FRED Reports

FRED
1982 Annual Report
to the
Alaska State Legislature
FRED Report Series No. 2

Alaska Department of Fish & Game
Division of Fisheries Rehabilitation,
Enhancement and Development

FRED
1982 Annual Report
to the
Alaska State Legislature

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FRED's major objectives are the rehabilitation, enhancement, development, protection, and maintenance of the salmon, trout, sheefish, and grayling resources of the State for the use of all Alaskans. To accomplish these, FRED utilized hatcheries and fishways as its basic tools. Hatcheries are about eight times more efficient in converting eggs to fish than the natural environment, and fishways open new spawning areas to anadromous fishes. FRED's research into genetics, limnology, biology, fish culture, and pathology is providing important information about the State's fish resources. FRED encourages rehabilitation efforts by private nonprofit aquaculture corporations and provides technical services to them.

During 1982, FRED released more than 195 million young salmon, an increase of 64 million over 1981 releases. Nearly 288 million eggs were taken for incubation during the year, representing an increase of over 60 million eggs from 1981. More than 1.5 million hatchery-bred salmon returned to the State's hatcheries and fisheries in 1982.

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INTRODUCTION

The Division of Fisheries Rehabilitation Enhancement and Development (FRED) was created in 1971 in response to a sharp decline in salmon catches that began in the late 1960s. The 30-year historical high average harvest is 82 million fish, but by the early 1970s, harvests had fallen to less than 25 million fish.

The state's new rehabilitation and enhancement program received its first substantial capital funding from the 1976 bond issue. By 1980, state hatcheries had adult returns of nearly 1 million salmon. Adult returns have been above 1.5 million fish for 1981 and 1982.

A long-range salmon plan developed by the Department of Fish and Game in 1976 called for an annual harvest of 117 million salmon, 25 million of which would be produced by rehabilitation and enhancement techniques. More recently, regional planning teams have revised this, calling for an annual harvest of 143 million salmon statewide, 51 million of which would be produced by rehabilitation and enhancement efforts.

The design capacity of the state's 20 hatcheries is 672 million eggs, a potential of approximately 10 million adult fish. However, not all facilities have been funded to their design capacities. Consequently, the actual potential of state hatcheries as they now stand is 8 million adult fish annually (from 458.5 million eggs). FRED hatcheries took 287.7 million eggs for incubation in 1982, which should result in 4.7 million adult salmon in future years.

MAJOR ACTIVITIES

FRED...

1) operates 20 fish hatcheries.
2) maintains 19 fishways.
3) operates a genetics and broodstock development laboratory.
4) operates a fish pathology laboratory.
5) investigates rehabilitation and enhancement opportunities.
6) investigates habitat improvement opportunities.
7) operates a limnology laboratory.
8) operates a fish tag recovery laboratory.
9) works on regional comprehensive salmon plans.
10) coordinates the private nonprofit hatchery program.
11) provides engineering services for ADF&G.

According to statute,

FRED Shall...

1) develop and maintain a plan for fisheries rehabilitation, enhancement, and development. (AS 16.05.092)
2) encourage investment by private enterprise in technological development and economic utilization of fish resources. (AS 16.05.092)
3) increase production and use of fish resources. (AS 16.05.092)
4) report to the Legislature annually. (AS 16.05.092)
5) coordinate activities with regional aquaculture associations. (AS 16.10.380)
6) process permits and applications for private nonprofit hatcheries. (AS 16.10.400)
7) assist nonprofit hatchery corporations. (AS 16.10.443)
8) cooperate in the development of regional salmon plans. (AS 16.10.375)

PRODUCTION REPORT

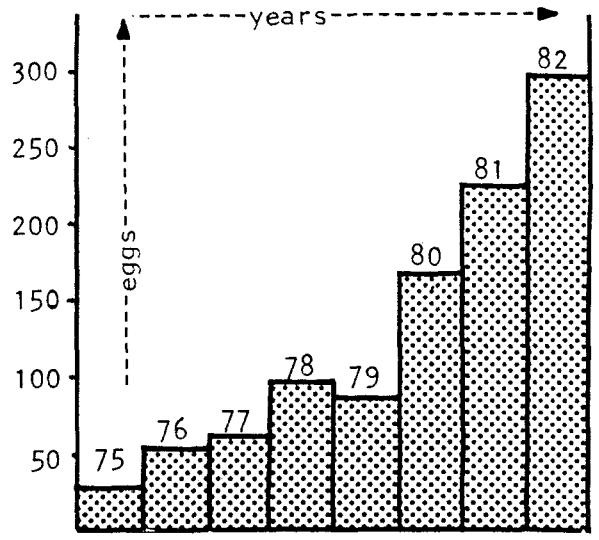
During 1982, FRED took more eggs and released more fish than ever before. FRED personnel took 287.7 million eggs, 60 million more than were taken in 1981. The predominant species were pink salmon (128 million eggs) and chum salmon (76 million eggs). Egg takes by facility and brood stock appear in Table 1, along with information on escapements and fish killed during spawning. A summary by species is included at the end of the Table.

Releases of fish during 1982 totaled 195.5 million, 64 million more than in 1981. Again, pink salmon was the predominant species (115 million fish). Releases by facility and species appear in Tables 2 and 3.

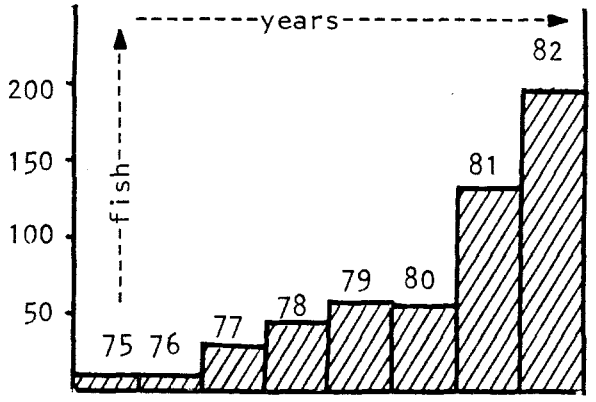
Adult returns of FRED hatchery fish in 1982 were lower than in 1981, mainly because of a decrease in the ocean survivals of pink salmon. These survivals had been 8 percent and higher at some locations, but during 1982, most dropped back to a normal 1 to 3 percent. Nearly 1.6 million FRED salmon returned during 1982 as opposed to just over 2 million the previous year. FRED hatchery returns by species and facility appear in Table 4. Of those 1.6 million, approximately 1.2 million were harvested by commercial fishermen. An estimated 15,000 were harvested by sport fishermen.

Returns, releases, and egg takes are discussed in greater detail in the area summaries that follow.

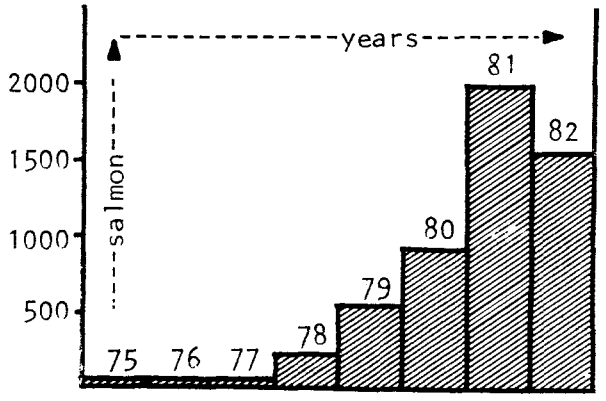
PRODUCTION AT A GLANCE...



Eggs taken for FRED hatcheries in millions



Releases of young fish from FRED hatcheries in millions



Adult returns of FRED hatchery salmon in thousands

HATCHERY PRODUCTION RESULTS, 1982

Southeastern Returns

Chum salmon dominated hatchery activities in Southeastern this year, returning to five of the six hatcheries (Table 4).

About 40,000 chums returned to the Hidden Falls Hatchery and surrounding areas, and an equal number may have been caught in the seine fishery. These fish were released as fingerlings after being transferred from the Snettisham Hatchery. Surveys conducted on five streams adjacent to the hatchery revealed the presence of Hidden Falls chum salmon.

About 17,000 natural chums returned to the Klawock River, which provided slightly over 6 million eggs for the Klawock Hatchery.

Crystal Lake Hatchery returns of chinook adults numbered 408 fish. Low returns were expected from the small number of smolts released in 1979. The hatchery was decontaminated that year and only disease-free brood stocks were incubated.

About 1,102 chinook salmon returned to Ketchikan Creek and the Deer Mountain Hatchery. About half were 2- and 3-year-old males. It is expected that these year classes will impact the commercial fishery in 1983.

The Southeastern hatcheries accounted for at least 31,000 cohos in the fisheries and at hatchery racks. Crystal Lake, Deer Mountain and Klawock Hatcheries were the principal contributors.

Tagged and marked chinook, coho, and chum salmon recovered by Fish and Game personnel revealed that hatchery fish were caught in commercial fisheries throughout the Southeast Region. That information has not yet been analyzed, and so cannot be reported in any detail. However, data for Klawock Hatchery coho are available. A total of 134 tagged cohos from the hatchery were captured in the fisheries. One-hundred-thirteen tags were from a group of 18,000 tagged fingerlings that were placed in Klawock Lake to overwinter before migrating to sea as smolts. A second group of 18,000 tagged smolts released directly from the hatchery provided only 21 tagged recoveries. The difference between 113 and 21 tags provides an indication of differences in survival of Klawock Hatchery smolts and those that smolted in Klawock Lake.

Southeastern Releases

Over 29 million chum salmon fingerlings were released from Southeast hatcheries. Many of the fingerling were reared for a short period of time to increase their survival in the marine environment. Snettisham, Hidden Falls and Beaver Falls were the primary release locations (Table 2).

About 491,000 king salmon juveniles were released in 1982 which is a substantial increase over past years. The Crystal Lake Hatchery's release of 333,000 chinook smolts was double any previous release. Over 558,600 coho salmon were released in 1982. The Snettisham Hatchery was the largest Southeast coho producer, with a release of 264,559 smolts and pre-smolts.

Southeastern Egg Takes

Chum salmon egg availability increased in 1982. Over 23 million eggs were taken at Hidden Falls Hatchery from the first major return (Table 1).

The Neka River in Port Fredrick, and Lagoon and Disappearance Creeks in Cholomondeley Sound contributed a total of 22 million chum eggs to the Snettisham, Beaver Falls and Klawock programs.

About 6.2 million eggs were taken from Klawock River chums which, when combined with 7 million Disappearance Creek/Lagoon Creek chum eggs, resulted in the first "production level" year for this species at the Klawock Hatchery.

In 1982 slightly over 1.8 million chinook salmon eggs were taken for incubation in hatcheries in the S.E. Region. Aside from brood stock returning to the hatchery, eggs were taken from Andrew Creek, King Salmon River and the Unuk River. Included in the Andrews Creek egg take were 50,000 eggs shipped to Medvejie hatchery operated by Northern Southeast Regional Aquaculture Association near Sitka.

The National Marine Fisheries Service's Little Port Walter research station provided 185,000 chinook eggs to private hatcheries at Ketchikan and Annette Island.

Prince William Sound Returns

The FRED Division operates two hatcheries in Prince William Sound and one streamside incubation facility for sockeye salmon on the upper Copper River. In 1982, about 820,000 adult salmon returned as a result of FRED activities. The commercial catch of Cannery Creek Hatchery pinks was about 688,800, with a spawning escapement of 71,575 (Table 4). This represents an ocean survival of 5.3%.

The Main Bay Hatchery was completed in 1982 and the Division took possession late in the fall. Approximately 35,000 pink salmon returned to Main Bay in 1982. These were from eggs taken at Port San Juan by the Prince William Sound Aquaculture Association and incubated at the Cannery Creek Hatchery and released as fry in Main Bay. This was also done with eggs taken in 1982.

About 21,640 Cannery Creek pink salmon, which had been released at Hobo Creek as fry in an effort to establish a spawning population above a new fishway, returned to the fishery and the stream. It is estimated that about 2,100 of the Hobo Creek transplants returned to Cannery Creek.

The sport fishery for coho in the Whittier area continues to improve. About 2,000 hatchery coho returned to the area and contributed to the sport fishery as intended.

Prince William Sound Releases

About 33 million pink salmon eggs were collected at the private hatchery in Port San Juan, incubated at the Cannery Creek Hatchery and released as fry in Main Bay. In addition, nearly 14 million pink salmon fry were released at Cannery Creek (Table 2).

Approximately 10,000 coho smolts were released at Whittier in 1982. This was less than previous years because of reconstruction of the Fort Richardson salmon and trout hatchery. Smolt releases at Homer and Seward were also reduced in 1982.

Over 8 million sockeye fry were released to lakes in the Copper River system from the Gulkana streamside incubation facility. Those fish are expected to contribute to the Copper River Delta gillnet fishery as well as up-river fisheries.

Prince William Sound Egg Takes

About 23 million pink salmon eggs were taken at Cannery Creek Hatchery, and nearly 11 million sockeye eggs were taken at the Gulkana facility (Table 1).

Nearly 10 million chum salmon eggs were taken for the Main Bay Hatchery. The eggs were held at the Valdez Fisheries Development Association's hatchery for transfer to Main Bay when the State accepted beneficial occupancy of that new facility late in the fall.

Cook Inlet Returns

All five species of salmon are produced at State hatcheries in the Cook Inlet drainages. In addition, rainbow trout are produced for stocking lakes throughout Central and Interior Alaska.

Over 51,000 sockeyes returned to Cook Inlet as a result of production at Big Lake and Crooked Creek Hatcheries (Table 4). The total would have been higher had not the parent year production at Big Lake been nearly destroyed by IHN Virus. There was no outbreak of the virus in 1981 or 1982.

The largest group of hatchery-produced sockeyes, 25,690, returned to Tustumena Lake. Sockeye fry from Crooked Creek Hatchery have also been experimentally stocked in Leisure Lake in Kachemak Bay and Chenik Lake in Kamishak Bay. Returns to the two projects in 1982 were 3,400 and 5,000 fish, respectively, which represented ocean survivals of up to 20%.

The Tutka Bay Hatchery is the only Cook Inlet facility producing pink and chum salmon. About 250,000 pink salmon returned to the hatchery and adjacent fishery in 1982, as compared to over 1 million fish in 1981. Although Tutka fish did not survive in the ocean at the high rate of the previous year, the 1982 returns still indicated 2% ocean survival which is considered average. About 2,000 pinks were caught by sportsmen within Tutka Lagoon.

Hatchery raised chinook salmon provided added fishing opportunities on the Kasilof River and Halibut Cove in Kachemak Bay. Over 3,800 chinooks were caught by sportsmen at the two locations. About 14,000 man-days of fishing effort were expended on the Kasilof chinooks; one out of every two fish caught was a hatchery fish. At Halibut Cove, about 2,200 fishermen made 680 boat trips to catch 2,200 chinooks.

In recent years coho salmon have been released at Homer, Seward, Whittier, and Knik Arm streams. Preliminary information indicates about 2,000 hatchery coho were caught by sportsmen at Whittier. Nearly 6,900 coho in upper Cook Inlet were the direct result of the fingerling stocking program from the Big Lake Hatchery to Fish Creek, Wasilla Creek, and Cottonwood Creek.

Cook Inlet Releases

Four species of salmon were released from Cook Inlet area hatcheries in 1982. Releases of coho were low and no chinook were released because the Fort Richardson Hatchery was closed for reconstruction.

Over 21 million sockeye fry were released by the Crooked Creek and Big Lake Hatcheries (Table 2), a reflection of our increasing success in being able to "farm around" IHN virus. Sockeye fry at Crooked Creek are started on feed prior to being placed back in Tustumena Lake, which is intended to increase their survival in the lake.

Nearly 16 million pink salmon were released from the Tutka Bay Hatchery. Over 10 million of those were reared in floating pens prior to release. Fed fry which returned as adults to Tutka Bay in 1982 survived at a rate of 2.5% compared to a survival of 1.3% for unfed fry.

In 1982, over 1 million coho fingerlings were released in upper Cook Inlet streams from the Big Lake Hatchery. Fish Creek, Wasilla Creek, and Cottonwood Creek were the streams that received the fish. The next stream to be included in the coho salmon rehabilitation project is the Little Susitna River.

The closure of the Fort Richardson Hatchery for reconstruction reduced the Division's smolt production. Success with the rainbow trout program at Elmendorf Hatchery resulted in lake releases of about 1,568,000 fish (Table 4). Many lakes which might have received coho fingerlings received rainbow trout instead. Because of space limitations for smolt production about 301,000 coho fingerlings were placed in West Chester Lagoon in Anchorage to create a sport fishery on returning adults in 1984. Halibut

Cove, Crooked Creek, Resurrection Bay, and Whittier are all slated to receive chinook smolts when production resumes.

Cook Inlet Egg Takes

Eggs were taken from 21 stocks of salmon and trout in 1982 for use in Cook Inlet area hatcheries.

Over 5.9 million coho eggs taken represents a new high for that species in Cook Inlet (Table 1). The new Trail Lakes Hatchery has begun incubating four Kenai River coho stocks.

About 520,000 coho eggs were taken from Little Susitna River fish, which represents a beginning for that rehabilitation project.

The Tutka Hatchery was filled to capacity in 1982 with 19 million pink salmon eggs and nearly 1.5 million chum salmon eggs.

Elmendorf Hatchery received about 752,000 Crooked Creek chinook salmon eggs last summer in place of the Fort Richardson Hatchery.

Sockeye salmon production in Cook Inlet appears to have climbed to another plateau with a total of over 40 million eggs in the Big Lake, Crooked Creek, and Trail Lakes Hatcheries.

Another success is the rainbow trout program at Anchorage. Past efforts provided less than one half million fry per year for lake stocking. In 1982, about 4.8 million eggs were taken from hatchery brood stock, which will provide fish well in excess of all present stocking requests.

A steelhead trout project was begun in 1981. Several adult steelhead were captured from the Anchor River and held at the Crooked Creek Hatchery for testing. The fish were held successfully, and in 1982, 50 adults are to be captured and held until spawned. The resulting 100,000 eggs will be incubated and reared to smolt size prior to stocking.

Interior and Northwest Returns

The Division operates two hatcheries in the Interior and Northwestern Alaska. A third facility, East Creek Hatchery, was closed during 1982 because of reduced funding. The hatchery at Clear Air Force Station produces salmon, trout, sheefish, and grayling as part of feasibility projects which may lead to expanded production.

Young salmon from the Clear Hatchery are released in Clear Creek, which provides a location for the evaluation of adult returns. In 1982, an estimated 68 chums representing Clear Hatchery's first returns, were recaptured in Clear Creek and in the river fisheries (Table 4). Those fish had been released in 1979 as unfed fry.

Grayling and sheefish are released in lakes and streams to benefit the sport fishery. Evaluation is provided by the Sport Fish Division.

Interior and Northwest Releases

Fish were released from two hatcheries in the Interior-Northwestern areas in 1982. Nearly 5.6 million sockeyes were released by the East Creek Hatchery at Lake Nunavaugaluk, near Dillingham (Table 2). That hatchery was then closed due to budget shortages.

Test numbers of chum, chinook, and coho salmon, and sheefish were released from the Clear Hatchery in continued tests of hatchery fry survivals in the Yukon River system (Tables 3 and 4).

Interior and Northwest Egg Takes

Chinook salmon egg takes at Clear were dropped in 1982 because of funding shortfalls. Coho and chum eggs were taken for the hatchery (Table 1). About 354,000 grayling eggs proved to be infertile. Bad weather killed sheefish being held for spawning and the operation was aborted.

About 70,000 rainbow trout eggs were taken from wild stocks at Big Lake and the Swanson River. These are being held at the Clear Hatchery for eventual transfer Fort Richardson. Broodstock developed at Ft. Richardson will provide trout fry for stocking in interior lakes.

A chum salmon hatchery on the Noatak River became operational in 1982. About 741,000 chum eggs were placed in the new Sikusuilaq Hatchery, even though severe flooding nearly caused the cancellation of the egg take.

Kodiak and Alaska Peninsula Adult Returns

The ADF&G operates two hatcheries and one streamside incubation facility in the Kodiak-Alaska Peninsula area. In 1982, 322,300 pink salmon returned to the Kitoi Bay Hatchery. Of those, 190,000 were harvested in the commercial fishery (Table 4).

About 27,800 chums and 60,000 pinks escaped into Russell Creek, near Cold Bay. The hatchery contribution to this return is unknown. Marking fish before release will provide a better analysis of hatchery returns in the future.

The Karluk Lake streamside sockeye salmon rehabilitation facility is expected to contribute adults in 1983. No contribution was expected in 1982.

About 93,000 pinks and 21,000 sockeye salmon were contributed to Afognak Island fisheries by streams with fishways. About 37,000 coho salmon from Afognak Island streams with fishways were taken by the commercial fishery. The Frazer Lake fishpass passed nearly 400,000 adult sockeye salmon, which <u>are not</u> included in the FRED Division production figures.

Kodiak and Alaska Peninsula Releases

The Kitoi Bay Hatchery continued to expand production in 1982, while the Russell Creek Hatchery at Cold Bay was held at a low production level because of design problems.

Almost 48 million pink salmon fry were released at Kitoi Bay last summer (Table 2). The Russell Creek Hatchery released more than 10 million chum fry, while the Karluk project planted about 10 million eyed sockeye eggs in Thumb Creek, which is a tributary of Karluk Lake.

Kodiak and Alaska Peninsula Egg Takes

The Kitoi Hatchery staff took more eggs in 1982 than in previous years. About 85.7 million pink salmon eggs were placed in the facility (Table 1). The Russell Creek Hatchery was again restricted to a low level of production (9.2 million chum eggs), while the sockeye rehabilitation project at Karluk increased its incubation to over 13.6 million. This effort is timely because the spawning escapement into the Karluk Lake system in 1982 was less than one-fourth of the desired escapement of 800,000 sockeyes.

Table 1. Estimates of the number of eggs taken for incubation by FRED during 1982 by facility, brood stock, and species, including the number of fish killed during spawning and the number allowed to escape upstream.

