increased flows in August and September has significantly reduced pre-spawning mortality from as high as 75 Percent to below 5 Percent.
3) Increased flows in the Applegate has expanded Fall Chinook distribution extensively.

4. CONCERNS AND ACTION

a. Run is generally healthy but expansion of the run upstream may impact Spring Chinook spawning areas.

b. Little is known about the Illinois River run. Effort is needed to monitor the run closer, document distribution and evaluate habitat conditions and status of the run.

c. Complete the Basin Plan.



GOLD RAY DAM COUNTS

FALL CHINOOK

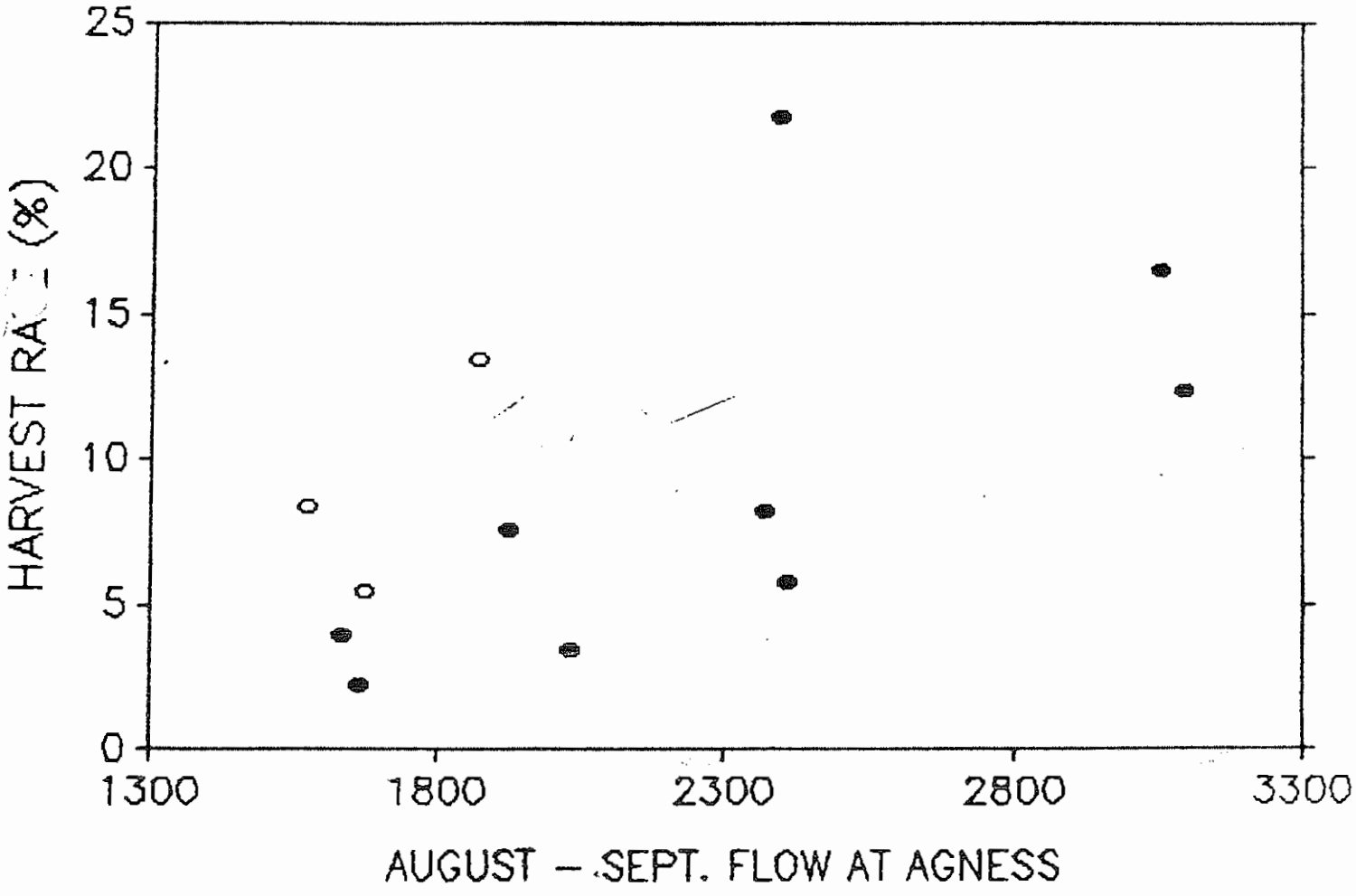
Table 21. Estimated freshwater escapement of wild and hatchery fall chinook salmon in the Rogue River, 1974-86.

