

PROGRESS REPORT

January, 1957 to September, 1960

ENGINEERING, HATCHERIES AND MARINE FARMING DIVISIONS

It appears one of the most difficult assignments of the Washington Department of Fisheries is to keep the public fully informed as to the true aspects of our fisheries.

During the past 3½ years this agency has exerted every possible means within the framework of the allotted funds to alert the fisheries interests of the possible and impending hazards to our salmon resources.

The decline of chinook, pink and silver salmon was predicted in the Department's publications, Fisheries Volumes I, II and III, during the past three years. In fact, this is the only agency on the Pacific Coast that has strongly urged full cooperation of all coastal states and Canada to work out joint conservation measures to secure these stocks of salmon.

Unfortunately, neither the International Sockeye Commission nor the Canadian Government has recognized the need to restrain the net fishery in the Strait of Juan de Fuca to permit adequate escapement of silver (coho) and pink salmon to Puget Sound streams. The efforts of Canada the past 5 years at the International Law of the Sea Conferences to press for a 12-mile exclusive territorial limit have further upset these relations.

The policy of the Administration in spite of lack of coordination in the management of high seas fisheries has been to exert every effort to protect salmon runs to Washington streams by placing additional restrictions on sport and commercial fishing as required by state law. In addition, increased efforts have been made to increase the artificial reared output of migrant sized salmon - chinook, silver, pink and chum - from the state hatcheries. A new and less

costly innovation of rearing young salmon has been carried out through natural pond rearing (fish farms) to increase the stocks of salmon.

Three new salmon hatcheries have been built. The hatchery reared output has been increased by 101 percent over the average of the three year period prior to this administration.

It appears that with proper regulations affecting all fisheries for salmon along the Pacific Coast through national and international understanding, these fisheries can be saved through the adoption of a general understanding as advocated by Governor Albert D. Rosellini with all interests involved in fisheries management.

The Department is proud of its accomplishments in the overall program the past 3½ years. A summary of the work follows.

ENGINEERING AND CONSTRUCTION

<u>Yakima County</u>	YAKIMA SHOP BUILDING	
December 1957	Shop Building for construction and repair of fish screens	Dept. of Fisheries Part. \$ 14,698 Job \$ 30,000
<u>Jefferson County</u>	- WHITNEY POINT TANKS	
December 1957	6 tanks (5000 gals. each) for pollution study	\$ 8,500
<u>Snohomish County</u>	- SUNSET FALLS FISHWAY	
1957 - 1958	Install part #1 of Fishway and trapping and hauling facilities for upper 28 miles of Skykomish River	\$418,707 Bid
<u>Mason County</u>	Rebuild Simpson Hatchery Bridge Completed December 1957	\$ 16,000
	Lake Melbourne Dam and Outlet Completed June 28, 1957 - Fish Farm Fresh Water site.	\$ 1,800
<u>Wahkiakum County</u>	- ELOKOMIN RACK AND TRAP	
	October 1957 - Concrete structure	\$ 38,950

BUILDING PROGRAM AND MAJOR BETTERMENTS AT SALMON HATCHERIES

FROM JANUARY, 1957 to AUGUST, 1960

Cowlitz County

A new salmon hatchery was constructed on Kalama River at Kalama Falls with Federal funds at a cost of \$951,000; opened in September, 1959; fry capacity of 9 million. During summer of 1960 additional fry capacity of 3,000,000 was added to Kalama Falls Station at a cost of approximately \$12,000.

A small hatchery and rearing station was constructed on Speelyai Creek, a sub-station of Lewis River hatchery; opened in December, 1958; constructed with funds provided by the Pacific Power and Light Company at the approximate cost of \$136,000. Fry capacity at Speelyai is six million.

An additional room was added to the helper's residence at Lewis River at a cost of \$2,400.

Skamania County

New hatchery on Washougal River; built with Federal monies at cost of \$1,001,500; was completed and placed in operation in December, 1957 with an egg and fry capacity of eight million.

Mason County

An appropriation of \$200,000 by Tacoma, plus \$50,000 contribution by the State was allocated for the Skokomish hatchery. At that site, the preliminary site grading and filling has been completed, and the water supply intake dam and main water supply line have been installed at a cost of \$50,000. Opening of bids for construction of buildings and ponds is planned by September 22, 1960, and a station sufficiently completed for receiving 1960 brood salmon is anticipated.

