

STATE OF IDAHO
FISH AND GAME DEPARTMENT
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IDAHO SALMON AND STEELHEAD
STATUS REPORT FOR 1973

by
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SPRING CHINOOK

The upriver spring chinook run of 239,200 fish into the Columbia River in 1973 was considerably above the preceding 10-year average of 181,700 fish. The Columbia River commercial fishery harvested 59,400 fish compared to the 1963 to 1972 average catch of 44,000. The Indian commercial catch of 33,500 was the second highest catch since 1955. Sport anglers below Bonneville Dam took 37,700 fish, the second largest catch on record (Fish Commission of Oregon and Washington Department of Fisheries, 1974). The Bonneville Dam count of 142,100 fish has been exceeded in only four years since counting began in 1938. Record counts of spring chinook occurred over the lower Snake River dams, with 56,500 counted over Little Goose Dam (Figure 1).

Stream flows in the spring of 1973 in the Snake and Columbia drainage basins were low and clear. Fish passage conditions were probably near optimum. Nitrogen supersaturation was not present.

Due to increased artificial production of spring chinook in Idaho, the minimum desired escapement level for spring chinook over Little Goose Dam, by agreement with the Columbia River Compact agencies, was raised from 32,000 to 40,000 fish.

Idaho's sport catch, estimated at 9,721, was 70% of the preceding 19-year average (Appendix 1). A count of redds along standard routes in spring chinook spawning areas in the Salmon River drainage was 115% of the preceding 5-year average. Neither Idaho's sport catch nor counts of redds in standardized trend routes reflected the large escapement past Little Goose Dam to the extent that we expected.

A recent upward trend is apparent for Columbia River upriver spring chinook (Figure 2). Artificial production is an important factor in this upward trend and is discussed in the following section. The spawning escapement of wild spring chinook stocks, as indicated by redd counts in standard trend areas, appears to be generally declining since 1961 (Figure 2).

ARTIFICIAL PROPAGATION

Clearwater River

The chinook salmon fishing season on the Clearwater River in 1973, the first such season in 45 years, was the direct result of a 13 year-old effort to re-establish chinook in the Clearwater drainage. An estimated 5,000 fish entered the Clearwater drainage in 1973, compared to 3,467 in 1972. This run, the largest yet recorded, was a result of eyed egg plants at Indian Creek and Running Creek incubation channels and natural reproduction from 2,529 adults of 1969 (Hoss, 1974).

A record 347 redds were counted in standard trend routes in the upper Selway River drainage in 1973 (Hoss, 1974).

State and federal programs yielded over 6 million spring chinook salmon of various sizes stocked into the Clearwater River system in 1973 (Table 1).

