File: 0140-6
Skeena

STEELHEAD STOCK MONITORING REPORT

PROJECT: Upper Skeena steelhead fry population monitoring

REGION: 6

MANAGEMENT UNIT: 6-7, 6-18

LOCATION: Babine, Sustut, and Kluatantan Rivers

AIR PHOTO REFERENCE NO: N/A

REPORT DATE: March 12, 1986

MAP REFERENCE NO:

DATE SURVEYED: August 1984 and 1985

PERSONS PRESENT: Regional Staff (M. Lough, et al)

REPORT PREPARED BY: D. Tredger

PURPOSE: (See attached)

OBSERVATIONS: (See attached)

PROPOSED ACTION: (See attached)

PHOTOGRAPHS ATTACHED: YES ___ NO ✓ AVAILABLE: YES ___ NO ✓

CIRCULATE TO:

Babine, Sustut, and Kluatantan Rivers

Juvenile fish sampling has been conducted in the Upper Skeena area since 1983 by Regional staff. Objectives include: 1) to collect basic inventory data on juvenile steelhead in some "unknown" areas and 2) to annually monitor steelhead fry recruitment where possible. The following report represents little more than a data summary for use in stock monitoring, future production modelling, and Regional fisheries management programs.

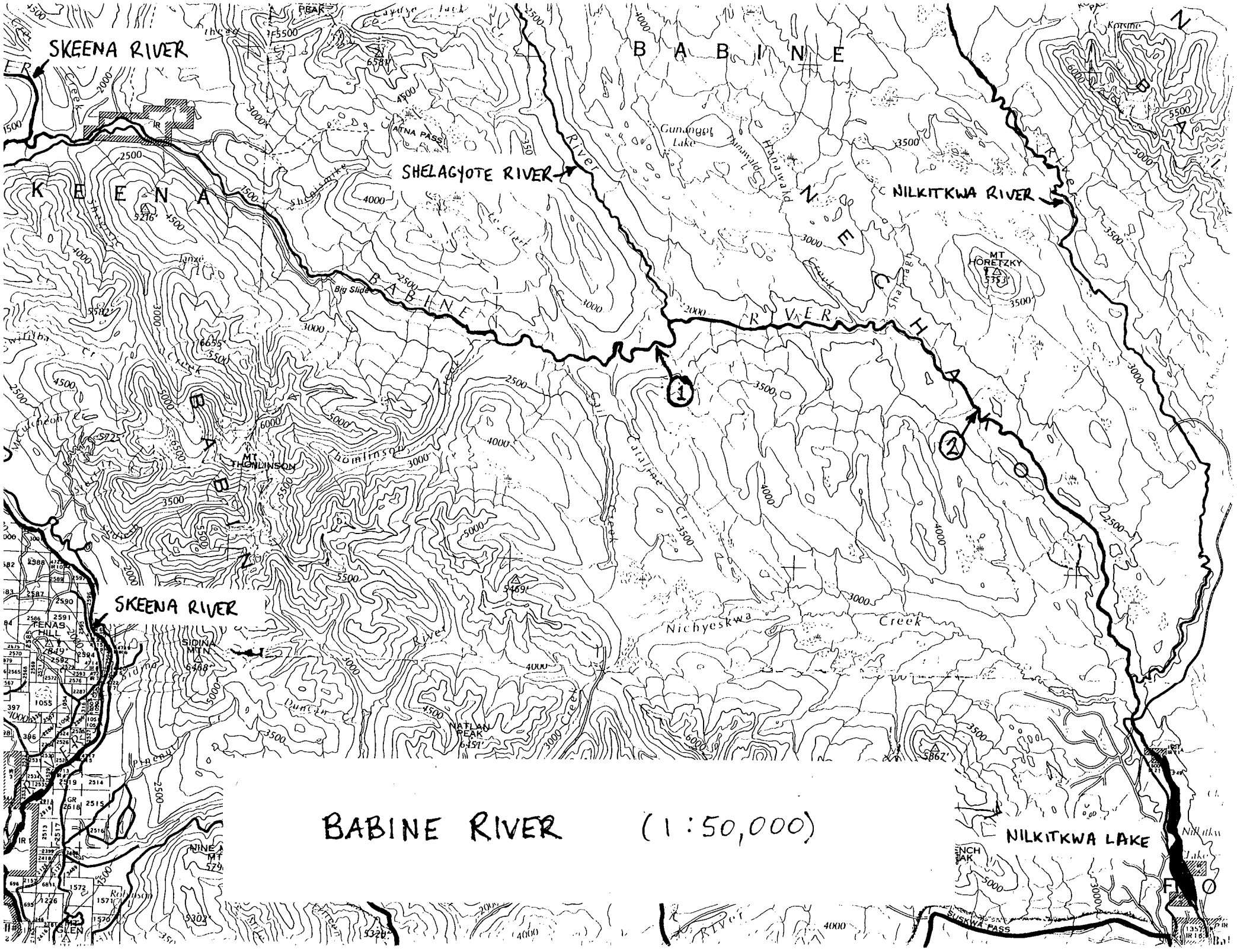
METHODS

Juvenile sampling (by electrofishing) has been conducted in several systems in Upper Skeena since 1983. Systems and number of sites sampled include the Babine River in 1983 (1 site), 1984 (1 site), and 1985 (2 sites); the Sustut River in 1983 (1 site), 1984 (5 sites), and 1985 (2 sites); and the Kluatantan River in 1984 (4 sites). The data is sufficient for some crude stock monitoring in the Sustut and Babine systems.

RESULTS

BABINE RIVER

Juvenile steelhead sampling results from the Babine River are summarized in Table 1. Note that all sites were sidechannels and that Site 1 was not in the same location in all years. Data include WUA for fry (based on depth