Year	Wild	Hatchery	Total	% Hatchery
1974	42,656	0	42,656	0
1975	37,175	0	37,175	0
1976	23,469	0	23,469	0
1977	32,038	0	32,038	0
1978	74,575	0	74,575	0
1979	69,730	0	69,730	0
1980	33,404	74	33,478	0.2
1981	40,811	609	41,420	1.5
1982	54,197	1,538	55,735	2.8
1983	18,287	3,177	21,464	14.8
1984	17,004	1,208	18,212	6.6
1985	33,863	2,246	36,109	6.2
1986	92,506	5,808	98,314	5.9

Appendix Table C-21. Angler catch of fall chinook salmon in the Rogue River **as estimated** from returns of salmon-steelhead cards, 1956-86. All years were **adjusted** for a non-response bias.

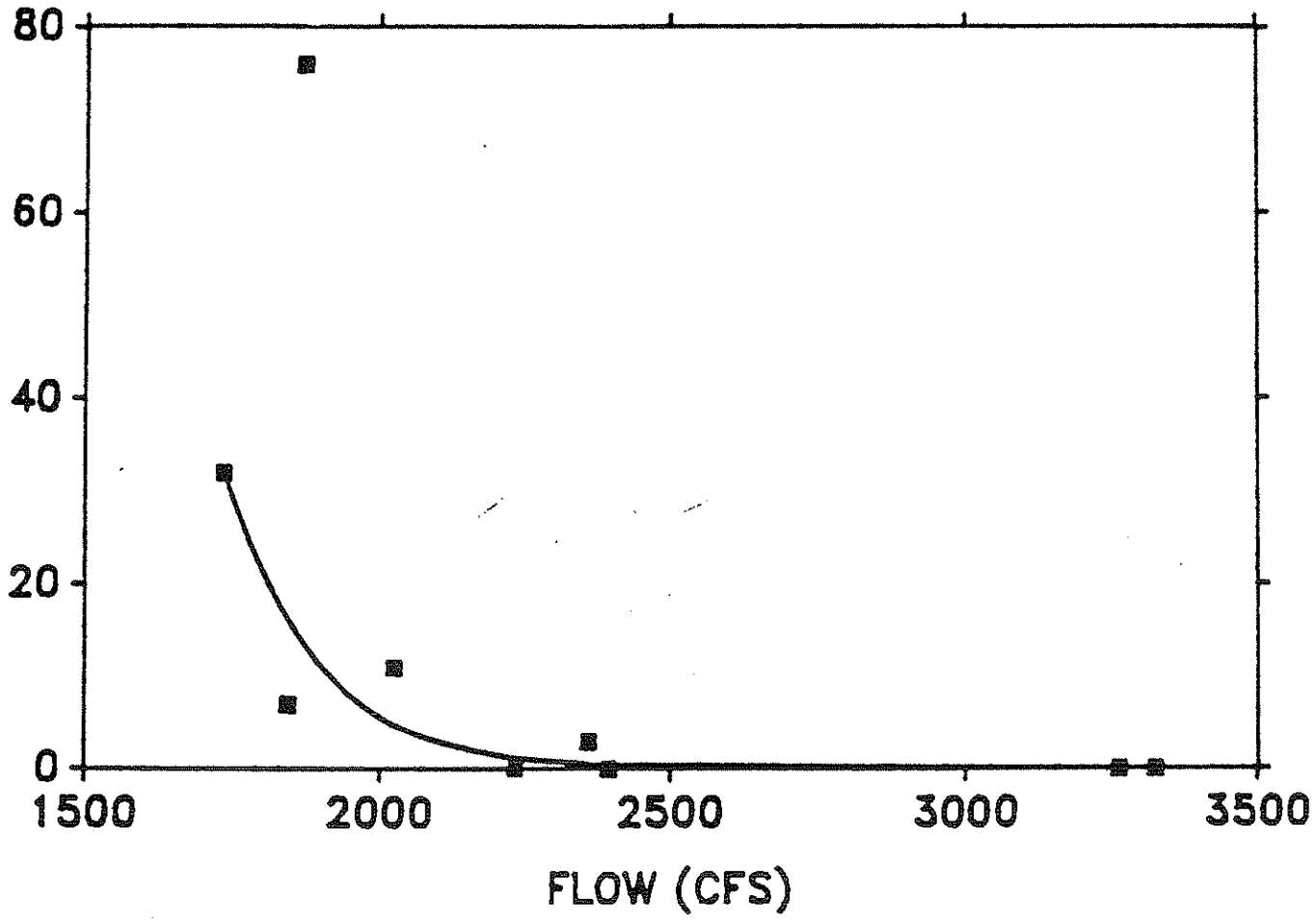
Year	Catch				
	August	September	October[a]	November[a]	Total
1956	1,012	1,414	865	187	3,478
1957	817	1,140	642	193	2,792
1958	--	--	--	--	--
1959	1,509	1,280	691	572	4,052
1960	868	909	886	233	2,896
1961	1,025	784	600	170	2,579
1962	1,212	1,110	338	121	2,781
1963	2,315	2,510	1,230	199	6,254
1964	1,948	1,596	816	226	4,586
1965	1,552	1,119	613	133	3,417
1966	851	1,176	1,166	216	3,409
1967	1,163	1,143	670	199	2,505
1968	1,208	1,268	394	106	2,976
1969	1,223	981	691	222	3,117
1970	1,020	536	313	124	1,993
1971	1,085	573	738	161	2,557
1972	594	821	892	205	2,512
1973	380	1,218	1,469	78	3,145
1974	627	1,258	1,105	537	3,527
1975	270	778	833	151	2,032
1976	423	862	621	194	2,100
1977	621	1,426	1,227	316	3,590
1978	412	962	591	345	2,310
1979	509	668	270	84	1,531
1980	206	413	231	49	899
1981	399	1,583	251	37	2,270
1982	538	1,306	419	33	2,296
1983	294	1,300	743	44	2,381
1984	38	1,151	273	16	1,478
1985	917	2,062	580	35	3,594
1986	698	2,942	608	80	4,328