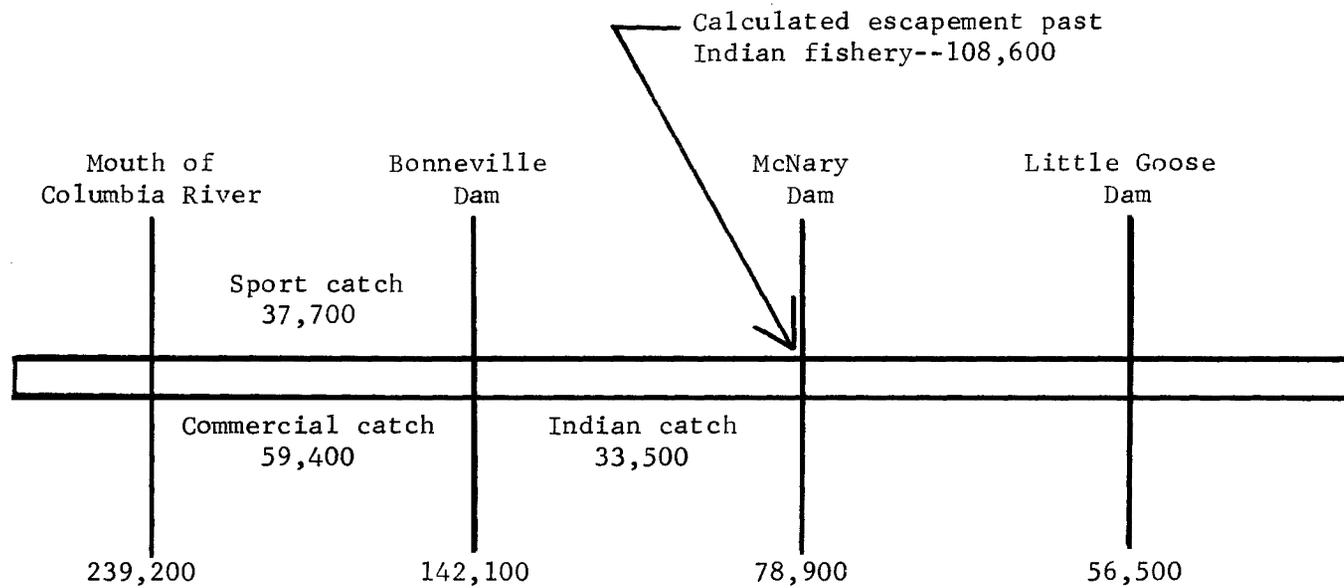


Figure 1. Harvest and escapement levels of 1973 spring chinook run into Columbia River.

