

NORTH LEWIS RIVER WILD STOCK FALL CHINOOK TAGGING AND
POST TAGGING RECAPTURE PROJECT, 1987
PROGRESS REPORT NO. 88-13

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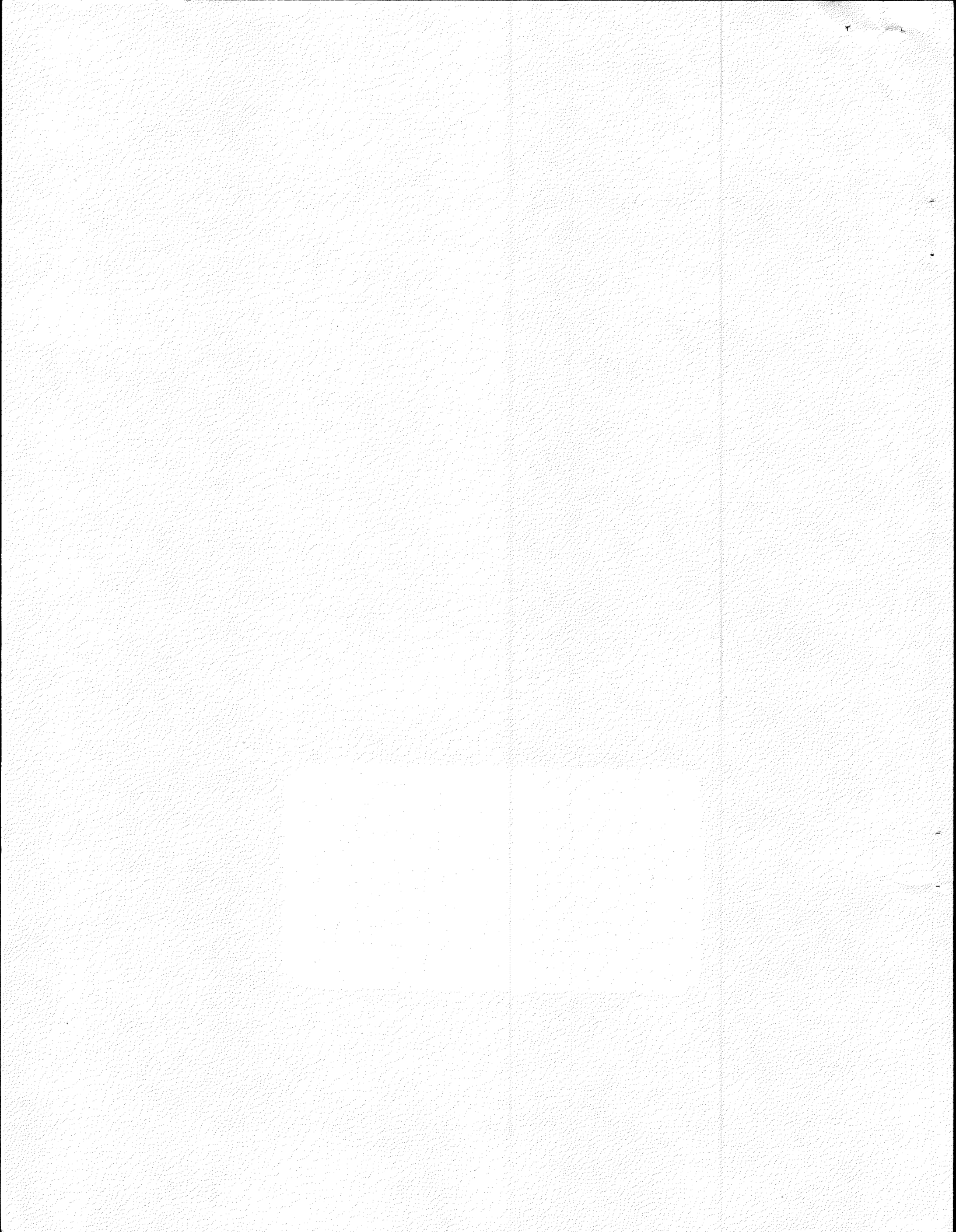
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Ron Roler
May, 1988



Introduction

Fall chinook which spawn naturally in the North Lewis River comprise about 85 percent of the total Lower Columbia River Wild (LRW) stock production, with escapements ranging from about 4,200-21,700 (Table 1). The LRW stock is one of four fall chinook management units on the Columbia River.

In an effort to obtain life history information on the wild fall chinook inhabiting the North Lewis River, a prototype tagging study was initiated in 1977 (McIsaac, 1977) and more complete projects were conducted in 1978 (McIsaac, 1980), 1979 (McIsaac, 1980), and 1980 (McIsaac, 1981). The tagging study was resumed in 1983 (Norman, 1984) and continued in 1984 (Norman, 1985), 1985 (Norman, 1986), and 1986 (Roler, 1987). This report documents data pertinent to two studies, one involving the capture, marking, and tagging of juvenile fall chinook in 1987, and another involving the capture of juvenile fall chinook on the North Lewis River during the post-tagging period in 1987. Information yielded by these studies is currently used for Pacific Salmon Treaty ocean and in-river harvest indexing, pre-smolt population estimates, Hydroelectric - anadromous fish management policy development, trout hatchery impact analysis, and in the Columbia River fall chinook run prediction database.

MARKING AND TAGGING

Methods

The zero age chinook were captured in eight seining days from June 2-10, 1987. The seining locations are shown by reference number ascending from Merwin Dam downstream to Woodland in Figure 1, a map of the North Lewis study area. As in previous years, stick seines (21 feet long with 2 foot bags, constructed of one-fourth inch bobbnet) were used for capturing the juveniles with the exception of June 4 and 5, when a 100 foot beach seine was also used. Methods of capture and transport described in the 1983 and 1984 reports were applied in 1987.

The captured salmonids were processed in a five station WDF tagging trailer located at the Lewis River Salmon Hatchery. The criteria for a minimum tagging size of 47 mm, established in 1983, was continued in 1987. Since 1983, chinook were uniquely tagged according to size (small fish one code, large fish another code). In 1986, this approach was abandoned and a replicate study design was used. This was continued in 1987 using tag codes 63-41/51 and 63-41/53 (Table 2).

Periodic samples of tagged fish (combined codes) were removed daily and held in a floating live pen overnight to measure immediate mortality and tag shed. An additional 835 marked and tagged chinook, from daily samples throughout the tagging period, were held for 22 to 29 days to measure long term tag shed. The long term tag shed data was used to estimate effective tag output. Species samples of culled fish were taken daily, as were the fork lengths of undersized chinook.

Several times throughout the work day, the tagged chinook,

