

NORTH RIVER SALMON COUNTING TOWER

1974

(From AYK Area Arctic Anadromous Fish Investigations)
Technical Report for July 1, 1974 to June 30, 1975

Paul Cunningham

Alaska Department of Fish and Game
Division of Commercial Fisheries
Anchorage, Alaska

NS/K
Esc #12

1974 Season

INTRODUCTION

A salmon tagging project near Unalakleet and a counting tower on a Unalakleet River tributary, the North River, completed a third season of operation in 1974 (Figure 20). Additionally, a salmon tagging project was initiated on the Noatak River of Kotzebue Sound (Figure 21). As a result of a storm that struck the Bering Sea coast and the Nome area on November 11 and 12, 1974, the salmon tagging data was destroyed in a subsequent flood.

OBJECTIVES

Norton Sound - Unalakleet River

1. Develop indices of king, pink and chum salmon run abundance.
2. Obtain daily and seasonal timing of salmon escapements into the North River.
3. Obtain estimates of king, pink and chum salmon spawning populations of the Unalakleet River.
4. Determine feasibility of assessing age composition of king salmon escapements by visual length categorization.
5. Obtain age, sex and length information of chum and king salmon commercial harvest.

Kotzebue - Noatak River

1. Determine seasonal timing of the chum salmon run to the Noatak River.
2. Determine spawning distribution and abundance of chum salmon.
3. Determine age, sex, size and fecundity of chum salmon spawners.
4. Determine and describe physical and chemical properties of selected chum salmon spawning areas.