MAJOR BETTERMENTS OF HATCHERIES IN THE PAST THREE YEARS INCLUDE:

Mason County

Installation of a new 20 inch cast iron saltwater line at the Hood Canal station. The pipeline installed in 1957 cost \$40,700. A new holding pond to permit ripening of adult salmon was also constructed at Hood Canal hatchery at a cost of \$12,600. This was completed in the summer of 1960.

Flood repair in the form of rock revetment was done at Simpson hatchery at a cost of \$6,500. Work was completed in March of 1960.

Fry capacities were increased at Simpson hatchery by 1,100,000 and a water controlled incubation temperature unit installed at a total cost of \$9,200; work completed in 1960.

Pierce County

New holding rack for chinook salmon and hatchery building renovation at Minter Creek hatchery was completed during summer of 1960 at a cost of \$9,400.

Pacific County

Enlarged hatching and feed room at Nemah hatchery to accept increased fry hatching equipment; cost \$27,000; completed in 1957. In 1960 increased hatching equipment was purchased for Nemah, increasing fry capacity by three million at a cost of \$11,000.

New house at the Willapa hatchery was constructed with reappropriated monies and completed in the fall of 1958 at a cost of \$14,977.

During the summer of 1960, fry capacities at Willapa hatchery were increased by 2,700,000, at a cost of approximately \$5,500.

Clallam County

Construction of four additional rearing ponds at Dungeness hatchery at a cost of \$20,471; completed in December, 1957. Work is under way for the construction of Epperson Creek fry station and rearing ponds, and \$25,000 has been allocated for purchase and installation of a pipeline, pond construction, and site preparation. Because of its warmer water supply, this station is to act as growth accelerator station operated in conjunction with the full time rearing at the main Dungeness hatchery.

Snohomish County

New house at the Skykomish hatchery was constructed with reappropriated monies and completed in the fall of 1958 at a cost of \$16,138.

During summer of 1960 fry capacities at Skykomish hatchery increased by 1,800,000 at a cost of approximately \$4,200.

King County

Fry capacities were increased during summer of 1960 by 3,600,000 at Issaquah hatchery, at a cost of approximately \$8,300.

A new intake dam and fishway was constructed, the water supply lines to all ponds renewed, and all 18 ponds renovated at the Issaquah hatchery. This work was completed in 1959; cost \$40,000.

Also during the summer of 1960, a dirt pond was revised to make an adult holding pond, and a connecting concrete fishway was constructed at the Issaquah hatchery at a cost of \$12,300; these facilities were provided for ripening of spawning salmon at this station.

Flood damage was repaired and lower rack renovated at Green River hatchery at a cost of \$3,150.

Skagit County

Extensive winter flood damage repair, including construction of four large rock cribs, was done at the Skagit hatchery. This cost \$20,000. Most of the work was completed in February, 1960.

A room was added to the helper's residence at Skagit hatchery at a cost of \$2,400.

Whatcom County

During the summer of 1960, fry capacities at the Nooksack hatchery were increased by 2,700,000, at a cost of approximately \$4,000.

Skamania County

Extensive enlargement of dirt rearing ponds and construction of concrete side walls were completed in 1960 at the Washougal hatchery at a cost of \$40,000.

MARINE FARMING AND STREAM IMPROVEMENT

Starting with the period of July, 1957, and continuing on, several new aspects of Fisheries have been directed by this Section. The main new innovation was and is to foster and expand the fish farming aspect to the existing fisheries programming.

The main activities of this section are listed as follows:

- I. Fish Farming (rearing of salmon in controlled natural water areas, fresh and salt).
- II. Direct, cultivate, and expand shellfish production on State reserves, public lands, and all beach areas.
- III. Institute a method of harvesting shellfish (clams) in deeper water areas; explore and chart areas of production.
- IV. Continue in advisory capacity on all fish facility requirements at formed obstructions to natural stream flows.
- V. Determine and handle the clearance of all natural stream obstructions hindering or preventing the passage of migratory anadromous fish.
- VI. Correlate activities of preparing and maintaining all minor fish passage facilities on streams in the State.
- VII. Handle investigations and determine provisions to protect fish on all hydraulic work requests and all water right requests in the State.
- VIII. Serve as fisheries' representatives to various organizations of the State, making use of or having effects on surface waters of the State.
- IX. Active participation on channel and diversion screening, primarily centered in Eastern Washington.