Facility	Broodstock	Species	Eggs Taken	Fish Killed During Spawning	Escapement[a]
SOUTHEAST REGION					
Beaver Falls	Beaver Falls Return	chum	2,749,032	2,300	-0-
	Disappearance Creek	chum	104,544	396	33,000
	Lagoon Creek	chum	4,272,048	2,158	16,000
Crystal Lake	Crystal Creek	chum	76,214	61	280
	Crystal Creek	coho	2,310,000	11,495	-0-
	Crystal Creek	chinook	450,480	175	-0-
	Andrew Creek	chinook	547,127	141	790
	Falls Creek	steelhead	13,343	14	100
Deer Mountain	Ketchikan Creek	chinook	281,426	686	-0-
	Ketchikan Creek	coho	88,750	300	100
	Ketchikan Creek	steelhead	19,214	-0-	107
	Cripple Creek	chinook	51,480	11	538
Hidden Falls	Hidden Falls Return	chum	23,224,924	34,440	-0-
	Andrew Creek	chinook	78,554	25	790
Klawock	Klawock River	coho	1,200,000	600	3,200
	Klawock River	steelhead	33,331	-0-	350
	Klawock River	chum	6,189,071	3,300	15,000
	Disappearance Creek	chum	7,613,609[b]	1,056	33,000
	Lagoon Creek	chum		3,022	16,000

-Continued-

Table 1. Continued.

Facility	Broodstock	Species	Eggs Taken	Fish Killed During Spawning	Escapement[a]
Snettisham	Neka River	chum	9,516,086	5,972	17,321
	Snettisham Return	chum	1,286,700	1,200	-0-
	King Salmon River	chinook	83,400	26	263
	Andrew Creek	chinook	321,744	33	790
	Speel Lake	coho	80,400	29	1,153
	Snettisham Return	coho	393,200	148	-0-
		SOUTHEAST TOTAL	60,984,677		
CENTRAL REGION					
Big Lake	Meadow Creek	Sockeye	9,336,969	5,080	22,720
	Nancy Lake	Sockeye	3,037,629	1,810	9,700
	Fish Creek	Sockeye	534,572	[c]	[c]
	Meadow Creek	Coho	1,023,303	850	4,350
	Fish Creek	Coho	1,724,165	[c]	[c]
	Little Susitna River	Coho	520,475	180	11,320
	Cottonwood Creek	Coho	232,166	117	1,927
Cannery Creek	Cannery Creek	Pink	23,141,794	50,000	10,000
	Cannery Creek	Coho	188,304	100	1,000
Clear	Clear Creek	Chum	39,296	34	-0-
	Clear Creek	Coho	646,684	120	1,250
	Jay Lake	Grayling	354,000[e]	100	-----
	Swanson	Rainbow	45,770	-0-	-----
	Big Lake	Rainbow	24,280	-0-	-----

-Continued-

Table 1. Continued.

Facility	Broodstock	Species	Eggs Taken	Fish Killed During Spawning	Escapement[a]
Crooked Creek	Bear Creek	Sockeye	11,158,026	5,600	51,300
	Glacier Flats	Sockeye	11,469,086	5,560	17,300
	Crooked Creek	Chinook	162,797	45	3,500
Elmendorf	Crooked Creek	Chinook	752,634	205	3,500
	Seward-Bear Creek	Coho	1,168,600	431	2,122
	Elmendorf	Rainbow	4,843,646		-----
Gulkana	Gulkana River	Sockeye	10,931,889	6,000	
Karluk	Upper Thumb	Sockeye	13,633,300	8,210	11,500
Kitoi Bay	Kitoi Creek	Pink	85,675,680	124,900	21,000
	Sturgeon River	Chum	145,046	156	89,500
	Chignik	Chinook	219,311	32	4,000
	Pasagshak	Chinook	50,977	14	53
	Buskin River	Coho	100,000		
Main Bay	Wells River	Chum	9,859,274	4,500	30,000
	P.W.S.A.C.	Pink	31,664,918	[d]	[d]
Russell Creek	Russell Creek	Chum	9,148,646	6,230	28,000
Sikusuilaq	Noatak River	Chum	741,686	400	50,000
Trail Lakes	Quartz Creek	Sockeye	1,556,000	800	70,400
	Ptarmigan Creek	Sockeye	1,570,320	920	7,525
	Hidden Lake	Sockeye	1,517,964	900	8,650
	Quartz Creek	Coho	687,098	400	2,520

-Continued-

Table 1. Continued.

Facility	Broodstock	Species	Eggs Taken	Fish Killed During Spawning	Escapement[a]
	Crooked Creek	Coho	525,000	240	905
	Russian Creek	Coho	31,200	15	2,250
Tutka Bay	Tutka Creek/Lagoon	Pink	18,996,533	41,200	18,500
	Tutka Creek/Lagoon	Chum	1,294,083	1,220	1,270
		CENTRAL TOTAL	226,734,203		
Eggs Totals By Species:		1. Chinook:	2,999,930		
		2. Chum:	76,260,259		
		3. Coho:	10,919,345		
		4. Pink:	127,814,007		
		5. Sockeye:	64,745,755		
		6. Grayling:	354,000[e]		
		7. Rainbow:	4,913,696		
		8. Steelhead:	65,888		
		GRAND TOTAL:	287,718,880		

a/ Does not include fish used in egg take
b/ This represents the total number of eggs taken at Disappearance Creek and Lagoon Creek.
c/ Spawning and escapement figures for Fish Creek and Meadow Creek are combined.
d/ Eggs were sent from P.W.S.A.C. hatchery at Port San Juan, and are not included in the total.
e/ Eggs lost due to infertility. Not included in the total.

Table 2. Numbers of salmon released during 1982 that were produced at FRED facilities.

Facility	Brood year, Stock, Species	Number of salmon released
CENTRAL REGION		
Big Lake	1981 Meadow Creek, coho	296,344
	1981 Fish Creek, coho	714,248
	1981 Little Susitna, coho	2,950
	1981 Meadow Creek, sockeye	3,899,730
	1981 Fish Creek, sockeye	366,067
	1981 Nancy Lake, sockeye	1,018,662
Cannery Creek	1981 Cannery Creek, pink	13,932,987
	1981 Siwash Creek, chum	866,891
Clear AFS	1981 Delta, chum	372,904
	1981 Clear Creek, coho	150,882
	1981 Salcha, chinook	102,987
Crooked Creek	1981 Bear Creek, sockeye	9,176,478
	1981 Glacier Flat, sockeye	8,299,617
East Creek	1981 Francis Creek, sockeye	5,070,486
	1981 East Creek, sockeye	505,998
Elmendorf	1981 Seward - Bear Creek, coho	1,096,666
Gulkana	1981 Gulkana River, sockeye	8,051,000
Karluk	1981 Upper Thumb River, sockeye	174,000
Kitoi Bay	1981 Big Kitoi Creek, pink	47,828,340
	1981 Chignik, chinook	96,756
	1981 Pasagshak, chinook	29,950
Main Bay	1981 PWSAC, pink	33,700,561
Russell Creek	1981 Russell Creek, chum	10,056,824
Tutka Bay	1981 Tutka Creek, chum	15,440
	1981 Tutka Creek, pink	15,660,017
	CENTRAL REGION TOTAL:	161,486,785

-Continued-

Table 2. Continued.

Hatchery	Brood Year, Stock, Species	Number of salmon released
SOUTHEAST REGION		
Beaver Falls	1981 Beaver Falls and Disappearance Creek, chum	8,016,467
Crystal Lake	1981 Crystal Creek, chum	16,978
	1980 Crystal Creek, coho	62,631
	1980 Crystal/Andrews, chinook	273,849
	1981 Crystal Creek, chinook	59,127
Deer Mountain	1980 Ketchikan Creek, coho	165,273
	1980 Cripple Creek, chinook	118,848
Hidden Falls	1981 Hidden Falls, chum	1,426,880
	1981 Kadasham Bay, chum	8,151,095
	1981 Hidden Falls/Seal Bay, chum	713,376
Klawock	1981 Klawock River, chum	2,051,429
	1980 Klawock River, coho	66,163
	1981 Klawock River, pink	3,736,832
Snettisham	1981 Neka River, chum	6,873,283
	1981 Snettisham/Limestone Inlet, chum	2,076,911
	1980 Speel Lake, coho	15,172
	1981 Snettisham, coho	249,387
	1980 Situk River, chinook	39,200
	SOUTHEAST REGION TOTAL:	34,112,901

SPECIES TOTALS

Chinook:	720,717
Coho:	2,819,716
Sockeye:	36,562,038
Chum:	40,638,478
Pink:	114,858,737
Total Salmon Release:	195,599,686

Table 3. Numbers of rainbow trout, steelhead trout, and sheefish planted by FRED in 1982.

Species	Brood Stock	Size	Number planted	Location planted
Rainbow trout	1978 Swanson	broodstock	420	
	1981 Swanson	sub-catchable	117,725	Anchorage and Fairbanks area
		catchable	77,897	
	1982 Elmendorf	fingerling	1,371,759	
		Rainbow total:	1,567,801	
Steelhead trout	1980 Crystal Creek	smolt	21,003	Crystal Creek, Falls Creek
	1980 Ketchikan Creek	smolt	1,479	Ward Lake
	1980 Klawock River	smolt	1,757	Klawock River
	1981 Klawock River	fingerling	29,628	Klawock River
		Steelhead total:	53,867	
Sheefish	1981 Koyukuk	fingerling	202,120	Harding Lake
	1980 Koyukuk	fingerling	382	
		Sheefish total:	202,502	

Table 4. Estimates of the numbers of salmon, produced at FRED hatcheries, that returned as adults to the fisheries and facilities in 1982.

Hatchery or Project	Species	Commercial catch	Sport catch	Brood stock/ escapement	Total
SOUTHEAST REGION					
Beaver Falls	chum	2,912		2,383	5,295
Crystal Lake	chinook	227	6	175+	408
	coho	21,153	1,600	11,495	34,248
Deer Mountain	chinook	300	116	686	1,102
	coho			400	400
Hidden Falls	chum	40,056		40,056	80,112
Klawock	coho	670		120	790
	chum			184	184
Snettisham	chum	1,219		1,219	2,438
	coho	208		186	394
REGIONAL SUBTOTALS:		66,745	1,722	56,904	125,371
CENTRAL REGION					
Big Lake	sockeye	12,245		2,171	14,416
	coho	4,750	510	1,606	6,866
Cannery Creek	pink	688,800		71,575	760,375
Hobo Creek	pink	17,543		6,311	23,854

-Continued-

Table 4. Continued.

Hatchery or Project	Species	Commercial catch	Sport catch	Brood stock/ escapement	Total
Clear	chum	34		34	68
Crooked Creek	chinook		1,616	2,309	3,925
Tustumena	sockeye	12,845		12,845	25,690
Leisure Lake	sockeye	200	1,770	1,430	3,400
Chenik Lake	sockeye			5,000	5,000
Hidden Lake	sockeye	1,282		1,282	2,564
Ship Creek Complex					
Halibut Cove	chinook	300	2,200		2,500
Fritz Cove	coho		689		689
Whittier	coho		2,000		2,000
Seward	coho		1,192		1,192
Bear Lake	coho		1,317		1,317
Kitoi Bay	pink	190,300		132,000	322,300
Main Bay	pink			35,000	35,000
Tutka Bay	pink	181,100	2,000	59,700	242,800
	chum	7,426		1,843	9,269
Paint River	pink	300		4,400	4,700
REGIONAL SUBTOTALS:		1,117,125	13,294	337,506	1,467,925
STATE TOTALS:		1,183,870	15,016	394,410	1,593,296

STATUS OF STATE OPERATED HATCHERIES, 1982

The Alaska Department of Fish and Game (ADF&G) has 21 fish incubation facilities (Table 5). Two are streamside incubation facilities rather than full scale hatcheries, and one facility (East Creek Hatchery) was placed in heated storage in FY-83.

State hatcheries are distributed from Ketchikan to Kotzebue and from Cold Bay to Clear Air Force Base. They release fish at a variety of locations ranging from ocean estuaries to streams in the upper Yukon River system.

The fiscal year each facility came on line, its egg capacity and operational status are also listed in Table 5. Some facilities have small egg capacities, which may seem to be inefficient. However, they are involved in rearing salmon and trout which spend at least one year in hatchery ponds before migrating to sea. Production at those facilities is generally limited by available water and the cost of extensive rearing facilities.

Most FRED hatcheries require upgrading of the physical plant and some require completion so that full production can be reached. The egg capacities are listed in Table 5 and give both design and actual numbers of eggs.

Life Stage Survival Report

Appendix A shows the survival, by life stage, of each stock of hatchery fish released in 1982 from the time they were placed in incubators as green eggs until the time they were released as either fry, fingerlings, or smolts. Actual survival rates are compared to standards of performance developed for quality control.

Stocking Records

Appendix B lists individual deliveries of fish from FRED hatcheries to receiving waters in 1981. This appendix lists the names of stocked waters along with the number of each species stocked.

Table 5. Status of state hatcheries in Alaska, 1982.

Year on line	Facility	Location	Primary species	Egg capacity (millions) Actual	Egg capacity (millions) Design	Status
FY 72	Crystal Lake	Petersburg	king/coho	3.5	5.8	needs upgrade
FY 73	Gulkana River[a]	Paxson	sockeye	10.0	10.0	operational
FY 76	Beaver Falls	Ketchikan	chum	20.0	20.0	need CIP to expand
FY 77	Deer Mountain[b]	Ketchikan	king/coho/steelhead	0.5	1.0	operational
FY 77	Big Lake	Wasilla	sockeye/coho	20.0	20.0	operational
FY 77	Crooked Creek	Kasilof	sockeye	23.0	20.0	operational
FY 77	Tutka Lagoon	Kachemak Bay	pink/chum	22.0	20.0	needs upgrade
FY 77	Kitoi Bay	Afognak Is.	pink/chum	81.0	50.0	needs upgrade
FY 78	Elmendorf	Anchorage	rainbow/king	2.5	2.5	operational
FY 79	East Creek	Dillingham	sockeye	0.0	15.0	closed FY-83
FY 80	Russell Creek	Cold Bay	chum/pink	14.0	52.0	needs CIP to complete
FY 80	Hidden Falls	Baranof Is.	chum/king	30.0	65.0	needs CIP to complete
FY 80	Klawock	Klawock	chum/coho	16.0	78.0	needs CIP to complete
FY 81	Cannery Creek	Prince Wm. Sound	chum/pink	54.0	80.0	needs CIP to complete
FY 81	Clear AFS	Anderson	salmon/grayling/ sheefish	2.5	2.5	need CIP for increase benefits
FY 81	Snettisham	Juneau area	chum/coho	15.0	75.8	needs CIP to complete
FY 81	Karluk Lake[c]	Kodiak Is.	sockeye	15.0	25.0	operational
FY 83	Main Bay	Prince Wm. Sound	chum/pink	80.0	80.0	just completed FY 83
FY 83	Ft. Richardson[d]	Anchorage	rainbow/coho	7.5	7.5	just completed FY 83
FY 83	Trail Lakes	Moose Pass	sockeye/king/coho	40.0	40.0	first year of operation
FY 83	Sikusuilaq Springs	Kotzebue area	chum	2.0	2.0	first year of operation
			TOTAL:	458.5	672.1	

a/ Stream-side incubation boxes, not a hatchery building. Operated by Division of Commercial Fisheries until FY 81, and now a cooperative project.
b/ Owned by the City of Ketchikan, operated by FRED.
c/ Steam-side incubation boxes, not a hatchery building.
d/ The original Ft. Richardson facility was operational in FY-62.

FISHWAYS AS ENHANCEMENT TOOLS

Hatchery production is the primary strategy for salmon rehabilitation and enhancement in Alaska. Other strategies for salmon include lake fertilization, stock introduction, alteration of barriers to salmon migration, improvement of habitat, and combinations of the above.

Lake fertilization is discussed on page 28 under the heading of Limnology. Lake stocking results were briefly listed in a preceeding section titled 1982 Production Report. The remainder of this discussion is confined to the development and operation of fishways, which provide salmon access to spawning and rearing areas above barriers.

Fishways

The Division presently operates 19 fishways (Table 6). Fishways at Anan Creek in Southeastern and Russian River, on the Kenai Peninsula, were tunneled around high water barriers. Most of the remaining fishways are aluminum and of a design developed by the Alaska Department of Fish and Game. These fishways are moved to the sites in preconstructed sections and bolted in place as year-round structures. Several fishways were installed through cooperative efforts with the U.S. Forest Service. During 1983, in a joint effort with the Forest service, the Bakewell Lake fishway in East Behm Canal will be repaired and a new fishway will be installed at Irish Creek west of Petersburg. A cooperative fishway project in Cook Inlet is being studied for feasibility. In a cooperative effort with the Cook Inlet Aquaculture Association biological and engineering investigations are advancing on the Paint River. This river has a 20-foot fall near tidewater as it flows into Kamishak Bay. Pink salmon fry were stocked in the river above the barrier falls in 1980. These fish survived passage over the falls and returned as adults in 1982.

Fish associated with fishways

Salmon utilizing fishways are not counted as adults produced by the FRED Division. Sufficient funds are not available to adequately evaluate every fishway. Aerial surveys provide data on several of the fishways. However, instantaneous aerial surveys generally reveal no more than half the total return to a given stream. Streams are usually surveyed for a target species, with the result that species which enter the stream at different dates are usually undetected. In addition, it is estimated between 50 to 70% of the fish returning are caught in the commercial fisheries.

Table 6 lists the 19 fishways and an estimate of the number of fish and species utilizing them. Nearly 736,000 salmon, including 400,000 counted through the Frazer Lake fishway on Kodiak Island, were surveyed at fishways in 1982.

Table 6. Fishways in Alaska and the approximate numbers and species using them in 1982.

Area	Location	Species	Approximate number of fish utilizing fishway
Southeastern	Anan Creek	pink, chum, coho, sockeye	80,000
	Bakewell Creek	pink, coho, sockeye, steelhead	1,500
	Falls Creek	pink, coho	unassessed
	Ketchikan Creek	pink, chum, coho, sockeye, king	12,000
	Navy Creek	pink, chum, coho	9,900
	Pavlof Creek	pink, chum, coho, sockeye	600
	Survey Creek		
Kodiak	Frazer Lake	chum, sockeye, king	400,000
	Little Kitoi Creek	pink, coho, sockeye	1,000
	Pauls/Laura Lake	coho, sockeye	26,000
	Portage River	pink, coho, sockeye	39,000
	Seal Bay Creek	pink, coho	26,000
	Waterfall Creek	pink, coho	61,000
Prince William Sound	Billy's Hole	sockeye	3,660
	Control Creek	pink, chum	15,000
	Hobo Creek	pink	4,200
	Shrode Creek	pink	40,000
	Paulson Creek	pink, chum	16,000
Cook Inlet	Russian River	coho, sockeye, king	-0-[a]
		Total	735,860

[a] Fishway only needed during times when high water is a velocity barrier. These conditions did not exist in 1982.

PROGRAM PROJECTIONS, 1983

The trend of the FRED program is upward in terms of numbers of fish released by hatcheries and those which have returned and are projected to return to fisheries and spawning areas. Reports of fish produced by enhancement and rehabilitation projects are underestimations of fish actually produced, because evaluation efforts are limited by lack of funds. Evaluation includes marking and tagging fish and later recovering them in the fisheries, on spawning grounds and at hatchery racks.

Projected returns

The FRED Division has adopted standard assumptions for predicting ocean survival for each salmon species. These performance standards are derived from results observed over a number of years at aquaculture projects along the West Coast of North America. In the absence of actual data, the standard assumptions are used to predict each species return numbers as adults. These standard assumptions are replaced as a data base is established for each hatchery. Some species perform better and survive at higher rates than predicted, others do not. Also, conditions in the marine environment vary annually and there are long trends in warming and cooling of the marine waters. Recently marine survival for pink salmon has been several times higher than normally expected. Considering facts such as these is important as expected and actual data are analyzed.

A total of about 2.5 million adult salmon is expected to be available in inshore waters in 1983 as a result of previous hatchery releases. A large percentage of these fish will be caught in fisheries and the remainder will be used as hatchery brood stock.

Projected 1983 returns of particular interest include over 86,000 chum salmon to the Hidden Falls Hatchery in Chatham Strait (Table 7). Only about 2,000 hatchery chinooks will be available in Southeastern, compared to substantially larger numbers that will be available beginning in 1984 as a result of increased smolt releases. Pink salmon returns to hatcheries in Prince William Sound, Cook Inlet, and Kodiak are expected to total over 2 million. Kitoi Bay Hatchery's release of over 26 million fry in 1982 is expected to yield about 850,000 pink salmon in 1983. Approximately 500,000 pink salmon should return to Main Bay Hatchery. The only chum salmon producing facility in the Central Region which has developed a brood stock is the Russell Creek Hatchery at Cold Bay. About 55,000 chums are expected to return there in 1983.

Projected egg-takes

The FRED Division adjusts its short-term hatchery objectives a year in advance as part of the budget proposal process. Hatchery objectives are based on brood stock expectations and, finally, budget request ceilings which restrain hatchery operations.

Hatchery egg-take objectives are necessarily optimistic, because managers are asked to increase the efficiency of their operations through continued

increases in production. Therefore, optimistically, FRED plans to take about 410 million eggs in 1983 contingent on availability of adequate funding and brood stocks (Table 8). If achieved, this will represent a 129 million increase in egg incubation over 1982. The largest production increases will be attributable to pink salmon at the Main Bay Hatchery in Prince William Sound, which came on line in late 1982.

About 6.7 million adult salmon should return to Alaska's coastal waters as a result of eggs taken in 1983. Another 1.1 million catchable trout will result from eggs taken that same year. Table 8 gives a breakdown by species of the expected adults to be produced from eggs taken in 1983.

Table 7. A projection of the number of salmon expected to return in 1983 as a result of FRED hatcheries and projects (excluding fishways).

