

ADULT SALMON ENUMERATION SURVEYS  
ON PROPOSED COPPER RIVER HIGHWAY ROUTES

REGIONAL INFORMATION REPORT<sup>1</sup> 2A92-26

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## ABSTRACT

The Department of Transportation is studying the possibility of extending the Copper River Highway north to the interior. A total of four different routes are under consideration. The first is constructing the highway on the old railroad bed along the Copper River to Chitina; the second is through the Tasnuna Valley; the third is along the Tiekel River and the fourth along the eastern coast of Prince William Sound. This study identified spawning adult salmon along three of the proposed routes. A total of five surveys were flown, observations were made on only four surveys. The only adult salmon observations made were in the Tiekel Lake system. No coho salmon were observed but due to wind conditions no surveys were completed after 27 August.

## INTRODUCTION

The State of Alaska has proposed the idea of linking the community of Cordova to Alaska's road system. Under consideration are four proposed routes. This study was conducted as part of the Copper River Highway Environmental Impact Statement. More specifically the purpose of this study was to locate, identify and enumerate spawning salmon populations along three of the proposed routes. The three routes are: Tasnuna Valley, Tiekel Valley and the Wood River Canyon.

## METHODS

Aerial surveys from a small fixed wing aircraft were flown on a bi-weekly basis by three surveyors of the Alaska Department of Fish & Game. Surveys were flown from Cordova by Steve Morstad, Assistant Area Management Biologist for Prince William Sound/Copper River; Wayne Donaldson, Area Management Biologist for Prince William Sound/Copper River and from Glennallen by Ken Roberson, Area Biologist Fred Division. Each surveyor recorded locations of adult spawning salmon along the three proposed highway routes. Aerial surveys were flown on the Tasnuna River drainage, outlet of Cleave Creek, Tiekel Lake, and the Uranatina River (Figures 1-5). All adult salmon observations were recorded and entered in the Department of Fish & Game's historical aerial survey data base that is archived in Glennallen, Alaska. Surveys extended from 17 July to 27 August. The goal was to fly into mid October but due to the poor weather conditions aerial surveys after 27 August were not possible. This time period would allow the observations of both sockeye and coho returning to these areas.

## RESULTS

A total of five surveys were flown during 1992, however, during one survey no data was collected due to high winds. Conditions during the four remaining surveys ranged from good to marginal. Adult sockeye were observed in only two locations Tiekel Lake and Uranatina River (Table 1 and 2).

## DISCUSSION

Few adult sockeye and no coho salmon were observed during the surveys. Only two spawning populations were sighted; 150 sockeye salmon in Tiekel Lake and 30 in Uranatina River. From aerial observations, the Tasnuna River drainage appears to be better suited for coho salmon spawning than sockeye salmon spawning. The lower Tasnuna River has the same general features as the Controller Bay area located in the lower Bering River drainage. These features consist of small backwaters created by beaver dams. This type of habitat in the lower delta provides the major spawning sites. Sockeye salmon have been observed in the Tasnuna in small numbers spawning along the north side of the Tasnuna River Drainage, in the small clear freshets (Roberson, personal communication). The Cleave Creek drainage was not flown due to the narrow canyon and glacial water. The outlet of Cleave Creek was flown but no adult salmon were observed. However, adult sockeye were observed from the ground during 1992 (Gnath, personal communication). It appears that these salmon may have been resting in the less

turbulent waters for further migration up the Copper River. This project dealt only with fixed wing surveys so a ground survey to examine the substrate of Cleave Creek was not possible. Cleave Creek is a glacial system so sockeye salmon may have been present, they just weren't visible from the air. No salmon were observed in the Tiekel River itself but this is due to the barrier falls on the river.

From the limited number of surveys conducted it appears that these systems do not constitute a major spawning area for sockeye or coho salmon. However these drainages may provide habitat at other life stages that this study did not address. The majority of sockeye salmon returning to the Copper River return in are of three age groups, therefore additional surveys could be completed to adequately address if the results in 1992 are the result of a paucity of a particular age class or stock. Surveys have been completed by the department of Fish and Game in the past but on a limited bases (Table 3).

