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The Sea-Run Cutthroat Trout Resource and Sport Fishery

PERCY WASHINGTON

INTRODUCTION

No doubt, the cutthroat trout, *Salmo clarki,* was well represented in the creel of the first angler/settler in the Pacific Northwest. The sea-run cutthroat is available to anglers through most of the year—either in fresh water or in marine estuaries (commonly called "salt-chuck" by Pacific Northwest anglers). The written record of the fishery is sketchy. However, the cutthroat or "harvest trout" season is about as much of a traditional fishery as can be found anywhere. Harvest trout is a local name for modest sized trout that return during the late summer and fall months in sizable schools, coinciding roughly with crop harvests.

Puget Sound angler proudly displays a fine sea-run cutthroat trout. (Photo courtesy of the *Seattle Times.*)

Cutthroat trout, while not attracting the attention that the larger chinook salmon, *Oncorhynchus tshawytscha;* coho salmon, *O. kisutch;* and steelhead trout, *S. gairdneri;* do, is probably the third most popular marine gamefish in the Pacific Northwest, behind coho and chinook, since steelhead are primarily caught in rivers. In Oregon's coastal rivers and estuaries, cutthroat trout are highly prized and heavily fished by anglers using techniques varying from fly casting to worms. In Washington, anglers also use a wide variety of techniques, but a greater amount of secrecy (compared with Oregon anglers) surrounds many of their activities.

LIFE HISTORY AND STATUS OF POPULATION

The sea-run (anadromous) cutthroat trout is found from northern California (DeWitt, 1954) to Prince William Sound, Alaska, in most fresh waters with access to the sea, in estuaries and bays, and in coastal waters. As with other anadromous salmonids—i.e. salmon, trout, and char—the sea-run cutthroat usually returns to its river of origin to spawn (Gieger, 1972).

In the spawning act, the mature female digs a redd in gravel with her tail and deposits eggs, which are immediately fertilized by attendant male(s). After each spawning act, the female covers the eggs as she moves upstream and digs another redd, pushing gravel back over the original redd, providing a redd for the next group of extruded eggs. The eggs incubate in the gravel for a period, dependent on water temperature. Upon hatching, the light-sensitive larvae move further down into the gravel to complete development. With the completion of yolk sac absorption, the "fry" emerge and commence feeding on various small aquatic life forms.

Percy Washington is with the Resource Ecology and Fisheries Management Department, Northwest and Alaska Fisheries Center, National Marine Fisheries Service, NOAA, 2725 Montlake Boulevard East, Seattle, WA 98112.

Table 1.—Age and number of previous spawnings of sea-run cutthroat trout taken at Sand Creek, Oreg., 1946-49 (Sumner, 1962).

Age in years	Number of annuli on scale		Number of previous spawnings			No. of fish	Percent of total	Fork length (mm)[1]
	Freshwater	Ocean	1	2	3			
2	1	1	—	—	—	1	0.26	(404)
3	2	1	—	—	—	11	2.93	323
4	2	2	12	—	—	12	3.19	386
	3	1	—	—	—	111	29.53	328
5	2	3	—	1	—	1	0.26	(417)
	3	2	50	—	—	52	13.85	373
	4	1	—	—	—	106	28.20	333
6	3	3	—	11	—	11	2.93	411
	4	2	35	—	—	36	9.58	368
	5	1	—	—	—	24	6.38	335
7	4	3	—	4	—	4	1.06	422
	5	2	3	—	—	3	0.79	373
	6	1	—	—	—	1	0.26	(343)
8	5	3	—	1	—	1	0.26	(409)
9	5	4	—	—	1	1	0.26	(422)
10	6	4	—	—	1	1	0.26	(429)
Total			100	17	2	376	100.0	
Percent of total			26.6	4.5	0.5	—	31.6	

[1]Average fork length is listed for each age group that has two or more fish.

Table 2.—Age-length relations of seaward migrant cutthroat trout taken at Petersburg Creek, Alaska, 1971 (Jones, 1972).

