PNPTC Technical Report TR 86-2

1984 - 1985 Salmon Spawner Survey Report for Coho and Chum Salmon of Hood Canal and Strait of Juan de Fuca

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Introduction

Spawner surveys were conducted during the 1984-1985 season for the second consecutive year on Hood Canal and Strait of Juan de Fuca tributaries in the Point No Point Treaty area (Figure 1). The program this year was designed to address specific questions about spawner activity. Objectives were established based on knowledge acquired during the previous year's (1983-1984) surveys regarding spawner distribution, run timing, spawner abundance, and stream accessibility to surveyors (Young, 1986). Tribal concerns and needs of the Point No Point Treaty Council (PNPTC) fisheries management program also were considered. These objectives focused on selected salmon species, river systems and management issues and were prioritized and undertaken according to time and manpower availability. Survey schedules were coordinated with the Washington Department of Fisheries (WDF). Effort was concentrated primarily on early, normal and late-normal naturally produced chum salmon and to a lesser extent naturally produced coho and chinook salmon in selected streams. The spawner survey program was not planned or used to monitor escapement for inseason harvest management except for coho salmon on the Dungeness River.

Survey Program Objectives by Species and Area

Chinook Salmon

Chinook salmon surveys were performed only on the South Fork Skokomish River for two purposes: 1) to determine if the range of spawning habitat extended farther upstream from the area surveyed by the WDF and 2) to attempt an evaluation of the tribal juvenile planting program in two tributaries, Brown and LeBar creeks, where adult returns were expected from plants made in previous years.

Coho Salmon

Hood Canal

We conducted surveys to learn more about spawner distribution and run timing, and estimate the abundance of coho salmon in the North Fork Skokomish River. This location was chosen because we observed a substantial run of coho salmon in the North Fork Skokomish River in 1983-1984 (Young, 1986) and because this river is not currently included in the WDF coho salmon index area surveys of the Skokomish River system.