[a] *May include some coho salmon, 1956-71.*



HARVEST RATE OF CHF IN THE ROGUE RIVER

FIGURE 4.



MORTALITY OF ADULT FALL CHINOOK RELATED TO FLOW AT AGNESS DURING 13 AUGUST TO 9 SEPTEMBER

SPRING CHINOOK

A. STATUS

1. The combined (hatchery plus wild) run of Spring Chinook in the Rogue appears strong and has been on a steady upward trend in recent years.

2. During the past five years the Gold Ray Dam counts have been the highest on record. The 1989 count was the lowest in recent years but still above the 10 year average.

3. Large run in recent years is basically the result of the following factors:

   a. Post El Nino ocean conditions
   b. Higher hatchery contribution
   c. Adults are returning at a younger age
   d. Decrease in the ocean catch

4. The wild run is down significantly since Lost Creek Dam became operational.

5. Distribution.

   a. Spring Chinook spawn almost entirely in the mainstem Rogue and primarily above Gold Ray Dam.
   b. Spawning distribution appears to be moving downstream as Fall Chinook are moving upstream.

6. Wild and Hatchery Population.

   a. Wild fish production decreased by an average of 67 Percent after Lost Creek Dam became operational.
   b. In 1989 only 25 Percent of the run was comprised of wild fish.

7. Fishery.

   a. The Lower River fishery in April-May is substantial but total catch appears lower than pre dam years.
   b. The Upper River fishery in June-July is very intense. Harvest rates of wild fish in this area is very high--up to 50 Percent, with addition of the Lower River catch and the ocean catch, wild fish harvest is extremely high.
   c. Hatchery fish are moving through the Upper River fishery very rapidly and returning to the hatchery in large numbers.
   d. About 5-15 Percent of the run is caught in the Lower River fishery and 15-35 Percent is harvested in the Upper fishery. This is wild plus hatchery.
   e. The ocean harvest rate is about the same as Fall Chinook which is dependent upon the PFMC recommendations.

1. MANAGEMENT

1. Inventory.

   a. Gold Ray counts.
   b. Carcass counts.
   c. Pre-spawning mortality surveys.
   d. Creel census.
      1) Statistical--Elk Creek Dam Evaluation
      2) Random
   e. Salmon-Steelhead tag returns.

2. Hatchery Program.

   a. Currently 1.7 million smolts are being released at the hatchery.
   b. Smolt production more than doubled when Lost Creek Dam became operational to mitigate for lost Spring Chinook spawning habitat.
   c. Over 30,000 surplus adult Spring Chinook accumulated at the hatchery and had to be sold.
   d. The impacts of IHN on both wild and hatchery stocks is still unknown but the virus was found in fish throughout the system.

3. Habitat.

   a. Flow Management.
      1) The operation of Lost Creek Dam decreased the abundance of fry by an average of 32 Percent annually.
      2) Rapid reductions in flow dewatered and killed fry.
      3) The growth rate of juveniles increased after Lost Creek became operational. The larger size caused the smolts to enter the ocean earlier. The adults also returned at a younger age.
      4) Flow changes from Lost Creek Dam also resulted in moving Fall Chinook into traditional Spring Chinook spawning areas and delaying spawning time about two weeks which increases conflicts with Fall Chinook spawning.
      5) Higher summer flows have minimized pre-spawning mortality during drought years.

   b. Habitat Improvement Projects--There are no projects completed or planned that will specifically enhance Spring Chinook habitat.

4. Concerns and Actions.

   a. --The wild fish population has declined significantly since Lost Creek Dam was completed.

   b. A large surplus of hatchery adults are passing rapidly through the fishery without being caught.