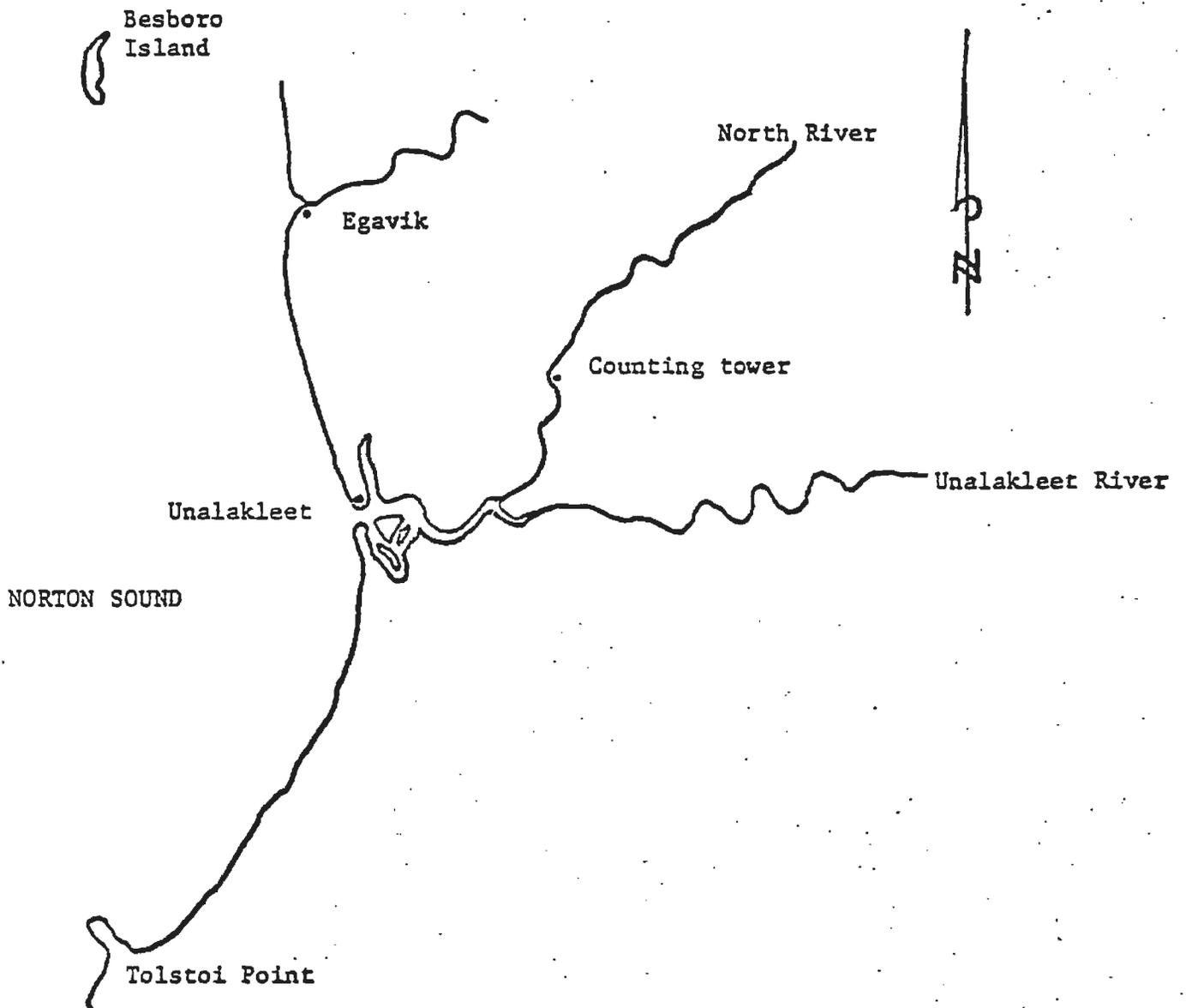


Figure 20. Location of Research Site, Unalakleet Subdistrict 333-60, 1974.