The actual activities may be referred to in various manners. The method followed is to indicate activities by counties, concluding with general projects and remarks. A separate listing of accomplishments on fish farms and proposed rearing areas is added.

<u>COUNTY</u>	<u>ACTIVITY</u>
ASOTIN	Renewed irrigation diversion screens. Howser Alpowa
BENTON	Renewed Kiona Irrigation diversion screen.
CHELAN	Irrigation diversion screens renewed - Entiat, Peshastin and Roundry. Technical meetings attended, plan approvals and fish facility requirements made on Rocky Reach Dam - Chelan County P.U.D.
CLALLAM	<ol style="list-style-type: none">1. Entirely new control section and screens (Clallam, Kline, Dungeness).2. Lake Creek cleared for passage to trap at Lake Pleasant.3. Cleaned out hatchery intake - <u>Dungeness Hatchery</u>.4. Log jams cleared <u>Clallam River</u>.5. Constructed repairs and alterations to fishway and dam at <u>Lake Pleasant</u>.
COLUMBIA	<ol style="list-style-type: none">1. Built new screen for Howard Irrigation Ditch.2. Constructed new fishway on the DeRue Dam, <u>Tucannon River</u>.
COWLITZ	<ol style="list-style-type: none">1. Cleaned hatchery intake - Lower Kalama River Hatchery.2. Debris cleared from <u>Fallert Creek</u>.3. Inspected and prepared plans for falls No's. 2,4,5. on Kalama River for upstream passage.4. <u>Toutle River System</u> - <u>Green River Falls</u> blasted for fish passage.
DOUGLAS	<ol style="list-style-type: none">1. Technical meetings - plan approvals and fish facility requirements made for wells dam project.
GRANT	<ol style="list-style-type: none">1. Technical meetings - plan approvals and fish facility requirements made for:<ol style="list-style-type: none">(1) Priest Rapids Dam(2) Wanapum Dam.
GRAYS HARBOR	<ol style="list-style-type: none">1. Technical meetings and preliminary fish facility requirements made on proposed Grays River Power Project.2. Two splash dams removed on <u>Hanson Creek</u>.3. Splash dam removed on <u>E. FK. Wishkah River</u>.4. Log jam removal was conducted on <u>Porter Creek</u>.5. Log jam removal was conducted at mouth of <u>Chenois Creek</u>.

- JEFFERSON
1. Log jam removed and a channel change - Big Quilcene River.
 2. Log jam removed from Thorndyke Creek.
 3. Cleaned hatchery intake - Hoodsport Hatchery.
 4. Debris cleared from stream near mouth of Dosewallips River.
- KING
1. Technical meetings attended. Water and fishery requirements, including technical stream charting made on Tolt River Dams - Water Supply - City of Seattle.
 2. An extensive channelization and stream clearance project was conducted through the swamp on Swamp Creek.
 3. Migrants salvaged from potholes during low flows on Swamp Creek and Raging River.
- KITSAP
1. Fish passage facilities prepared in culvert, Chico Creek.
- KITTITAS
1. Irrigation diversion screen section renewed.
 - a. Tandy & Gibbs
 - b. Tjossam
 - c. Icicle
 - d. Ellensburg Dam
 - e. Beck
 - f. Suvert
 - g. Grinod & Dougherty
- LEWIS
1. Prepared plans for blasting falls No. 2 on Scantigrease Creek.
 2. Technical meetings, plan approvals, fish facility designs made on:
 - (1) Cowlitz River Dams - City of Tacoma
 - (2) Lewis River Dam (Merwin) Pacific Power & Light.
- MASON
1. Big Beef Creek - fingerlings salvaged during low stream flows
 2. Sherwood Creek - this stream has been cleared twice, once with the assistance of an Olympia Salmon Club.
 3. Lake Erdman - outlet cleared of debris.
 4. Melbourne Lake - outlet cleared of debris.
 5. Technical meetings, plan considerations, and fishery requirements on stream flows made on Skokomish River Project, City of Tacoma.
- OKANOGAN
1. Irrigation diversion screens renewed.
 - a. Chewuck River
 - b. Twisp River
 - c. Twisp Airy
 - d. Skyline
 - e. Fulton
 2. Designed new fishway for Methow River Irrigation District.