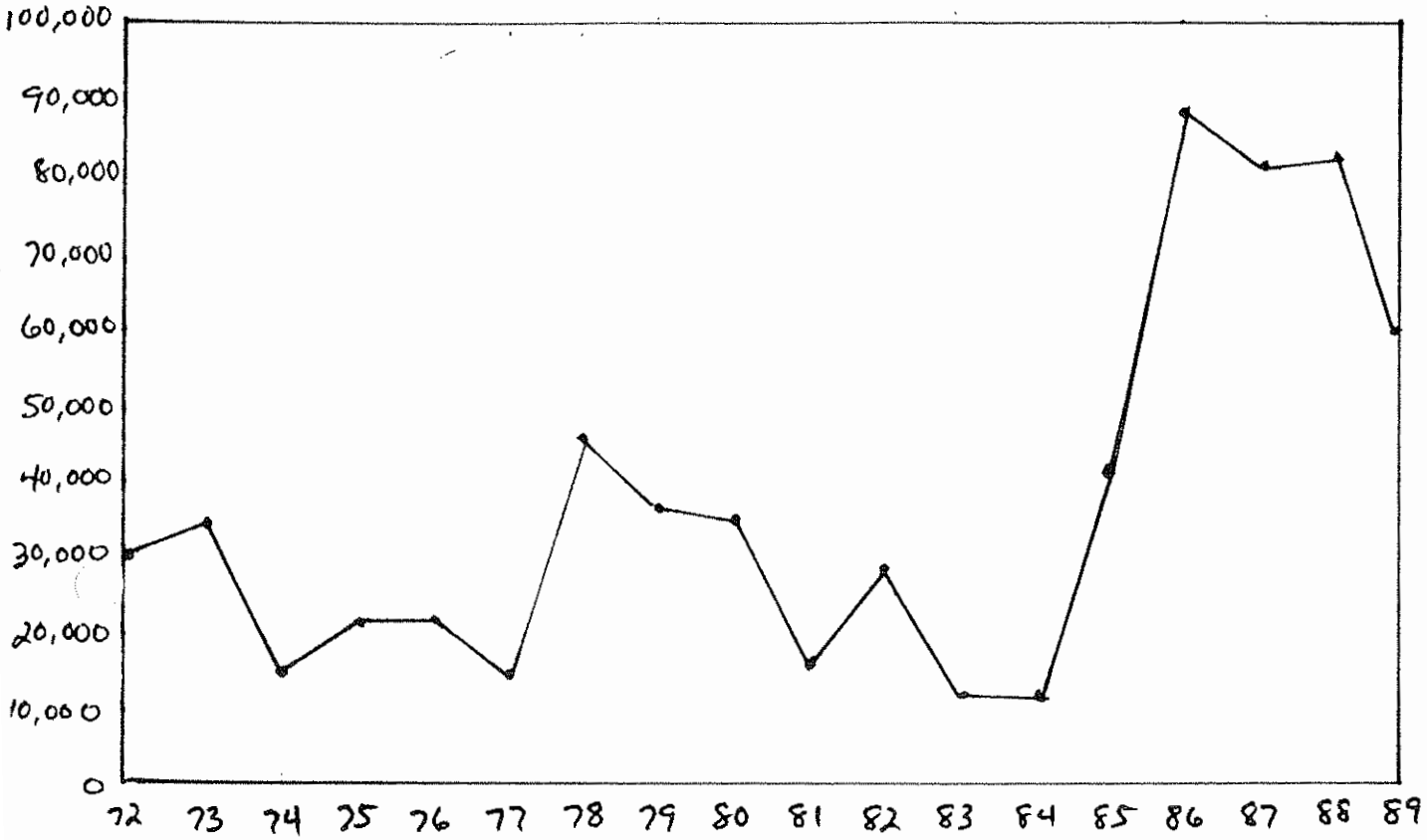
   c. Spring chinook are spawning later and Fall Chinook are spawning further up the system, creating a conflict.

d. Release cooler water in late spring and early summer. This will create older adults which contribute better to the sport fishery.

e. Avoid rapid outflow decreases to prevent dewatering fry.

