

RICKREALL CREEK SYSTEM

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## INTRODUCTION

Rickreall Creek is a small tributary entering the Willamette River from the left <sup>1/</sup> (Figure 91). The stream originates on the east slope of the Coast Range and flows 30 miles to join the Willamette River 89 miles above the mouth of the latter and 4 miles upstream from the Oregon Highway 22 bridge at Salem. It has no large tributaries and drains an area of 106 square miles. Low summer flows in this stream appear to provide unfavorable habitat for anadromous salmonids in the lower 12 miles or more. Small numbers of cutthroat and steelhead trout and silver salmon may utilize the spawning area found throughout much of the stream. Trash fish common to the Willamette River system are found in Rickreall Creek.

### Stream Surveys - Dates and Areas

The lower 12 miles of Rickreall Creek below the town of Dallas were surveyed by OFC personnel in May 1959. The adjoining 12 miles upstream had been previously surveyed in August 1953. Surveys were made of the South Fork for 1 mile above the mouth and the main stem 2 miles below and 1 mile above the South Fork in September 1957.

### Survey Data

**Basin:** The lower 12-mile section of stream flows through flat farmland. Oaks, alders, willows and brush are generally dense along the banks. The upper portion of the stream flows through a narrow valley bordered by steep, logged-off hills.

**Stream:** Gradient is slight in the lower 7 miles, slight to moderate to the South Fork, and moderate to steep above the South Fork. Good shading is provided by trees and brush throughout the length of the stream.

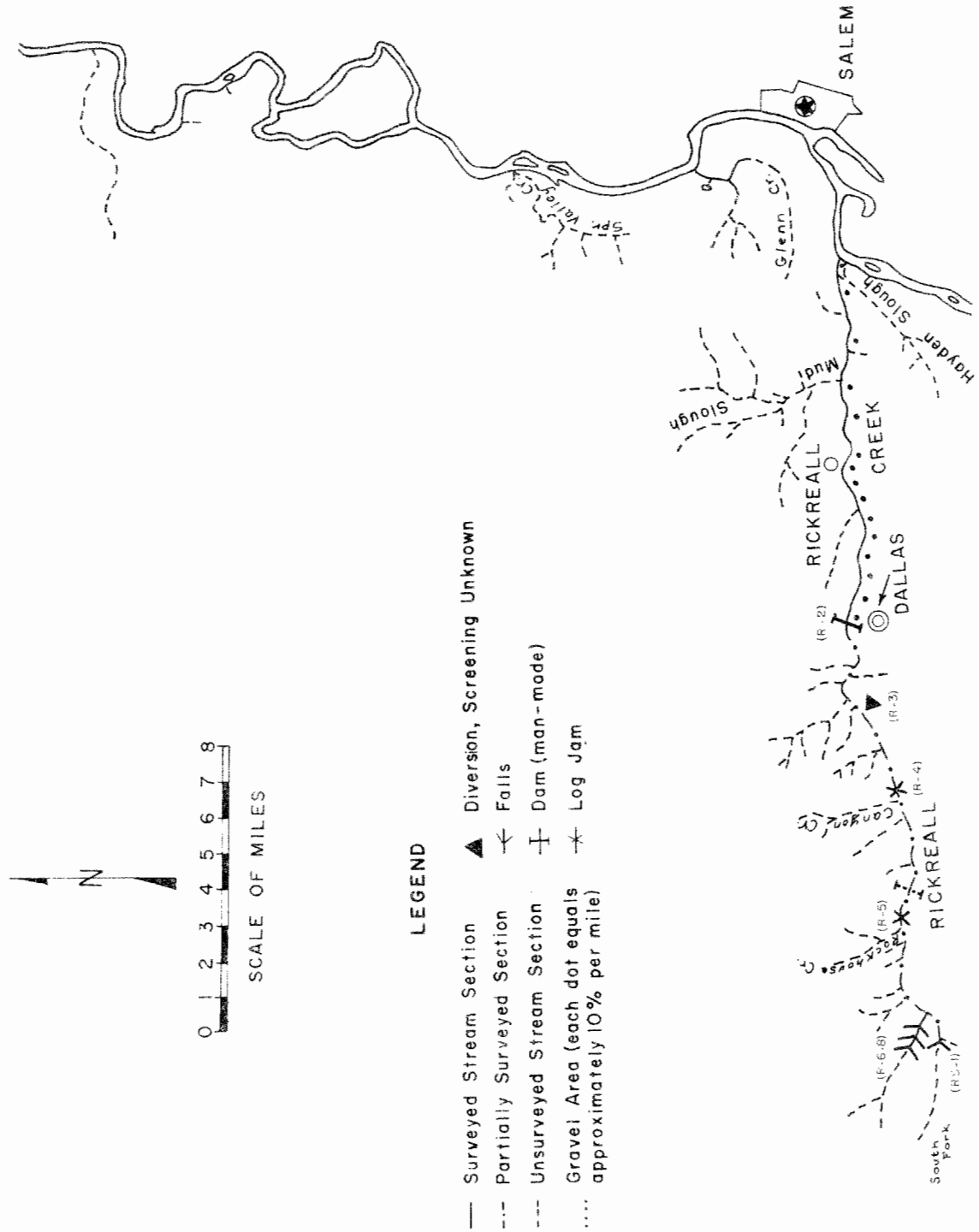
**Bottom Material:** Gravel and bedrock predominate as the bottom material in Rickreall Creek. Walnut- to baseball-size gravel provides good spawning area in the 12 miles below Dallas. Ideal spawning gravel is found in good supply from Dallas to the confluence of Rockhouse Creek. Spawning area in the upper reaches of the stream above Rockhouse Creek is extremely limited.