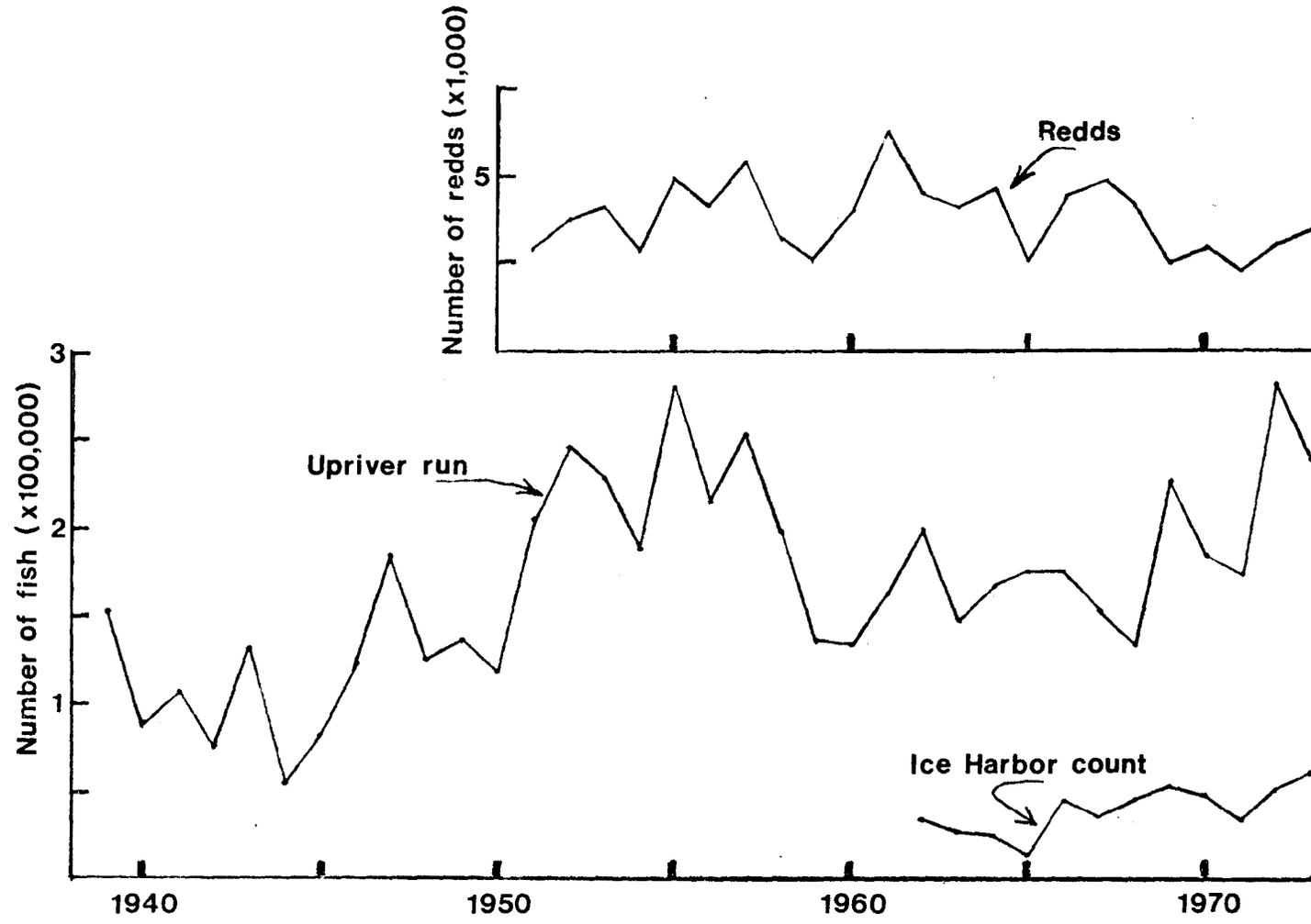


Figure 2. Columbia River spring chinook salmon upriver run size, Ice Harbor Dam counts, and Idaho redd count trend.

Table 1. Spring chinook stocking summary, Clearwater River drainage, 1973.

Stocking area	Number	Size	Rearing facility
Indian Creek Incubation Channel	2,030,000	eyed eggs	----
Crooked River Incubation Channel	930,000	eyed eggs	-----
Red River Incubation Channel	550,000	eyed eggs	----
Selway Drainage	1,600,000	fry	Indian Creek Incubation channel
Lochsa River	256,000	fingerlings	Kooskia NFH
Lochsa River Drainage	115,000	smolts	Sandpoint Hatchery
South Fork Clearwater Drainage	197,000	smolts	Rapid River Hatchery
Middle Fork Clearwater River	356,000	smolts	Kooskia NFH
South Fork Clearwater River	1,294	adults	Rapid River Hatchery
TOTAL	6,034,000 ^{1/}		

^{1/} Does not include 1,294 adult fish transplanted from Rapid River.

Salmon River

Over 3 million spring chinook smolts were stocked in the Salmon River drainage in 1973 (Table 2).

Rapid River Hatchery

A record 17,343 spring chinook adults returned to Rapid River Hatchery in 1973. We held 8,167 for egg-taking. We stocked 5,831 into the Little Salmon River sport fishery. We marked and stocked, experimentally, 1,530 into the main Salmon River above Riggins to determine whether or not further upstream migration would occur. Further, we stocked 1,294 into the South Fork Clearwater River to enhance spring chinook reintroduction.

A loss of 37% of the 8,167 fish held occurred before egg-taking, primarily due to kidney disease. Over 13.5 million eggs were taken. Eggs surplus to Rapid River Hatchery operational requirements were made available to other Idaho and federal programs.

Smolt to adult survival of 4-year-old fish was 0.47%, which was somewhat higher than noted in the previous three years. The rate of jack salmon returns was the lowest yet noted, at 0.01% (Parrish, et. al., 1974).

Spring chinook which returned to Rapid River Hatchery comprised 31% of those counted over Little Goose Dam. Production from Rapid River contributed a minimum of 30% of the statewide catch of salmon in 1973.

Nearly 3 million smolts at 17 per pound were released into Rapid River in the spring of 1973. These were, on the average, the largest smolts yet produced at Rapid River Hatchery.

Decker Flat Rearing Pond

In late June, 1973, we stocked 100,000 spring chinook fingerlings at 55 per pound into the Decker Flat experimental rearing pond. The fish were released in late September at 20 per pound. A sample of 50,300 were marked with a fin clip. Some downstream movement of these fish in the fall was verified by recaptures of marked fish at Challis (69 fish) and at Riggins (1 fish).

Six adult chinook bearing distinctive marks to identify them as Decker Flat Rearing Pond production were recovered on the upper Salmon River in 1973 (Reingold, 1973a).

Hayden Creek Research Station

The experimental approach of releasing smolt-size fish in the fall is being investigated at this station. In June, 100,000 spring chinook fingerlings (1972 brood year) were transferred to Decker Flat Rearing Pond.

In October, 150,560 spring chinook (1972 brood year) at 16 per pound were released from a rearing pond at the Hayden Creek station.

Table 2. Spring chinook stocking summary, Salmon River drainage, 1973.

Stocking area	Number	Size	Rearing facility
Rapid River	2,908,500	smolts	Rapid River Hatchery
Upper Salmon River	100,000	smolts	Decker Flat Rearing Pond
Hayden Creek (Lemhi River)	150,500	smolts	Hayden Creek Research Station
TOTAL	3,159,000		

Thirty adult chinook returned to the Hayden Creek station in 1973. Based on recoveries of marked fish, an additional 15 adult chinook were estimated to have entered upper Hayden Creek and the upper Lemhi River (Reingold, 1973b).