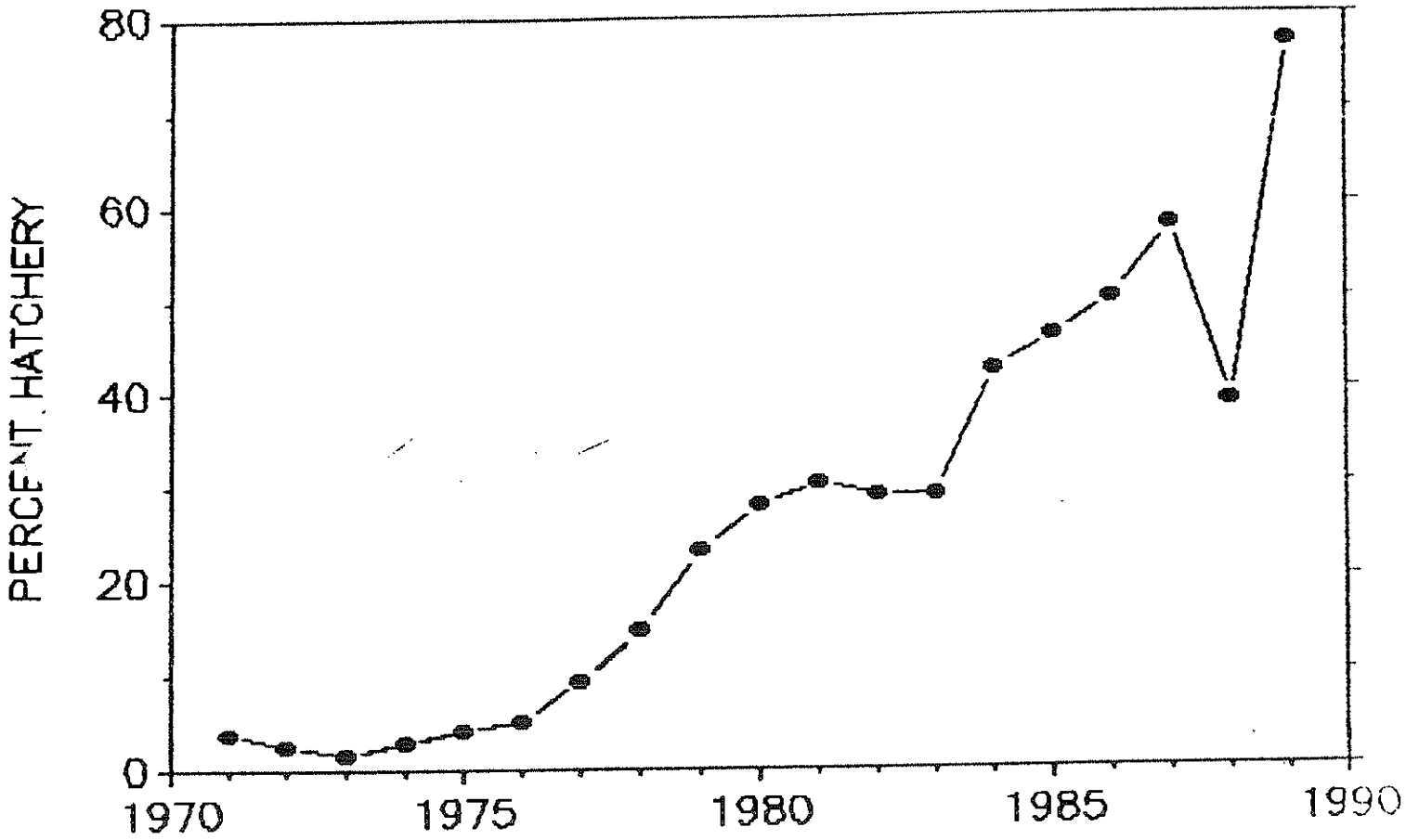
f. Continue releases of cooler water in the fall and winter. This will increase Spring Chinook fry and restore balance between Spring and Fall Chinook.

g. Complete the Rogue Basin Plan.



GOLD RAY DAM COUNTS

SPRING CHINOOK



RUN COMPOSITION OF SRING CHINOOK
PASSING GOLD RAY DAM

Appendix 16. Estimates[a] of adult spring chinook salmon caught by anglers in the lower Rogue River during April through May and in the upper Rogue River during June through July, 1964-81.

Year	April-May catch	Percentage of run[b]	June-July catch	Percentage of run[c]
Predam years:				
1964	2,309	7.0	1,607	5.3
1965	4,816	10.1	3,013	7.6
1966	3,110	10.1	2,251	8.1
1967	2,256	15.6	1,790	14.6
1968	1,824	13.1	2,532	20.1
1969	6,252	10.7	6,485	12.4
1970	4,380	10.6	3,738	10.1
1971	4,553	15.4	4,903	19.5
1972	4,843	15.7	4,524	17.3
1973	1,804	5.5	4,497	14.6
1974	4,822	27.0	1,982	15.2
1975	2,678	13.4	2,410	13.9
1976	2,056	12.0	2,415	16.1
1977[d]	1,777	11.9	3,061	23.3
Postdam years:				
1978	2,739	7.2	5,627	15.9
1979	4,549	12.5	6,872	21.7
1980	2,063	6.7	5,715	20.0
1981	1,641	10.5	4,584	32.9
1982	2,675	12.3	4,579	24.0
1983	1,031	11.9	1,490	19.5

[a] *From salmon-steelhead cards.*
[b] *Catch + Gold Ray Dam count of fish larger than 60 cm as of 31 July.*
[c] *Gold Ray Dam count of fish larger than 60 cm as of 31 July.*
[d] *Extensive prespawning mortality.*