**Obstructions, Diversions, and Pollution Problems:** There are about 25 active water-use permits, but no obstructions in the 12 miles of stream between Dallas and the mouth. Water taken from the stream under these permits is drawn largely by pumps. It has been reported that 75 per cent of the stream flow (the total flow was less than 4 c.f.s. on August 4, 1953) below the city of Dallas in the late summer was discharge from that city's sewage treatment plant (R-1).

A survey of August 4, 1953, disclosed a 6-foot-high, laddered dam (R-2) which formed a public swimming pool at the Dallas City Park. Also, two log jams between Dallas and Rockhouse Creek were observed during this survey. Both jams appeared impassable at that time. One jam (R-3) consisted of logs and trash piled up against a logging road bridge and the other (R-4) was caused by logs piled up against the remnants of an old splash dam. Observed again on September 17, 1957, the remnants of the splash dam had created a 6-foot falls that was thought to be difficult but passable.

Two sloping, 5- to 6-foot falls (R-6-7), another 6-foot falls (R-8) with a channel around it, and several log jams were found in the 1-mile section of the

<sup>1/</sup> Facing downstream



**FIGURE 91. RICKREALL CREEK SYSTEM AND ADJACENT TRIBUTARIES**

main stem above the South Fork in 1957. All were of questionable passability to anadromous fish. There are about five active water-use permits in the area above Dallas. The city of Dallas has water rights for 4.75 c.f.s. which it takes from Rickreall Creek 3 miles above Dallas.

**Impoundment and Hatchery Sites:** Low summer flows preclude utilization of this stream for hatchery purposes. There may be potential impoundment sites in the system, but none were investigated.

**Temperature and Flow Data:** Records are available from a newly-established gaging station situated 3.5 miles above Dallas for August 14 through September 30, 1957. Maximum discharge for that period was 8.8 c.f.s. on August 14 and the minimum discharge was 4.0 c.f.s. Mean discharge was 5.2 c.f.s. (USGS, 1957). The foregoing figures include the Dallas municipal water supply diversion, which can take 4.75 c.f.s. under its water-use permit. The maximum water temperature recorded by OFC personnel was 70° F. at a location 4.5 miles above the mouth on July 28, 1953. The estimated flow at this location was 8 c.f.s. Other temperatures and estimated flows taken by OFC personnel in 1953 and 1959 are shown in Table 81.

**Tributaries:** Rickreall Creek has no large tributaries.

The city of Dallas has water rights to the entire flow of 3-mile-long Canyon Creek which enters Rickreall Creek from the left 7 miles above Dallas.

The South Fork, 4 miles long, enters Rickreall Creek some 14 miles above the city of Dallas. It was surveyed from the mouth upstream one mile to a 12- to 15-foot-high falls (RS-1). There is only about 2 miles of stream above this falls and it is very small.

#### Anadromous Fish Populations

Small numbers of steelhead and cutthroat trout and silver salmon have been reported in Rickreall Creek, but this has not been confirmed. Chinook salmon are not known to utilize this system.

#### Major Proposed Water-Use Projects

A 50-foot-high water storage dam has been under consideration by the City of Dallas for construction on upper Rickreall Creek about 10 miles above Dallas. The purpose of this dam would be to provide a year-long supply of domestic water for the City of Dallas and possibly to increase summer flows in lower Rickreall Creek.

Another possible future project is the construction by the USCE of a flood control, irrigation, and pollution abatement dam 16.6 miles above the mouth on the main stem (USCE, 1958). This location is about 7 miles downstream from the other 50-foot proposed dam.

#### DISCUSSION AND RECOMMENDATION

Good spawning gravel is available from the confluence of Rockhouse Creek to the mouth of Rickreall Creek but low summer flows, pollution from sewage, and probably high water temperatures, hamper the use of this stream section for salmonid spawning or rearing purposes. The upper reaches of Rickreall Creek provide very little area for anadromous salmonids because of sparse spawning gravel and numerous obstructions.

Should the Dallas water storage dam be built, passage would be blocked only to the relatively unproductive area in the upper portion of the stream. The tentative site of a USCE dam is about 7 miles farther downstream. If either of these dams could provide adequate summer flows to alleviate conditions of pollution and high summer water temperature, Rickreall Creek would have good spawning and rearing potential for steelhead and silver salmon.

Log jams and other obstructions in the headwater streams probably do not warrant correction at this time and most of them are above proposed dam sites on the stream. It is recommended that any large dam constructed on this stream include the provision for increased minimum flows downstream for the benefit of fish life between the project and the mouth of Rickreall Creek.

Table 81. Miscellaneous Temperatures and Estimated Flow Data for Rickreall Creek and Tributaries, 1953 and 1959.

Stream	Miles Above Mouth	Location	Date	Time		Flow in c.f.s.	Temp. in °F.	
				a.m.	p.m.		Water	Air
Rickreall Cr.	0.2		5-19-59		5:30	45	54	61
	6.5	At Rickreall	5-19-59	11:30		35	50	57
	12.0	At Dallas	5-18-59	11:50		20	56	66
	6.5	At Rickreall	5-18-59		2:45	20	55	56
	0.1		7-28-53		12:25	7	66	70
	3.0		7-28-53		1:25	6-7	68	68
	4.5		7-28-53		2:25	8	70	80
	15.0		8-4-53		12:45	12	60	70
	26.0		8-4-53		2:10	3	55	67
	Unnamed Left Trib.	0	At the mouth	8-4-53		12:45	2	58
South Fork	0	Just above Mouth	8-4-53		2:05	3	55	67