SUMMER CHINOOK

The 1973 summer chinook salmon run into the Columbia River, at 48,900 fish, was the smallest run on record (Figure 3). There was no intentional commercial fishery for summer chinook; however, some were taken by gillnetters below Bonneville Dam (1,200), Indians above Bonneville Dam (2,000), and sport fishermen below Bonneville Dam (2,300) (Fish Commission of Oregon and Washington Department of Fisheries, 1974).

The run into the Snake River, as judged by the Ice Harbor Dam count (12,800), was the lowest on record.

In 1973, as since 1965, we again allowed no fishing for summer chinook in Idaho. Redd counts in Salmon River drainage trend areas were about 10% above the preceding 5-year average, which may have reflected comparatively good conditions downriver for upstream passage of fish.

The upriver run has been generally declining since the late 1950's (Figure 4). We have no reason to expect improvement in the outlook for summer chinook in the foreseeable future.

ARTIFICIAL PROPAGATION

Pahsimeroi River

We released 217,000 summer chinook at 50 per pound in May from a rearing pond directly into the Pahsimeroi River. A sample of 30,000 were marked with a right ventral fin clip.

Approximately 379 summer chinook were trapped from the Pahsimeroi River and held for egg-taking. Nearly 500,000 eggs were taken and transferred to Mackay Hatchery for rearing.

SUMMER STEELHEAD (1972-1973 RUN)

A run of 225,600 summer steelhead entered the Columbia River in 1972. The commercial fishery took 24,900 below Bonneville Dam and the Indian fishery above Bonneville Dam took 28,800. An estimated 15,400 fish were taken by sport fishermen below Bonneville Dam (Fish Commission of Oregon, Washington Department of Fisheries, 1974) (Figure 5).

About 63,650 summer steelhead entered the Snake River as evidenced by the count over Ice Harbor Dam. This was less than the 1962-1971 10-year average of 68,200 fish. The fish run over Little Goose Dam (fall of 1972 and spring of 1973) totalled 56,500 (Figure 6).

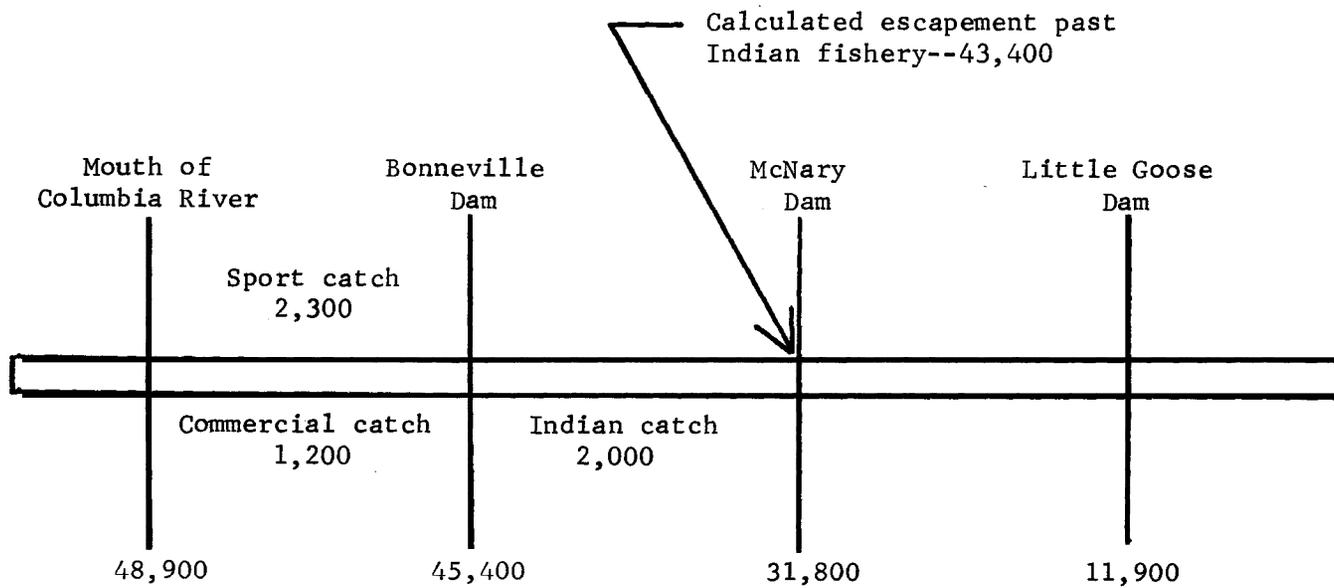


Figure 3. Harvest and escapement levels of 1973 summer chinook run into Columbia River.

