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PRELIMINARY SURVEY OF
STEELHEAD SPAWNING HABITA
BJDA c. 1 mm SMIPHERS

PRELIMINARY SURVEY OF

STEELHEAD SPAWNING HABITAT

KITIMAT RIVER, B.C.

By:

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INTRODUCTION

A preliminary study of steelhead spawning areas on the Kitimat River was undertaken during June to August, 1976. The main objectives were: to locate and map where steelhead had spawned that spring, and to measure the physical characteristics of redds and spawning areas located. For a description of the study area, see "Preliminary Survey of Juvenile Salmonid Rearing Habitat, Kitimat River, B.C." (Morris & Eccles, 1976).

METHODS

Several methods were used to survey the steelhead spawning areas on the lower Kitimat River. In locating the general areas where steelhead spawned, information was collected from the stream files of the Smithers Fish and Wildlife Branch, from the Fisheries and Marine Service office in Kitimat and from local anglers. The collected information was then verified by a field reconaissance.

Where no road access was available or where the river was too hazardous for floating in wetsuits, a river boat was used to locate the spawning grounds. The redds were spotted from the

boat with the aid of polaroid sun glasses to cut the glare from the water. On larger rivers like the Kitimat, doing a spawning survey by riverboat is the safest and most practical method of study.

Physical characteristics of the redds such as width, gravel size, and water depth were measured with a meter stick. The water velocity over the redd was estimated using the chip flow method.

RESULTS AND DISCUSSION

Steelhead spawning sites on the Kitimat River were found on the mainstem, on Humphreys Creek and Cecil Creek (Figure 1). It is probable that spawning also occurs on the other low gradient tributaries such as Wedeene River, Nalbeelah Creek, and Deception Creek.

Spawning sites on the mainstem were found in two habitats. Redds were located either on the lower ends of flats between section of riffle or in deep runs. Gravel sizes the fish spawned in ranged between 5 cm. and 15 cm. with some stones to 20 cm. Water depth over the redds recorded after the spawning was finished, ranged from 0.3 to 2.0 meters. Water velocity over the redds averaged 0.75 meters per second.

Spawning sites observed on Humphreys Creek and Cecil Creek were small, consisting of one or two redds. Water depths over the redds ranged from 0.25 to 0.40 meters and water velocities were 0.3 to 1.0 meters per second.

The above data may not represent the water conditions that the fish chose to spawn in. The river had risen since the steelhead finished spawning and thus changed the water conditions over the redds. In the future, study should be carried out from April to June when the fish are still on the redds.

Although most of the steelhead had spawned and returned to the sea by the start of the study, spawned out individuals (kelts) were in the river until mid-July. The Fisheries and Marine Service chinook tagging crew seined a total of 12 kelts from June to July (Table 1).

Spawning areas on the upper Kitimat were surveyed by helicopter on August 22 when the salmon spawning was at its peak. The most used spawning areas are located at the confluence of tributaries and along braided sections of the mainstem. A particularly important area is between Tetlock and Hunter Creek. Although steelhead were not observed spawning, suitable sites do exist to at least Hunter Creek. Juvenile rainbow were found in the lower reaches of McKay Creek and the main river is accessible to anadromous fish to four miles above Davies Creek.

The steelhead spawning grounds mapped during this study will probably be different by next spring. Each high water changes the Kitimat mainstem. Gravel is constantly being shifted and major channel changes occur frequently. Because there is so much clean coarse gravel available in the valley bottom, steelhead spawning areas should always exist on the river.

Table 1. Beach Seining Results - Adult trout captured by Fisheries & Marine Chinook tagging crew

Date	Location of Set	Number & Species	Sex	Approx. Weight	Comments, Length
June 12	½ mile above town	ST	F	8 lb.	- net damage on operculun
	bridge at Coho Flats	ST	F	10 lb.	- silver
	At sandhill, Eurocan	ST	M	8 lb.	- dark
	water intake	ST	F	10 lb.	- kelt
	below sándhill	ST	F	9 lb.	- kelt
June 14	Coho Flats	ST	M	6 lb.	- kelt
		ST	M	6 1b.	
June 16	Coho Flats	ST	M	7 lb.	- scale sample taken, fish released
June 21	Upper Coho Flats	ST	M	12 lb.	- kelt
June 23	Upper Coho Flats	ST	M	12 lb.	- kelt 89 cm.
June 24	Upper Coho Flats	DV	-	1 lb.	
	below sandhill	3 DV	-	1lb.each	
July 2	Coho Flats	ST	M	7 lb.	- kelt, 77 cm.
July 13	Coho Flats	DV	-	-	
	below sandhill	3 DV	-	-	
July 12	Coho Flats	ST	M	7 lb.	- Large open wound on tail, very thin kelt

BIBLIOGRAPHY

Morris, M. and B. Eccles, 1976. Preliminary Survey of Juvenile Salmonid Rearing Habitat Kitimat River, B.C. (unpublished) Stream Files of Fish and Wildlife Branch, Smithers