Return site	Numbers by species				
	Chinook	Coho	Sockeye	Chum	Pink
SOUTHEAST REGION					
Beaver Falls	--	--	--	14,686	--
Crystal Lake	409	1,252	--	4	--
Deer Mountain	1,629	4,958	--	--	--
Hidden Falls	--	--	--	86,539	--
Klawock	--	1,461	--	7,747	74,736
Snettisham	136	152	--	3,278	--
REGIONAL TOTALS	2,174	7,823	0	112,254	74,736
CENTRAL REGION					
Big Lake	--	4,105	--	--	--
Cannery Creek	--	--	--	--	210,225
Clear	--	1,000	--	150	--
Crooked Creek	2,712	--	--	--	--
East Creek	--	--	12,030	--	--
Halibut Cove Lagoon	1,700	--	--	--	--
Hidden Lake	--	--	3,000	--	--
Hobo Creek	--	--	--	--	7,000
Kitoi Bay	--	--	--	--	851,160
Leisure Lake	--	--	24,000	--	--
Main Bay	--	--	--	--	505,500
Paint River	--	--	--	--	400
Russell Creek	--	--	--	55,000	--
Seward	--	600	--	--	--
Tustumena	--	--	63,500	--	--
Tutka	--	--	--	50	607,400
REGIONAL TOTALS:	4,412	5,705	102,530	55,200	2,181,685
STATE TOTALS:	6,586	13,528	102,530	167,454	2,256,421

GRAND TOTAL: 2,546,519

Table 8. Production potential for FRED hatcheries in FY 84.

Species	Egg Objectives 1983 (Thousands)	Expected Adult Returns from 1983 Eggs (Thousands)[a]
Sockeye salmon	44,000.0	357.0
Chum salmon	115,573.0	1,804.0
Pink salmon	230,000.0	4,115.5
Chinook salmon	5,040.0	71.9
Coho salmon	10,115.0	335.0
Steelhead	190.0	11.0
Rainbow trout	4,450.0	1,070.0
Grayling	1,250.0	156.0
Sheefish	1,500.0	56.0
	411,618.0	7,976.4

[a] These adults will return over several years, beginning in 1985.

TECHNOLOGY AND DEVELOPMENT

The disciplines of science management, biology, fish culture, genetics, limnology, pathology, engineering, and biometrics make up the Technology and Development (T&D) branch of FRED. This branch is responsible for quality control, research, hatchery development, and the continued improvement of enhancement and rehabilitation technology in Alaska.

General

The engineering and culture staff brought on line three new hatcheries -- Sikusuilaq, Trail Lakes, and Main Bay Hatcheries. In addition, the Ft. Richardson Hatchery was completely rebuilt. Plans were also made for the expansion or completion of existing hatcheries.

Each year considerable effort is put into what is called "hatchery evaluation." This reveals how well fish released from hatcheries survive in the ocean, and how many come back as adults. In 1982, pink salmon survivals and returns were down from previous years. At Tutka Hatchery, for example, marine survival of 1979 brood pinks was about 16% (based upon adults which returned in 1981) whereas marine survival of the 1980 brood, which produced the 1982 adults, was only about 2%. The ocean environmental factor(s) that caused this disparity is not known. Two percent is considered about normal.

Approximately 375,000 emergent pink salmon fry at Kitoi Bay Hatchery were tagged with half-length (1/2 millimeter) coded wires in the spring of 1982. FRED personnel are working with the tag vendor to develop a device that will automatically sort out tagged salmon at processing plants. If successful, this new hardware could greatly improve our efficiency in determining marine survival of hatchery releases and this technology has applications for assessing natural stock performance.

In 1982, at Hidden Falls Hatchery, marine survival of chums was the highest yet achieved with this species -- 3.2%. This completed the three year returns of 1977 brood chum that had been reared in fresh water prior to release in salt water.

The world's most rapid machine for separating live from dead salmon eggs, the Sustaf 10^6, which is so named because it handles nearly one million eggs per hour, was used in Alaskan hatcheries beginning in late 1981. A practical use and repair workshop for this machine was held in March 1982. The proceedings of this workshop will be available as an ADF&G Information Leaflet early in 1983.

Statewide Tag Laboratory

During the past year a statewide tag laboratory was established in Juneau. The purpose of the lab is to recover and decode the wire tags placed in juvenile salmon. Coastwide, millions of tags are "released" yearly. Having a single repository in the state helps simplify the accounting process. The lab removed and decoded approximately 10,000 wire tags

during 1982. These tags came from fish recovered from commercial and sport fisheries. ADF&G personnel sampled more than 6,000 boats last season to recover tagged fish. Without such an effort, it would be difficult to estimate how many hatchery-produced salmon contribute to the commercial and sport fisheries. This lab serves all hatcheries in the State, both public and private. Services provided to the private hatcheries are free of charge.

Limnology Laboratory

FRED Division's Limnology Laboratory, which directs the lake fertilization efforts, has been building a necessary and critically needed research program on sockeye and coho rearing adding to the basic knowledge of rearing fish dynamics.

Much of what has been learned concerning lake-rearing fish (e.g., coho and sockeye) dynamics in the last 50 years has been ascertained by management related observations, i.e., catch and escapement counts. Little progress has been made beyond this "research program" to determine lake "carrying" or rearing capacity even though the technology is available to do so. More direct cause-and-effect types of information are needed, which cannot be gained by only counting fish. This critical direct cause-and-effect type of data can be gained only though broad manipulation of lake ecosystems. This approach is the single most powerful experimental tool available to ascertain a lake system's ability to produce fish, and consists of two complementary or parallel avenues of experimentation:

where pre-existing rearing capacity is:	High --	or --	Low:
(I) perform - "lake stocking" or fish density manipulations to challenge rearing capacity	↓ Lower		↓ Higher (II) perform - "lake enrichment" or productivity manipulations to increase rearing capacity

An essential element is this: The point where rearing fry growth (and/or smolt production) begins to decline to unsatisfactory levels is considered the carrying capacity of the system. This point should be associated with or preceeded by some deterioration in food availability (either quality or quantity, or both) due to heavy cropping by fish. The benchmark of such experimental manipulation in terms of fish production is the quality and quantity of outmigrating smolt, i.e., the evaluation of production from the freshwater phase. This is because the quality and quantity of rearing area will be integrated into fish biomass and will be reflected in the population characteristics of the smolts.

For example, in scenario (I) a lake with a high pre-existing rearing capacity is progressively stocked with larger numbers of rearing fry,

either coho or sockeye. Any changes in the fish food community (zooplankton) and the concomitant changes in the smolt population characteristics can be documented following stocking. That is, the lake's fertility is held constant while numbers of rearing fry are progressingly increased. In scenario (II), a lake with a low pre-existing rearing capacity is fertilized. The addition of the needed nutrients increases fish food production expanding the lake's rearing capacity. This should be reflected in not only increasing the quality and quantity of zooplankton, but also should be relected in the quality and quantity of outmigrating smolts. Thus, the number of rearing fry is held "constant" while lake fertility is increased.

By closely following both processes separately in several lake "types", definitions can be developed for each particular lake's natural pre-existing capacity to rear fish based upon existing zooplankton community composition and resultant smolt population characteristics. That is, each lake can be positioned on the continuum from high to low rearing capacity. Enhancement strategies can be developed from this knowledge. In essence, a statewide empirical model of smolt production is being defined and validated by the above two experimental approaches using both coho and sockeye fry, and coho and sockeye lakes.

The Division's limnology and lake fertilization program has participated in cooperative projects with state, federal and private non-profit organizations throughout the State. As part of these programs, 100 to 125 lakes are sampled yearly to determine their potential to increase the rearing capacity for salmon fry.

Three lake systems are now being fertilized and will continue to be fertilized pending budget approval; McDonald and Hugh Smith (Ketchikan area), and Bear (Seward area). Systems to be brought on line in the spring of 1983 include Eshamy (Prince William Sound), Packers (Cook Inlet), Summit (Upper Cooper River), and Falls (Northern Southeast).

Fish Genetics Laboratory

The fish genetics laboratory staff performs starch-gel electrophoretic analysis to develop genetic profiles of salmon stocks chosen for hatchery use. This procedure defines gene frequencies at all detectable, variable gene loci. These frequencies are then used in calculating various statistics for and about the populations analyzed. Most importantly, this analysis is used to determine if the genetic variation inherent in wild stocks of salmon is being maintained in hatchery brood stocks. Genetic diversity is necessary to protect the reproductive potential of stocks, and hatchery practices can be changed if that diversity is found to be affected. Further, the interaction, if any, of hatchery stocks on neighboring wild stocks can be monitored.

Populations selected for screening are usually those most easily accessible, i.e., hatchery populations and the remote sites where eggs are taken. The best time to collect samples is during egg takes, because carcasses are readily available and even though the tissue is not in the best condition, it is more probable that a distinct population is being sampled.

Two special projects are being developed by genetics laboratory personnel. They are:

Tutka Lagoon Hatchery genetic marking of odd-year pink salmon.

> The odd-year pinks have been genetically marked by increasing the frequency of the variant AGP allele. Using a breeding plan being determined) over a few generations, this marking will continue. The even-year stock that returns to the hatchery will be left untouched -- as a control group.

Noatak River Chum Salmon -- The population structure.

> This project is still in the early planning stages. The object is to determine the genetic structure of the chum salmon in the Noatak River drainage. Starch-gel electrophoresis will be used to define gene frequencies and detect any differences in these gene frequencies between up-river vs downriver populations. Comparisons between chum in the Noatak River and chums in the Kobuk River will also be made.

Genetics laboratory personnel are adapting Biosys-1, which is a Fortran program for the comprehensive analysis of electrophoretic data in population genetics and systematics. The program can compute allele frequencies and genetic variability measures and make graphic displays of these measures.

Fish Pathology Laboratory

FRED's fish pathology laboratory continued to provide consultation and diagnostic services to public and private hatcheries throughout the state while personnel continued their research into fish diseases such as Bacterial Kidney Disease (BKD) and Infectious Hematopoietic Necrosis (IHN). Annual and pre-release inspections of all state, federal and private nonprofit (PNP) hatcheries required by law were completed.

The red algae Alaska Dulse (*Neodilsea americana*) was examined to determine if it has an antiviral effect. It was found to reduce the viral replication rate of IHNV. Experimentation is continuing to more precisely define this inactivation. Blood samples were taken from 1977 and 1978 Swanson River rainbow trout (*Salmo gairdneri*) at Ship Creek Hatchery one month after injection with an experimental furunculosis bacteria. Antibody titers to *Aeromonas salmonicida* had significantly increased in the vaccinated group, indicating this vaccine may be effective in furunculosis control.

A new method for controlling IHN virus was recently tested by state fish pathologists. Fertilized sockeye salmon eggs were water hardened in 100 ppm iodophor solution, a concentration high enough to kill IHN virus. There was no egg mortality due to the iodophor. Whether the procedure is efficacious could not be ascertained since IHN did not occur in the

control group either. More tests are required.

Tests were also conducted to determine the differential effects, if any, of IHN strains on different stocks of sockeye. Preliminary results indicate that a virus strain from one stock may have quite detrimental and dramatic effects on other sockeye stocks. This information is vital to the consideration of movement and transport of sockeye for enhancement and rehabilitation projects.

During 1982 large numbers of hatchery and brood stock samples were screened for pathogens. This included 6,548 BKD samples, 402 enteric redmouth disease (ERM) samples, 2,521 furunculosis samples and 1,558 IHNV samples.

Highlights

- Since the application of fertilizer to Bear Lake (Seward) the survival of juvenile coho in the lake doubled in the first year.
- Feeding trials with pink and chum salmon of a new dry fish food developed by FRED scientists have proved very positive.
- No outbreaks of IHN virus occurred at sockeye salmon hatcheries.
- Dr. K. Nishino, former director for all government hatcheries in Japan, visited FRED hatcheries.

Professional Service of FRED Division employees during 1982

Mr. Lowell Barrick, Department Engineer, served on the executive committee of the Association of Conservation Engineers.

Dr. Robert Burkett, Chief of Technology and Development, served as Vice Chairman of the Alaska Council on Science and Technology.

Dr. Roger Grischkowsky, Principal Pathologist, served on the executive committee of the American Fisheries Society, Alaska Chapter.

Mr. Stan Moberly, Director, served as president-elect of the Western Division of the American Fisheries Society.

Dr. Jim Raymond, Fisheries Biologist, served as adjunct professor of biology at the University of Alaska, Fairbanks.

Mr. Tom Kron, Fisheries Biologist, received a scholarship from Japan to live there for one and a half years while he studies aquaculture and fisheries.

Presentations made by FRED Division employees during 1982

Bricker, M. 1982. "A non-lethal technique for controlling Dolly Varden predation on hatchery and natural stream stocks." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Flagg, L. and D. Litchfield, 1982. "Juvenile to adult survival of Hidden Lake sockeye salmon." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Follett, J. 1982. "Disease status of Gastineau Channel stocks." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Follett, J. 1982. "The normal morphology and histopathology of tanner crab (Chionoecetes baridi) gastrointestinal tract." National Shellfish Assoc.; Pacific Coast Section; Annual Meeting; Tumwater, Washington.

Grischkowsky, R. 1982. "Histopathology of IHNV in chum salmon." Northwest Fish Culture Conference; December 1-3; Portland, Oregon.

Grischkowsky, R. 1982. "Kenai River system disease incidences and ramifications." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Hauck, K. 1982. "Some uses of histopathological techniques in the diagnosis of fish diseases." Symposium of the National Society for Histotechnology; September 12-16; Boston, Massachusetts.

Howe, A.; Clupach, R. and D. Litchfield, 1982. "Alternative methods for estimating smolt populations." Alaska Chapter, American Fisheries Society, November 15-18; Sitka, Alaska.

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Presentations (continued)

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Kyle, G. and J. Koenings. 1982. "Decomposition rates and degradation products from decompositing sockeye salmon carcasses from Hidden Lake, Alaska: Preliminary results." Alaska Chapter, American Fisheries Society; November 15-18, Sitka, Alaska.

Peltz, L. 1982. "Coded wire tagging of wild sockeye smolt at Hugh Smith and McDonald Lakes." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Sullivan, J. 1982. "Fish pathology section disease criteria for fish transport recommendations." Alaska Chapter, American Fisheries Society; November 15-18; Sitka, Alaska.

Wenderoff, L. 1982. "Trophic competition between threespine stickleback (*Gasterosteus aculeatus*) and rainbow trout (*Salmo gairdneri*) in three lakes in the Matanuska Valley;" Proc. 33rd Alaska Science Conference; September 16-18; Fairbanks, Alaska.

Publications attributed to FRED Division employees during 1982

Davis, R. and C. Olito, 1982. Genetic variation in Alaskan chum salmon, Oncorhynchus keta. Alaska Department of Fish and Game, Informational Leaflet #200. 14p.

Grischkowsky, R. and D. Mulcahy, 1982. Effects of injection of hormones on the expression of infectious hematopoietic necrosis virus in spawning sockeye salmon (Onchorhynchus nerka). Proc. North Pacific Aquaculture Symposium; August 18-21, 1980. University of Alaska, Sea Grant Report, 82-2.

Kepshire, B. 1982. Pacific salmon alevin incubation densities and alevins/dm^2 incubator area in intalox saddle plastic substrate at Alaskan hatcheries. Proc. North Pacific Aquaculture Symposium; August 18-21, 1980. University of Alaska, Sea Grant Report 82-2.

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THE PRIVATE NONPROFIT HATCHERY PROGRAM

Background

The Private Nonprofit Hatchery Program was created to provide private sector participation in rebuilding Alaska's depleted salmon fisheries. The 1974 Legislature passed a statute authorizing the Alaska Department of Fish and Game (ADF&G) to issue hatchery permits to qualified private nonprofit (PNP) corporations, and the 1976 Legislature authorized the creation of regional aquaculture associations.

Since then, six regional aquaculture associations have formed:

1) Cook Inlet Aquaculture Association (CIAA)
2) Lower Yukon/Kuskokwim Regional Aquaculture Association (LY/KRAA)
3) Northern Southeast Regional Aquaculture Association (NSRAA)
4) Prince William Sound Aquaculture Corporation (PWSAC)
5) Southern Southeast Regional Aquaculture Association (SSRAA)
6) Imarpik Regional Aquaculture Corporation (IRAC)

Regional associations are comprised of representatives of commercial fishermen and other user groups in the region, including sport fishermen, processors, subsistence fishermen, and members of local communities.

Planning

In 1976 Legislature directed the Commissioner of the Alaska Department of Fish and Game "to develop and amend as necessary a comprehensive salmon plan for each region, including provisions for public and private nonprofit hatchery systems." To accomplish this planning, the law established Regional Planning Teams (RPT's), comprised of three members from the regional associations and three members from the department. The teams have three specific functions in this planning process, as defined by statute:

1) Development of a comprehensive salmon plan, including provisions for both public and private nonprofit hatchery systems (AS 16.10.375).

2) Review of private nonprofit permit applications (AS 16.10.400[a]).

3) Review of the proposed suspension or revocation of a permit (AS 16.10.430[a]).

The 1979 Legislature provided funding of $400,000 to be distributed through the Commissioner of ADF&G to qualified regional associations for developing regional salmon plans in cooperation with the department. Contracts to issue the funds were negotiated with the four regional associations in existence at that time: CIAA, NSRAA, PWSAC, and SSRAA.

During FY 1983, the ADF&G has available $250,000 to contract with the recognized regional aquaculture associations to support Regional Planning

Teams' comprehensive planning activities. Through the use of these funds, the associations provide staff and other support for the RPT's. Experience has shown that the comprehensive salmon planning progresses in phases. Phase I sets the goals, objectives, and strategies for the area; Phase II is site specific and establishes criteria through which to evaluate enhancement and rehabilitation potentials of various sites.

At present, all six regional associations are actively engaged in planning. Comprehensive planning has also been initiated in the Kodiak region, but an aquaculture association has not been developed and approved by the Commissioner of ADF&G at this time.

The status of the planning, by region, follows:

1) SSRAA and NSRAA - These two associations joint-ventured in FY '81 to produce a Phase I regional plan which was the first to be completed in the State and approved by the Commissioner. The plan was produced and presented to the Commissioner by the RPT's as required under AS 10.16.375.

   The NSRAA, through the Regional Planning Team (which is responsible for the comprehensive plan), submitted a Phase II Comprehensive Salmon Plan to the Commissioner of ADF&G in August of 1982. Final revisions were incorporated, and approval by the Commissioner was given in December of 1982.

   The SSRAA is actively engaged in Phase II planning, and a Comprehensive Salmon Plan, developed through the RPT, should be submitted to the Commissioner of ADF&G for review and approval early in 1983.

2) CIAA - This association, through the RPT, submitted a Comprehensive Salmon Plan for the Cook Inlet region, which was approved by the Commissioner of ADF&G on February 19, 1982. This plan was different than previously approved plans because it incorporated Phase II planning efforts with Phase I. The Association is presently engaged in Phase II planning efforts which will culminate in an update and revision of the plan as originally approved.

3) PWSAC - The RPT is presently involved in an extensive rewrite and revision of an original Phase I draft plan. A Phase I Comprehensive Salmon Plan should be submitted to the Commissioner of ADF&G for review and approval by February of 1983. It is anticipated that the corporation and RPT will move toward Phase II planning in the later half of FY 1983.

4) LY/KRAA - During FY '83, the Association, through the RPT, has initiated planning activities, and the RPT is presently working on a report entitled, "Salmon Fisheries Status in the Lower Yukon/ Kuskokwim Region," which should be completed by June of 1983. The results of this status report will help the RPT to determine whether full-scale comprehensive salmon planning should be initiated in this region.

5) IRAC - During FY '83, the Corporation is involved in reactivating the RPT for Bristol Bay. A contract for developing a Comprehensive Salmon Plan and for conducting an identification of rehabilitation and enhancement opportunities on the Kvichak River system and Nushagak Bay tributaries has been initiated and is presently in effect.

6) Kodiak - The process of regional planning has been initiated for the Kodiak region during FY '83 with a contract between the ADF&G and Leonard Lane Associates, Inc. The two main purposes of this contract are to develop a Comprehensive Salmon Plan for the Kodiak region and to form an aquaculture association. An RPT has been formed, and the plan is presently being written.

Funding

In 1977, a Fisheries Enhancement Revolving Loan Fund was created within the Department of Commerce and Economic Development for the purpose of making loans to permit holders for the planning, construction, and operation of hatchery facilities. At that time, loans were limited to $3 million for a hatchery constructed under a permit granted to a qualified regional association's nonprofit corporation, or to a local nonprofit corporation approved by a qualified regional association. A loan for any other nonprofit hatchery corporation project, a small "mom and pop" hatchery, for example, was limited to $300,000.

The 1980 Legislature raised the loan amounts for regional associations to $6 million with a payment period of up to 30 years. Other PNP programs may now borrow up to $1 million. Payments on the loan can be deferred from 6 to 10 years. The interest rate is 9.5%. To date, $22.6 million have been borrowed by PNP corporations.

Program Implementation

Since the inception of the PNP program, 18 PNP salmon hatchery permits have been issued, one permit has been rescinded, and 24 applications have been denied or withdrawn. Nine applications are now pending. Fifteen of the permitted hatcheries are in operation, and nine of these have already had returns of adult salmon. Applications for PNP permits are reviewed according to the processes outlined in Figures 1 and 2.

Listings of permitted PNP hatcheries, pending PNP applications, and scientific/educational hatcheries are presented in Tables 9 through 11, respectively. The establishment and growth of PNP hatcheries are contributing to the State's effort to rehabilitate depleted and depressed salmon fisheries. In 1982, PNP corporations estimated that more than 5.2 million salmon, originally released as juveniles from PNP hatcheries, either returned to their facilities as adults or were captured in common property fisheries (Table 12). The Port San Juan Hatchery, operated by PWSAC, had most of these returns. PWSAC estimated that over 3.1 million of their returning pink salmon were caught in the commercial fishery.