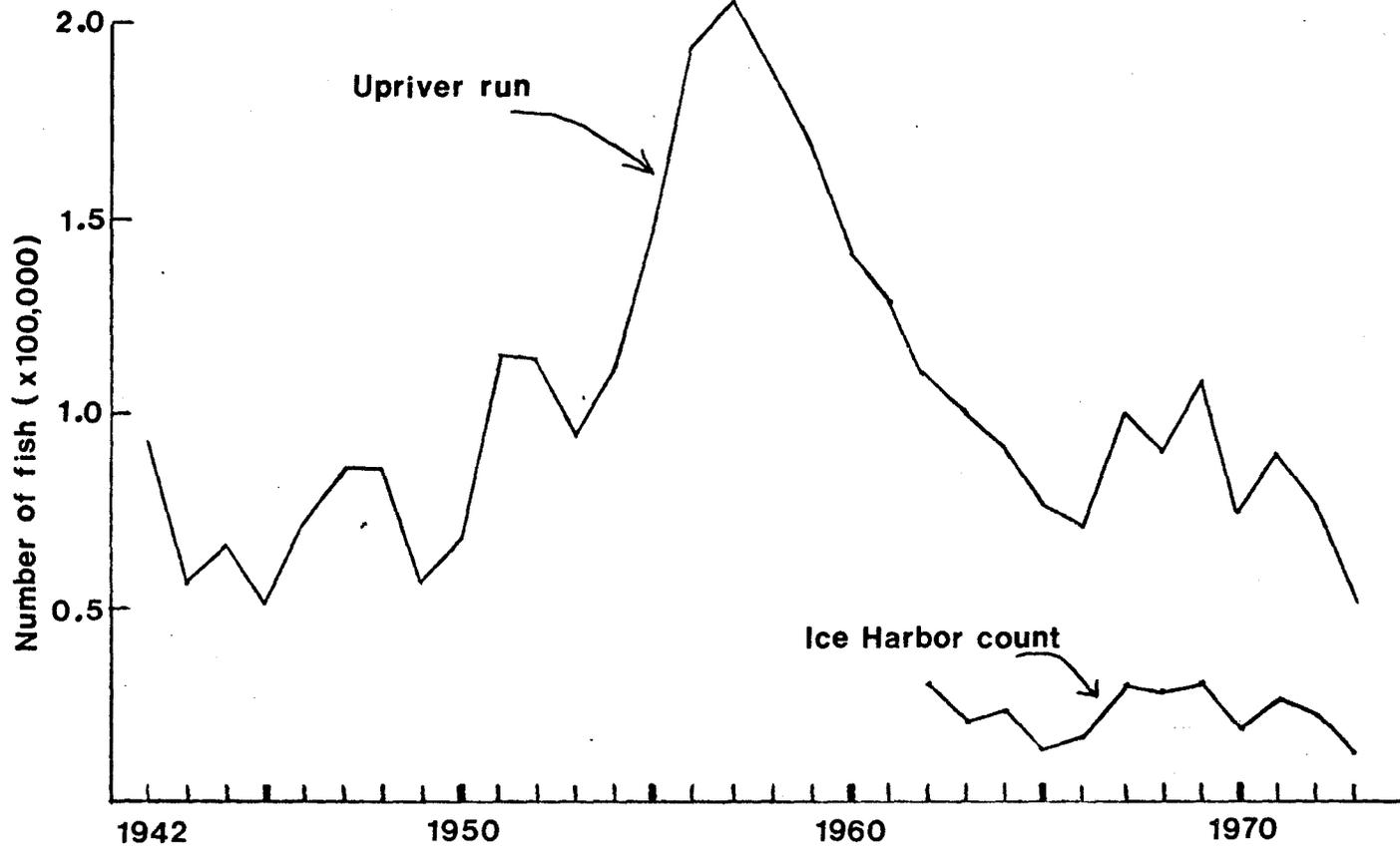


Figure 4. Columbia River summer chinook salmon upriver run size and Ice Harbor Dam counts.

