LOWER COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM

KLASKANINE RIVER AREA

OREGON

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KLASKANINE RIVER AREA

BASIN DESCRIPTION

Included in the Klaskanine River area are all Columbia River tributaries in Oregon downstream from Big Creek, such as Skipanon, Lewis and Clark, Youngs, Walluski, Klaskanine, and John Day rivers, and Mill, Marys, and Bear creeks.

Skipanon River (II-1) enters the Columbia at Warrenton, Oregon, about 5 miles above the mouth. The river has a total length of about 14 miles and drains from Cullaby Lake. Most of the stream passes through marshland, and only the lower 4 or 5 miles have a perceptible flow. The lower portion of the stream is often polluted by waste products from fish-rendering and processing plants. The stream is of no significant value to anadromous fish.

Lewis and Clark River (II-2) enters Youngs Bay 8 miles above the mouth of the Columbia River. The stream is about 25 miles long, of which the lower 6 miles is a tidal slough of no value. The stream rises on the south side of Saddle Mountain and drains an area of about 62 square miles. Much of the upper section of the stream is logged off. The lower 7.5-mile section above tidewater has a moderate gradient bordered by pasture land and brushy slopes, and has considerable good spawning area. The 6.5 miles above this section flows through a steep, narrow canyon and has little good gravel.

The town of Warrenton, Oregon, maintains a water-supply dam about 14 miles upstream that forms a barrier to fish at some water flows, although it does have a fish ladder. Above this dam the river again flows through an open valley with moderate stream gradient, and there is an abundance of good gravel. Flow records are lacking, and there are no tributaries of value. No improvements for this stream are proposed at present.

Youngs River (11-3) enters Youngs Bay about 10 miles above the mouth of the Columbia River. The stream, about 22 miles long, has a drainage area of 47 square miles. The lower 7- or 8-mile section of the river consists of a tidal slough which is of little value to salmon. An impassable 40-foot falls, which is scheduled for laddering under the Lower River Program, exists about 0.4 mile upstream from the head of tidewater. The area below the falls has a succession of excellent spawning riffles and at present supports small runs of chinook, chum, and silver salmon, and steelhead. Above the falls in logged-off hilly terrain the stream has a moderate gradient and excellent gravel for several miles. A dense marginal vegetation of cottonwoods and conifers exists, and a few farms border the stream in the upper sections.

Stream flow records are available for the periok of March 1916 to September 1917 at a site 3 miles above the crest of the Youngs River falls, for August 1927 to December 1933 at a site one mile upstream, and since January 1034 at a site 50 feet above the falls.

The extremes for the period 1927-47 show a maximum discharge of 6,300 second-feet on November 24, 1927, and a minimum of 3.7 second-feet on September 22, 1938.

No tributaries of importance enter Youngs River proper, although the Walluski River and the Klaskanine River enter Youngs Bay.

Walluski River (II-3-A) enters Youngs Bay about 3 miles above the Youngs Bay highway bridge at Astoria, Oregon. The stream is about 9.5 miles long, with a tidal slough comprising the lower 2.5 miles. The next 2.5 miles of stream has an average width of 15 feet and a bottom composed mostly of mud and sand with some limited spawning area. The upper section of the stream is smaller but contains some additional spawning area. Numerous log jams are found in this stream, some of which have been considered impassable at low-water stages. No improvements are scheduled for this stream at present.

Klaskanine River (II-3-B) enters Youngs Bay about 7 miles above the Youngs Bay highway bridge. The main stream extends for about 2 miles to the confluence of the North and South Forks; only the upper quarter mile of the main stream has suitable spawning area, the remainder being tidal slough.

North Fork of Klaskanine River (II-3-B-(1)) is about 9 miles long and has a width of 18 to 40 feet in the central portion and a moderate stream gradient From the mouth to the Oregon Fish Commission's Klaskanine Hatchery, about 2 miles upstream, there are many good spawning riffles. This is one of the hatcheries to be

expanded under the Lower River Program. A 9-foot dam is located at the hatchery and forms a partial block to migrating salmon. Above, the stream runs through a narrow valley bordered by rugged hills covered with good stands of second-growth timber. The marginal vegetation is fairly dense. Numerous log jams exist in the upper sections, and some are probably impassable at low-water stages. Barth Falls, about 5 feet high, located 4 miles above the hatchery dam, is a low-water barrier. Flow data on this stream are lacking.