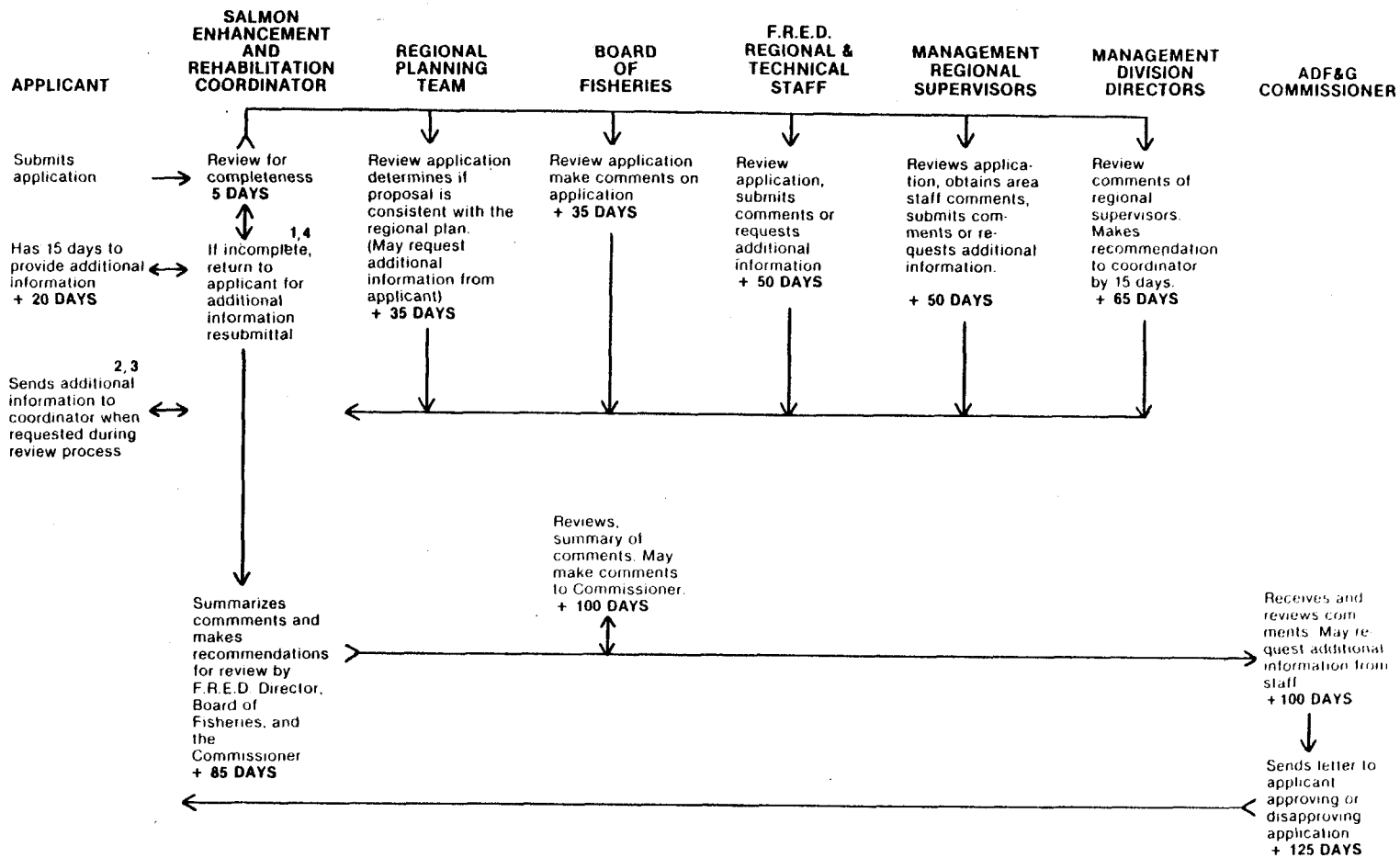
Returns since 1977 are presented by species in Tables 13 through 16. The adults returning in 1977 from PNP hatchery releases were the result of egg takes by the only two hatcheries operated in 1975, NERKA and Sheldon Jackson. The number of fish returning to PNP hatcheries has increased each year as new hatcheries became operational and egg take levels at existing hatcheries increased.

During 1982, nearly 127 million fish were released from PNP hatcheries (Table 17). That is an increase of 25.6 million fish over 1981 releases. PNP hatchery releases going back to 1976 are recorded by species in Tables 13 through 16.

Egg takes for PNP hatcheries totaled over 235 million in 1982 (Table 18). The 1981 egg take totaled approximately 223 million. By far, the largest egg take this year was at Port San Juan Hatchery. More eggs were taken there--140.1 million--than at any other hatchery. Total numbers of eggs taken since 1975 are recorded by species in Table 13 through 16.

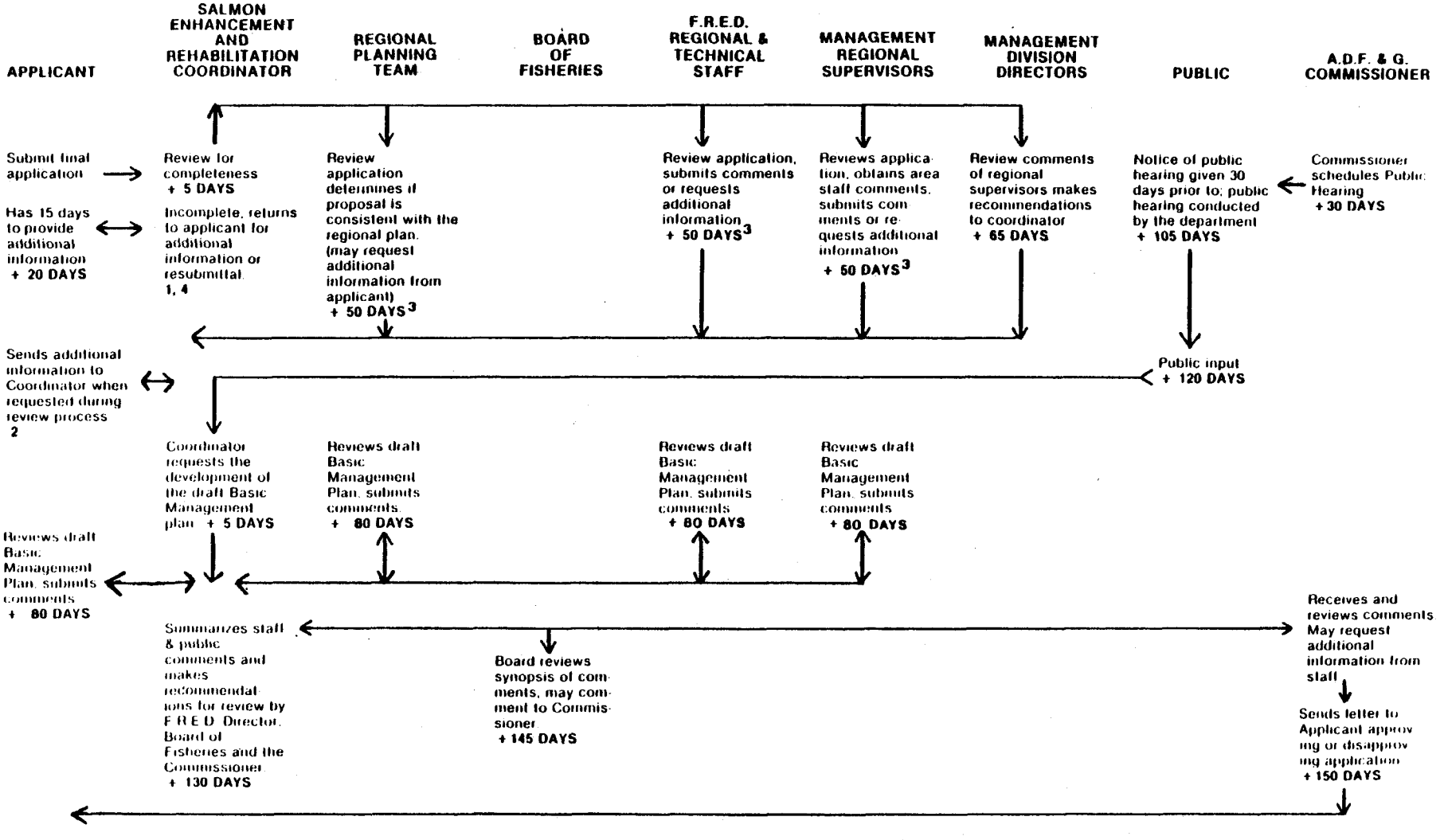
Most PNP hatcheries are still developing brood stock and, therefore, have not reached their permitted egg capacities. Permitted capacities at PNP hatcheries now total 472.3 million eggs (Table 19), which could result in releases of up to 397 million juvenile fish. This would represent a three-fold increase over current releases and could result in a similar increase in adult returns if current levels of marine survival are maintained. Approximately 75% of the permitted production for PNP hatcheries is for pink salmon, and approximately 20% for chum salmon.

Figure 1. **Preliminary Application - Review and Approval Procedure Schedule** *



* Any contact between the applicant and the department will be directed through the coordinator.
1 Processing of application will not proceed until all requested additional information has been received
2 Each request for additional information from applicant will add 15 days to review time.
3 All requests for additional information during the review period will be directed to the coordinator for review.
4 Resubmittal required when completion of application requires more than 15 days.

Figure 2. **Final Application - Review and Approval Procedure Schedule**



1 Processing of application will not proceed until all requested additional information has been received.
2 Each request for additional information from applicant will add 15 days to review time.
3 All requests for additional information during the review period will be directed to the coordinator.
4 Resubmittal required when complete application requires more than 15 days.

Table 9. Permitted private nonprofit hatcheries, January 1983.

Permit No.	Corporation/Facility location	Status	Egg capacity
1.	NERKA, Inc. Perry Island, Prince William Sound	Operational, Permit Issued 9/19/75	3 million pink & chum
2.	Prince William Sound Aquaculture Corporation Port San Juan, Evans Island	Operational, Permit Issued 7/1/76	150 million pink 13 million chum
3.	Sheldon Jackson College Aquaculture Program Indian River, Sitka	Operational, Permit Issued 4/29/75	16 million pink & chum .2 million coho
4.	Tlingit & Haida Central Council Maksoutof River, Baranof Island	Operational, Permit Issued 12/18/75	25 million pink & chum
5.	Alaska Aquaculture Foundation, Inc. Burnett Inlet, Etolin Island, Wrangell	Operational, Permit Issued 4/28/76	4 million pink 5 million chum
6.	Douglas Island Pink & Chum, Inc. Kowee Creek, Juneau	Operational, Permit Issued 7/30/76	6 million pink & chum
7.	Kake Nonprofit Fishery Development Corporation Gunnuk Creek, Kake	Operational, Permit Issued 4/1/77	1 million pink 2 million chum
8.	Southern Southeast Regional Aquaculture Association Whitman Lake, Ketchikan	Operational, Permit Issued 3/9/78	26.8 million chum 2.3 million coho .4 million chinook
10.	Meyers Chuck Aquaculture Association Meyers Creek, Meyers Chuck	Operational, Permit Issued 7/22/79	1 million pink

-Continued-

Table 9. Continued.

Permit No.	Corporation/Facility location	Status	Egg capacity
11.	Douglas Island Pink & Chum, Inc. Sheep Creek, Juneau	Operational, Permit Issued 9/18/79	25 million pink 5 million chum
12.	Burro Creek Farms Burro Creek, Skagway	Operational, Permit Issued 5/23/80	10 million pink & chum
13.	Armstrong-Keta, Inc. Port Armstrong, Baranof Island	Not Operational, Permit Issued 2/23/81	11 million pink & chum
14.	Northern Southeast Regional Aquaculture Association Salmon Creek, Juneau	Operational, Permit Issued 4/17/81	30 million pink & chum .8 million coho
15.	Valdez Fisheries Development Corp. Solomon Gulch, Valdez	Operational, Permit Issued 6/26/81	50 million pink 18 million chum 1 million coho
16.	Northern Southeast Regional Aquaculture Association Medvejie Creek, Sitka	Operational, Permit Issued 8/17/81	20 million chum 3.3 million coho .3 million chinook
17.	Cook Inlet Aquaculture Association Eklutna River, Cook Inlet	Operational, Permit Issued 2/8/82	20.0 million pink & chum .1 million coho .1 million chinook
18.	Angoon Aquaculture Association, Inc. Favorite Bay, Angoon	Not Operational, Permit Issued 8/15/82	7.5 million pink 20.0 million chum 1.5 million coho

Table 10. Proposed private nonprofit hatcheries, January 1983.

Organization/Facility location	Status	Requested egg capacity
1. Prince William Sound Aquaculture Corporation Esther Lake, Prince William Sound	Preliminary Application Accepted 7/13/77	At start-up: 10 million pink 2 million chum 2 million sockeye 2 million coho At capacity: 40 million pink 10 million chum Capacity for sockeye and coho not know at this time.
2. Pelican Cold Storage Pelican Creek, Pelican	Preliminary Application Inactive 11/24/81	At start-up: 350,000 pink & chum At capacity: 2.2 million chum
3. Twin Creek Salmon Ranch, Inc. Twin Creek, Petersburg	PNP Preliminary Application Accepted 12/14/81	At start-up: 500,000 pink
4. Irreantum, Inc. Tonsina Bay, Cook Inlet	Preliminary Application Submitted 3/22/82	At capacity: 2 million pink 9 million chum
5. Crittenden Creek Aquaculture, Inc. Crittenden Creek, Wrangell	PNP Preliminary Application Accepted 4/23/82	At start-up: 2 million pink 2 million chum At capacity: 15 million chum
6. Southern Southeast Regional Aquaculture Association Tyee Lake, Wrangell	PNP Preliminary Application Accepted 5/10/82	At capacity: 40 million pink & chum 4 million coho 2 million king
7. Port Williams Hatchery Port Williams, Shuyak Island, Kodiak	Preliminary Application Submitted 8/23/82	At start-up: 3 million pink At capacity: 20 million pink 5 million chum 5 million coho

-Continued-

Table 10. Continued.

Organization/Facility location	Status	Requested egg capacity
8. Southern Southeast Regional Aquaculture Association Neets Bay, Revillagigedo Island	PNP Preliminary Application Submitted 11/4/82	At capacity: 60 million chum 5 million coho 2 million king
9. Gro Fish, Inc. Santa Anna Creek, Ernest Sound	PNP Final Application submitted 12/20/82	At start-up: 1 million pink .15 million chum At capacity: 3 million pink 10 million chum

Table 11. Permitted scientific/educational hatcheries, December 1982.

Organization/Facility location	Type of program	Permitted egg capacity
1. Kake City Schools Gunnuk Creek, Kake	Educational	40,000 pink
2. Petersburg High School Petersburg	Educational	55,000 chum
3. Sheldon Jackson College Aquaculture Program Indian River/Sitka	Educational	Miscellaneous Species including invertebrates
4. Skagway High School Pullen Creek, Skagway	Educational	200,000 pink
5. Valdez Fisheries Development Association Crooked Creek, Valdez Robe Lake, Valdez	Educational/ Research	400,000 chum 360,000 pink
6. Sand Point JOM Parent Committee Humboldt Creek, Sand Point	Educational	200,000 pink & coho
7. Unalaska City School Unalaska	Educational	25,000 pink 58,500 coho

Table 12. Estimated 1982 adult returns for PNP hatcheries as reported by hatchery operators.

Facility	Pink	Chum	Coho	Chinook
SSRAA - Whitman Lake	-	19,841	61,709	3,500b/
NSRAA - Salmon Creek	500	-	-	-
AAFI - Burnett Inlet	6,440	652	-	-
SJC - Indian River	48,000	79	-	-
BCF - Burro Creek	450	-	-	-
DIPAC - Kowee Creek	16,000	200	-	-
DIPAC - Sheep Creek	56,000	-	-	-
NERKA - Perry Island	5,000	-	-	-
PWSAC - Port San Juan	5,126,818a/	1,687	-	-
TOTAL	5,259,208	22,459	61,709	3,500

a/ Represents 7.1% marine survival.
b/ These were jacks that returned the same year they were released.

Table 13. Summary of pink salmon production from PNP hatcheries.

Year	Eggs taken	Fry released	Total return[a]/	Special harvest[b]/	Value of harvest
1975	8,002,395				
1976	16,251,456	3,653,666			
1977	35,383,112	12,093,184	160,147	108,718	$ 130,726
1978	34,851,807	25,732,238	160,397	114,188	$ 141,799
1979	46,582,015	28,204,674	356,498	244,555	$ 309,612
1980	98,030,000	31,690,000	1,504,878	346,168	$ 436,171
1981	188,000,000	78,800,000	2,491,345	838,037	$1,200,000[c]/
1982	183,780,000	102,810,000	5,259,208	1,354,732	$1,084,806
Total	610,880,785	282,983,762	9,932,473	3,006,398	$3,303,114

a/ Includes estimates of contributions of common property fisheries.
b/ Harvest by the hatchery.
c/ Estimated.

Table 14. Summary of chum salmon production from PNP hatcheries.

Year	Eggs taken	Fry released	Total return[a]/	Special harvest[b]/	Value of harvest
1975	77,000				
1976	347,275	66,075			
1977	1,614,574	264,068			
1978	1,684,930	1,064,000	543		
1979	6,782,864	924,400	3		
1980	26,850,000	3,340,000	1,588		
1981	32,400,000	21,900,000	20,518	6,115	$ 24,460
1982	48,150,000	23,640,000	22,459	378	$ 302
Total	117,906,643	51,198,543	45,111	6,493	$ 24,762

a/ Includes estimates of contribution to common property fisheries.
b/ Harvest by the hatchery.

Table 15. Summary of coho salmon production from PNP hatcheries.

Year	Eggs taken	Presmolts released	Smolts released	Total return[a]	Special harvest	Value of harvest
1975	12,000					
1976	24,150	8,000				
1977	10,500	0	3,102			
1978	809,430	0	0	27		
1979	931,000	0	2,700	0		
1980	666,500	0	557,200	0		
1981	2,800,000	0	900,000	52,050	6,141	$ 50,000[b]
1982	3,170,000	0	690,000	61,709	11,500	$ 80,500
Total	8,423,580	8,000	2,153,002	113,786	17,641	$130,500

a/ Includes estimates of contributions to common property fisheries.
b/ Estimated.

Table 16. Summary of chinook salmon production from PNP hatcheries.

Year	Eggs taken	Presmolts released	Smolts released	Total return	Special harvest	Value of harvest
1980	194,000					
1981	400,000					
1982	220,000	78,322	145,573	3,500		
Total	814,000	78,322	145,573	3,500	0	0

Table 17. 1982 releases from PNP hatcheries in millions.

REGION/LOCATION	Pink	Chum	Coho	Chinook
SOUTHERN SOUTHEAST				
SSRAA - Whitman L.	-	13.35	.56	.22
AAFI - Burnett In.	.03	.31	-	-
MCAA - Meyers Chuck	.01	-	-	-
NORTHERN SOUTHEAST				
NSRAA - Salmon Cr.	1.56	.91	-	-
- Medvejie Cr.	-	.22	.12	-
DIPAC - Kowee Cr.	3.00	.50	-	-
- Sheep Cr.	9.00	.10	-	-
SJC - Indian R.	10.69	.08	.01	-
BCF - Burro Cr.	.50*	.15*	-	-
PRINCE WILLIAM SOUND				
PWSAC - Port San Juan	70.12	7.62	-	-
VFDC - Solomon Gulch	7.90	.40	-	-
NERKA - Perry Is.	-	-	-	-
TOTAL	102.81	23.64	.69	.22

* Released as eyed eggs and alevins.

Note: pink and chum releases are from 1981 brood year, coho from 1980 brood year, and chinook from 1980 and 1981 brood years.

Table 18. 1982 egg takes for PNP hatcheries in millions.

REGION/LOCATION	Pink	Chum	Other
SOUTHERN SOUTHEAST			
SSRAA - Whitman L.	-	23.86	2.30 coho .17 chinook
AAFI - Burnett In.	4.21	.61	-
MCAA - Meyers Chuck	.01	-	-
NORTHERN SOUTHEAST			
NSRAA - Salmon Cr.	1.04	3.86	.41 coho
- Medvejie Cr.	-	2.96	.24 coho .05 chinook
DIPC - Kowee Cr.	3.60	.32	-
- Sheep Cr.	15.83	.79	-
SJC - Indian R.	19.00	1.25	-
BCF - Burro Cr.	.84	-	-
THCC - Sandy Bay	.10	.02	-
KNFDC - Gunnuk Cr.	1.02	.83	-
PRINCE WILLIAM SOUND			
PWSAC - Port San Juan	129.62[1]/	10.48	-
VFDC - Solomon Gulch	8.41	1.88	.12 coho
NERKA - Perry Is.	.10	-	-
COOK INLET			
CIAA - Eklutna	-	1.29	.10 coho
TOTAL	183.78	48.15	3.39

[1]/ Includes 28.5 million eggs transferred to the Main Bay Hatchery.

Table 19. Permitted egg capacities, in millions, of PNP hatcheries within the planning regions, 1982.

Region	Pink	Chum	Coho	Chinook	Total
Southern S. E.					
Association Facility	-	26.8	2.3	0.4	29.5
Non Association Facilities	5.0	5.0	-	-	10.0
Total	5.0	31.8	2.3	0.4	39.5
Northern S. E.					
Association Facility	30.0*	20.0	4.1	0.3	54.4
Non Association Facilities	101.5*	20.0	1.7	-	123.2
Total	131.5	40.0	5.8	0.3	177.6
Prince William Sound					
Association Facility	150.0	13.0	-	-	163.0
Non Association Facilities	53.0*	18.0	1.0	-	72.0
Total	203.0	31.0	1.0	-	235.0
Cook Inlet					
Association Facility	20.0*	-	0.1	0.1	20.2
Total	20.0	-	0.1	0.1	20.2
STATEWIDE TOTAL	359.5	102.8	9.2	0.8	472.3

*pink and/or chum (to be totaled once)

PROGRAM EXPENDITURES

The Alaska Fisheries Plan, developed by the Department of Fish and Game in 1976, outlined a 15-year program for rebuilding statewide salmon harvest to an annual production of more than 100 million fish. To accomplish this, the plan called for $300 million in capital expenditures during the 15-year period. Approximately $235 million of that total was recommended for salmon rehabilitation, enhancement, scientific research, laboratory facilities and their associated activities within the FRED Division. Forty-five million dollars were to be spent in the fish management program for information and data acquisition and the remaining $20 million was for habitat protection and miscellaneous projects.