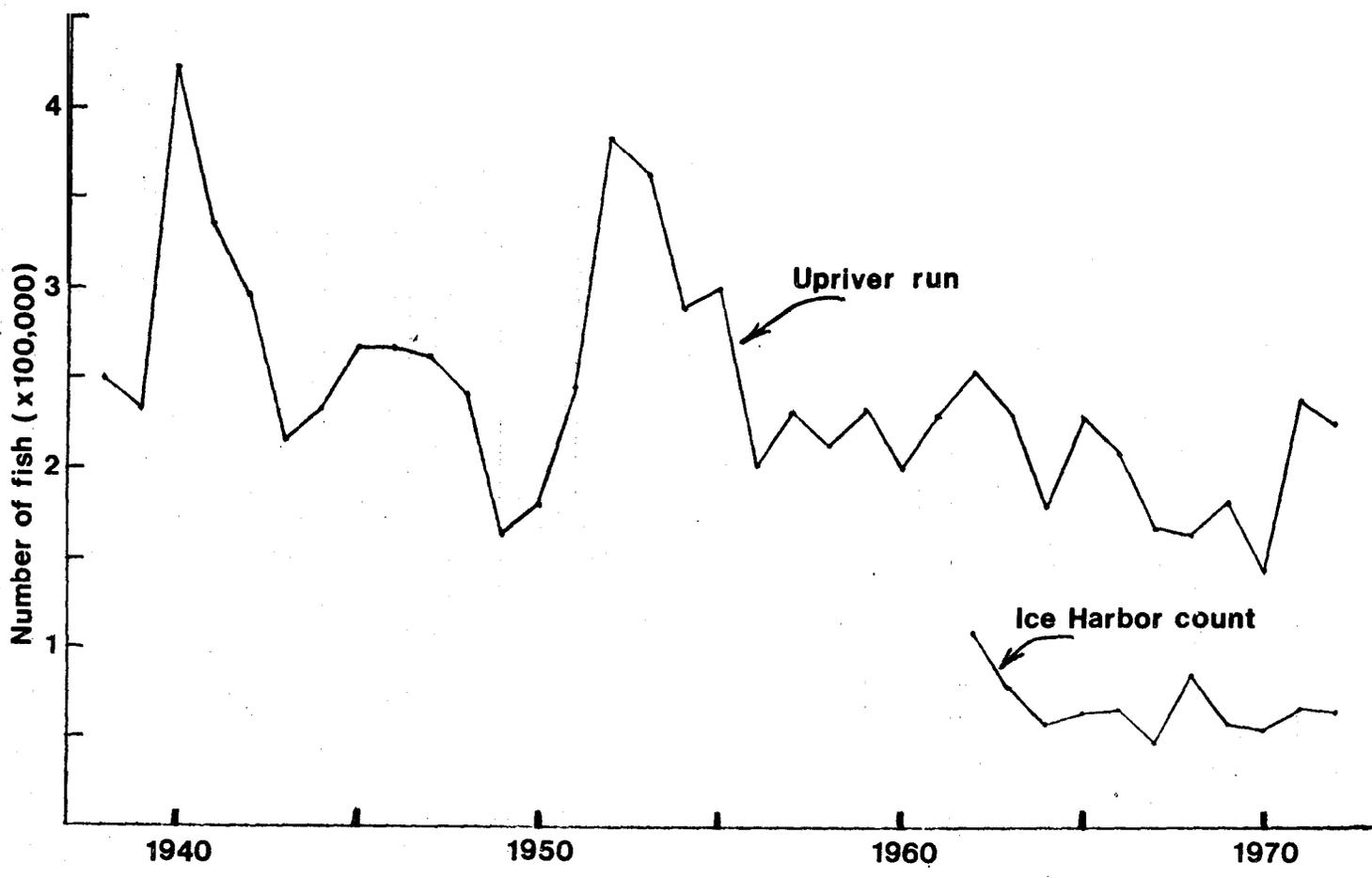


Figure 5. Columbia River summer steelhead upriver run size and Ice Harbor Dam counts.