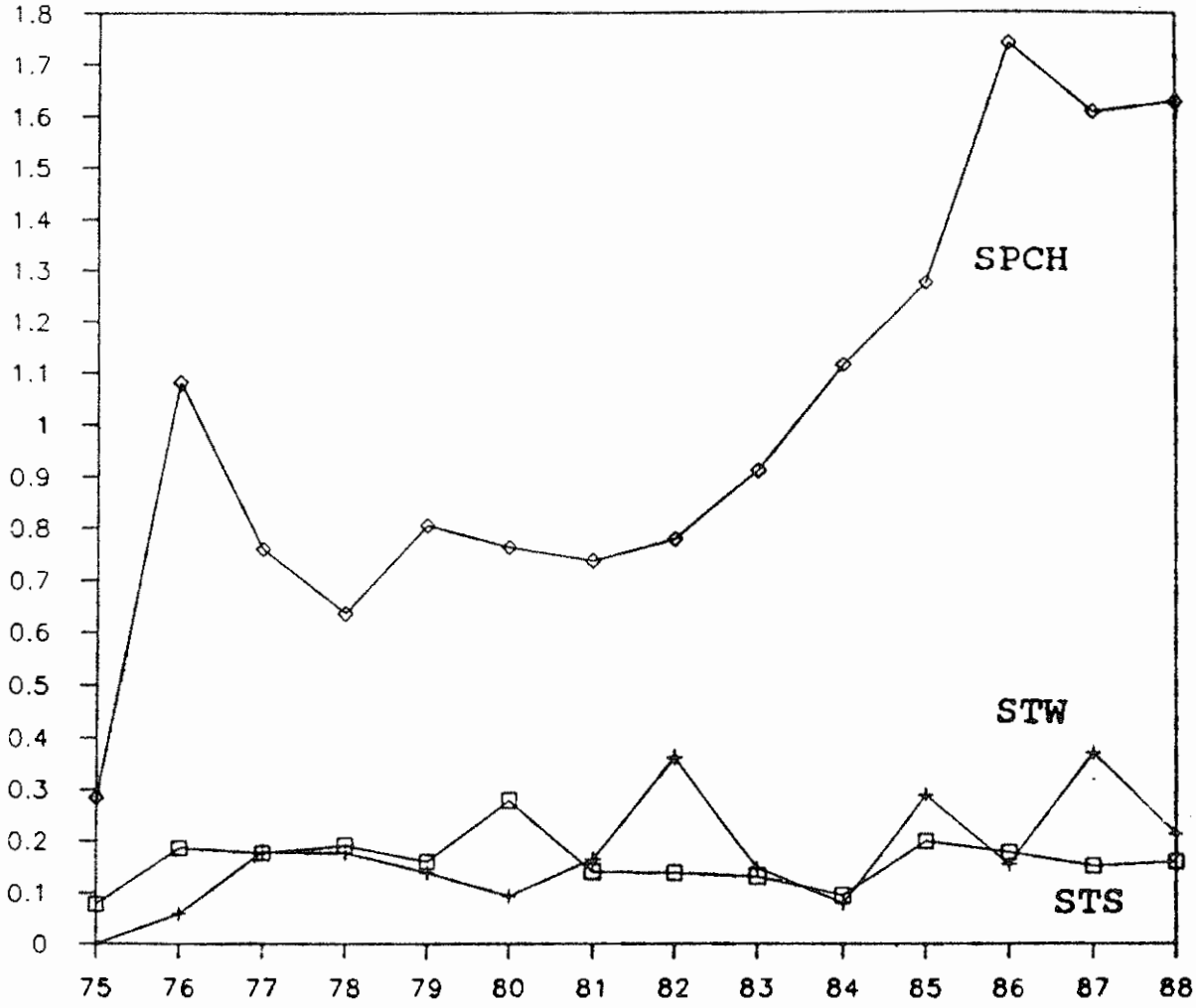
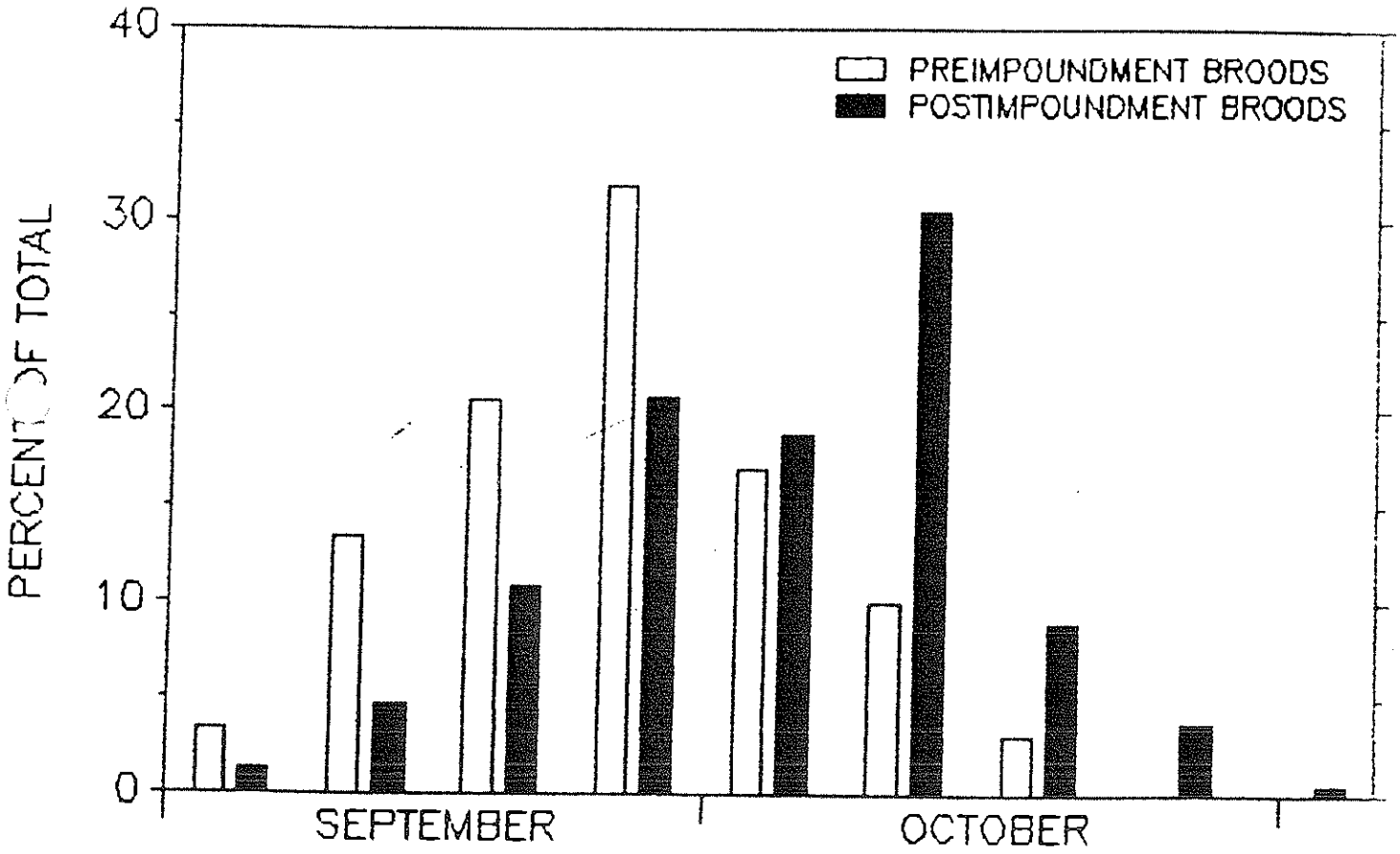