The capital funds required for the salmon program described in the 1976 plan were plotted over time as being representative of orderly program development. That funding curve for FRED Division expenditures is presented in Figure 3, and indicates an achievement of program construction goals by 1990. However, the funding curve is admittedly naive in that it does not consider inflation, which would depress the purchasing power of the $235 million drastically if expressed in 1976 dollars.

Capital funding actually received by the FRED Division is plotted in Figure 3 beside the planned funding curve. It can be seen how dramatically the construction program has fallen behind the plan, though there was support for that schedule as expressed through Bond Issues which were approved by Alaska's voters in 1976 and 1978. The total capital expenditure for hatcheries is about $80 million (Table 20), as opposed to a planned appropriation of about $160 million by this date. The goal for hatchery production however, was increased from 25 million salmon to 51 million salmon for harvest annually.

In addition to the capital and bond funds appropriated to the FRED Division, nearly $23 million has been loaned to the private sector for capital construction and operation of 14 PNP hatcheries. Table 21 details these loans.

It is argued that Alaska's salmon stocks have rebounded in the late 1970s and early 1980s to a level that precludes the need for enhancement and rehabilitation programs. At the same time, it should be noted that a well rounded salmon management program should include enhancement and rehabilitation strategies, and that the best time to put those strategies in place is during a period of high production. In addition, it should be emphasized that Japan and Russia plan to release 2.3 billion and 4.97 billion salmon fry, respectively, from hatcheries each year as a long-term plan. Japan has already reached that figure, and that country's salmon are feeding in the ocean pastures shared with Alaska's fluctuating stocks.

Funded FRED hatcheries were designed for a total capacity of 672.1 million eggs and resultant reared fish. However, inflated design and construction costs resulted in hatcheries which require additional capital expenditure to prepare them for expansion to full production beyond the brood-stock development stage. For this reason total capacity for state hatcheries is really at 458.5 rather than 672.1 million eggs.

Operational Budgets:

FRED Division annual operating budgets are included in Table 20. The operating budget peaked at $12.9 million in Fiscal Year 1982, followed by a decline of $700,000 (plus inflation) in Fiscal Year 1983. This budget decline is accompanied by the opening of four new hatcheries including: Main Bay in Prince William Sound, Trail Lakes on the Kenai River, Sikusilaq Springs near Kotzebue, and the completely reconstructed Fort Richardson trout and salmon hatchery at Anchorage. The result of increased demands for hatchery operational money is that field biology projects, hatchery evaluation, and regional management staffs have been reduced.

Composition of FRED's Operating Budget:

The FRED Division operated with $12.9 million in Fiscal Year 1982. The division operates a series of fish hatcheries, conducts habitat improvement work including placement and operation of fishways, and undertakes lake fertilization studies. In addition, the division provides department-wide: (1) engineering services, (2) fish pathology services, (3) limnological services, (4) fish genetics services, and (5) tagged fish decoding services. These services in addition to the functions of private nonprofit hatchery coordination and regional planning coordination are provided to the regional aquaculture association and those individuals holding "mom and pop", and scientific and educational hatchery permits.

The Fiscal Year 1982 FRED operating budget is broken down into functions along with the percentage of the budget each accounts for in Table 22. Those functions having department-wide responsibilities or dealing partially with federal resource management and private nonprofit hatchery corporations are asterisked.

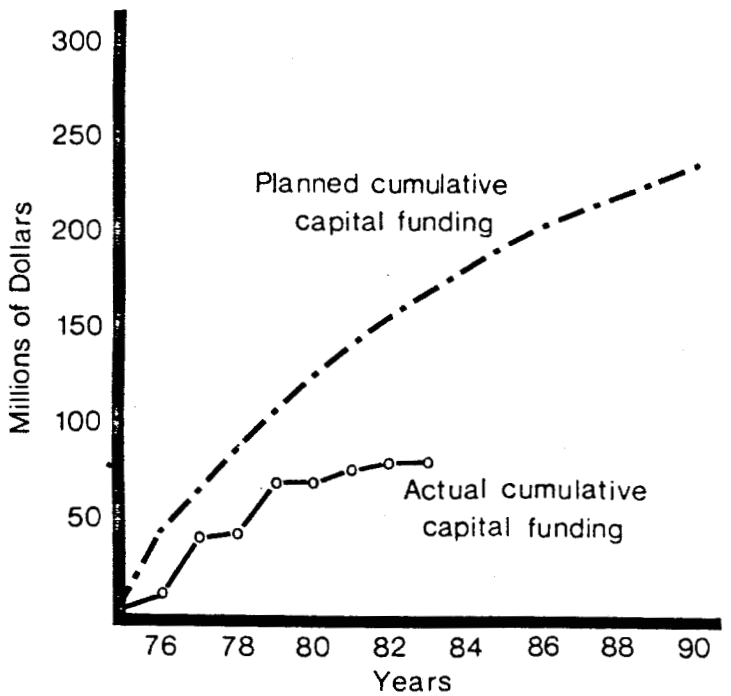


Figure 3. Planned versus actual cumulative capital funding for salmon rehabilitation and enhancement programs (Planned figures are derived from the Alaska Fisheries Plan, 1976).

Table 20. FRED's operational budgets, capital spending, and egg capacities of hatcheries, FY 1971-1983.

Fiscal Year	Cumulative Egg Capacity (Millions)		Capital Funding for Hatcheries (Thousands $)			Annual Operational Budget (Thousands $)	
	Actual	Design	CIP	BOND	Cumulative Capital Funds	Actual Dollars	Adjusted to 1976 Dollars 3/
1971	8.6 1/	8.6 1/	0	-	0	-	-
1972	12.1	14.4	70.0	-	70.0	464.6	666.1
1973	22.1	24.4	349.8	-	419.8	749.8	1,015.1
1974	22.1	24.4	1,645.1	-	2,064.9	941.4	1,127.0
1975	22.1	24.4	1,763.5	6,099.4	9,927.8	1,407.9	1,499.1
1976	32.1	34.4	249.0	-	10,176.8	3,482.8	3,482.8
1977	107.6	109.9	2,575.1	28,040.0	40,791.9	3,217.3	3,041.3
1978	109.6	111.9	1,688.8	-	42,480.7	6,975.1	6,001.2
1979	139.6	141.9	1,712.5	25,743.0	69,936.2	9,267.8	7,333.7
1980	209.6	346.9	-	-	69,936.2	7,978.8	5,764.0
1981	347.1	550.1	3,075.0	3,500.0	76,511.2	9,673.4	6,503.5
1982	351.5	550.1	3,180.0	-	79,691.2	12,926.9	8,516.3
1983	458.5	672.1 2/	0	-	79,691.2	12,196.9	7,579.5
			16,308.8	63,382.4	79,691.2		

1/ Eggs in existing hatcheries prior to FRED legislation.
2/ Additional funding is required to enable several existing facilities to reach their design capacities.
3/ Adjusted using the Anchorage Consumer Price Index. The 1983 amount was adjusted assuming an annual CPI increase of 0.06.

Table 21. State Loans secured for capital construction and operational costs and revenues generated by assessments and fish sales for 14 private nonprofit (PNP) hatcheries.

Permits		State Loans: For Capital Construction	State Loans: For Operations	Funds Generated by Assessments or Sale of Fish
	SOUTHEAST			
(1,2)	Northern Southeast Regional Aquaculture Association (2)	$ 959,209	$ 822,869	$ 495,443 1/
(3)	Southern Southeast Regional Aquaculture Association	$ 4,935,000	$ 917,600	$1,456,930 1/
(4)	Alaska Aquaculture Foundation, Inc.	$ 304,530	$ 342,025	
(5)	Burro Creek Farms, Inc.	$ 191,375	$ 92,000	
(6)	Kake Nonprofit Fisheries Development Corp.	$ 364,900	$ 104,500	
(7,8)	Douglas Island Pink and Chum Corp. (2)	$ 476,000	$ 379,500	
(9)	Sheldon Jackson College	$ 177,254	$ 61,370	
(10)	Tlingit and Haida Fisheries Development Corp.	$ 1,553,860		
(11)	Armstrong-Keta, Inc.	$ 474,045		
	PRINCE WILLIAM SOUND			
(12)	Prince William Sound Aquaculture Corp.	$ 5,755,500		1,084,806 3/ $ 169,175 2/
(13)	Valdez Fisheries Development Corp.	$ 2,582,530	$ 387,000	
	COOK INLET			
(14)	Cook Inlet Regional Aquaculture Association	$ 1,348,881	$ 444,755	$ 487,934 1/
	TOTALS	$19,105,084	$3,551,619	$3,694,288

1/ 3% mandatory assessment tax collected from fishermen
2/ 2% voluntary assessment tax collected from fishermen
3/ Revenue from sales of fish captured at hatchery

Table 22. FRED Division Budget composition for $12.9 million, FY-82.

Function	Percent
Headquarters Management & Administration*	6.25
Private Nonprofit Hatchery Coordination and Regional Planning*	1.45
Regional Management and Administration*	8.96
Hatchery Operations	52.15
Rehabilitation excluding hatchery production	3.55
Hatchery Evaluation	9.70
Investigations/Development	1.43
Genetics Laboratory activities*	1.35
Pathology Laboratory activities*	3.64
Limnology Laboratory activities*	2.26
Hatchery and project technology and quality control*	3.92
Engineering*	3.66
Tag decoding Laboratory activities*	1.68
TOTAL	100.00

* Functions which provide services to other ADF&G programs, or federal agencies and private nonprofit hatchery corporations.

ECONOMIC PLANNING PROGRESS REPORT

Most public investment planning, including fisheries development investments, involve treatment of both efficiency and equity issues. Efficiency issues may be expressed in dollar terms through an accounting of national or state income. Equity issues, on the other hand, concern themselves primarily with distribution of impacts between groups and the "fairness" of the given property rights allocation or investment. While the science of economics does not attempt to make judgments on issues of fairness, it does employ a number of methods, theories and models to measure the changes in efficiency and the impacts of specific resource investments and actions.

Benefit-cost analysis is one widely used analytical tool which yields useful information on public investment alternatives based strictly on measures of efficiency. Benefit-cost analysis is the emphasis of FRED Division's current and developing economic methods and in 1981 to 1982 resulted in the development of an in-house computer simulation model designed to evaluate public salmon and trout enhancement alternatives. Essentially, the methodology of this form of incremental analysis is identical to the methodology of many of the more familiar applications of benefit-cost analysis, such as the Susitna Hydro Feasibility Study (Yould, 1982).

Applications of Enhancement Benefit-Cost Analysis

The principal capabilities of the present model are as follows:

1) To identify the worth of an existing program and the value of proposed investments such as a capital or operational budget request.

2) Compare alternative uses of the same hatchery to aid in optimizing the design and operation of physical fish production plants and in identifying the most efficient facility capacity, size, location, and incubation and rearing schemes.

3) With input from other economic studies, to identify the distribution of user benefits to specific sectors of the fisheries industries as well as impacts on wages and employment from direct and induced sources.

4) To compare hatcheries against one another to determine the best choice for continued operation or expansion.

General Structure of Models

The enhancement economic feasibilitymodel is comprised of two separate systems of computer programs which involve input of data for between 200 to 300 variables in a given simulation. The hatchery broodstock development (HBD) system projects future salmon production, plans for expansion, life-stage survival assumptions and fishery exploitation expectations.

The facility benefit-cost (FBC) system is the economic simulation program which uses harvest predictions from a given (HBD) simulation and combines these with economic assumptions to generate predictions for a benefit and cost series[1] resulting from salmon and/or trout enhancement.

The (FBC) routine has two separate components. The first, is a price index model which adjusts past nominal costs and benefits to base year dollars for ex post analysis. The second, is an ex ante or future oriented program which estimates present values for a number of benefit and cost series alternatives for commercially and recreationally harvested salmon or trout which are directly attributable to a given enhancement project.

Salmon Fishery Benefits and Associated Costs

Evaluation of the efficiency of an investment for a specific project requires the analyst to estimate the gross benefits and gross costs of increasing the available salmon resource. In the (FBC) model the primary benefits can be estimated as either the incremental value to the commercial fishery or as the incremental value to both the processing industry and the commercial fishery. In the first case the gross benefit to the commercial fishery from the incremental fish production is measured as the ex-vessel value of the product. The gross cost is measured as the resources foregone from the fleet to catch the incremental production. In the second case the gross benefit to the processing industry is the market value of the increased catch or first wholesale value. The processing costs are taken to be the value of the foregone resources required to both process and harvest the enhancement produced catch.

Sport Fish Valuation

Many of the projects and facilities in FRED Division are scheduled to or currently produce salmon and trout highly valued by sport fishermen. In fact, the product of some facilities are targeted almost entirely at sport fishermen. Just what these recreation benefits are and will be is a subject covered in the Documentation for the Enhancement Benefit Cost Model (Hartman and Rawson, 1982). The analysis method presented in that text is intended to only serve the purpose of the enhancement program evaluation.

Though recreational evaluation procedures can encompass benefits of a program other than those directly received by Alaskan fishermen (examples of these other procedures include existence valuation and option valuation techniques), the primary purpose of the valuation process is to identify the change in surplus as a measure of the satisfaction people enjoy from their consumption of a commodity and is based upon what they would be willing to pay for it, or in the case of enhancement investments, what they would be willing to pay for the opportunity to fish for the incremental increase in the available stock.

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[1] In this case a "series' refers to an income or cost stream extending into the past or future for a specific number of years.

Alaskan Impact Assessments Input

If a decision-maker were only interested in a single objective, namely the maximization of fishing income, then the economic evaluation need not to go beyond benefit-cost analysis. However, if the decision-maker is also interested in formally dealing with distributional effects of an investment, then it is necessary to expand the analysis to impact assessment, which must be dealt with separately from efficiency considerations. The purpose of impact analysis is to measure changes and the magnitude of changes in local or regional employment, labor force participation, real income distribution and business and industrial activity by the series of sectors. Though measurements of impacts from a project can take place even at the national level, we currently and in the future will continue to extend our interest only to assessments relevant to Alaska. The facility benefit cost (FBC) routine accounts for these interactions within the Alaskan economy indirectly by incorporating values from impact models capable of generating multipliers relevant to the salmon fishing and processing industry. Such models take one of two forms. The first type are known as input-output models which are based upon a detailed accounting of the flow of goods and services at a given point in time.

A second form of impact assessments are dealt with in some types of econometric models which may also be used for predicting changes in employment and income from enhancement or rehabilitation produced salmon.

One model used by the Division of Budget for the Department of Revenue was used to produce a data set for the salmon industry based on a hypothetical increase in the salmon harvest of 10 percent over the naturally produced base level (Kreinheder and Teal, 1982). This incremental increase resulted in an income multiplier for the seafood industry of approximately 1.84. The estimate indicates that for each one dollar of processing income produced, an additional increment of 84 cents is produced in the form of induced wages to Alaskans.

What Constitutes an Efficient Return of Investments for an Enhancement Project?

If investment resources are limited, the undertaking of any public investment, be it transportation, hydro-electric power generation, permanent fund, or a salmon enhancement facility will divert resources from an alternative use. The benefit-cost concept essentially compares the gross benefits foregone by its existence. Clearly, if the value of the benefits of the proposed project exceed the present benefits lost by the project's existence, then the project is in society's best interest, based on a measure of efficiency.

As a result, a single or series of benefit-cost ratios or estimates of return on investment for Alaskan public hatcheries may not provide as much familiar information to the decision maker as a broader formalized comparison of the rate of return from public hatcheries versus rate of return from some selected Alaskan investment alternatives. While State policy to date does not require a formal benefit-cost analysis for all public expenditures; possibly since the value of some public goods

are difficult to express in benefit-cost analysis, comparison with anticipated returns for a few notable public investments will help shed light on the efficiency of a typical enhancement investment.

Preliminary estimates from enhancement economic analysis suggest a typical hatchery investment benefit-cost ratio would fall between a range of 2:1 and 3:1 with a typical return of investment (B-C) of approximately 20 million dollars over the anticipated economic life. While an explicit comparison of site specific cases with and without the proposed investment would be required to identify all the foregone alternative opportunities for any public project, it can be generally demonstrated that enhancement projects compare favorably with some existing and proposed public investments.

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1. Hartman, Jeff, Kit Rawson. "FRED Division Enhancement Cost-Benefit Model". Alaska Department of Fish and Game, Unpublished.

2. Kreinheder, Jack, David Teal. "The Alaska Fishing Industry". Alaska House Research Agency Report 81-4, Alaska State Legislature, Juneau, 1982.

3. Yould, Eric P. "The Susitna Hydro Studies". Alaska Power Authority, Anchorage, 1982.

2/ Long term in this case refers to the average real interest rate over a period 20 years or more.

3/ The real rate of interest is the expected nominal rate of interest or market rate less the expected rate of inflation for a given time interval.

APPENDIX A

Table 1. Survival summary of pink salmon released in 1982 from Central Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
Kitoi	1981 Big Kitoi Creek	66,931,290	57,414,455 (85.8%)	47,855,296[b]/ (83.4%)	1,827,609[a]/	6,058,710[a]/
Tutka	1981 Tutka Creek Tutka Lagoon	19,916,335	15,878,416 (79.7%)	15,721,571[c]/ (99.0%)	10,078,839[a]/ (99.4%)	
Cannery Creek	1981 Cannery Creek	14,246,864	13,570,965 (95.3%)	13,932,987 (102.7%)	13,932,987[a]/ (100%)	
Cannery Creek	1981 PWSAC	36,493,418	35,228,000 (96.5%)	33,782,582 (95.9%)	33,700,561[d]/ (99.8%)	

a/ Number released.
b/ 39,942,021 released as emergent fry. The remainder were released as fed fry or fingerling.
c/ 5,581,178 released as emergent fry. The remainder were released as fingerling.
d/ These fry were released from Main Bay.

Table 2. Survival summary of pink salmon released in 1982 from Southeast Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
Klawock	1981 Klawock	4,380,344	4,071,336 (93.0%)	3,436,832[a] (91.8%)		

[a] Number released.

Table 3. Survival summary of chum salmon released in 1982 from Central Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
Russell Creek	1981 Russell Creek	14,055,300	11,573,595 (82.3%)	11,112,949 (96.0%)	8,179,472[a]	1,877,352[a]
Clear AFB	1981 Delta	549,120	430,477 (78.4%)	368,484 (85.6%)		372,904[a]
Kitoi	1981 Stargeon River	465,287	427,399 (91.9%)	1,159[b] (0.3%)		
Tutka	1981 Tutka Creek	21,002	16,640 (79.2%)	15,531[c] (93.3%)	14,286[a] (99.0%)	
Cannery Creek	1981 Siwash	1,143,066	981,207 (85.8%)	866,891 (88.3%)	866,891[a] (100%)	

a/ Number released.
b/ Mortalities due to IHN virus. Remainder destroyed.
c/ 1,154 released as emergent fry, the remainder were released as fed fry.

Table 4. Survival summary of chum salmon released in 1982 from Southeast Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
Beaver Falls	1981 Beaver Falls/ Disappearance	11,161,188	10,458,009 (93.7%)			8,016,467 a/ (76.7%)
Klawock	1981 Klawock R.	2,555,293	2,230,269 (87.3%)	2,112,350 (94.7%)		2,051,429 a/ (97.1%)
Crystal Lake	1981 Crystal Cr.	24,729	21,810 (88.2%)	21,362 (98.0%)		16,978 a/ (79.5%)
Snettisham	1981 Neka River	10,024,100	9,044,570 (90.2%)	7,888,683 (87.2%)		6,873,283 a/ (87.1%)
Snettisham	1981 Limestone	1,692,500	1,462,975 (86.4%)	1,453,221 (99.3%)		
Snettisham	1981 Snettisham	1,114,627	1,067,189 (95.7%)	907,503 (85.0%)		2,076,911 a/ (87.9%)
Hidden Falls	1981 Kadashan	9,231,151	8,574,734 (92.9%)	8,383,904 (97.9%)		8,151,095 a/ (97.1%)
Hidden Falls	1981 Seal Bay/ Hidden Falls	333,594	294,633 (87.0%)	288,446 (97.9%)		
Hidden Falls	1981 Hidden Falls	2,356,997	2,032,412 (86.2%)	1,931,657 (95.0%)		2,140,256 a/ (96.4%)

a/ Number released.

Table 5. Survival summary of chinook salmon released in 1982 from Central Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
Clear AFB	1981 Salcha	120,340	103,089 (85.7%)	98,627 (95.7%)		102,987[a]
Kitoi	1981 Chignik	129,044	98,477 (76.3%)	98,054 (99.6%)		96,756[a] (98.7%)
Kitoi	1981 Pasagshak	42,196	32,314 (76.6%)	32,236 (99.8%)		29,950[a] (92.9%)

a/ Number released.

Table 6. Survival summary of chinook salmon released in 1982 from Southeast Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)	Smolt (80%
			(Percent survival goals from previous stage)				
Deer Mountain	1980 Cripple Cr.	188,770	150,948 (80.0%)	153,060 b/ (101%)			118,848a/ (77.7%)
Crystal Lake	1980 Andrew Cr.	234,556	176,535 (75.3%)	159,718 (90.5%)			118,154a/ (74.0%)
Crystal Lake	1980 Crystal Cr (Andrew Cr. origin)	236,224	102,569 (43.4%)	97,166 (94.7%)			80,197a/ (82.5%)
Crystal Lake	1980 Crystal Cr. (mixed origin)	233,671	97,875 (41.9%)	91,374 (93.4%)			75,498a/ (82.6%)
Crystal Lake	1981 Crystal Cr. (mixed origin)	207,039	153,567 (69.3%)	114,801 (80.0%)			59,127c/ (51.5%)
Snettisham	1980 Situk River	66,100	53,401 (80.8%)	52,453 (98.7%)			39,200a/ (74.4%)

a/ Number released. Release location , date, size etc. can be found on fish stocking records (Appendix B)
b/ Sampling error
c/ Accelerated release. Smolt released one year earlier than normal smolt release.