- PACIFIC
1. Major log jam and splash dam removal on Naselle River and Savage Creek opening up 32 miles of stream for fish use.
 2. Falls blasted for passage - No. Fk. Naselle River & Alder Cree
- PIERCE
1. Blind stream screened off Muck Creek.
 2. Hylebos Creek cleared of debris and channelized.
 3. Muck Creek cleared of log and debris jams - channelization.
 4. Migrants salvaged from White River potholes during low stream flows.
 5. Cleared stream & hatchery intake on Voights Creek, Orting Hatchery.
- SKAGIT
1. Yearly clearance of debris and log jams on Samish River.
- SNOHOMISH
1. Lake Cavanaugh screen from Pilchuck Creek.
 2. A natural falls was blasted on S. Fk. Stillaquamish River to allow for fish passage at all stream flows.
 3. Technical meetings attended. Tentative plan approval and stream fishery requirements made on Sultan River Dams - City of Everett and Snohomish County P.U.D.
- WAHKIAKUM
1. Conducted stream survey for passage on Fossil Creek.
- WALLA WALLA
1. Irrigation diversion screens renewed -
 - a. Touchet Dam
 - b. Huntsville
 - c. Eastside - Westside
 - d. Lowden
 - e. Williams
 - f. Burlingame
- YAKIMA:
1. Constructed fishway on Pioneer water users dam Wenatchee River.
 2. Irrigation diversion screens renewed -

a. Columbia	g. Sinclair
b. Barclay & Union Gap	h. Selah - Moxee
c. Naches Screen	i. Fruitdale
d. Powell	j. Naches - Cowiche
e. Richartz	k. Glead
f. Hubbard	l. Taylor
 3. A stream survey and recommendations were made on American River to open more of the river for upstream spawning use.

CORPS OF ENGINEERS PROJECTS:

Technical inspections and recommendations made on Corps of Engineers Projects:

1. Snake River Projects
2. John Day Dam Operation
3. Bonneville Dam Operation
4. McNary Dam Operation
5. Dalles Dam Operation
6. Mud Mountain Dam Releases
7. Channel Dredging Projects
 - a. Columbia River
 - b. Snohomish River
 - c. Bellingham Harbor
 - d. Everett Harbor
 - e. Chehalis River
 - f. Duwamish Waterway

STATE OF IDAHO:

Technical meetings attended in consultation capacity on power dam projects in Idaho and on the Snake River and including Brownlee and Oxbow Dams as well as proposed Hells Canyon, Nez Perce and Imnaha projects.

MISCELLANEOUS ACTIVITIES:

1. Experimental project to count fish over dams by photography.
2. Fluctuating forebay - downstream migrant trap experiment.
3. Culvert baffle experiment and report.
4. Migrant downstream trap Merwin Dam- Design.
5. Artificial spawning channel - Baker River.
6. Dungeness River - flood control - irrigation and diking project.
7. Water chlorination - experiments - pollution.
8. Proposed dam sites, California & Terrel Creeks - fish report and water flow.
9. Soil Conservation Service Inspection Projects:
 - (1) Soar Creek
 - (2) French Creek
 - (3) Marshland Project
 - (4) Fifth Plain Creek

MISCELLANEOUS ACTIVITIES (cont.)

10. Electronic fish counter - Coweman River, installed.
11. Models for fairs - sports groups set up - screening model.
12. Muck Creek - Fort Lewis Project - stream management.
13. Tabulation (all fish counts yearly).
14. Observations on Indian Fishery - various areas including Columbia River.
15. Okanogan - Similkameen Dam - report on fish facilities.
16. Day Creek - survey and report - low flow requirements.
17. Upper Yakima River spawning survey for low flow stream requirements.
18. City of Bremerton - Union River - surveys - fish kill. Obtained \$8,000 damages.
19. Western Washington Reclamation Institute - membership meetings.
20. New shop building - Game & Fisheries jointly - Yakima.
21. City of Tacoma - Leach Creek Project - reports, surveys for protection from flood damages.
22. Pollution Control Commission meetings and reports.
23. Bumping River Project - report surveys - to Bureau of Reclamation.
24. Dosewallips River - data for low flow fishery requirements.
25. Skokomish River Report.
26. McNary spawning channel - design, survey and report.
27. City of Chehalis water supply - meetings for stream flow requirements.
28. Meetings and membership attendance with Washington State Flood Control Council.
29. Member in attendance on the Inter-departmental Technical Committee on Water Resources.
30. Assessed damages to Pacific Northwest Pipeline Corporation adverse to recommendations causing fish kill damages; collected over \$6,000.