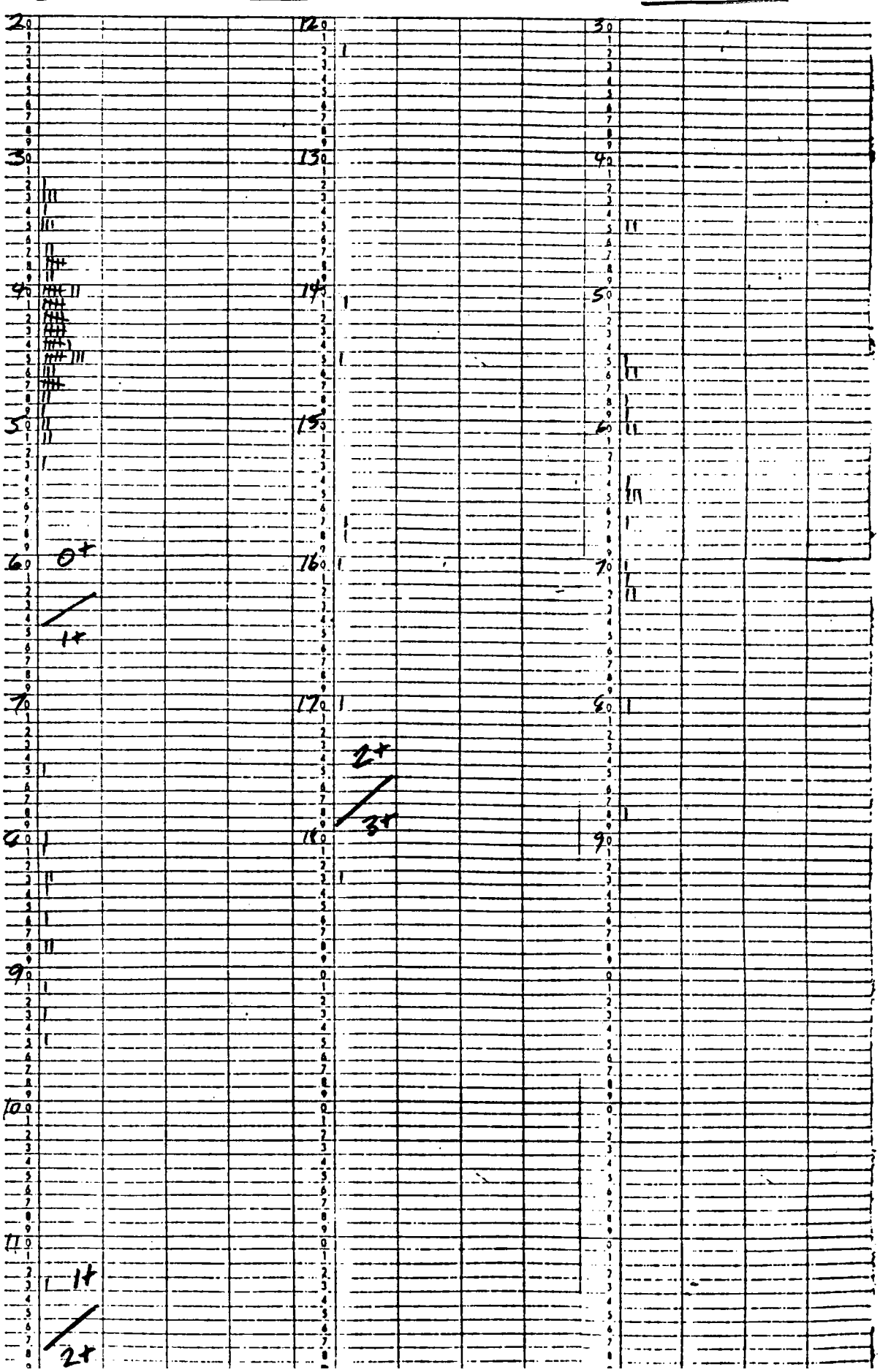


BABINE RIVER (1:50,000)

Table 1. Summary of Babine River Juvenile Steelhead Densities, 1983-85.

Year	Site 1			Site 2		
	WUA	Fry/m^2	Parr/m^2	WUA	Fry/m^2	Parr/m^2
1983	.98	0.13 (0.13)	0.08			
1984	1.00	0.34 (0.34)	0.04			
1985	.85	0.11 (0.13)	0.06	.40	0.22 (0.55)	0.06