LITERATURE CITED

1. Roberson, K. Aerial surveys of the Upper Copper River 1978-1991. unpublished table. CRESCSK.WR1. Alaska Department of Fish&Game, Glennallen.

Table 1. Aerial escapement indices by date and location for sockeye salmon in the Copper River, 1992. <sup>a</sup>

Drainage	17 July	30 July	15 Aug	27 Aug	15 Sept
Whitting Falls	0	NS	0	0	NS
Tasnuna	0	NS	0	0	NS
Cleave Creek	0	NS	0	NS	NS
Tiekel	0	90	150	70	NS
Uranatina	NS	NS	NS	30	NS

a NS= no survey.

Table 2. Aerial escapement indices by date and location for coho salmon in the Copper River, 1992. <sup>a</sup>

Drainage	17 July	30 July	15 Aug	27 Aug	15 Sept
Whitting Falls	0	NS	0	0	NS
Tasnuna	0	NS	0	0	NS
Cleave Creek	0	NS	0	NS	NS
Tiekel	0	0	0	0	NS
Uranatina	NS	NS	NS	NS	NS

a NS= no survey.



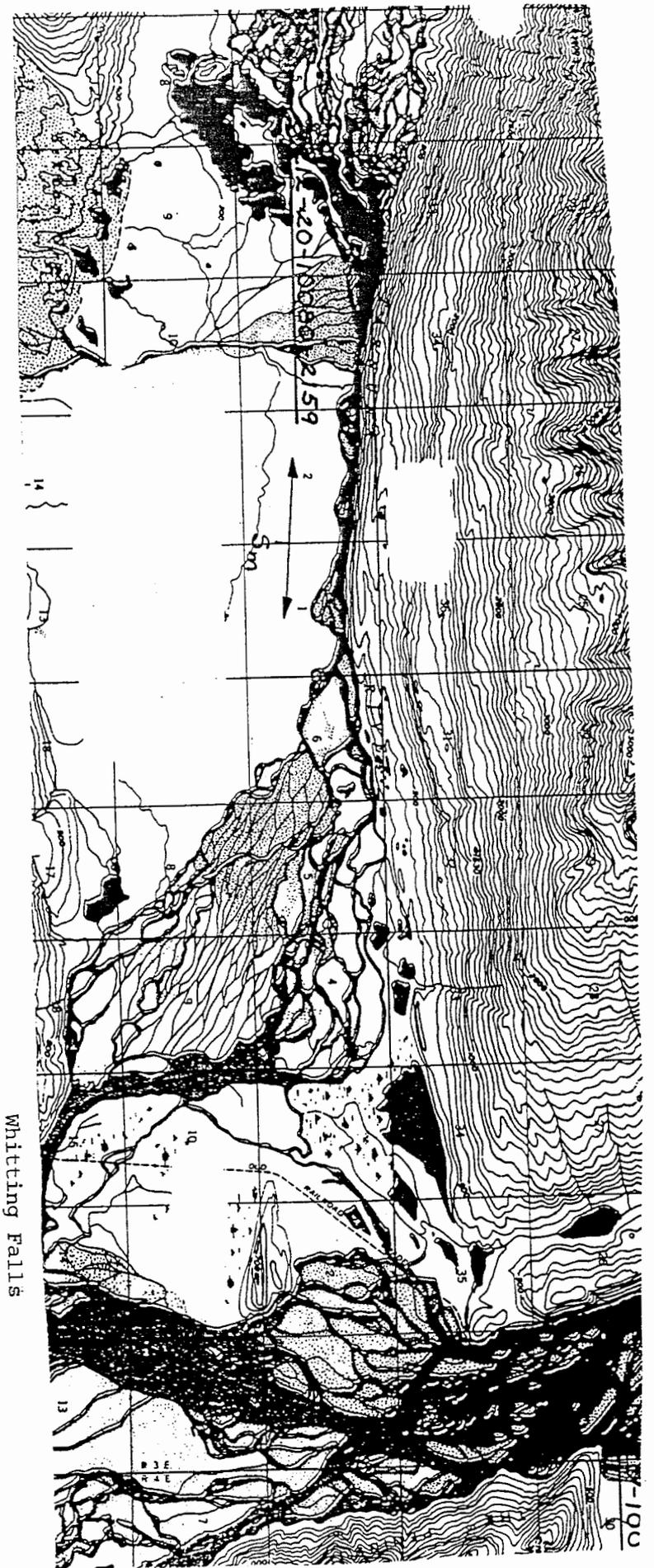


Figure 1. Lower Tasnuna River and Whitting Falls, Copper River, 1992.