Fork length (mm)	Age (no. of annuli on scale)[1]					% of total
	3	4	5	6	Total	
141-160	1	—	—	—	1	4.8
161-180	—	—	—	—	0	0.0
181-200	1	—	—	—	1	4.8
201-220	—	1	1	—	2	9.5
221-240	—	4	3	—	7	33.3
241-260	—	1	1	—	2	9.5
261-280	—	—	5	1	6	28.6
281-300	—	—	1	—	1	4.8
301-320	—	—	—	1	1	4.8
Total	2	6	11	2	21	—
Percent of total	9.5	28.6	52.4	9.5	—	100.0
Avg. length (mm)	169	233	253	284	—	—

[1]Includes annuli formed at sea as well as in freshwater.

Table 3.—Age-length relations of the spawning migration of sea-run cutthroat trout taken at Petersburg Creek, Alaska, 1971 (Jones, 1972).

Fork length (mm)	Age (no. of annuli on scale)[1]							Percent of total
	3	4	5	6	7	8	Total	
141-160	1	—	—	—	—	—	1	1.3
161-180	3	1	—	—	—	—	4	5.3
181-200	2	5	—	—	—	—	7	9.2
201-220	3	6	—	—	—	—	9	11.8
221-240	—	6	2	—	—	—	8	10.5
241-260	—	9	1	—	—	—	10	13.2
261-280	—	6	4	—	—	—	10	13.2
281-300	—	1	2	—	—	—	3	3.9
301-320	—	—	6	2	—	1	9	11.8
321-340	—	1	3	1	1	—	6	7.9
341-360	—	1	1	—	—	1	3	3.9
361-380	—	—	—	3	—	—	3	3.9
381-400	—	—	1	—	1	—	2	2.6
401-420	—	—	—	—	1	—	1	1.3
Total	9	36	20	6	3	2	76	—
Percent of total	11.8	47.4	26.4	7.9	3.9	2.6	—	100
Avg. length (mm)	187	242	289	342	365	318	—	—

[1]Includes annuli formed at sea as well as in freshwater.

The sea-run cutthroat spends the first years of its life in fresh water, migrating then to inshore marine areas, usually near the home stream (Gieger, 1972). At maturity (normally no earlier than age 2 for males and age 3 for females), the fish ascend their stream of origin to spawn. A high percentage of cutthroat trout are multiple spawners. The freshwater and marine life histories of cutthroat trout vary within and among populations (Armstrong, 1971; Gieger, 1972; Jones, 1972; and Sumner, 1962) and seem directly related to growth rates of individuals. Presented in Tables 1-4 is information on age and growth of Oregon and Alaskan fish; life history data elsewhere in the sea-run cutthroat's range are sparse or lacking.

The sea-run cutthroat trout numbers only a small fraction of most of the other anadromous salmonids of the Pacific Northwest and is on a downward trend. Compared with Pacific salmon and steelhead trout, relatively little has been done to increase the cutthroat trout population through artificial propagation. However, major concentrations still exist in areas where human population pressures have not affected habitat or given rise to overharvesting of natural stocks.

Figures on the total catch of sea-run cutthroat trout and on fishing effort by anglers have not been published. While some studies and creel censuses have been made, data are fragmented and

Table 4.—Age-length relations of seaward migrant cutthroat trout taken at Eva Lake, Alaska, May and June 1964 (Armstrong, 1971).