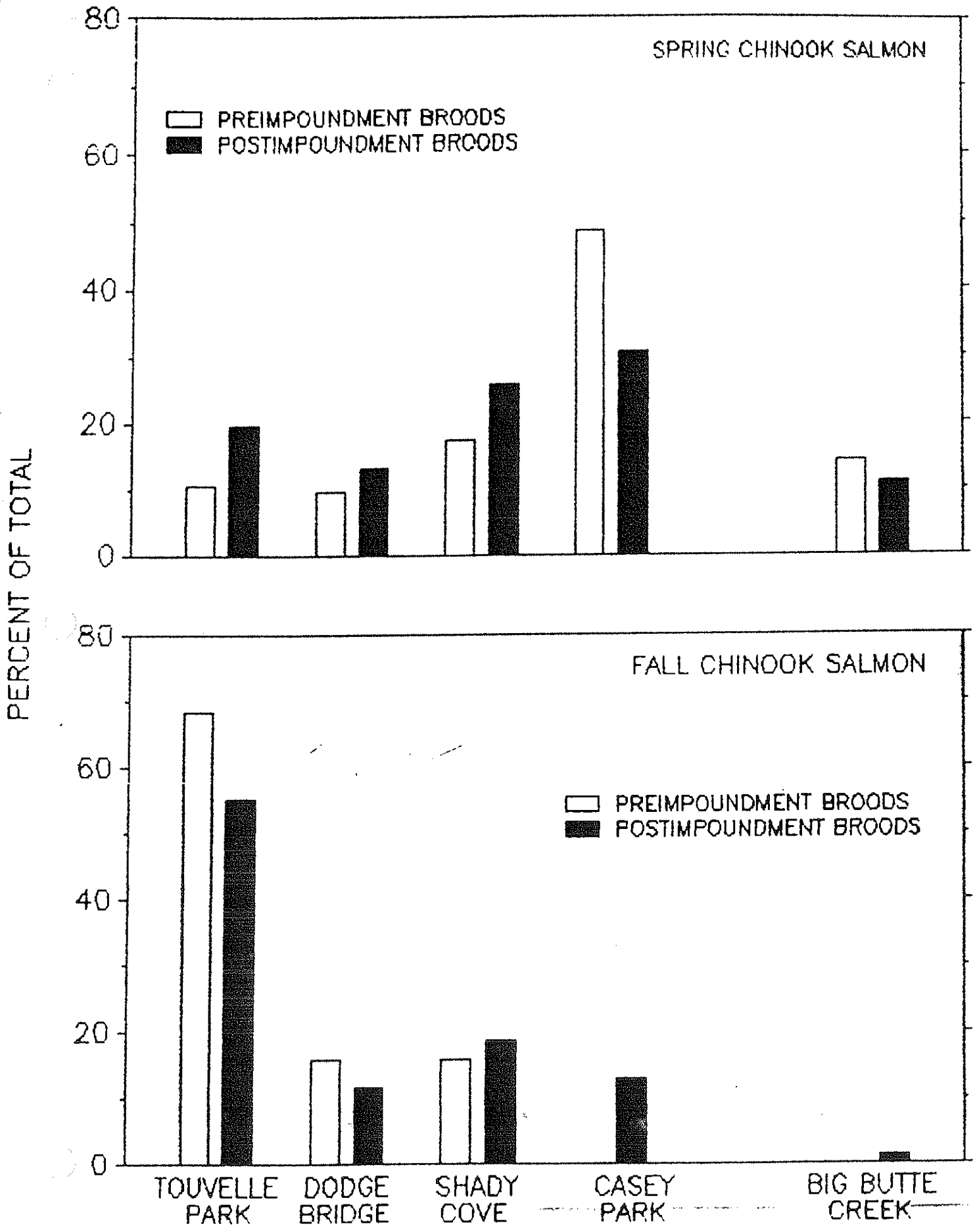