BABINE RIVER - 1983 to 1985



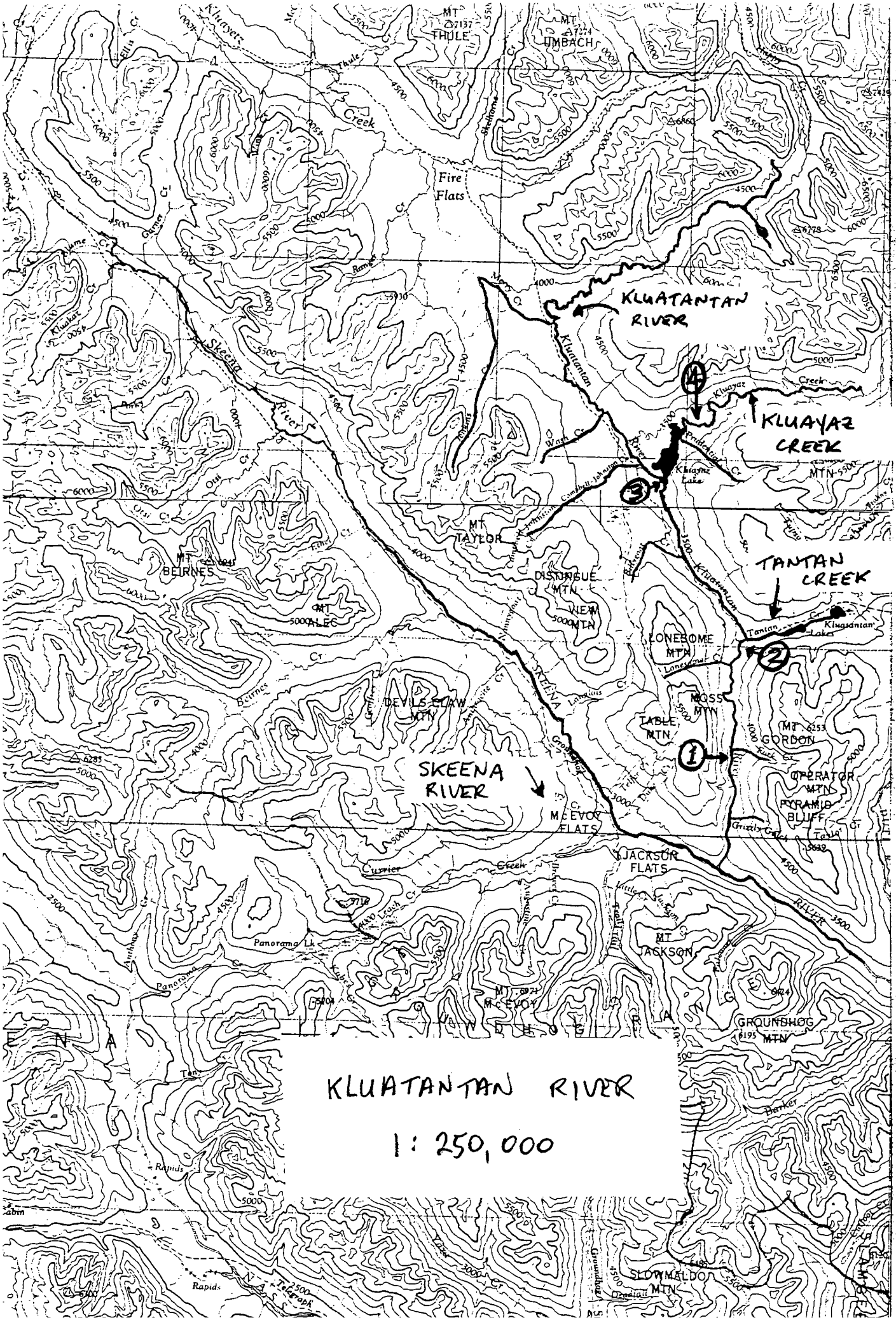
only from Bovee curves), sampled fry density and adjusted (based on WUA) fry density, and parr density. The highest density of fry was found in 1984, while the highest adjusted density was found in 1985 (Site 2). It is not possible to rank the years in terms of recruitment "strength" from these data. Adjusting the density values based on WUA should give an insight into recruitment levels relative to saturation. Adjusted densities presented in Table 1 are low but are irrelevant, as only depth estimates were available. Depth and velocity transect measurements are required to improve confidence in this information.

KLUATANTAN RIVER

Four sample sites were conducted in the Kluatantan system in 1984 (Table 2). Results indicate juvenile steelhead and chinook were present in all areas sampled. Length-frequency data indicate relatively slow growth in the system. The data will be used in further steelhead modelling.