Table 7. Survival summary of coho salmon released in 1982 from Central Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
Clear	1981 Clear Creek	164,792	161,667 (98.1%)	159,607[c] (98.7%)		125,882[a] (93.5%)
Elmendorf	1981 Seward-Bear Cr.	2,003,700	1,903,200 (95.0%)	1,899,588 (99.8%)		1,210,396[b] (63.7%)
Big Lake	1981 Meadow Creek	348,097	323,479 (92.9%)	283,383 (87.6%)	296,344[a]	
Big Lake	1981 Fish Creek	935,658	818,710 (87.5%)	808,017 (98.7%)	714,248[a] (88.4%)	
Big Lake	1981 Little Susitna	3,378	3,277 (97%)	3,277 (100%)	2,950[a] (90.0%)	

a/ Number released.
b/ 1,096,666 were released as fingerling, the remainder are still being reared.
c/ 25,000 were released as emergent fry. The remainder were released as fingerlings.

Table 8. Survival summary of coho salmon released in 1982 from Southeast Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)	Smolt (80%)
			(Percent survival goals from previous stage)				
Deer Mountain	1980 Ketchikan Cr.	259,787	226,753 (87.3%)	215,978 (95.2%)			165,273[a/] (76.5%)
Klawock	1980 Klawock R.	84,015	77,126 (91.8%)	76,195 (98.8%)			66,163[a/] (86.8%)
Crystal Lake	1980 Crystal Cr.	68,579	65,461 (95.5%)	64,836 (99.1%)			62,631[a/] (96.6%)
Snettisham	1980 Speel Lake	19,600	19,401 (99.0%)	19,358 (99.8%)			15,172[a/] (78.4%)
Snettisham	1981 Speel Lake	493,538	477,858 (96.8%)	486,180[b/] (102.0%)	458,950[c/] (94.4%)		

a/ Number released.
b/ Sampling error
c/ 249,387 were released as fry into Indian Lake, the remainder will be released as smolt.

Table 9. Survival summary of sockeye salmon released in 1982 from Central Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)
			(Percent survival goals from previous stage)			
East Creek	1981 Francis Creek	6,493,205	5,583,241 (86.0%)	5,150,231 (92.2%)	12,482[a]	5,058,004[a] (98.5%)
East Creek	1981 East Creek	607,808	562,220 (92.5%)	511,751 (91.0%)	505,998[a] (98.9%)	
Crooked Creek	1981 Bear Creek	11,672,311	10,143,400 (86.9%)	9,071,914 (89.4%)		9,176,478[a]
Crooked Creek	1981 Glacier Flat	12,354,134	10,299,387 (83.4%)	8,706,340 (84.5%)		8,299,617[a] (95.3%)
Big Lake	1981 Meadow Creek	5,395,495	4,358,718 (80.8%)	3,631,318 (83.3%)	3,816,545[a]	
Big Lake	1981 Fish Creek	535,635	411,018 (76.7%)	380,704 (92.6%)	366,067[a] (96.2%)	
Big Lake	1981 Nancy Lake	1,684,873	1,207,248 (71.7%)	1,066,485 (88.3%)	1,018,662[a] (95.5%)	

a/ Number released.
b/ 83,185 were released as emergent fry. The remainder were held until fed fry stage.

Table 10. Survival summary of rainbow trout released in 1982 from Crentral Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)	Smolt (80%
			(Percent survival goals from previous stage)				
Elmendorf	1982 Elmendorf	4,843,646	4,238,000 (87.5%)	3,837,000 (90.5%)		1,541,043[c]/ (40.2%)	
	1981 Swanson	2,555,600	966,500 (38%)	618,700 (64%)	507,300 (82%)	349,700[b]/ (69%)	77,897[a]/

a/ Number released.
b/ 138,000 released in 1981; 117,725 were released in 1982, and the remainder held to catchable size.
c/ 1,371,759 were released in 1982, the remainder are being reared.

Table 11. Survival summary of steelhead trout released in 1982 from Southeast Region FRED Division facilities.

Facility	Brood year, Brood stock	Green eggs	Eyed eggs (90%)	Emergent (95%)	Fry (95%)	Fingerlings (90%)	Smolt (80%)
Crystal Lake	1980 Crystal Creek	65,262	30,180 (46.2%)	28,566 (94.7%)			21,003[a] (73.5%)
Deer Mountain	1980 Ketchikan Creek	5,521	3,575 (64.8%)	2,396 (67.0%)			1,479[a] (61.7%)
Klawock	1980 Klawock River	14,361	13,008 (90.6%)	12,812 (98.5%)	[b]		1,757[a]
Klawock	1981 Klawock River	45,058	41,513 (92.1%)	40,454 (97.4%)	29,628[a] (73.2%)		

a/ Number released.
b/ 6,422 released in 1981, the remainder were released as smolts in 1982.

APPENDIX B

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
CS	80	STURGEON RIVER	FEED FRY	KITOI BAY	4/24/81	36,846	21.26	NO	
H2OSTOCKED TOTAL						36,846	21.26		
AGE TOTAL						36,846	21.26		
SPECIES TOTAL						36,846	21.26		
KS	80	CHIGNIK RIVER	FINGERLINGS	LAKE ROSE TEAD	5/27/81	134,784	166.58	NO	
H2OSTOCKED TOTAL						134,784	166.58		
AGE TOTAL						134,784	166.58		
SPECIES TOTAL						134,784	166.58		
PS	80	BIG KITOI CREEK	SWIMUP FRY	BIG KITOI CREEK	5/01/81	106,521	27.45	RV	
PS	80	BIG KITOI CREEK	SWIMUP FRY	BIG KITOI CREEK	4/29/81	19,452,879	4,901.55	NO	
PS	80	BIG KITOI CREEK	SWIMUP FRY	BIG KITOI CREEK	4/24/81	72,234	18.20	ADRV	
PS	80	BIG KITOI CREEK	SWIMUP FRY	BIG KITOI CREEK	4/18/81	60,780	15.32	LV	
H2OSTOCKED TOTAL						19,692,414	4,962.52		
AGE TOTAL						19,692,414	4,962.52		
PS	80	BIG KITOI CREEK	FINGERLINGS	KITOI BAY	5/18/81	62,161	57.78	ADLV	
PS	80	BIG KITOI CREEK	FINGERLINGS	KITOI BAY	5/18/81	6,597,089	6,131.70	NO	
H2OSTOCKED TOTAL						6,659,250	6,189.48		
AGE TOTAL						6,659,250	6,189.48		
SPECIES TOTAL						26,351,664	11,152.00		
HATCHERY TOTAL						26,523,294	11,339.84		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
RT 78		SWANSON RIVER	BROOD STOCK	ELMENDORF HATCHERY	8/26/81	104	188.69	NO	
H2OSTOCKED TOTAL						104	188.69		
AGE TOTAL						104	188.69		
RT 81		SWANSON RIVER	FINGERLINGS	CRATER LAKE	9/25/81	4,996	11.94	NO	
H2OSTOCKED TOTAL						4,996	11.94		
AGE TOTAL						4,996	11.94		
RT 80		SWANSON RIVER	CATCHABLES	BEACH LAKE	5/18/81	2,270	124.81	NO	
RT 80		SWANSON RIVER	CATCHABLES	BEACH LAKE	5/18/81	2,732	150.21	NO	
H2OSTOCKED TOTAL						5,002	275.02		
AGE TOTAL						5,002	275.02		
RT 81		SWANSON RIVER	FINGERLINGS	BUFFALO LAKE	9/25/81	1,000	2.39	NO	
H2OSTOCKED TOTAL						1,000	2.39		
AGE TOTAL						1,000	2.39		
RT 80		SWANSON RIVER	CATCHABLES	CAMPBELL POINT LAKE	5/13/81	5,356	269.94	NO	
H2OSTOCKED TOTAL						5,356	269.94		
RT 80		SWANSON RIVER	CATCHABLES	CLUNIE LAKE	5/12/81	5,000	298.42	NO	
H2OSTOCKED TOTAL						5,000	298.42		
RT 80		SWANSON RIVER	CATCHABLES	DELONG LAKE	5/11/81	2,680	159.95	NO	
H2OSTOCKED TOTAL						2,680	159.95		
AGE TOTAL						13,036	728.31		
RT 81		SWANSON RIVER	FINGERLINGS	FLORENCE LAKE	8/10/81	10,915	8.39	NO	
H2OSTOCKED TOTAL						10,915	8.39		
AGE TOTAL						10,915	8.39		
RT 80		SWANSON RIVER	CATCHABLES	GREEN LAKE	5/12/81	2,589	167.76	NO	
H2OSTOCKED TOTAL						2,589	167.76		
RT 80		SWANSON RIVER	CATCHABLES	GWEN LAKE	5/12/81	4,937	319.91	NO	
H2OSTOCKED TOTAL						4,937	319.91		
RT 80		SWANSON RIVER	CATCHABLES	HILLBERG LAKE	5/12/81	2,680	159.95	NO	
H2OSTOCKED TOTAL						2,680	159.95		
AGE TOTAL						10,206	647.62		
RT 81		SWANSON RIVER	FINGERLINGS	IRENE LAKE	8/12/81	3,590	2.83	NO	
H2OSTOCKED TOTAL						3,590	2.83		
RT 81		SWANSON RIVER	FINGERLINGS	JEROME LAKE	9/24/81	3,000	5.29	NO	
H2OSTOCKED TOTAL						3,000	5.29		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
AGE TOTAL						6,590	8.12		
RT	80	SWANSON RIVER	CATCHABLES	JEWEL LAKE	6/29/81	803	91.06	NO	
RT	80	SWANSON RIVER	CATCHABLES	JEWEL LAKE	5/11/81	4,971	265.27	NO	
H2OSTOCKED TOTAL						5,774	356.33		
AGE TOTAL						5,774	356.33		
RT	81	SWANSON RIVER	FINGERLINGS	JOHNSON LAKE	9/24/81	1,992	4.43	ADRV	
RT	81	SWANSON RIVER	FINGERLINGS	JOHNSON LAKE	9/24/81	2,000	4.43	ADLV	
RT	81	SWANSON RIVER	FINGERLINGS	JOHNSON LAKE	8/13/81	1,030	1.09	RV	
RT	81	SWANSON RIVER	FINGERLINGS	JOHNSON LAKE	8/13/81	1,995	1.98	LV	
H2OSTOCKED TOTAL						7,017	11.93		
RT	81	SWANSON RIVER	FINGERLINGS	JUNCTION LAKE	8/12/81	543	.59	RV	
RT	81	SWANSON RIVER	FINGERLINGS	JUNCTION LAKE	8/12/81	540	.56	LV	
RT	81	SWANSON RIVER	FINGERLINGS	JUNCTION LAKE	9/24/81	545	1.21	ADLV	
RT	81	SWANSON RIVER	FINGERLINGS	JUNCTION LAKE	9/24/81	545	1.21	ADRV	
H2OSTOCKED TOTAL						2,173	3.57		
RT	81	SWANSON RIVER	FINGERLINGS	KEPLER-BRADLEY LAKE	7/23/81	17,400	8.62	NO	
H2OSTOCKED TOTAL						17,400	8.62		
RT	81	SWANSON RIVER	FINGERLINGS	KNIK LAKE	9/23/81	5,062	11.11	AD	
RT	81	SWANSON RIVER	FINGERLINGS	KNIK LAKE	8/13/81	5,070	4.74	NO	
H2OSTOCKED TOTAL						10,132	15.85		
AGE TOTAL						36,722	39.97		
RT	80	SWANSON RIVER	CATCHABLES	LOWER FIRE LAKE	5/12/81	5,000	283.49	NO	
H2OSTOCKED TOTAL						5,000	283.49		
AGE TOTAL						5,000	283.49		
RT	81	SWANSON RIVER	FINGERLINGS	MATANUSKA LAKE	8/12/81	3,060	3.07	RV	
RT	81	SWANSON RIVER	FINGERLINGS	MATANUSKA LAKE	8/11/81	3,070	2.71	LV	
RT	81	SWANSON RIVER	FINGERLINGS	MATANUSKA LAKE	9/25/81	3,080	7.56	ADRV	
RT	81	SWANSON RIVER	FINGERLINGS	MATANUSKA LAKE	9/25/81	3,075	6.76	ADLV	
H2OSTOCKED TOTAL						12,285	20.10		
AGE TOTAL						12,285	20.10		
RT	78	ALASKA-ENNIS	ADULTS	OTTER LAKE	10/16/81	20	72.57	NO	
H2OSTOCKED TOTAL						20	72.57		
AGE TOTAL						20	72.57		
RT	80	SWANSON RIVER	CATCHABLES	OTTER LAKE	5/12/81	6,500	421.19	NO	
H2OSTOCKED TOTAL						6,500	421.19		
AGE TOTAL						6,500	421.19		

BR SP YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
RT 81	SWANSON RIVER	FINGERLINGS	RAINBOW LAKE	9/24/81	2,995	5.29	NO	
H2OSTOCKED TOTAL					2,995	5.29		
RT 81	SWANSON RIVER	FINGERLINGS	RAVINE LAKE	9/28/81	1,315	3.41	AD	
RT 81	SWANSON RIVER	FINGERLINGS	RAVINE LAKE	8/10/81	1,230	1.00	NO	
H2OSTOCKED TOTAL					2,545	4.41		
RT 81	SWANSON RIVER	FINGERLINGS	REED LAKE	9/28/81	1,930	5.00	AD	
RT 81	SWANSON RIVER	FINGERLINGS	REED LAKE	8/14/81	1,930	1.63	NO	
H2OSTOCKED TOTAL					3,860	6.63		
AGE TOTAL					9,400	16.33		
RT 79	SWANSON RIVER	ADULTS	SAND LAKE	7/08/81	93	33.75	NO	
RT 79	SWANSON RIVER	ADULTS	SAND LAKE	7/07/81	191	57.76	NO	
H2OSTOCKED TOTAL					284	91.51		
AGE TOTAL					284	91.51		
RT 80	SWANSON RIVER	CATCHABLES	SAND LAKE	5/11/81	4,971	265.27	NO	
H2OSTOCKED TOTAL					4,971	265.27		
AGE TOTAL					4,971	265.27		
RT 81	SWANSON RIVER	FINGERLINGS	SEYMOUR LAKE	8/10/81	22,800	17.58	NO	
H2OSTOCKED TOTAL					22,800	17.58		
RT 81	SWANSON RIVER	FINGERLINGS	SPORT LAKE	9/24/81	7,000	12.35	NO	
H2OSTOCKED TOTAL					7,000	12.35		
RT 81	SWANSON RIVER	FINGERLINGS	SLIVER	9/25/81	490	1.16	ADLV	
RT 81	SWANSON RIVER	FINGERLINGS	SLIVER	9/25/81	490	1.16	ADRV	
RT 81	SWANSON RIVER	FINGERLINGS	SLIVER	8/11/81	490	.47	RV	
RT 81	SWANSON RIVER	FINGERLINGS	SLIVER	8/11/81	490	.49	LV	
H2OSTOCKED TOTAL					1,960	3.28		
RT 81	SWANSON RIVER	FINGERLINGS	TEX SMITH LAKE	9/25/81	5,000	11.94	NO	
H2OSTOCKED TOTAL					5,000	11.94		
AGE TOTAL					36,760	45.15		
RT 80	SWANSON RIVER	CATCHABLES	THOMPSON LAKE	5/18/81	999	60.42	NO	
H2OSTOCKED TOTAL					999	60.42		
AGE TOTAL					999	60.42		
RT 81	SWANSON RIVER	FINGERLINGS	TIGGER LAKE	9/28/81	2,300	5.96	AD	
RT 81	SWANSON RIVER	FINGERLINGS	TIGGER LAKE	8/14/81	2,295	1.94	NO	
H2OSTOCKED TOTAL					4,595	7.90		
RT 81	SWANSON RIVER	FINGERLINGS	TINY LAKE	9/25/81	500	1.19	NO	
H2OSTOCKED TOTAL					500	1.19		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
RT	81	SWANSON RIVER	FINGERLINGS	WALBY LAKE	8/13/81	4,000	3.74	NO	
RT	81	SWANSON RIVER	FINGERLINGS	WALBY LAKE	9/23/81	3,995	8.77	AD	
H2OSTOCKED TOTAL						7,995	12.51		
RT	81	SWANSON RIVER	FINGERLINGS	WEINER LAKE	8/10/81	5,435	4.17	NO	
H2OSTOCKED TOTAL						5,435	4.17		
AGE TOTAL						18,525	25.77		
RT	80	SWANSON RIVER	SUBCATCHABLES	BIRCH LAKE	5/19/81	50,654	1,148.81	NO	
H2OSTOCKED TOTAL						50,654	1,148.81		
AGE TOTAL						50,654	1,148.81		
RT	81	TALARIK CREEK	FINGERLINGS	LITTLE HARDING LAKE	7/16/81	300	4.81	NO	
H2OSTOCKED TOTAL						300	4.81		
AGE TOTAL						300	4.81		
SPECIES TOTAL						240,043	4,722.20		
SS	80	BEAR CREEK	FINGERLINGS	ARC LAKE	5/21/81	3,010	4.40	NO	
H2OSTOCKED TOTAL						3,010	4.40		
AGE TOTAL						3,010	4.40		
SS	80	BEAR CREEK	SMOLTS	BEAR CREEK	6/17/81	39,612	704.83	NO	
SS	80	BEAR CREEK	SMOLTS	BEAR CREEK	6/17/81	14,465	257.30	ADCW	
H2OSTOCKED TOTAL						54,077	962.13		
AGE TOTAL						54,077	962.13		
SS	80	BEAR CREEK	FINGERLINGS	BEAR LAKE	6/02/81	103,818	131.85	NO	
SS	80	BEAR CREEK	FINGERLINGS	BEAR LAKE	6/02/81	142,727	198.95	NO	
H2OSTOCKED TOTAL						246,545	330.80		
AGE TOTAL						246,545	330.80		
SS	80	BEAR CREEK	SUBCATCHABLES	TAKU CAMPBELL	6/04/81	10,000	159.10	NO	
H2OSTOCKED TOTAL						10,000	159.10		
AGE TOTAL						10,000	159.10		
SS	80	BEAR CREEK	FINGERLINGS	CENTENNIAL LAKE	5/21/81	6,010	8.79	NO	
H2OSTOCKED TOTAL						6,010	8.79		
SS	80	BEAR CREEK	FINGERLINGS	CHRISTIANSEN LAKE	6/04/81	17,550	32.85	NO	
H2OSTOCKED TOTAL						17,550	32.85		
AGE TOTAL						23,560	41.64		
SS	80	BEAR CREEK	SUBCATCHABLES	CHRISTIANSEN LAKE	7/22/81	3,829	126.77	NO	