Figure 3. Steelhead and spring chinook smolts (in millions) released from Cole Rivers Hatchery, 1975 to 1988.



SPAWNING TIME OF SPRING CHINOOK IN THE ROGUE RIVER


SPRING CHINOOK SALMON
PREIMPOUNDMENT BROODS
POSTIMPOUNDMENT BROODS
FALL CHINOOK SALMON
PREIMPOUNDMENT BROODS
POSTIMPOUNDMENT BROODS
PERCENT OF TOTAL
0
20
40
60
80
TOUVELLE PARK
DODGE BRIDGE
SHADY COVE
CASEY PARK
BIG BUTTE CREEK

SEA-RUN CUTTHROAT

A. STATUS

1. DISTRIBUTION

a. It is not known if Sea-Run Cutthroat are present in the District in any significant numbers.

b. No Sea-Run Cutthroat pass Gold Ray Dam and very few are collected during the Huntley Park seining. The few that are found may be strays from another stream system.

2. FISHERY

a. There is no known fishery for Sea-Run Cutthroat.

b. Cutthroat caught in the Rogue appear to be resident.

B. MANAGEMENT

1. INVENTORY

a. An inventory program targeted on Cutthroat coupled with a scale sampling program is needed to determine if any of the Rogue Cutthroat are anadromous.

b. An evaluation is needed to determine if the potential exists to establish a Sea-Run Cutthroat Program in the Rogue using hatchery production and/or habitat improvement.

OTHER SPECIES

A. SHAD

1. STATUS

a. Size and trend of population is unknown but numbers are in the tens of thousands.

b. Known to reach Rainy Falls area.

c. A small sport fishery exists at Rainy Falls.

2. MANAGEMENT

a. Inventory.

1) Juveniles are collected incidentally while seining for Salmonids at Huntlly Park (R.M. 9).
2) Creel census will be taken when possible. Access to the known fishery is difficult so it is unlikely this fishery will expand much in the near future.

b. Habitat--probably in stable condition so no improvement work is being considered.

c. Concerns--none specifically, more information is needed.

B. STURGEON

1. STATUS

a. Both white and green Sturgeon are found from Lobster Creek up through the Rogue Canyon.

b. No known spawning. Population probably maintained by fish entering from the ocean.

c. A modest and slowly growing fishery exists below Rainy Falls and in deeper holes between the Canyon and Lobster Creek.

d. Size and trend of the population is unknown. New statewide regulations should keep population from declining as a result of increased pressure.

2. MANAGEMENT

a. Inventory--a little random creek data is available. There is no plans to expand on this at present.

b. Habitat--quality and conditions is not known. No plans, at present, for evaluations.

c. Concerns--none specifically. More information is needed.

C. SQUAWFISH

1. STATUS

a. Expanded rapidly in recent years and now found up to Savage Rapids Dam on the Rogue and the town of Applegate on the Applegate River.

b. Being caught by anglers more frequently throughout the river system. Some anglers report catching up to ten fish per day near the mouth of Graves Creek.

c. There is a sizeable population of Squawfish in the central Rogue River, primarily between Galice and the Mouth of the Applegate River.

2. MANAGEMENT

a. Inventory--young of the year and yearlings are collected incidently during seining efforts on the lower Rogue and lower Applegate rivers.

b. Habitat--no information is available.

c. Concerns.

1) Predation on juvenile Chinook is of significant concern because of habitat preferences predation on juvenile steelhead is not as prevalent.
2) Predation could become significant as the Squawfish population continues to grow.

D. SUCKERS

1. STATUS

a. Common throughout Rogue and Applegate rivers below the dams. There appears to be an enormous population in the system.

b. About 2,700 Suckers were caught one day in a trap at Murphy on the Applegate River.

2. MANAGEMENT

a. Inventory--commonly caught by anglers and incidentally during other sampling programs. The night electrofish sampling in the Rogue was suspended due to the enormous numbers of Suckers and Cottids.

b. Habitat--apparently in excellent conditions.

c. Concerns--Suckers do not prey on salmonids but do share some of the same habitat and probably compete for some of the same food organisms.

55