SUSTUT RIVER

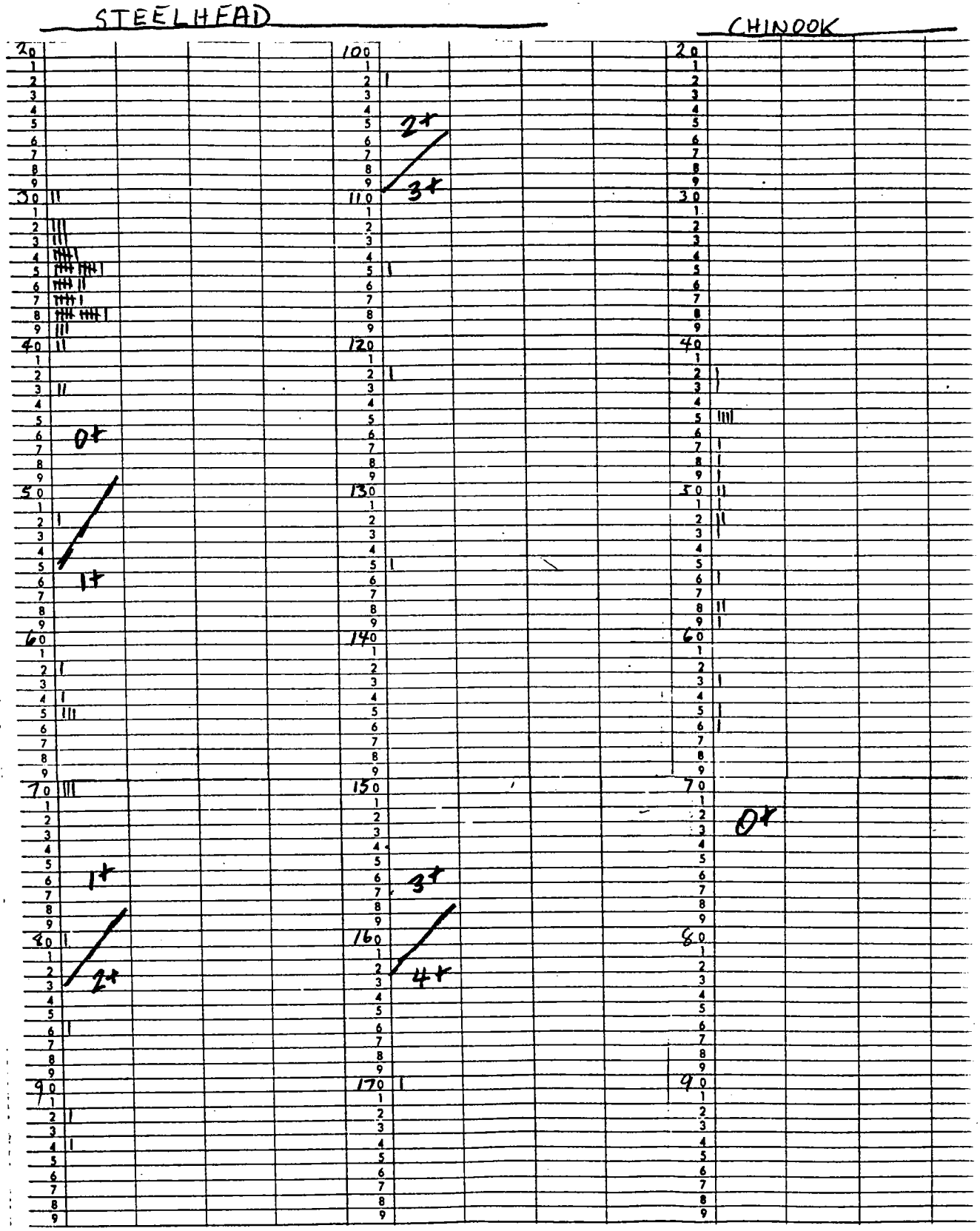
Juvenile fish sampling results from the Sustut River system are summarized in Table 3. In terms of stock monitoring, the 1984 fry densities appeared quite high when compared to "similar" 1984 sites. This suggests fry recruitment was good in 1985.