Figure 2. Upper Tasnuna River drainage, Copper River, 1992.

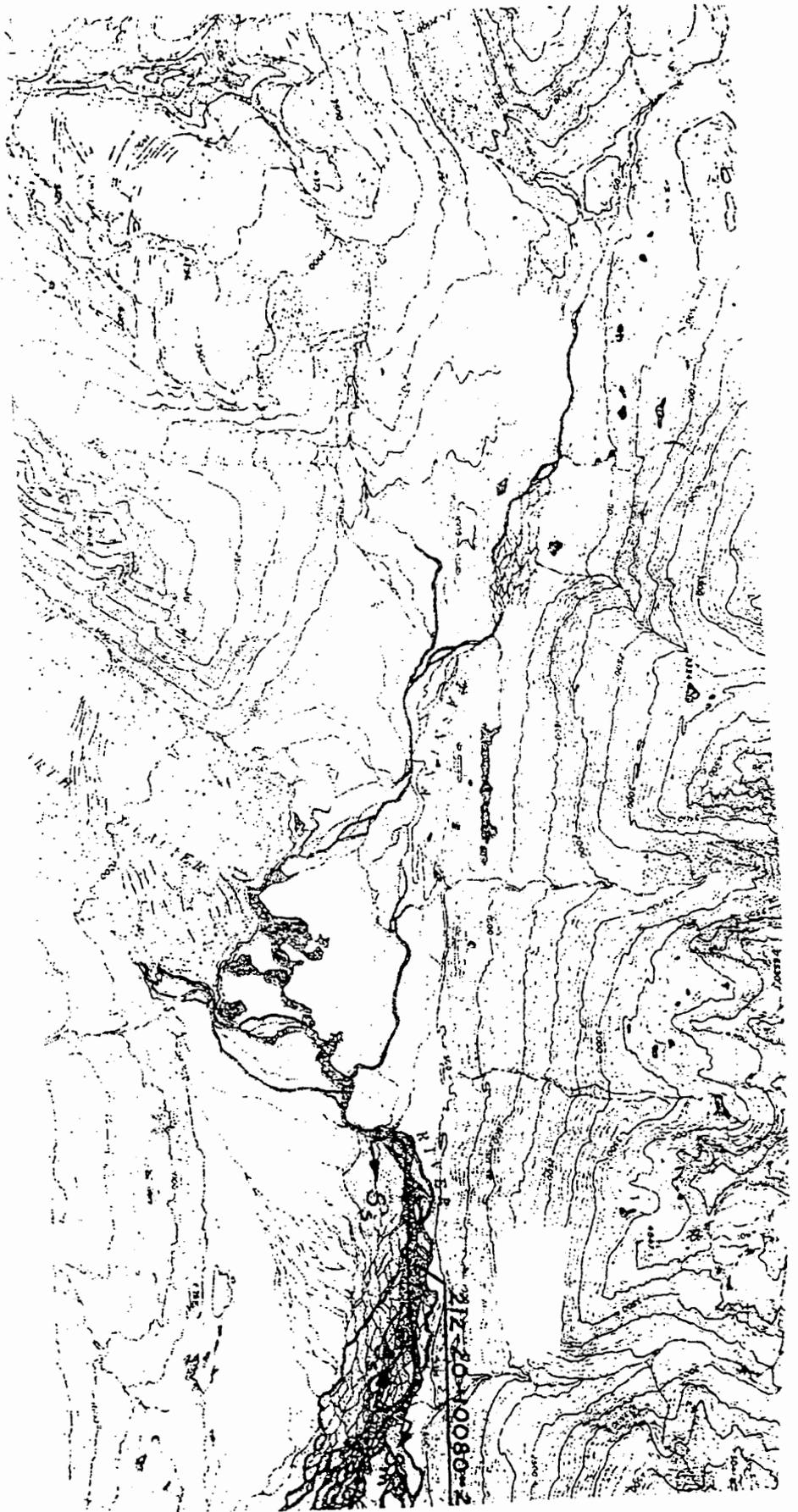


Figure 3. Cleave Creek drainage, Copper River, 1992.