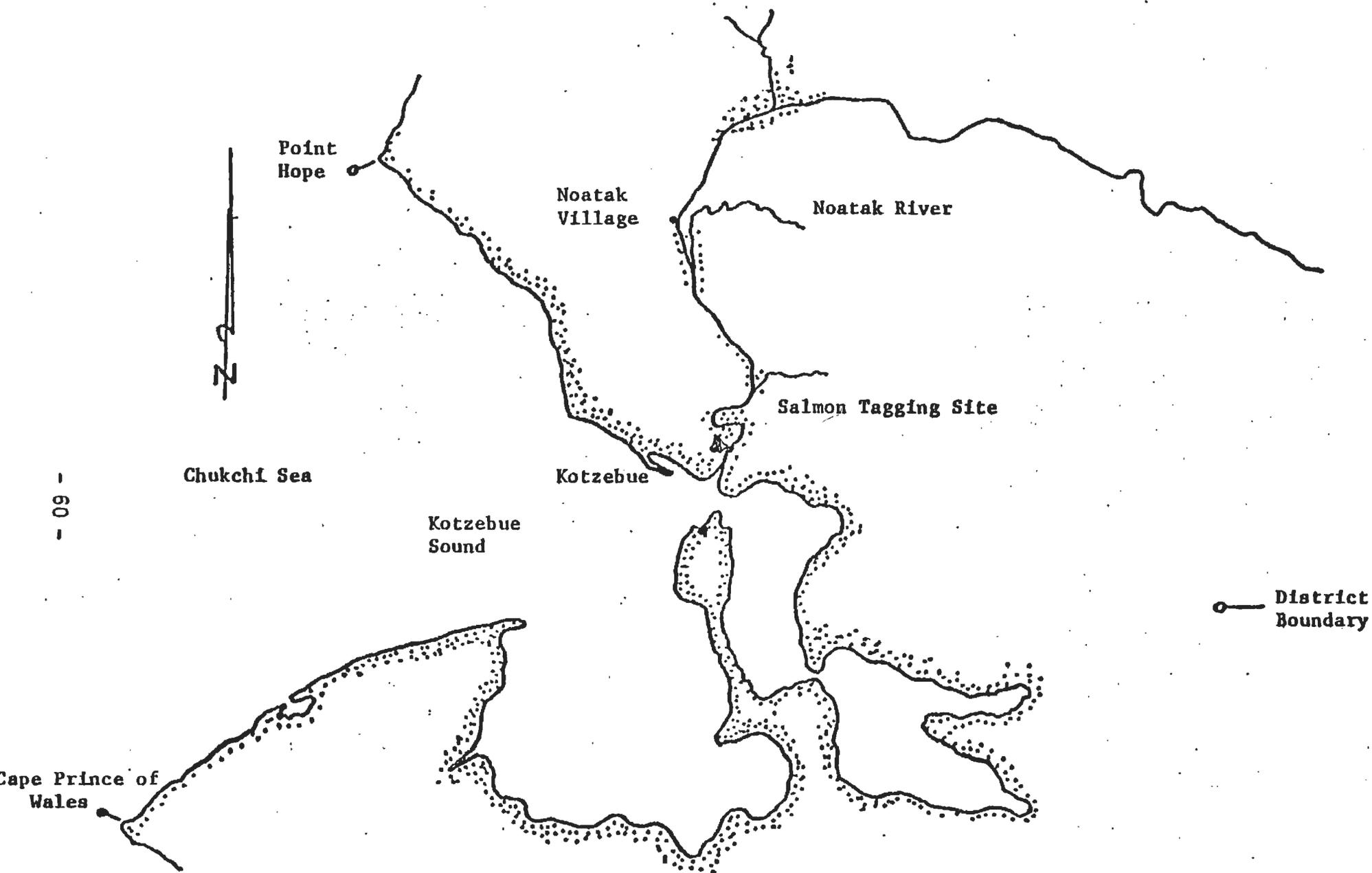


Figure 21. Kotzebue District Showing Project Locations, 1974.

METHODS AND MATERIALS

Methodology for these projects may be reviewed in AFC-55 (Cunningham 1975).

RESULTS AND DISCUSSION

Tabular and graphic data for these projects may be reviewed in AFC-55 (Cunningham 1975).

North River salmon counting tower

1. An expanded estimate of 220 king, 154,285 pink and 861 chum salmon were enumerated past the North River tower in 1974.
2. An estimated total of 196 king, 143,789 pink and 826 chum salmon were enumerated past the North River tower in 1974.
3. King, chum and pink salmon migration peaks were demonstrated during the periods July 3 to July 6; July 2 to July 7 and June 30 to July 4 respectively.
4. Estimates of size of king salmon passing the tower was as follows: Three less than 50 cm; sixty-two 50-60 cm; forty-eight 60-80 cm and eighty-three greater than 80 cm.
5. The North River king salmon escapement age composition, as a result of comparing estimated length to the commercial catch sample was 0.5% 3₂, 13.2% 4₂, 18.4% 5₂, 25.5% 6₂, 34.7% 7₂, and 7.6% 8₂.
6. Expanded 10-minute counts resulted in an estimated escapement of 252 king, 978 chum and 180,031 pink salmon.
7. Aerial surveys of the Unalakleet River resulted in a peak count of 268 king, 5,800 chum, 57,031 pink salmon.
8. Forty-one subsistence fishermen interviewed harvested 313 king, 588 chum, 7,341 pink and 706 coho salmon.

9. In 1974 commercial fishermen harvested 2,100 king, 36,170 chum, 93,332 pink and 1,778 coho salmon in the Unalakleet subdistrict.

Although all collected tagging data was lost in the Nome flood it was felt that the salmon tag and recovery effort in 1974 surpassed previous tagging programs on the Unalakleet River. There was, at the time, indication that of the estimated 1,100 tagged salmon, sufficient tag returns had been documented to be incorporated into a "Schaeffer" population estimator.

At the conclusion of the Noatak River salmon tagging project in 1974 it was firmly indicated that due to the return of tags the program would not be capable of yielding a population estimate. A number of tagged fish were recovered from the commercial fishery in Kotzebue, some on the same day as tagged. Only one viable tag recovery was made at the village of Noatak from a spawned chum salmon carcass.

What information gained from the tagging program was age, sex and length data which unfortunately was lost in the November 11 and 12 flood in Nome.