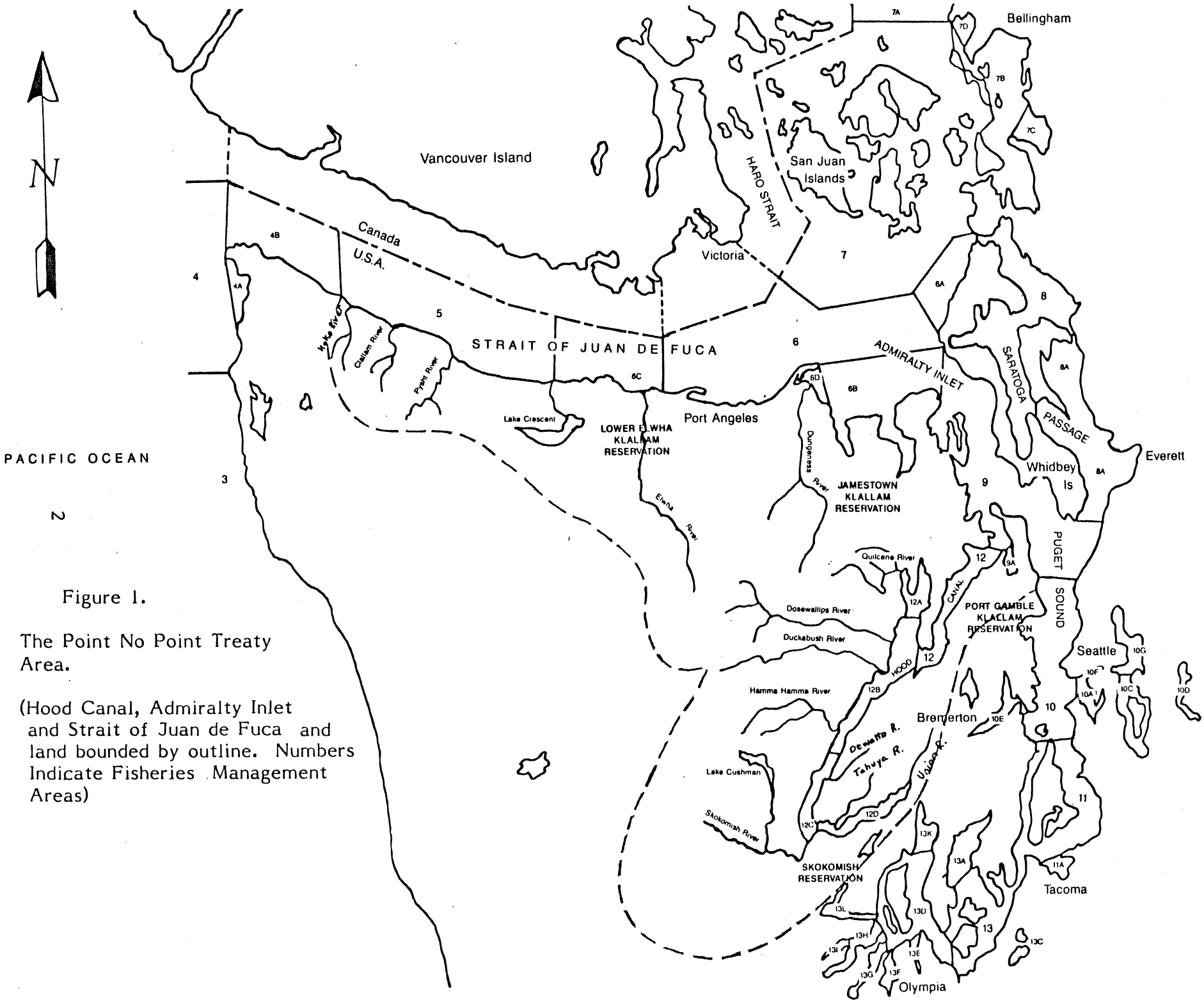

Figure 1.

The Point No Point Treaty Area.

(Hood Canal, Admiralty Inlet and Strait of Juan de Fuca and land bounded by outline. Numbers Indicate Fisheries Management Areas)

Strait of Juan de Fuca

Coho salmon spawner surveys were performed on Sadie Creek (tributary to the East Twin River) and on the Pysht River system to gain additional information on spawner distribution, run timing and escapement. Sadie Creek, a western Strait stream with good access for surveying, was included because of its potential as an index stream. Until 1983, little was known about salmon distribution or the condition of spawning grounds in the Pysht River. Intensive spawner surveys were conducted in 1983 for the first time when the PNPTC developed spawner index areas and performed weekly surveys (Young, 1986). This year's surveys were intended to build upon and extend the information gathered in 1983.

Two additional objectives were: 1) to monitor coho spawner distribution in an attempt to insure escapement to upstream areas prior to fishery openings on the Dungeness River and 2) to check for returning spawners from juvenile coho outplants returning this season (brood 1981) to selected tributaries of the Strait.

Early Chum Salmon

We surveyed early chum salmon runs to obtain run timing and escapement estimates because coverage was inadequate during the 1983 surveys and these runs were not included by the WDF in its weekly surveys this year. We also surveyed the Lyre and Dungeness rivers, and Deep and Salt creeks to determine for the first time, whether early chum salmon runs existed in these streams.

Normal Chum Salmon

Hood Canal

The purpose of our surveys of normal-timed chum salmon spawners of Hood Canal was to investigate run timing and abundance. For the Skokomish River, in addition to run timimg and abundance, we wanted to determine the distribution of chum spawners. We also had a particular interest in the occurance of late-normal runs in the North Fork Skokomish River, Hamma Hamma River, Dosewallips River and Fulton Creek. Finally, we attempted to evaluate the effectiveness of the egg box incubation program based on numbers of returning spawners.

Strait of Juan de Fuca

Spawner distribution, run timing and abundance of normal chum salmon were investigated on the Lyre, West Twin and Pysht rivers. We decided to survey these streams because data

gathered last year were found to be inadequate. Also this year the WDF did not plan to include the Lyre River in its weekly survey schedule and was planning to survey the West Twin River only once during the season and we felt that more thorough coverage was nessasary.