KLUATANTAN RIVER

1: 250,000

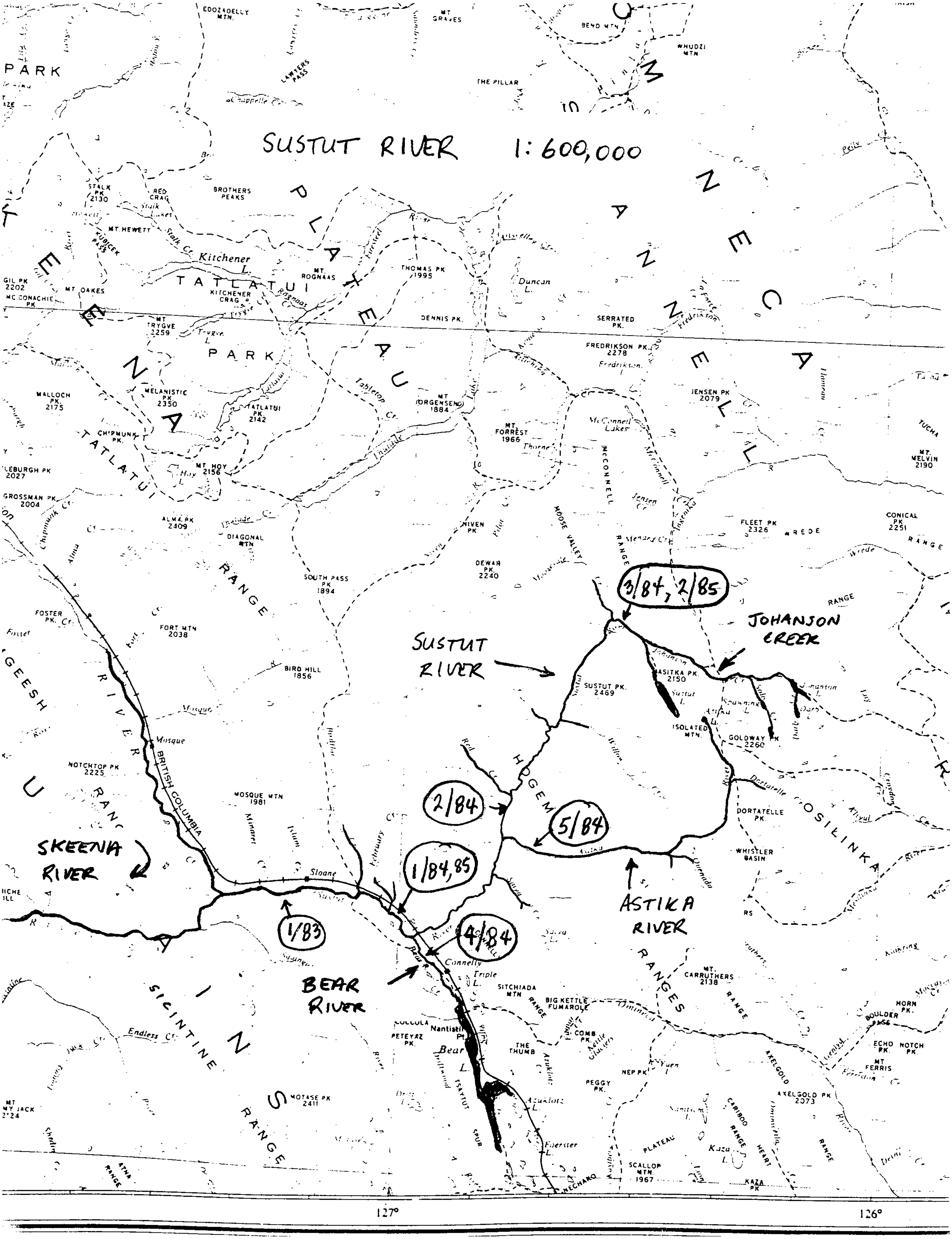
KLUATANTAN RIVER - 1984



Scale reading by Regional staff.

Table 2. Summary of Juvenile Salmonid Densities in the Kluatantan River System, 1984.

Site	Location	Steelhead					Chinook
		0+	1+	2+	3+	4+	Fry
1	Lower area	.04	.03	.01	.01	0	.13
2	below Tantan Cr.	.31	.03	0	.01	0	.07
3	below Kluayaz Lk.	0	.04	.06	0	.02	.06
4	Kluayaz Cr.	Present					Present