The listings noted are the main projects of operation. The additional accomplishments on a more general basis have been:

1. To chart all public land areas in the Puget Sound and Straits to ascertain lower tideland and deep water stocks of clam supplies. The M/v Rhododendron has been obtained and outfitted, dredges have been perfected and an initial start has been made on this exploratory work. The areas and quantities of stocks will be started and determined this late fall and early winter 1960, and into 1961.
2. State oyster reserves are being managed to obtain a higher yield with the aim to produce sufficient seed stock to be able to supply seeding of all reserve areas, as well as public land areas.
3. A joint handling of approvals for hydraulic projects and water right applications is required by Legislative action. Joint handling is with the Department of Game. Approximately 600 hydraulic requests are handled annually and approximately 500 to 550 water right applications are handled annually.

Three and one-half years of operation resulted in 2100 hydraulic requests and around 1800 water right applications. These required investigations, considerations, and provisions to be followed to protect the fishery of the streams involved.

4. Yearly activities also include field inspection, cleaning, greasing, and minor repairs to over 300 different irrigation diversions and fish farm control screens. Since January, 1957 this has amounted to approximately 1000 to 1100 units. New construction during this period amounted to 30 complete new screen units and major repairs to 100 units.

Areas which have been developed as Fish Farm Areas are as follows:

Clallam County	Pleasant Lake	500 Acres	Fresh Water
Cowlitz County	Blue Creek	15 Acres	Fresh Water
Island County	Kennedy's Lagoon	11 Acres	Salt Water
Island County	Maylor Point	30 Acres	Salt Water
Jefferson County	Anderson Lake	60 Acres	Fresh Water
King County	Raabs Lagoon	9 Acres	Salt Water
Kitsap County	Keyport Lagoon	22 Acres	Salt Water
Kitsap County	Kingston Lagoon	11 Acres	Salt Water
Kittitas County	Cle Elum Pond	30 Acres	Fresh Water
Kittitas County	Easton Pond	12 Acres	Fresh Water
Mason County	Cranberry Lake	171 Acres	Fresh Water
Mason County	Erdman Lake	18 Acres	Fresh Water
Mason County	Melbourne Lake	35 Acres	Fresh Water
Mason County	Pricketts Lake	80 Acres	Fresh Water
Mason County	West Lake	54 Acres	Fresh Water
Pacific County	Black Lake	30 Acres	Fresh Water
Pacific County	Johnson Slough	10 Acres	Fresh Water
Pierce County	Sequalitchew Lake	78 Acres	Fresh Water
Pierce County	Titlow Lagoon	4 Acres	Salt Water
Pierce County	Titlow Park	2 Acres	Fresh Water
Skamania County	Greenleaf Slough	51 Acres	Fresh Water
Thurston County	Capitol Lake	300 Acres	Fresh Water
Thurston County	Silver Springs	5 Acres	Fresh Water

Areas which have been investigated and the preliminary plans which have been considered are as follows:

Clallam County	Elwha River	30 Acres 7 Acres	Fresh Water Fresh Water
Island County	Triangle Cove (Joe Eels Bay)	150 Acres	Salt Water
Jefferson County	Bywater Bay	50 Acres	Salt Water
King County	Whiteman's Cove	40 Acres	Salt Water
Kitsap County	Little Clam Bay	24 Acres	Salt Water
Pacific County	North River	13 Acres 15 Acres	Fresh Water Salt Water
Pierce County	Longs Lagoon (Anderson Island)	2 plus Acres 5 Acres	Fresh Water Salt Water
San Juan County	Fisherman's Bay (Lopez Island)	56 Acres	Salt Water
Thurston County	Ellis Cove	10 Acres	Salt Water
Thurston County	Silver Springs	5 Acres	Fresh Water
Thurston County	Upper Eld Inlet (Mud Bay)	90 or 150 Acres	Fresh Water
Whatcom County	Kendell Creek	35 Acres	Fresh Water

The total number of Fish Farm ponds developed to date are 23 areas. The total acreage involved is approximately 1500 surface acres in which the department has planted and reared over 25,000,000 salmon. The rearing is for the period up to downstream migrant size.