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
SS	80	BEAR CREEK	SUBCATCHABLES	CHRISTIANSEN LAKE	7/21/81	5,300	175.48	NO	
H2OSTOCKED		TOTAL				9,129	302.25		
SS	80	BEAR CREEK	SUBCATCHABLES	ECHO LAKE	6/04/81	4,600	79.88	NO	
H2OSTOCKED		TOTAL				4,600	79.88		
AGE TOTAL						13,729	382.13		
SS	80	BEAR CREEK	FINGERLINGS	ENGINEER LAKE	5/21/81	44,900	65.84	NO	
H2OSTOCKED		TOTAL				44,900	65.84		
SS	80	BEAR CREEK	FINGERLINGS	FINGER LAKE	5/13/81	72,954	100.20	NO	
H2OSTOCKED		TOTAL				72,954	100.20		
AGE TOTAL						117,854	166.04		
SS	80	BEAR CREEK	SUBCATCHABLES	FISH LAKE	6/05/81	3,500	72.16	NO	
H2OSTOCKED		TOTAL				3,500	72.16		
AGE TOTAL						3,500	72.16		
SS	80	BEAR CREEK	SMOLTS	FRITZ CREEK	6/18/81	13,869	349.49	ADCW	
SS	80	BEAR CREEK	SMOLTS	FRITZ CREEK	6/18/81	40,571	1,022.37	NO	
H2OSTOCKED		TOTAL				54,440	1,371.86		
AGE TOTAL						54,440	1,371.86		
SS	80	BEAR CREEK	FINGERLINGS	LOON LAKE	5/20/81	10,797	13.83	NO	
H2OSTOCKED		TOTAL				10,797	13.83		
SS	80	BEAR CREEK	FINGERLINGS	LUCILLE LAKE	5/13/81	72,838	106.58	NO	
H2OSTOCKED		TOTAL				72,838	106.58		
SS	80	BEAR CREEK	FINGERLINGS	MEMORY LAKE	5/29/81	8,300	143.37	NO	
H2OSTOCKED		TOTAL				8,300	143.37		
AGE TOTAL						91,935	263.78		
SS	80	BEAR CREEK	SUBCATCHABLES	MIRROR LAKE	6/05/81	10,004	148.78	NO	
H2OSTOCKED		TOTAL				10,004	148.78		
SS	80	BEAR CREEK	SUBCATCHABLES	OTTER LAKE	10/16/81	475	10.77	NO	
H2OSTOCKED		TOTAL				475	10.77		
AGE TOTAL						10,479	159.55		
SS	80	BEAR CREEK	FINGERLINGS	PRATOR LAKE	5/20/81	9,824	12.59	NO	
H2OSTOCKED		TOTAL				9,824	12.59		
SS	80	BEAR CREEK	FINGERLINGS	ROCKY LAKE	5/29/81	2,950	50.96	NO	
H2OSTOCKED		TOTAL				2,950	50.96		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
SS	80	BEAR CREEK	FINGERLINGS	ROQUE LAKE	5/21/81	1,500	2.19	NO	
H2OSTOCKED TOTAL						1,500	2.19		
AGE TOTAL						14,274	65.74		
SS	80	BEAR CREEK	SMOLTS	SEWARD LAGOON	6/15/81	82,757	1,416.52	NO	
SS	80	BEAR CREEK	SMOLTS	SEWARD LAGOON	6/15/81	25,944	444.07	ADCW	A42035
H2OSTOCKED TOTAL						108,701	1,860.59		
AGE TOTAL						108,701	1,860.59		
SS	80	BEAR CREEK	SUBCATCHABLES	6-MILE LAKE	6/05/81	5,500	108.47	NO	
H2OSTOCKED TOTAL						5,500	108.47		
AGE TOTAL						5,500	108.47		
SS	80	BEAR CREEK	FINGERLINGS	SOUTH ROLLY LAKE	5/20/81	16,429	21.05	NO	
H2OSTOCKED TOTAL						16,429	21.05		
SS	80	BEAR CREEK	FINGERLINGS	SUNKEN ISLAND LAKE	5/21/81	30,000	44.04	NO	
H2OSTOCKED TOTAL						30,000	44.04		
AGE TOTAL						46,429	65.09		
SS	80	BEAR CREEK	SUBCATCHABLES	TRIANGLE LAKE	6/08/81	3,500	69.02	NO	
H2OSTOCKED TOTAL						3,500	69.02		
AGE TOTAL						3,500	69.02		
SS	80	BEAR CREEK	FINGERLINGS	VICTOR LAKE	5/29/81	1,400	24.18	NO	
H2OSTOCKED TOTAL						1,400	24.18		
AGE TOTAL						1,400	24.18		
SS	80	BEAR CREEK	SMOLTS	WHITTIER CREEK	6/10/81	11,374	224.31	NO	
SS	80	BEAR CREEK	SMOLTS	WHITTIER CREEK	6/11/81	9,034	214.54	NO	
SS	80	BEAR CREEK	SMOLTS	WHITTIER CREEK	6/10/81	42,925	846.54	NO	
H2OSTOCKED TOTAL						63,333	1,285.39		
AGE TOTAL						63,333	1,285.39		
SS	80	BEAR CREEK	FINGERLINGS	BENKA LAKE	6/04/81	18,445	33.86	NO	
H2OSTOCKED TOTAL						18,445	33.86		
AGE TOTAL						18,445	33.86		
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/09/81	45,962	906.43	NO	
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/09/81	9,396	185.30	NO	
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/08/81	12,507	246.66	NO	
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/08/81	25,471	502.32	ADCW	A42037
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/10/81	39,857	786.04	NO	
SS	80	BEAR CREEK	SMOLTS	COVE CREEK	6/12/81	5,556	132.64	NO	
H2OSTOCKED TOTAL						138,749	2,759.39		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
AGE TOTAL						138,749	2,759.39		
SS	80	BEAR CREEK	FINGERLINGS	SOUTH JANS LAKE	6/10/81	14,980	33.04	NO	
H2OSTOCKED TOTAL						14,980	33.04		
SS	80	BEAR CREEK	FINGERLINGS	BIRCH LAKE	5/19/81	29,810	45.06	NO	
H2OSTOCKED TOTAL						29,810	45.06		
SS	80	BEAR CREEK	FINGERLINGS	COAL MINE #5	5/14/81	2,994	3.63	NO	
H2OSTOCKED TOTAL						2,994	3.63		
SS	80	BEAR CREEK	FINGERLINGS	HARDING LAKE	7/16/81	32,165	97.42	NO	
H2OSTOCKED TOTAL						32,165	97.42		
SS	80	BEAR CREEK	FINGERLINGS	LES LAKE	5/19/81	750	1.13	NO	
H2OSTOCKED TOTAL						750	1.13		
SS	80	BEAR CREEK	FINGERLINGS	LITTLE HARDING LAKE	5/19/81	19,885	30.04	NO	
H2OSTOCKED TOTAL						19,885	30.04		
SS	80	BEAR CREEK	FINGERLINGS	LOST LAKE	5/19/81	9,890	15.02	NO	
H2OSTOCKED TOTAL						9,890	15.02		
SS	80	BEAR CREEK	FINGERLINGS	MOOSE LAKE	5/19/81	4,950	7.51	NO	
H2OSTOCKED TOTAL						4,950	7.51		
SS	80	BEAR CREEK	FINGERLINGS	QUARTZ LAKE	5/19/81	39,400	60.08	NO	
SS	80	BEAR CREEK	FINGERLINGS	QUARTZ LAKE	5/14/81	109,914	133.47	NO	
H2OSTOCKED TOTAL						149,314	193.55		
SS	80	BEAR CREEK	FINGERLINGS	28 MILE PIT	5/19/81	1,988	3.00	NO	
H2OSTOCKED TOTAL						1,988	3.00		
SS	80	BEAR CREEK	FINGERLINGS	CHINIAK LAKE	5/11/81	18,000	18.56	NO	
H2OSTOCKED TOTAL						18,000	18.56		
SS	80	BEAR CREEK	FINGERLINGS	DARK LAKE	5/11/81	5,000	5.15	NO	
H2OSTOCKED TOTAL						5,000	5.15		
SS	80	BEAR CREEK	FINGERLINGS	ISLAND LAKE	5/11/81	5,000	5.15	NO	
H2OSTOCKED TOTAL						5,000	5.15		
SS	80	BEAR CREEK	FINGERLINGS	KALSIN LAKE	5/11/81	2,400	2.47	NO	
H2OSTOCKED TOTAL						2,400	2.47		
SS	80	BEAR CREEK	FINGERLINGS	MAYFLOWER LAKE	5/11/81	2,500	2.58	NO	
H2OSTOCKED TOTAL						2,500	2.58		
AGE TOTAL						299,626	463.31		
SPECIES TOTAL						1,329,086	10,648.63		
HATCHERY TOTAL						1,569,129	15,370.83		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
KS	80	SHIP CREEK	FINGERLINGS	CHENY POND	5/28/81	20,795	287.57	NO	
H2OSTOCKED TOTAL						20,795	287.57		
AGE TOTAL						20,795	287.57		
KS	80	CROOKED CREEK	SMOLTS	CROOKED CREEK	5/28/81	32,784	494.04	NO	
KS	80	CROOKED CREEK	SMOLTS	CROOKED CREEK	5/28/81	50,586	762.30	ADCW	A42034
KS	80	CROOKED CREEK	SMOLTS	CROOKED CREEK	5/29/81	78,715	1,081.95	NO	
KS	80	CROOKED CREEK	SMOLTS	CROOKED CREEK	5/26/81	41,918	667.25	NO	
H2OSTOCKED TOTAL						204,003	3,005.54		
KS	80	CROOKED CREEK	SMOLTS	HALIBUT COVE LAGOON	6/01/81	24,521	422.13	NO	
KS	80	CROOKED CREEK	SMOLTS	HALIBUT COVE LAGOON	6/01/81	24,554	376.62	ADCW	A42033
KS	80	CROOKED CREEK	SMOLTS	HALIBUT COVE LAGOON	6/01/81	26,811	411.27	NO	
KS	80	CROOKED CREEK	SMOLTS	HALIBUT COVE LAGOON	6/01/81	25,337	436.22	ADCW	A42032
H2OSTOCKED TOTAL						101,223	1,646.24		
AGE TOTAL						305,226	4,651.78		
KS	80	SHIP CREEK	FINGERLINGS	MEMORY LAKE	5/26/81	8,300	114.78	NO	
H2OSTOCKED TOTAL						8,300	114.78		
KS	80	SHIP CREEK	FINGERLINGS	ROCKY LAKE	5/26/81	2,950	40.80	NO	
H2OSTOCKED TOTAL						2,950	40.80		
KS	80	SHIP CREEK	FINGERLINGS	SCOUT LAKE	5/27/81	12,000	165.95	NO	
H2OSTOCKED TOTAL						12,000	165.95		
KS	80	SHIP CREEK	FINGERLINGS	VICTOR LAKE	5/26/81	1,400	19.30	NO	
H2OSTOCKED TOTAL						1,400	19.30		
AGE TOTAL						24,650	340.83		
KS	80	CROOKED CREEK	SMOLTS	COVE CREEK	6/22/81	71,600	1,217.05	NO	
KS	80	CROOKED CREEK	SMOLTS	COVE CREEK	6/10/81	38,250	559.78	NO	
H2OSTOCKED TOTAL						109,850	1,776.83		
AGE TOTAL						109,850	1,776.83		
SPECIES TOTAL						460,521	7,057.01		
RT	74	TALARIK CREEK	ADULTS	OTTER LAKE	3/10/81	53	168.54	NO	
H2OSTOCKED TOTAL						53	168.54		
AGE TOTAL						53	168.54		
SPECIES TOTAL						53	168.54		
HATCHERY TOTAL						460,574	7,225.55		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	CRYSTAL CREEK	FINGERLINGS	CRYSTAL CREEK	5/01/81	5,915	8.40	ADCW	H40403
H2OSTOCKED TOTAL						5,915	8.40		
AGE TOTAL						5,915	8.40		
CS	80	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/01/81	1,227	1.74	AD	
CS	80	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/01/81	5,660	8.04	ADCW	140407
H2OSTOCKED TOTAL						6,887	9.78		
AGE TOTAL						6,887	9.78		
SPECIES TOTAL						12,802	18.18		
KS	79	ANDREWS CREEK	SMOLTS	CRYSTAL CREEK	5/15/81	18,682	710.28	ADCW	042043
KS	79	ANDREWS CREEK	SMOLTS	CRYSTAL CREEK	5/15/81	18,530	704.51	ADCW	042042
KS	79	ANDREWS CREEK	SMOLTS	CRYSTAL CREEK	5/15/81	3,080	117.10	AD	
KS	79	ANDREWS CREEK	SMOLTS	CRYSTAL CREEK	5/15/81	1,905	72.42	ADCW	042045
H2OSTOCKED TOTAL						42,197	1,604.31		
AGE TOTAL						42,197	1,604.31		
SPECIES TOTAL						42,197	1,604.31		
SS	79	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/26/81	25,119	392.36	ADCW	042052
SS	79	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/26/81	9,902	154.67	ADCW	041922
SS	79	DUNCAN SALT CHUCK CR	SMOLTS	CRYSTAL CREEK	5/28/81	22,211	551.05	NO	
SS	79	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/26/81	412,701	6,446.40	NO	
SS	79	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/26/81	3,467	54.16	AD	
SS	79	CRYSTAL CREEK	SMOLTS	CRYSTAL CREEK	5/26/81	25,722	401.78	ADCW	042051
H2OSTOCKED TOTAL						499,122	8,000.42		
SS	79	CRYSTAL CREEK	SMOLTS	OHMER CREEK	6/01/81	49,376	803.84	NO	
SS	79	CRYSTAL CREEK	SMOLTS	OHMER CREEK	6/01/81	164	2.67	AD	
SS	79	CRYSTAL CREEK	SMOLTS	OHMER CREEK	6/01/81	20,355	331.38	ADCW	042044
H2OSTOCKED TOTAL						69,895	1,137.89		
AGE TOTAL						569,017	9,138.31		
SPECIES TOTAL						569,017	9,138.31		
HATCHERY TOTAL						624,016	10,760.80		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINU
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	2/24/81	1,910	.83	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/07/81	565,743	226.30	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/04/81	718,892	316.31	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	3/30/81	152,873	64.21	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	3/29/81	775,303	325.63	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/19/81	6,760	2.70	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/18/81	469	.19	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/18/81	16,813	6.73	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/17/81	5,784	2.31	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/16/81	38,143	15.26	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/13/81	13,000	5.20	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/12/81	14,935	5.97	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/11/81	21,593	8.64	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/10/81	19,662	7.86	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/09/81	12,957	5.18	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/08/81	21,852	8.74	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/07/81	42,578	17.03	NO	
H2OSTOCKED TOTAL						2,429,267	1,019.09		
AGE TOTAL						2,429,267	1,019.09		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/07/81	626,781	520.23	NO	
H2OSTOCKED TOTAL						626,781	520.23		
AGE TOTAL						626,781	520.23		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/06/81	38,903	15.56	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/04/81	95,746	38.30	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/04/81	451,802	176.20	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/03/81	80,818	32.33	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/02/81	70,572	28.23	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/01/81	126,603	50.64	NO	
H2OSTOCKED TOTAL						864,444	341.26		
AGE TOTAL						864,444	341.26		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/01/81	372,028	331.10	NO	
H2OSTOCKED TOTAL						372,028	331.10		
AGE TOTAL						372,028	331.10		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/30/81	51,408	20.56	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/29/81	42,357	16.94	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/29/81	85,470	34.19	NO	
H2OSTOCKED TOTAL						179,235	71.69		
AGE TOTAL						179,235	71.69		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	4/26/81	381,000	392.38	NO	
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	4/23/81	367,103	403.81	NO	
H2OSTOCKED TOTAL						748,103	796.19		
AGE TOTAL						748,103	796.19		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	BEAVER-DISSAPPEAR	SWIMUP FRY	GEORGE INLET	4/22/81	583,834	239.37	NO	
CS	80	BEAVER-DISSAPPEAR	SWIMUP FRY	GEORGE INLET	4/20/81	1,008,986	423.77	NO	
H2OSTOCKED TOTAL						1,592,820	663.14		
AGE TOTAL						1,592,820	663.14		
CS	80	BEAVER FALLS	FEED FRY	GEORGE INLET	4/16/81	372,610	346.61	NO	
H2OSTOCKED TOTAL						372,610	346.61		
AGE TOTAL						372,610	346.61		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/14/81	335,087	134.03	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/13/81	766,116	298.79	NO	
H2OSTOCKED TOTAL						1,101,203	432.82		
AGE TOTAL						1,101,203	432.82		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	4/11/81	357,864	393.65	NO	
H2OSTOCKED TOTAL						357,864	393.65		
AGE TOTAL						357,864	393.65		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	4/09/81	410,010	164.00	NO	
H2OSTOCKED TOTAL						410,010	164.00		
AGE TOTAL						410,010	164.00		
CS	80	BEAVER FALLS	FEED FRY	GEORGE INLET	5/29/81	216,688	186.35	NO	
H2OSTOCKED TOTAL						216,688	186.35		
AGE TOTAL						216,688	186.35		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/29/81	291	.12	NO	
H2OSTOCKED TOTAL						291	.12		
AGE TOTAL						291	.12		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/28/81	518,041	533.58	NO	
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/26/81	535,460	546.17	NO	
H2OSTOCKED TOTAL						1,053,501	1,079.75		
AGE TOTAL						1,053,501	1,079.75		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/24/81	194	.08	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/24/81	310	.12	NO	
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/23/81	1,607	.64	NO	
H2OSTOCKED TOTAL						2,111	.84		
AGE TOTAL						2,111	.84		
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/22/81	532,392	532.39	NO	
CS	80	BEAVER FALLS	FINGERLINGS	GEORGE INLET	5/18/81	513,123	600.14	NO	
H2OSTOCKED TOTAL						1,045,515	1,132.53		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
AGE TOTAL						1,045,515	1,132.53		
CS	80	BEAVER FALLS	SWIMUP FRY	GEORGE INLET	5/22/81	1,390	.56	NO	
H2OSTOCKED TOTAL						1,390	.56		
AGE TOTAL						1,390	.56		
SPECIES TOTAL						11,373,861	7,479.93		
HATCHERY TOTAL						11,373,861	7,479.93		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	19,038	55.21	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	267	.77	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	100,364	281.02	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	25	.07	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	296	.83	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/07/81	26,000	41.60	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/07/81	164,909	263.85	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/06/81	162,423	316.72	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/06/81	149	.29	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/06/81	1,774	3.46	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/05/81	121,489	242.98	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/05/81	186	.37	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/05/81	2,216	4.43	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/02/81	121,530	182.30	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/02/81	151	.23	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/02/81	1,804	2.71	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	150,361	240.58	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	18,038	28.86	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	203,705	203.71	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	130	.13	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	1,538	1.54	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	63,598	260.75	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	104	.43	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	701	2.87	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	200	.77	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	62,116	256.54	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	604	2.49	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	46,067	152.02	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	406	1.34	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	37,242	148.97	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	328	1.31	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/24/81	43,940	43.94	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/24/81	49	.05	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/24/81	332	.33	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/13/81	100,977	282.74	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/13/81	71	.20	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/13/81	476	1.33	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	48,875	78.20	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	80	.13	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/24/81	536	.86	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/13/81	491	.61	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/13/81	203,997	244.80	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/13/81	1,646	1.98	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/13/81	204,327	265.63	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	4/13/81	1,647	2.14	ADCW	H40306
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	50,342	332.26	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	1,161	7.66	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	8,944	59.03	ADCW	041923
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	6,319	41.71	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	1,357	8.96	ADCW	041924
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	1,139	7.40	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	239	1.55	ADCW	041924