SUSTUT RIVER 1:600,000
SUSTUT RIVER
JOHANSON CREEK
SKEENA RIVER
BEAR RIVER
ASTIKA RIVER
3/84, 2/85
2/84
5/84
1/84,85
1/83
4/84
TATLATUI PLATEAU
TATLATUI PARK
TATLATUI RANGE
SKEENA MOUNTAINS
OMINECA MOUNTAINS
HOGEM RANGES
OSILINKA RANGES
SICINTINE RANGE
BRITISH COLUMBIA
Kitchener L.
THOMAS PK 1995
MT. ROGNAAS
DENNIS PK.
SERRATED PK.
FREDRIKSON PK. 2278
JENSEN PK 2079
MT. JORGENSEN 1884
MT. FORREST 1966
McConnell Lakes
MCCONNELL RANGE
MOOSE VALLEY
NIVEN PK
DEWAR PK. 2240
SOUTH PASS PK 1894
FLEET PK 2326
CONICAL PK 2251
MT. MELVIN 2190
SUSTUT PK. 2469
ASITKA PK. 2150
ISOLATED MTN.
GOLDWAY PK 2260
DORTATELLE PK.
WHISTLER BASIN
MT. CARRUTHERS 2138
SITCHIADA MTN
BIG KETTLE FUMAROLE
COMB PK.
THE THUMB
PEGGY PK.
NEP PK
MOTASE PK 2411
PETEYAZ PK.
SCALLOP MTN. 1967
AXELGOLD PK 2073
MT. FERRIS
BOULDER PASS
ECHO PK.
NOTCH PK.
HORN PK.
MT. HOY 2156
MELANISTIC PK. 2350
TATLATUI PK. 2142
MT. TRYGVE 2259
MALLOCH PK. 2175
ALMA PK 2409
DIAGONAL MTN
FORT MTN 2038
BIRD HILL 1856
FOSTER PK.
NOTCHTOP PK 2225
MOSQUE MTN 1981
GROSSMAN PK. 2004
STALK PK 2130
RED CRAG
BROTHERS PEAKS
MT. HEWETT
KUBICEK PASS
MT. OAKES
GIL PK 2202
MC CONACHIE PK
KITCHENER CRAG
THE PILLAR
BEND MTN
WHUDZI MTN
EDOZADELLY MTN.
MT. GRAVES
LAWYERS PASS
Duncan L.
Mosque
Sloane
Connelly
Triple L.
Nantistil Pt.
Bear L.
Azuklotz L.
Foerster L.
Sustut L.
Asitka L.
Johanson L.
Darb L.
NECHAKO
127°
126°