Fork length (mm)[1]	Age (no. of annuli on scale)[1]									Percent of total
	3	4	5	6	7	8	9	10	Total	
121-140	1	—	1	—	—	—	—	—	2	1.0
141-160	—	—	—	—	—	—	—	—	0	0.0
161-180	—	1	—	—	—	—	—	—	1	0.5
181-200	2	6	—	—	—	—	—	—	8	4.1
201-220	—	8	3	1	—	—	—	—	12	6.1
221-240	1	5	8	2	—	—	—	—	16	8.2
241-260	—	4	16	4	—	—	—	—	24	12.3
261-280	—	—	5	5	7	1	—	—	18	9.2
281-300	—	—	1	10	17	1	—	—	29	14.8
301-320	—	—	2	16	12	1	—	1	32	16.3
321-340	—	—	—	11	15	—	—	1	27	13.8
341-360	—	—	—	7	4	2	1	—	14	7.1
361-380	—	—	—	3	3	3	—	—	9	4.6
381-400	—	—	—	—	2	2	—	—	4	2.0
Total	4	24	36	59	60	10	1	2	196	100.0
Percent of total	2.0	12.2	18.4	30.1	30.6	5.1	0.5	1.0	—	99.0
Fork length[2]	185	216	247	306	307	345	352	319	—	—

[1]Includes annuli formed at sea as well as in freshwater.
[2]Average fork length is listed for each age group that has two or more fish.

A father and son show off their prize. Sea-run cutthroat trout like this one produce thousands of hours of angling pleasure in the Pacific Northwest. (Photo courtesy of the *Seattle Times*.)

sketchy because records of the catch of sea-run cutthroat trout are not kept by fishery agencies, as is the case with steelhead trout and Pacific salmon.

ANGLING TECHNIQUES

At some place or another, there's a sea-run cutthroat trout waiting to take a fly or a lure at any time of the year. From late summer through winter, cutthroat generally can be found in some freshwater system. After spawning in winter, the sea-run cutthroat trout return to estuaries in spring, where they are available from the spring through the fall months.

A variety of approaches are successfully employed to capture sea-run cutthroat trout (Johnson, 1971). Included are trolling, fly casting, bait casting, and "spinning" (spin casting) from skiffs and shore in rivers, lakes, ponds, and inshore waters. Fly fishermen employ a wide variety of wet flies, which are generally attractor patterns—large and gaudy in color. Flies tied on size 4-10 hooks are most common, with colors like "hot" orange, bright reds, and yellows. Favored materials are dyed polar bear hair and bucktail wings with bright chenille or tinsel bodies. Hundreds of patterns have been developed and popular cutthroat trout fly patterns are listed here (Johnson, 1971).

Fly	Sizes
Black/gnat bucktail	4-12
Cutthroat bucktail	4-8
Pink shrimp	4-6
Conway special	4-8
Spruce fly	4-8
Kalama special	4-10
Knudsen's spider	4-10
Grayhackle-yellow	4-12
Muddler minnow	4-12 (X or 4X long)
Grayhackle-peacock	4-16
McGinty	6
Silver demon	6-8
Silver spruce	6-8
Skagit minnow	6-8
Royal coachman bucktail	6-10

Lures for cutthroat fall into a few basic groupings which include spoons, spinners, plugs, and bobbers; these are presented with casting, spinning, or fly rods and reels.

An unlimited assortment of baits exists. Most popular are salmon eggs and worms; however, everything from grasshoppers to Pacific sand lance, *Ammodytes hexapterus*, are cutthroat trout food items and can be presented with casting, spinning, or fly equipment.

Strategies and tactics vary with setting in sea-run cutthroat trout fishing. There are as many ways to fish cutthroat trout as there are places to find them. Certainly casting lures or flies to cruising schools of cutthroat trout in fresh or salt water is one of the more popular and productive methods. Generally, as long as the angler can maintain contact with a school, the bite is on. This strategy is executed from a boat or the shore. In large bodies of waters when fish are scattered, trolling is a popular method of locating them. While some anglers prefer a line of spinners (or "pop" gear) placed in front of a bait or lure, just trolling a fly or a small plug will often attract the sea-run cutthroat trout. Another method involves drift fishing—wading or by skiff.

Cutthroat trout seem to have definite preferences in terms of habitat. In rivers they like backwaters, sloughs, and slow water with plenty of adequate cover (log jams, foliage overhangs, etc.).

In marine waters, they feed in shallow estuaries, over gravel beaches, and in or near "saltchucks" during high tide periods.

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