Chum Salmon Sex ratios

The sex ratio of chum salmon returning to the surveyed streams was determined again this year to supplement data collected during the 1983-1984 survey season.

Methods

Field Data Collection

Training of six tribal members, who were used as field surveyors began September 17, 1984 and continued in the field during actual surveys. The last survey of the season was performed on February 8, 1985. Each team of two surveyors consisted of a technician and a trainee who worked both in pairs and separately. The technician was responsible for data recording and overseeing the trainee. A field supervisor managed and coordinated the survey teams. The surveyors generally covered between 2 and 4 streams per day and 1.0 to 4.0 miles per stream depending on travel distances and length of surveys. Boat surveys were rare but were used in cases where the river was too deep, inaccessible by foot (i.e. brush on banks) or too wide such as in Richert Springs and Hunter Creek. Surveys were performed on the same streams every 7 days when water conditions permitted. Survey methods, data collected and equipment used were identical to that described in Young (1986).

Chinook Salmon

Chinook spawner surveys on the South Fork Skokomish River spanned a three week period (September 25 to October 19) to coincide with the run peak. We surveyed four times near the run peak because we were assessing spawner distribution in the river and our chances of observing spawners were greatest at that time. The survey locations were chosen for their accessibility to the river. Those locations were between the river miles of 2.0 and 3.2, 5.5 and 6.0, 10.2 and 13.0, 17.9 and 19.2, and 21.4 and 22.1. The WDF index area was between river miles 0.0 and 2.2. Brown and LeBar creeks both were surveyed once (October 9) from the mouth to approximately river mile 1.0; we assumed this area included all or a major portion of each streams's anadromous zone because a series of cascades and boulder substrate were present at the upper end of our survey area.

Coho Salmon

Sadie Creek and the Pysht River system, including the mainstem, South Fork Pysht River, Green Creek, unnamed (stream no. 190121) and Needham Creek, were surveyed weekly for coho spawners throughout the spawning season. The Pysht River system was surveyed in cooperation with the WDF. The Dungeness River was surveyed five times for coho spawner distribution at key pools and index areas established last season, again to coincide with the run peak. The following Strait streams were surveyed during the run peak from one to three times: Colville Creek, Field Creek, Susie Creek, East Twin River and Little Hoko River. The intent was to check for returning spawners from 1981 brood juvenile plants. We were also interested in returns from plants in Sadie Creek, the Pysht and South Fork Pysht rivers, and Green Creek; these streams were covered under the aforementioned weekly surveys. Coho were also counted and recorded in streams when they were observed during chum surveys.

Early Chum Salmon

Streams surveyed for early chum salmon in Hood Canal were Big Mission Creek and Union, Tahuya, Dewatto, and Little Quilcene rivers. Snow, Salmon and Jimmycomelately creeks, which drain into the eastern Strait of Juan de Fuca were also surveyed. The Strait streams including Dungeness River, Salt Creek, Deep Creek, and Lyre River, were surveyed by the PNPTC two to three times near the estimated run peak for early chum salmon.

Normal Chum Salmon

We continued counting chum salmon on those east side Hood Canal streams (and also the Little Quilcene River) that were surveyed for early timing chum while the WDF surveyed streams on the west side. The PNPTC also began surveying the west side of Hood Canal streams after the WDF had stopped but only where late-normal timing chum salmon were still present. Our surveys of tributaries to the Strait included the Lyre, West Twin and Pysht rivers. We closely coordinated surveys of those Strait streams with the WDF to avoid duplication and insure adequate coverage.

Adult chum salmon returns were monitored in the following southern Hood Canal egg box streams: Anderson Creek, Caldervin Creek, Stimson Creek, Tahuya River and Union River. These streams were surveyed two to three times near the suspected run peak for four and five year old chum salmon expected to return in 1984.