North Fork of the North Fork of Klaskanine River (II-3-B(1)a) joins the North Fork just above the hatchery dam. It is about 6 miles long, as wide as 30 feet, and has a moderate to fairly steep gradient. The stream drains a narrow, brush-choked valley. Two small dams for the diversion of auxiliary water to the fish hatchery on the North Fork are located a short distance from the mouth. These dams are provided with stationary trash racks and are barriers to fish. In addition, there are numerous log jams and beaver dams that are either low-water or total barriers to fish.

South Fork of Klaskanine River (II-3-B-(2)) is about 12 miles long, and at the mouth, about 50 feet wide. The gradient is moderate over most of the course, increasing steeply in the upper section. There is a large amount of excellent spawning area in the lower 6 miles below an impassable 20-foot falls. Above the falls there is additional suitable spawning area. There are some log jams in the stream, but all are believed passable at high-water stages.

In addition to the high falls, there are several other falls that are passable with more or less difficulty, depending on the water stage. An 8-foot falls is located about 5 miles above the mouth, another, 6 feet in height, is located 300 yards farther upstream, and an 8-foot falls that is a barrier at low water is located 8.5 miles upstream. No improvements other than the hatchery expansion are scheduled for the Klaskanine at present.

Mill Creek (II-4) is a small stream entering the Columbia River about 14 miles above the mouth, just above Astoria. The stream is about 2 miles long with practically no gradient and a bottom composed mostly of mud and sand, but with some spawning gravel. Several beaver dams throughout its course may form barriers at low water. Records indicate flows as low as 0.1 second-foot. The stream is of little actual or potential value to salmonoids.

John Day River (II-5) enters the Columbia River about 15 miles above the mouth. The stream has a length of about 5 miles, of which the lower 3 miles is a tidal slough. About one-half mile below the upper end of the slough the channel is crossed by an earth dike about 8 feet high equipped with a tide gate. It is difficult for salmon to pass upstream through this gate to obtain access to several small spring-fed branches above the slough area that contain a small amount of spawning area. The stream is of only slight actual or potential value to salmonoids.

Marys Creek (II-6) enters the Columbia River about 19 miles

above the mouth through Svenson Slough. It is a small, mud-bottom stream about 3 miles in length, and is of no significant value to salmon.

Bear Creek (II-7) enters the Columbia about 19 miles above the mouth through Svenson Slough. The stream is about 7.5 miles long, of which the lower mile is tidal slough. The gradient is moderate, and there are numerous spawning riffles and an abundance of good resting pools. The marginal vegetation is dense and composed of willow, alder, and maple. The stream valley is about one-half mile wide and cultivated in hay, fruit, and pasturage. The surrounding low, rolling hills have been cut over and now have a covering of brush, alder, and second-growth conifers. A 6-foot falls about 3 miles upstream forms a low-water barrier. An impassable 50-foot high dam and diversion for the city of Astoria domestic water supply is located about 5 miles upstream. There are several beaver dams and log jams below the reservoir dam that are possibly low-water barriers. Miscellaneous discharge records indicate summer flows of only one or two second-feet.

Bear Creek and its tributary, Little Bear Creek, support a considerable run of silver salmon.

ECONOMIC DEVELOPMENT

Close proximity of the streams of this area to the early established city of Astoria, Oregon, accounts in part for the rapid harvesting of the readily available timber resources. Promiscuous

timber removal during early logging operations, coupled with several serious and wide-spread fires, removed much of the once dense cover of coniferous growth. An extensive tree-planting program to hasten the recovery of the area is now being pursued by private and state agencies. Logging is continuing in some parts of the area.

Much of the continued prosperity of the area is attributed to the important fishing industry, both sport and commercial, which centers around Astoria, a city of 10,400 people. Fishing boats and gear, processing plants, and many dependent industries make the city of Astoria of major importance among the cities of the West Coast.

Dairying is of some small importance locally in the flat areas at the mouths of the major streams. There are no hydroelectric power plants located on any of the streams in this sub-basin nor are any contemplated for the near future. A 12-foot dam, located on Lewis and Clark River, provides water for the city of Warrenton, and a 50-foot dam on Bear Creek provides water for Astoria.

PRESENT FISHERY STATUS AND CONTEMPLATED RESULTS FROM PROGRAM

Although the Klaskanine River area actually consists of several streams and watersheds, for convenience in evaluation they have been combined as in Table 1.

Chinook Salmon.