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	1,263	8.23	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	6,096	40.23	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	1,388	9.16	ADCW	041913
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	33,949	220.67	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	7,734	50.27	ADCW	041913
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	43	.12	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	77,072	184.97	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	760	1.82	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	60,397	175.15	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	970	2.81	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	77,569	186.17	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	766	1.84	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	64,400	186.76	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	705	2.04	ADCW	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	13,154	38.15	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	284	.82	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	55	.16	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	112,056	257.73	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	1,926	4.43	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	59,464	172.45	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	833	2.42	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	99,790	339.29	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	1,722	5.85	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	100,380	240.91	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	7	.02	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/17/81	542	1.30	ADCW	H40501
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	505	1.79	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	65,849	269.98	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	13,305	38.58	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	214	.62	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	63,679	216.51	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	756	2.57	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	49,972	144.92	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	863	2.50	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	63,079	214.47	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	798	2.71	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	63,768	216.81	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	701	2.38	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	63,827	261.98	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	1,098	4.50	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	64,251	218.45	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	676	2.30	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	62,867	257.75	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/28/81	923	3.78	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	43	.16	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	32,700	107.91	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	288	.95	ADCW	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	26,132	104.53	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/26/81	230	.92	ADCW	H40305
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	105	.38	AD	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	78,732	299.18	NO	
CS	80	KLAWOCK RIVER	FINGERLINGS	KLAWOCK RIVER	5/22/81	996	3.78	ADCW	H40305
H2OSTOCKED TOTAL						3,364,456	8,594.84		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
AGE TOTAL						3,364,456	8,594.84		
SPECIES TOTAL						3,364,456	8,594.84		
PS	80	KLAWOCK LAKE	SWIMUP FRY	KLAWOCK RIVER	4/28/81	4,456	1.16	NO	
PS	80	KLAWOCK LAKE	SWIMUP FRY	KLAWOCK RIVER	4/24/81	15,579	4.05	NO	
PS	80	KLAWOCK LAKE	SWIMUP FRY	KLAWOCK RIVER	4/16/81	40,275	10.47	NO	
PS	80	KLAWOCK LAKE	SWIMUP FRY	KLAWOCK RIVER	4/16/81	58,259	15.15	NO	
PS	80	KLAWOCK LAKE	SWIMUP FRY	KLAWOCK RIVER	4/13/81	347,231	90.28	NO	
H2OSTOCKED TOTAL						465,800	121.11		
AGE TOTAL						465,800	121.11		
PS	80	KLAWOCK LAKE	FEED FRY	KLAWOCK RIVER	4/13/81	504,274	141.20	NO	
H2OSTOCKED TOTAL						504,274	141.20		
AGE TOTAL						504,274	141.20		
SPECIES TOTAL						970,074	262.31		
SH	80	KLAWOCK RIVER	SMOLTS	KLAWOCK RIVER	6/17/81	5,886	249.57	ADCW	041912
SH	80	KLAWOCK RIVER	SMOLTS	KLAWOCK RIVER	6/17/81	536	22.73	AD	
H2OSTOCKED TOTAL						6,422	272.30		
AGE TOTAL						6,422	272.30		
SPECIES TOTAL						6,422	272.30		
SS	79	KLAWOCK LAKE	SMOLTS	KLAWOCK LAKE	3/27/81	974	18.59	AD	
SS	79	KLAWOCK LAKE	SMOLTS	KLAWOCK LAKE	3/27/81	17,069	325.85	ADCW	041941
H2OSTOCKED TOTAL						18,043	344.44		
SS	79	KLAWOCK LAKE	SMOLTS	KLAWOCK RIVER	5/28/81	18,494	462.35	ADCW	041942
H2OSTOCKED TOTAL						18,494	462.35		
AGE TOTAL						36,537	806.79		
SPECIES TOTAL						36,537	806.79		
HATCHERY TOTAL						4,377,489	9,936.24		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	589,272	948.73	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	2,388	3.84	AD	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	29,947	48.21	ADCW	H40406
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/18/81	428,956	464.90	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/18/81	303,406	363.80	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/17/81	40,773	54.00	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/17/81	520,082	631.20	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/16/81	303,620	357.40	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/15/81	368,312	386.10	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/15/81	342,833	404.54	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/15/81	628,303	1,526.78	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/15/81	432	1.05	AD	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/15/81	30,156	73.28	ADCW	H40405
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/12/81	614,222	877.50	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/12/81	316,898	537.10	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/11/81	610,666	728.70	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/10/81	658,716	1,358.20	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/09/81	687,094	1,520.10	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	5/08/81	542,488	1,490.20	NO	
CS	80	SEAL BAY	FINGERLINGS	KASNYKU BAY	4/15/81	117,509	192.00	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	624,861	492.00	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	628,442	724.00	NO	
CS	80	KADASHAN RIVER	FINGERLINGS	KASNYKU BAY	4/15/81	624,562	755.72	NO	
H2OSTOCKED TOTAL						9,013,938	13,939.35		
AGE TOTAL						9,013,938	13,939.35		
SPECIES TOTAL						9,013,938	13,939.35		
HATCHERY TOTAL						9,013,938	13,939.35		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	NEKA-SNETTISHAM	FINGERLINGS	PORT SNETTISHAM	5/08/81	1,997,656	2,177.45	NO	
CS	80	NEKA-SNETTISHAM	FINGERLINGS	PORT SNETTISHAM	5/08/81	45,602	49.71	ADCW	H40404
H2OSTOCKED TOTAL						2,043,258	2,227.16		
AGE TOTAL						2,043,258	2,227.16		
SPECIES TOTAL						2,043,258	2,227.16		
KS	79	KING SALMON RIVER	SMOLTS	PORT SNETTISHAM	5/29/81	2,677	32.30	AD	
KS	79	KING SALMON RIVER	SMOLTS	PORT SNETTISHAM	5/29/81	23,569	284.00	ADCW	042049
KS	79	KING SALMON RIVER	SMOLTS	PORT SNETTISHAM	5/29/81	500	6.00	NO	
H2OSTOCKED TOTAL						26,746	322.30		
AGE TOTAL						26,746	322.30		
SPECIES TOTAL						26,746	322.30		
SS	79	SPEEL LAKE	SMOLTS	PORT SNETTISHAM	5/29/81	2,356	13.17	ADCW	041907
SS	79	SPEEL LAKE	SMOLTS	PORT SNETTISHAM	5/29/81	7,990	44.66	ADCW	041919
SS	79	SPEEL LAKE	SMOLTS	PORT SNETTISHAM	5/29/81	7,795	43.57	ADCW	041918
SS	79	SPEEL LAKE	SMOLTS	PORT SNETTISHAM	5/29/81	75,358	392.60	NO	
SS	79	SPEEL LAKE	SMOLTS	PORT SNETTISHAM	5/29/81	5,481	30.64	AD	
H2OSTOCKED TOTAL						98,980	524.64		
AGE TOTAL						98,980	524.64		
SPECIES TOTAL						98,980	524.64		
HATCHERY TOTAL						2,168,984	3,074.10		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
KS	79	CRIPPLE CREEK	SMOLTS	KETCHIKAN CREEK	5/15/81	15,204	254.81	ADCW	042039
KS	79	CRIPPLE CREEK	SMOLTS	KETCHIKAN CREEK	5/15/81	15,734	211.46	ADCW	042040
KS	79	CRIPPLE CREEK	SMOLTS	KETCHIKAN CREEK	5/15/81	2,087	42.72	AD	
KS	79	CRIPPLE CREEK	SMOLTS	KETCHIKAN CREEK	5/15/81	3,821	113.02	ADCW	041917
KS	79	CRIPPLE CREEK	SMOLTS	KETCHIKAN CREEK	5/15/81	14,533	261.73	ADCW	041945
H2OSTOCKED TOTAL						51,379	883.74		
AGE TOTAL						51,379	883.74		
SPECIES TOTAL						51,379	883.74		
SH	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	1,112	72.77	ADCW	041914
SH	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	34	2.22	AD	
H2OSTOCKED TOTAL						1,146	74.99		
SH	78	KETCHIKAN CREEK	SMOLTS	WARD CREEK	6/08/81	297	46.17	AD	
SH	78	KETCHIKAN CREEK	SMOLTS	WARD CREEK	6/08/81	2,174	337.94	ADCW	041915
SH	78	KETCHIKAN CREEK	SMOLTS	WARD CREEK	6/08/81	34	2.76	AD	
SH	78	KETCHIKAN CREEK	SMOLTS	WARD CREEK	6/08/81	311	25.30	ADCW	041903
H2OSTOCKED TOTAL						2,816	412.17		
AGE TOTAL						3,962	487.16		
SPECIES TOTAL						3,962	487.16		
SS	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	44,096	808.72	NO	
SS	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	4,300	72.45	AD	
SS	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	12,672	201.61	ADCW	042041
SS	79	KETCHIKAN CREEK	SMOLTS	KETCHIKAN CREEK	6/01/81	6,480	115.34	ADCW	041916
H2OSTOCKED TOTAL						67,548	1,198.12		
SS	80	KETCHIKAN CREEK	SMOLTS	WARD CREEK	11/23/81	27,830	364.85	NO	
SS	80	KETCHIKAN CREEK	SMOLTS	WARD CREEK	11/23/81	346	4.60	AD	
SS	80	KETCHIKAN CREEK	SMOLTS	WARD CREEK	11/23/81	24,360	324.47	ADCW	042148
SS	80	KETCHIKAN CREEK	SMOLTS	WARD CREEK	11/23/81	27,830	364.85	NO	
H2OSTOCKED TOTAL						80,366	1,058.77		
AGE TOTAL						147,914	2,256.89		
SPECIES TOTAL						147,914	2,256.89		
HATCHERY TOTAL						203,255	3,627.79		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/22/81	91,849	14.34	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/21/81	58,472	8.97	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/21/81	241,876	38.26	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/17/81	84,198	13.33	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/14/81	61,551	9.74	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/10/81	44,513	6.95	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/06/81	13,797	2.15	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/03/81	7,097	1.10	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/29/81	200,806	24.95	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/26/81	73,178	10.56	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/19/81	92,691	13.92	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/19/81	208,519	31.28	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/15/81	267,792	39.96	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/15/81	214,347	30.25	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/11/81	371,487	56.49	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/07/81	402,655	61.23	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/04/81	123,525	20.27	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	5/04/81	277,109	45.76	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/30/81	202,945	33.23	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/29/81	227,359	36.42	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/27/81	190,285	30.26	NO	
RS	80	FISH CREEK	SWIMUP FRY	BIG LAKE	4/24/81	111,827	16.92	NO	
H2OSTOCKED TOTAL						3,567,878	546.34		
AGE TOTAL						3,567,878	546.34		
RS	80	MEADOW CREEK	FEED FRY	MEADOW CREEK	6/12/81	10,136	2.85	NO	
H2OSTOCKED TOTAL						10,136	2.85		
AGE TOTAL						10,136	2.85		
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	3/01/81	45,117	7.10	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	2/28/81	111,196	17.46	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	2/27/81	182,162	28.60	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	3/11/81	21,835	3.40	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	3/05/81	4,419	.70	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	3/03/81	5,471	.88	NO	
RS	80	MEADOW CREEK	SWIMUP FRY	MEADOW CREEK	3/02/81	19,717	3.10	NO	
H2OSTOCKED TOTAL						389,917	61.24		
AGE TOTAL						389,917	61.24		
SPECIES TOTAL						3,967,931	610.43		
SS	80	FISH CREEK	FINGERLINGS	COTTONWOOD LAKE	6/05/81	47,896	33.84	RV	
SS	80	FISH CREEK	FINGERLINGS	COTTONWOOD LAKE	5/22/81	48,072	18.61	LV	
H2OSTOCKED TOTAL						95,968	52.45		
SS	80	FISH CREEK	FINGERLINGS	BIG LAKE	6/09/81	50,254	41.44	RV	
SS	80	FISH CREEK	FINGERLINGS	BIG LAKE	5/29/81	53,776	24.63	LV	
H2OSTOCKED TOTAL						104,030	66.07		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
SS	80	FISH CREEK	FINGERLINGS	KINGS LAKE	6/09/81	23,383	19.29	RV	
H2OSTOCKED TOTAL						23,383	19.29		
SS	80	FISH CREEK	FINGERLINGS	MEADOW CREEK	5/27/81	14,041	10.35	LV	
H2OSTOCKED TOTAL						14,041	10.35		
SS	80	FISH CREEK	FINGERLINGS	WASILLA LAKE	6/06/81	61,043	46.85	RV	
SS	80	FISH CREEK	FINGERLINGS	WASILLA LAKE	5/27/81	62,264	29.15	LV	
H2OSTOCKED TOTAL						123,307	76.00		
SS	80	FISH CREEK	FINGERLINGS	CORNELIUS LAKE	5/22/81	21,377	8.28	LV	
SS	80	FISH CREEK	FINGERLINGS	CORNELIUS LAKE	6/09/81	21,194	16.52	RV	
H2OSTOCKED TOTAL						42,571	24.80		
SS	80	FISH CREEK	FINGERLINGS	ANDERSON LAKE	6/08/81	25,601	19.95	RV	
SS	80	FISH CREEK	FINGERLINGS	ANDERSON LAKE	5/28/81	26,496	12.27	LV	
H2OSTOCKED TOTAL						52,097	32.22		
AGE TOTAL						455,397	281.18		
SPECIES TOTAL						455,397	281.18		
HATCHERY TOTAL						4,423,328	891.61		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
CS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	6/06/81	597	.23	NO	
H2OSTOCKED TOTAL						597	.23		
AGE TOTAL						597	.23		
CS	80	TUTKA BAY LAGOON CR	FINGERLINGS	TUTKA BAY	6/05/81	7,395	6.80	NO	
H2OSTOCKED TOTAL						7,395	6.80		
AGE TOTAL						7,395	6.80		
SPECIES TOTAL						7,992	7.03		
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	PAINT RIVER	5/27/81	31,833	7.02	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	PAINT RIVER	5/27/81	477,776	105.35	NO	
H2OSTOCKED TOTAL						509,609	112.37		
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY LAGOON CR	6/09/81	49,790	11.21	NO	
H2OSTOCKED TOTAL						49,790	11.21		
AGE TOTAL						559,399	123.58		
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	268,268	129.79	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	245,575	124.75	NO	
H2OSTOCKED TOTAL						513,843	254.54		
AGE TOTAL						513,843	254.54		
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	6/06/81	143,690	32.36	NO	
H2OSTOCKED TOTAL						143,690	32.36		
AGE TOTAL						143,690	32.36		
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	248,665	92.97	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	160,115	70.30	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	241,338	99.33	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	245,456	112.91	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	255,024	114.75	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	255,475	124.73	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	178,288	79.83	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	5,898	3.06	RV	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	250,920	111.62	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	204,798	97.09	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	235,037	114.78	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/10/81	260,096	115.25	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	19,413	12.25	RV	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	178,288	79.83	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	208,152	80.28	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/13/81	264,594	95.70	NO	
H2OSTOCKED TOTAL						3,211,557	1,404.68		
AGE TOTAL						3,211,557	1,404.68		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/24/81	40,290	9.07	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/17/81	98,703	21.93	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/17/81	21,541	4.79	LV	
H2OSTOCKED TOTAL						160,534	35.79		
AGE TOTAL						160,534	35.79		
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	257,760	108.88	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	260,352	116.13	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	246,715	111.12	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	250,047	110.24	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	253,206	110.32	NO	
H2OSTOCKED TOTAL						1,268,080	556.69		
AGE TOTAL						1,268,080	556.69		
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/30/81	254,998	57.02	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/30/81	15,723	3.52	LV	
H2OSTOCKED TOTAL						270,721	60.54		
AGE TOTAL						270,721	60.54		
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	10,268	3.85	RV	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	252,145	108.40	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	285,795	118.41	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	5/29/81	233,058	98.44	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/05/81	242,466	113.85	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/04/81	8,564	3.90	RV	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/04/81	276,715	122.70	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/04/81	282,382	122.97	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/04/81	251,937	126.61	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/14/81	247,965	122.93	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/04/81	255,750	124.82	NO	
H2OSTOCKED TOTAL						2,347,045	1,066.88		
AGE TOTAL						2,347,045	1,066.88		
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	6/02/81	250,273	55.78	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	6/02/81	7,291	1.63	LV	
H2OSTOCKED TOTAL						257,564	57.41		
AGE TOTAL						257,564	57.41		
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	8,356	3.13	RV	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	276,352	115.23	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	262,295	113.87	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	248,952	111.67	NO	
PS	80	TUTKA BAY LAGOON CR	FEED FRY	TUTKA BAY	6/01/81	262,412	115.74	NO	
H2OSTOCKED TOTAL						1,058,367	459.64		
AGE TOTAL						1,058,367	459.64		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	4/24/81	75,689	17.12	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/11/81	24,428	5.47	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/04/81	98,095	21.78	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	5/02/81	48,689	11.20	NO	
PS	80	TUTKA BAY LAGOON CR	SWIMUP FRY	TUTKA BAY	4/27/81	231,052	49.61	NO	
H2OSTOCKED TOTAL						477,953	105.18		
AGE TOTAL						477,953	105.18		
SPECIES TOTAL						10,268,753	4,157.29		
HATCHERY TOTAL						10,276,745	4,164.32		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
RS	80	EAST CREEK	SWIMUP FRY	EAST CREEK	6/18/81	1,032,680	154.90	NO	
RS	80	FRANCIS CREEK	SWIMUP FRY	EAST CREEK	6/06/81	868,889	156.40	NO	
RS	80	EAST-KILLIAN MIX	SWIMUP FRY	EAST CREEK	6/06/81	764,736	117.80	NO	
RS	80	FRANCIS CREEK	SWIMUP FRY	EAST CREEK	6/01/81	830,711	166.14	NO	
RS	80	EAST CREEK	SWIMUP FRY	EAST CREEK	5/26/81	786,193	133.65	NO	
H2OSTOCKED TOTAL						4,283,209	728.89		
AGE TOTAL						4,283,209	728.89		
SPECIES TOTAL						4,283,209	728.89		
HATCHERY TOTAL						4,283,209	728.89		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
RS	80	TUSTUMENA LAKE	FINGERLINGS	CHENIK LAKE	6/10/81	276,048	55.88	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	CHENIK LAKE	6/11/81	269,072	54.49	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	CHENIK LAKE	6/11/81	279,536	56.80	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	CHENIK LAKE	6/10/81	272,062	55.08	NO	
H2OSTOCKED TOTAL						1,096,718	222.25		
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/18/81	679,452	142.57	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/18/81	589,206	112.84	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/18/81	493,799	117.43	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/18/81	503,028	119.63	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	582,433	111.54	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	506,805	120.53	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	585,038	112.04	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	308,396	73.34	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	198,409	47.19	RV	
RS	80	TUSTUMENA LAKE	FINGERLINGS	GLACIER CREEK	6/17/81	520,960	99.77	NO	
H2OSTOCKED TOTAL						4,967,526	1,056.88		
RS	80	TUSTUMENA LAKE	FINGERLINGS	LEISURE LAKE	5/26/81	595,837	93.31	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	LEISURE LAKE	5/26/81	498,876	78.13	NO	
H2OSTOCKED TOTAL						1,094,713	171.44		
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	253,947	55.32	LV	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/16/81	593,692	120.16	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/16/81	555,230	112.37	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	549,806	111.28	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	551,285	111.58	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	501,968	109.36	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	267,257	58.22	NO	
RS	80	TUSTUMENA LAKE	FINGERLINGS	BEAR CREEK	6/15/81	535,860	116.74	NO	
H2OSTOCKED TOTAL						3,809,045	795.03		
AGE TOTAL						10,968,002	2,245.60		
SPECIES TOTAL						10,968,002	2,245.60		
HATCHERY TOTAL						10,968,002	2,245.60		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
CS	80	EAGLEK RIVER	SWIMUP FRY	CANNERY CREEK	5/19/81	1,933,404	638.02	NO	
CS	80	EAGLEK RIVER	SWIMUP FRY	CANNERY CREEK	5/19/81	30,253	9.98	ADRV	
CS	80	SIWASH BAY	SWIMUP FRY	CANNERY CREEK	5/19/81	454,638	150.03	NO	
CS	80	SIWASH BAY	SWIMUP FRY	CANNERY CREEK	5/19/81	30,316	10.00	RV	
H2OSTOCKED TOTAL						2,448,611	808.03		
AGE TOTAL						2,448,611	808.03		
SPECIES TOTAL						2,448,611	808.03		
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	4/22/81	1,985,214	397.04	NO	
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	4/22/81	14,786	2.96	ADRV	
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	4/16/81	1,900,000	399.00	NO	
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	5/07/81	250,000	47.50	NO	
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	4/29/81	2,784,748	556.95	NO	
PS	80	SAN JUAN	SWIMUP FRY	HOBO BAY	4/29/81	15,252	3.05	ADRV	
H2OSTOCKED TOTAL						6,950,000	1,406.50		
PS	80	CANNERY CREEK	SWIMUP FRY	CANNERY CREEK	5/15/81	14,358,515	3,015.29	NO	
H2OSTOCKED TOTAL						14,358,515	3,015.29		
AGE TOTAL						21,308,515	4,421.79		
SPECIES TOTAL						21,308,515	4,421.79		
HATCHERY TOTAL						23,757,126	5,229.82		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
CS	80	DELTA-BLUFF MIX	FEED FRY	FOSTER CREEK	5/01/81	130,676	65.14	NO	
CS	80	DELTA-BLUFF MIX	FEED FRY	FOSTER CREEK	5/01/81	83,538	41.64	NO	
CS	80	DELTA-BLUFF MIX	FEED FRY	FOSTER CREEK	5/01/81	99,725	49.73	NO	
H2OSTOCKED TOTAL						313,939	156.51		
AGE TOTAL						313,939	156.51		
SPECIES TOTAL						313,939	156.51		
GR	81	"J" LAKE	SWIMUP FRY	SPORT FISH	6/05/81	13,025	.18	NO	
H2OSTOCKED TOTAL						13,025	.18		
GR	81	JUNCTION LAKE	SWIMUP FRY	CANOE LAKE	6/11/81	13,172	.20	NO	
H2OSTOCKED TOTAL						13,172	.20		
GR	81	JUNCTION LAKE	SWIMUP FRY	HARRIET LAKE	6/11/81	3,133	.05	NO	
H2OSTOCKED TOTAL						3,133	.05		
GR	81	JUNCTION LAKE	SWIMUP FRY	JUNCTION LAKE	6/11/81	9,068	.14	NO	
H2OSTOCKED TOTAL						9,068	.14		
GR	81	JUNCTION LAKE	SWIMUP FRY	LONG LAKE	6/11/81	24,982	.38	NO	
H2OSTOCKED TOTAL						24,982	.38		
GR	81	JUNCTION LAKE	SWIMUP FRY	MEIRS LAKE	6/11/81	10,079	.15	NO	
H2OSTOCKED TOTAL						10,079	.15		
GR	81	JUNCTION LAKE	SWIMUP FRY	THOMPSON LAKE	6/11/81	11,579	.17	NO	
H2OSTOCKED TOTAL						11,579	.17		
GR	81	JUNCTION LAKE	SWIMUP FRY	TOLSONA LAKE	6/11/81	92,823	1.40	NO	
H2OSTOCKED TOTAL						92,823	1.40		
GR	81	JUNCTION LAKE	SWIMUP FRY	MOOSE CREEK	6/11/81	20,191	.31	NO	
H2OSTOCKED TOTAL						20,191	.31		
GR	81	JUNCTION LAKE	SWIMUP FRY	BOLID LAKE	6/11/81	50,545	.76	NO	
H2OSTOCKED TOTAL						50,545	.76		
GR	81	JUNCTION LAKE	SWIMUP FRY	DUNE LAKE	6/11/81	50,394	.76	NO	
H2OSTOCKED TOTAL						50,394	.76		
GR	81	"J" LAKE	SWIMUP FRY	ENGINEERS HILL LAKE	6/05/81	27,201	.38	NO	
H2OSTOCKED TOTAL						27,201	.38		
GR	81	"J" LAKE	SWIMUP FRY	81 MILE PIT	6/05/81	4,998	.07	NO	
H2OSTOCKED TOTAL						4,998	.07		
GR	81	JUNCTION LAKE	SWIMUP FRY	UPPER ISATKOAK LAG	6/11/81	50,288	.76	NO	
H2OSTOCKED TOTAL						50,288	.76		
GR	81	JUNCTION LAKE	SWIMUP FRY	ABERCROMBIE LAKE	6/11/81	20,343	.31	NO	
H2OSTOCKED TOTAL						20,343	.31		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
GR	81	JUNCTION LAKE	SWIMUP FRY	CASCADE LAKE	6/11/81	10,277	.16	NO	
H2OSTOCKED TOTAL						10,277	.16		
GR	81	JUNCTION LAKE	SWIMUP FRY	LONG LAKE	6/11/81	10,204	.15	NO	
H2OSTOCKED TOTAL						10,204	.15		
AGE TOTAL						422,302	6.33		
SPECIES TOTAL						422,302	6.33		
SF	80	KOYUKUK RIVER	FINGERLINGS	CRAIG LAKE	6/29/81	3,100	5.86	NO	
H2OSTOCKED TOTAL						3,100	5.86		
AGE TOTAL						3,100	5.86		
SF	80	KOYUKUK RIVER	SWIMUP FRY	EIELSON COOLING POND	1/16/81	10,043	.14	NO	
H2OSTOCKED TOTAL						10,043	.14		
SF	80	KOYUKUK RIVER	SWIMUP FRY	FT. WW COOLING POND	1/16/81	1,015	.01	NO	
SF	80	KOYUKUK RIVER	SWIMUP FRY	FT. WW COOLING POND	1/16/81	1,015	.01	NO	
H2OSTOCKED TOTAL						2,030	.02		
SF	80	KOYUKUK RIVER	SWIMUP FRY	GULL LAKE	1/19/81	20,335	.28	NO	
H2OSTOCKED TOTAL						20,335	.28		
AGE TOTAL						32,408	.44		
SF	80	KOYUKUK RIVER	FEED FRY	LAKEVIEW POND	5/11/81	10,031	1.42	NO	
H2OSTOCKED TOTAL						10,031	1.42		
AGE TOTAL						10,031	1.42		
SF	80	KOYUKUK RIVER	SWIMUP FRY	MANCHU LAKE	1/16/81	40,152	.60	NO	
H2OSTOCKED TOTAL						40,152	.60		
AGE TOTAL						40,152	.60		
SF	80	KOYUKUK RIVER	FINGERLINGS	SILVER FOX PIT	6/29/81	200	.34	NO	
H2OSTOCKED TOTAL						200	.34		
AGE TOTAL						200	.34		
SF	80	KOYUKUK RIVER	SWIMUP FRY	TEXAS #2	1/19/81	15,094	.21	NO	
H2OSTOCKED TOTAL						15,094	.21		
AGE TOTAL						15,094	.21		
SF	80	KOYUKUK RIVER	FEED FRY	WHITE ALICE #1	5/11/81	2,015	.27	NO	
H2OSTOCKED TOTAL						2,015	.27		
SF	80	KOYUKUK RIVER	FEED FRY	WHITE ALICE #2	5/11/81	2,015	.27	NO	
H2OSTOCKED TOTAL						2,015	.27		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWTNO
AGE TOTAL						4,030	.54		
SF	80	KOYUKUK RIVER	FINGERLINGS	WEIGHT STATION POND	6/29/81	281	.55	NO	
H2OSTOCKED TOTAL						281	.55		
AGE TOTAL						281	.55		
SPECIES TOTAL						105,296	9.96		
HATCHERY TOTAL						841,537	172.80		

SP	BR YR	ORIGIN	STAGE	WATER STOCKED	TRIP DATE	NUMBER STOCKED	TOTAL WT IN KG	MARKS	CWINO
FINAL TOTALS						110,864,487	96,187.47		

540 RECORDS TOTALED

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