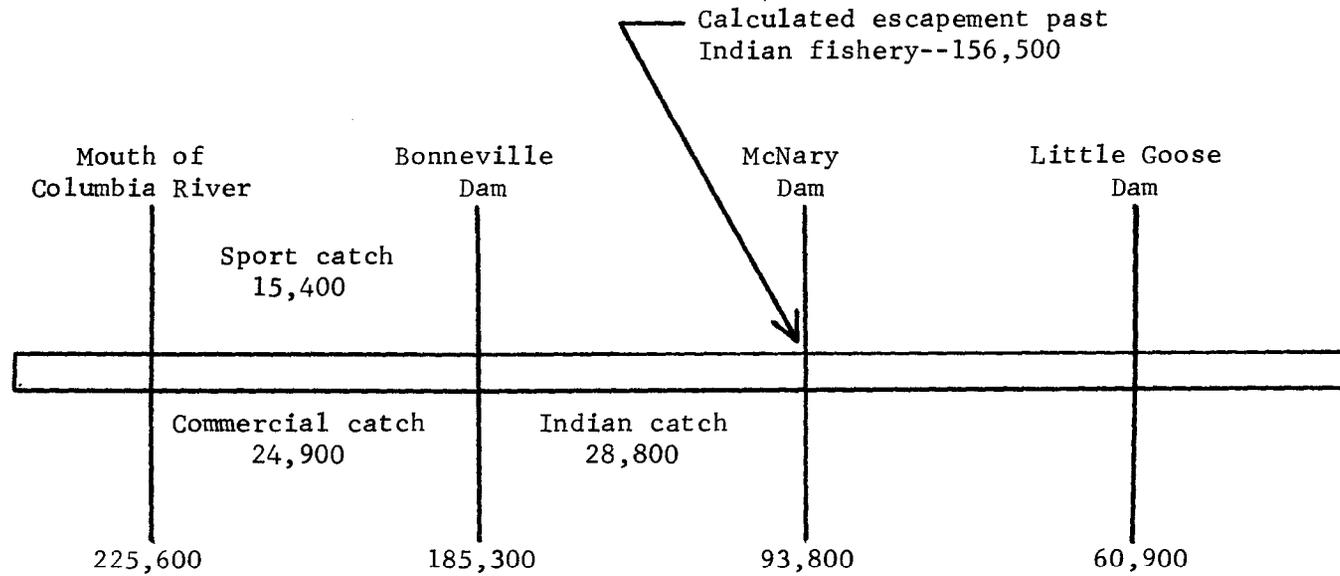


Figure 6. Harvest and escapement levels of 1972 summer steelhead run into Columbia River.

The estimated catch of steelhead of the 1972-1973 run in Idaho was 15,800, the lowest since the run of 1964-1965.

Steelhead caught by Salmon River anglers who were checked at the North Fork check station in the fall of 1972 were about 34% of hatchery origin. Fish checked at Shorts Bar (above Riggins) were 19% of hatchery origin and fish checked between Riggins and Whitebird were 13% of hatchery origin (Corley, et. al., 1973). The Niagara Springs--Pahsimeroi River fish cultural operation is the main source of these fish.

Catches in the spring of 1973 were noted as 61% hatchery origin at the North Fork check station and 28% hatchery origin at the Shorts Bar check station (Corley, et. al., 1974).

ARTIFICIAL PROPAGATION

Clearwater River

A run of 9,824 adult steelhead returned to Dworshak National Fish Hatchery. This 1972-1973 run was the largest yet to return to the hatchery since it began operation in 1968. Additionally, over 2,200 steelhead of Dworshak NFH origin were caught by Idaho sport anglers.

Over 2.6 million steelhead smolts were released from Dworshak NFH in March and April of 1973. These were 1971 and 1972 brood year fish. Also, over 1 million 1972 brood year fingerling steelhead were released into the South Fork Clearwater River in the spring of 1973 (U.S. Fish and Wildlife Service unpublished data). We experimentally stocked 2 million steelhead sac fry into the South Fork Clearwater drainage. These were 1973 brood year fish surplus to needs at Dworshak NFH.

Salmon River

Niagara Pahsimeroi

Approximately 1,292,000 steelhead smolts were trucked from Niagara Springs Hatchery and released into the Pahsimeroi River in the spring of 1973. These were 1972 brood year fish. This was the first smolt delivery since the initiation of the project that consisted entirely of progeny of fish which had been released into the Pahsimeroi (Reingold, 1974).