A total of 1,300 fall chinook salmon comprises the present spawning escapement in the rivers included in the Klaskanine River area. Since low water during the time of spawning is a limiting factor, the only increase in these runs as a result of the Lower

River Program will be from Klaskanine Hatchery production. It is estimated that this increase will be in the neighborhood of 700 fish, for a total escapement of 2,000 fall chinook.

The present commercial yield is estimated to be 55,400 pounds and the present yield to the lower Columbia sport fishery 4,700 pounds annually. After improvements, the expected yield will be 85,200 pounds and 7,200 pounds respectively for commercial and sport fisheries, resulting in an increased commercial value of $11,300 and sports value of $4,400 annually.

Silver Salmon.

The present annual spawning escapement of silver salmon including those taken by the Klaskanine Hatchery, is estimated to be 6,200 fish. The annual contribution to the commercial fisheries is estimated at 241,600 pounds.

On completion of the projects scheduled under the Lower River Program, the annual escapement will be increased to an estimated 12,000 silver salmon and the annual commercial yield to 467,500 pounds of fish worth $177,700.

Chum Salmon.

The annual spawning escapement of chum salmon in the Klaskanine River area is estimated to be 1,600 fish, and the present annual chum yield is estimated to be 52,800 pounds worth $16,900. As in the case of chinook salmon, no benefits to the chum run are in prospect as a result of the Lower River Program, since chum salmon spawn in the lower reaches of the streams which will not be

affected by improvements.

Steelhead.

The present steelhead run into the rivers comprising the Klaskanine River area is estimated to be 4,200 fish. Steelhead currently contribute 5,400 pounds annually to the commercial fishery and 1,600 pounds to the sport fishery. It is believed that the escapement after improvements should increase to 5,000 fish. This increased escapement will result in an additional annual yield to the sport and commercial fisheries of $500, each.

FISHERY PROGRAM

With the exception of construction of a stream gaging station, none of the proposed improvements to the Klaskanine River area under the Lower River Program have been accomplished as yet.

In former years, the Klaskanine Hatchery has racked the South Fork of the Klaskanine River as well as the North Fork in order to insure an adequate egg take for the hatchery. This situation has been changed, and part of the anadromous fish runs now ascend the South Fork which has several miles of excellent spawning and rearing facilities. The planting of silver and chinook fingerlings in this tributary should restore this fine stream to a high level of productivity.

Hatchery plantings are being made in the headwaters of the North Fork of the Klaskanine, South Fork of the Klaskanine, Youngs River, and Lewis and Clark River. These plantings should

result in a high survival rate of the fingerlings, hence an increased spawning escapement.

The cost of stream improvement above the proposed Youngs Falls ladder will be $5,000, the laddering of Youngs Falls $94,000, the remodeling of the Klaskanine Hatchery $310,000, and construction of a gaging station $2,100; these capital costs total $411,100.

Annual improvement costs of the entire Klaskanine River area will total $56,684 for the following: operation and maintenance of Youngs Falls ladder and the gaging station, biological surveys, and hatchery costs required to produce 3,000,000 fall chinook and 5,250,000 silver salmon for annual planting. Capital costs have been included in the above figure ($56,684) by prorating them at 4 percent in order to distribute them on an annual basis for comparison.

The cost-benefit ratio based on total expected annual benefits and total annual costs will be 1:1.81.

Two new hatchery installations have been proposed for construction in the Klaskanine River area, but until further studies have been made they will not be included with present recommended improvements. These hatcheries are tentatively to be located on the Lewis and Clark River and on Youngs River.

Table 1. Summary of improvements accomplished and recommended on Klaskanine River area, Oregon.