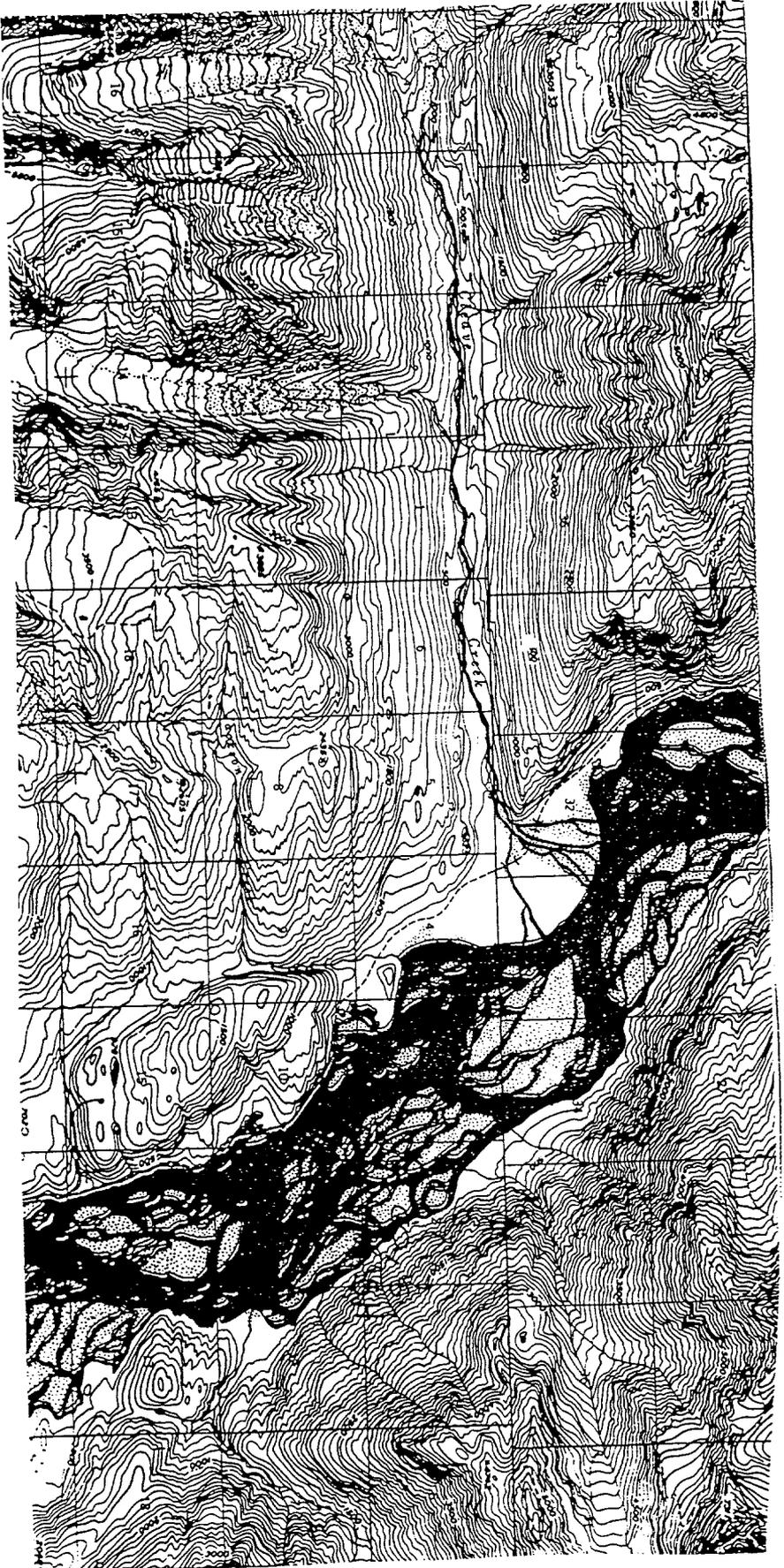
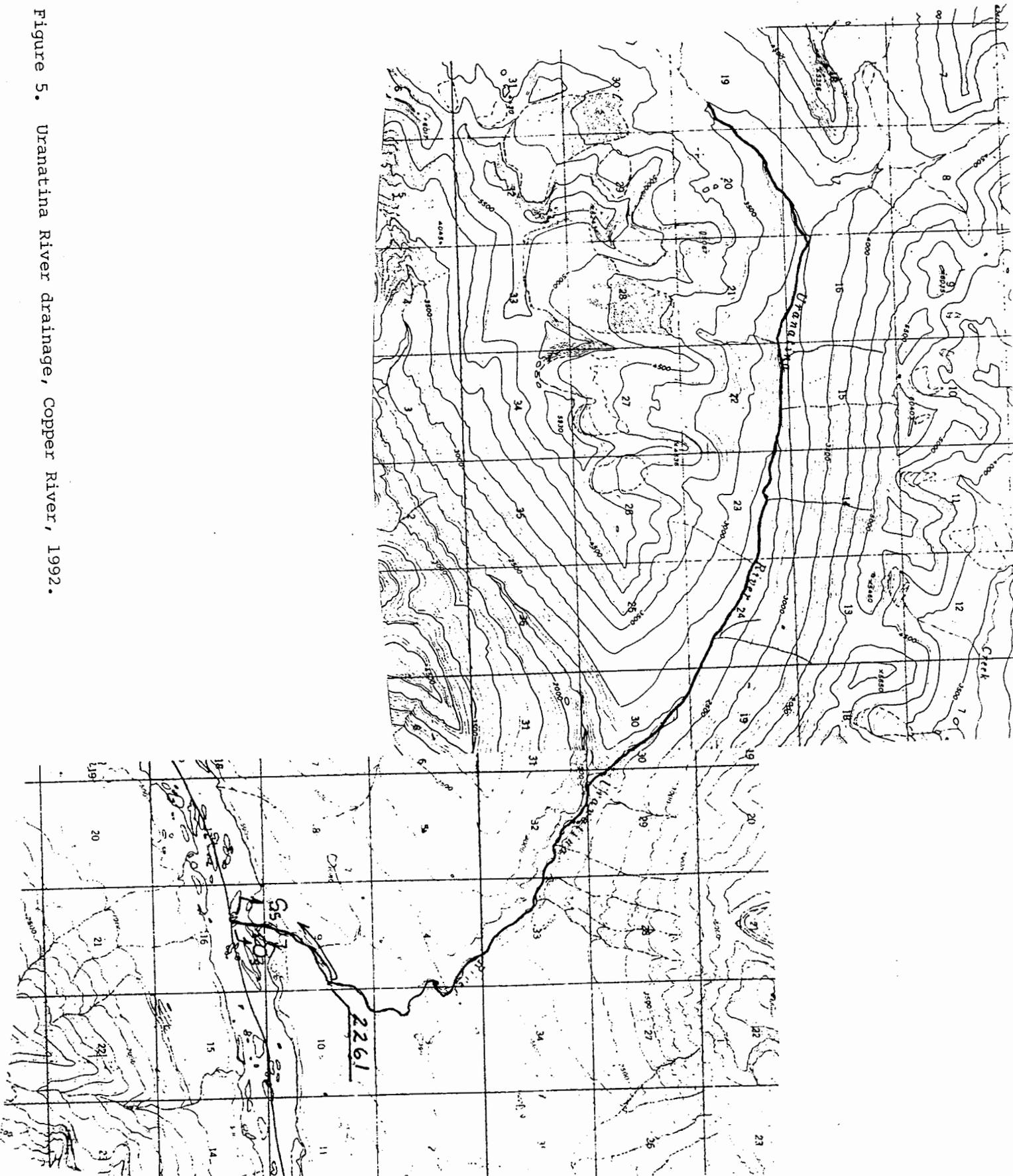




Figure 4. Tiekel River and Tiekel Lake drainage, Copper River, 1992.

Figure 5. Uranatina River drainage, Copper River, 1992.



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