Some 1,458 adults returned to the Pahsimeroi station in 1973. These were 67.5% one-ocean and 32.5% two-ocean fish. Reingold (1974) estimated 3,070 Niagara-Pahsimeroi origin steelhead entered the Salmon River in the 1972-1973 run, and that 1,612 (52% of the returning population) were caught by anglers.

The 1973 brood year fry at Niagara Springs Hatchery were destroyed due to an epizootic of Infectious Pancreatic Necrosis. These fish were replaced by 2 million fry obtained from Dworshak NFH.

Table 3. Steelhead stocking summary, Idaho, 1973.

Stocking area	Number	Size	Rearing facility
South Fork Clearwater Drainage'	2,000,000	fry	Sweetwater
South Fork Clearwater Drainage	1,365,000	fingerlings	Dworshak NFH
South Fork Clearwater River	217,800	fingerlings	Niagara Springs Hatchery
North Fork Clearwater River	2,628,719	smolts	Dworshak NFH
Lemhi River	2,020,200	fry	Dworshak NFH
Upper Salmon River	236,355	smolts	Hagerman Hatchery
Valley Creek	215,316	smolts	Hagerman Hatchery
Pahsimeroi River	1,432,520	smolts	Niagara Springs Hatchery
Snake River	630,900	fry	Niagara Springs Hatchery
South Fork Salmon River Drainage	2,089,940	fry	Rapid River Hatchery
Lemhi River	1,692,096	fry	Rapid River Hatchery
Hayden Creek	31,779	smolts	Hayden Creek Station
TOTAL	14,560,625		

Hayden Creek Research Station

Experimental pond rearing of steelhead on a 2-year rearing cycle continued at Hayden Creek Research Station. Approximately 32,000 1971 brood year steelhead were released into Hayden Creek in April, 1973. These fish averaged 7.1 per pound.

Twenty adult steelhead returned to the station in 1973. Five were classed as one-ocean 1971 smolt release fish and 15 were classed as two-ocean 1970 smolt release fish (Reingold, 1973b). It is likely that the Salmon River sport fishery also took a few returnees.

Supplemental Stocking

We began supplemental stocking of steelhead smolts in Salmon River headwaters (upper Salmon River and Valley Creek) in 1973. We began a rearing cycle at Hagerman State Hatchery with 781,000 1972 brood year Group A steelhead eggs which gave a smolt plant of 451,671 after a one-year rearing cycle. The eggs were obtained at the Pahsimeroi station.

Snake River

The fish trap below Hells Canyon Dam was operated in the fall of 1972 and spring of 1973, and trapped 438 adult steelhead which were transported to Oxbow Hatchery for maturation and egg-taking. A total of 1,261,300 eggs were taken.

In a sample of 108 steelhead which were examined for fin erosion, 57 were noted to be of probable hatchery origin, specifically the Hells Canyon Dam trapping, Oxbow Hatchery egg-taking, Niagara Springs Hatchery rearing and below Hells Canyon Dam stocking program (John Siple, inter-department correspondence).

The usual stocking of subsmolt steelhead below Hells Canyon Dam was not done in 1973. Fish to be used for this purpose were destroyed in an outbreak of Infectious Pancreatic Necrosis at Niagara Springs Hatchery.

FALL CHINOOK

Only one fall chinook was trapped at Hells Canyon Dam in 1973. Approximately 3,300 fall chinook were counted over Little Goose Dam.

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APPENDIX I

Estimated sport catch of chinook salmon and steelhead, Idaho, 1954 to 1973.

Year	Chinook salmon catch	Steelhead catch
1954	15,000	12,000
1955	19,000	13,000
1956	21,000	8,000
1957	39,000	20,000
1958	24,000	30,000
1959	20,000	31,000
1960	21,000	30,000
1961	13,000	25,000
1962	12,000	19,000
1963	12,000	26,000
1964	8,000	18,000
1965	SALMON SEASON CLOSED	19,500
1966	8,500	20,500
1967	6,500	22,500
1968	10,000	23,000
1969	11,500	15,500
1970	5,500	20,500
1971	3,500	17,500
1972	6,500	13,500
19-year average	13,500	20,000
1973		10,500
(% of 19-year average)	(70.4)	(52.5)