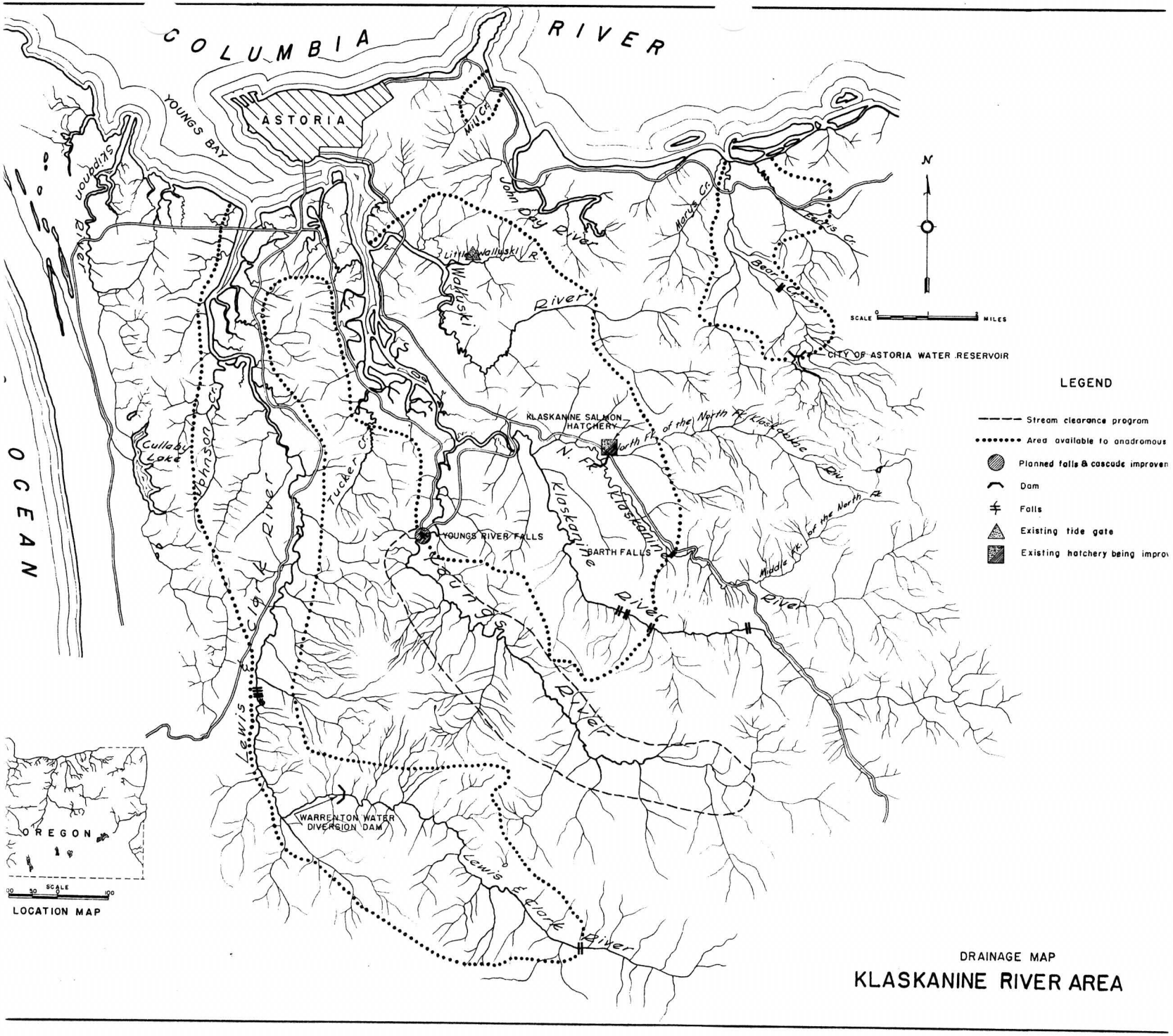
Species	Present Spawning Escapmnt.	Present Yield (lbs.)	Expected Escapmnt after Improvmnts.	Expected Yield to Fishery after Improvements Pounds	Dollars	Increase in Annual Yield to Fishery after Improvements
Chinook (Com'l)	1,300	55,400	2,000	85,200	32,400	11,300
(Sport)		4,700		7,200	12,600	4,400
Silver	6,200	241,600	12,000	467,500	177,700	85,900
Chum	1,600	52,800	1,600	52,800	16,900	0
Steelhead (Com'l)	4,200	5,400	5,000	6,400	2,900	500
(Sport)		1,600		1,900	3,300	500
						102,600

Improvements Project	Costs
Klaskanine Hatchery	310,000
Stream Gaging Station	2,100
Youngs Falls Ladder	94,000
Stream Clearance Youngs River	5,000
Total Capital Costs	411,100

Annual Maintenance Costs	
O & M Youngs Falls Ldr.	1,000
Maintenance of Gaging Sta.	700
Biological Surveys	2,000
Rearing Silver & Chinook fing. for planting 1/	48,940
Total Annual O & M	52,640
Capital costs other than hatchery prorated at 4% annually	4,044
Total annual costs	56,684
Estimated annual benefits	102,600

Cost-benefit ratio = 1:1.81

1/ Capital cost of hatchery construction prorated at 4% annually ($12,400) and increased annual operation and maintenance ($36,540) have been included in cost of rearing.



DRAINAGE MAP

KLASKANINE RIVER AREA