SUSTUT RIVER - 1983 to 1985

STEELHEAD

CHINOOK

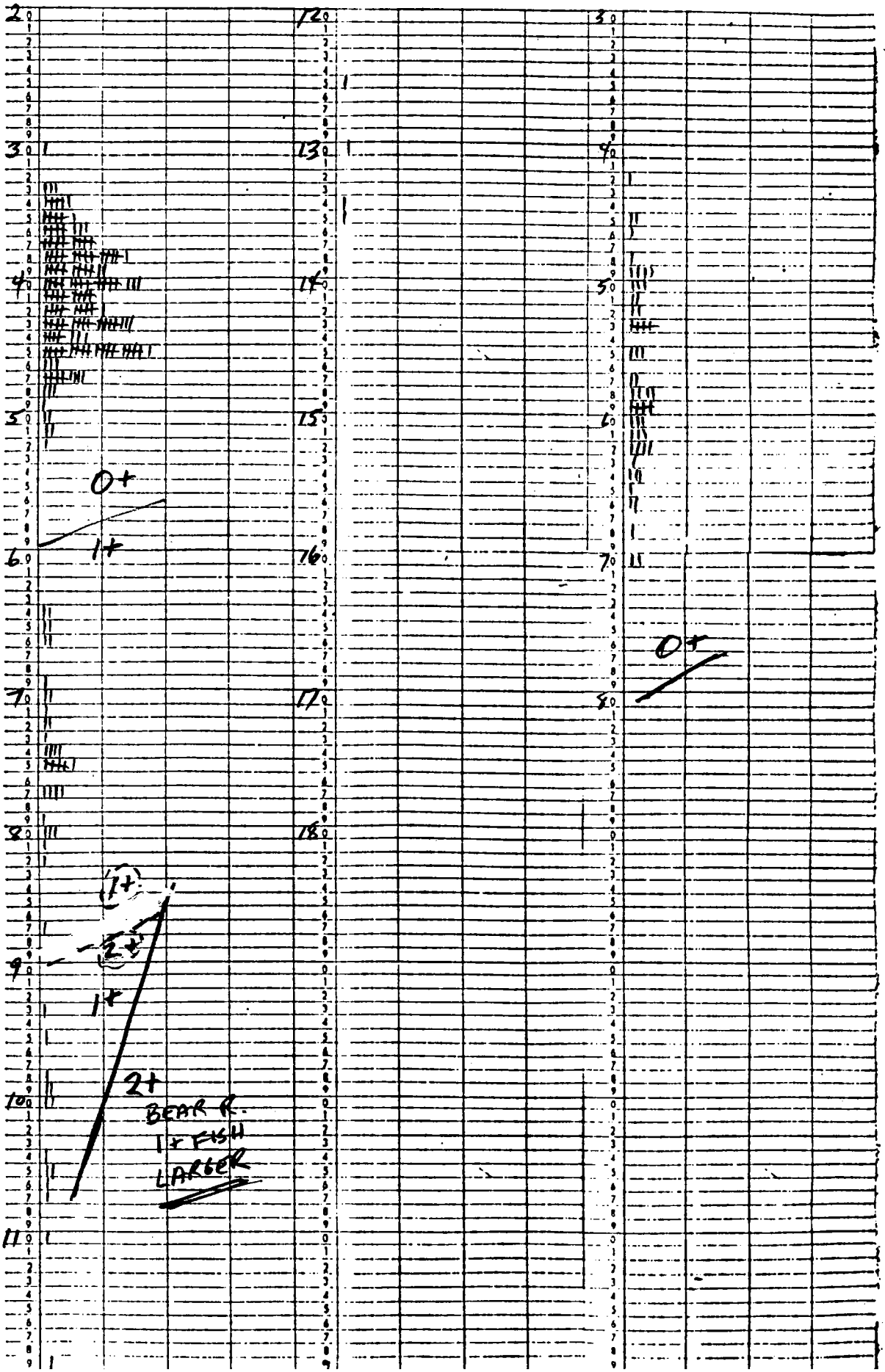


Table 3. Summary of Juvenile Salmonid Densities in the Sustut River System, 1983 to 1985.

Year	Site	Location	Steelhead				Coho	Chinook
			0+	1+	2+	3+	Fry	Fry
1983	1	Lower Sustut	.28	.08	.08	.02	0	.23
1984	1	Meathole	.18	.04	.01	0	.01	.15
	2	below Red Cr.	.06	.04	0	0	0	.02
	3	above Moosevale Cr.	.12	.06	.03	.01	0	.09
	4	Bear R.	1.35	.06	0	0	0	.02
	5	Asitka R.	0	0	0	0	0	0
	1	Meathole	.38	.08	0	0	0	.05
1985	2	above Moosevale Cr.	.70	.09	.01	0	.01	0

Some additional information which may be useful for future assessment/ modelling include:

- no steelhead juveniles were found in the Asitka River.
- the Bear River appears very productive, in terms of fry density and juvenile growth.

DISCUSSION AND RECOMMENDATIONS

Although data are sparse, it appears that steelhead fry recruitment in the Sustut and Babine Rivers was good in 1985. However, this information should be viewed as "indicative," at best. If any of these systems were to be chosen as "index streams," the following is required (for juvenile assessment):

1. Baseline assessment of stream capacity, including distribution and abundance of habitat types and juvenile steelhead populations.

2. A number of reach representative index stations, selected on the basis of the habitat/population assessment, should be identified for annual stock monitoring.

3. At index sites data on habitat parameters (depth, velocity, etc.) should be collected as a control on annual habitat variability due to discharge.