BC16 2004

## DEPARTMENT OF FISHERIES AND OCEANS ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATION

#### **BULKLEY RIVER - UPPER**

AREA: 4 MAINLAND
LOCATION: BULKLEY / MORICE

ALIAS 1: BULKLEY RIVER - UPPER

ALIAS 2:

ABORIGINAL NAME 1: ABORIGINAL NAME 2: Year 2004

Watershed Code: 460-000000 Waterbody Id: 0000\_TEMP

DATES of INSPECTION:

Jun	29					

#### TIMING AND ESCAPEMENT

SPECIES	ARRIVAL IN STREAM	START	PEAK	END	# OF INSP. USED	EST. MTH.	EST. CLASS	REL.	ANNUAL ESTIMATE	ESTIMATE STAGE
SOCKEYE					4				-2	Final
соно					2	4		Medium	380	Fina
PINK									-3	Fina
сним	THE STATE OF						Medi		-4	Fina
CHINOOK	8-1-1-1				2				-2	Fina

#### Annual Estimate Rationale:

Sockeye

On August 05 a survey was done from Maxan Lake to approximately 500m below Foxy Creek, then up Foxy Creek to the Forest Service road. Access to Maxan Lake was blocked by a beaver dam at the time. Water levels below the lake to Foxy Creek were very low and at 17.2 C. Below Foxy the water level was doubled and temperature at 13C. No fish were seen although the survey time coincided with historic records of sockeye spawning below Maxan Lake. On August 24, 12 sockeye were captured by Toboggan Hatchery crew near the confluence with McQuarrie Creek. Of the 12 caught 5 had been tagged at Moricetown. 16 sockeye were captured at the Houston counting fence of which two were tagged from Moricetown. A Bulkley River sockeye population does exist, an estimate of 100 total would be reasonable. However its relationship to the Maxan Lake population is not known.

Chinook - On August 20 a helicopter adult survey from Morice River Junction to Bulkley Falls was done for a count of 466. Ground truthing of the hel count was done in the McQuarrie/Richfield area and few fish were missed during the flight, estimate 530 adults.

Count by section was:

Above Bulkley Falls - N/I Richfield Creek - 95 Below McQuarrie Ck. - 113 In Buck Creek - N/I Meanwhile Creek - 14 Perow Station - 97 Below Knockholt - 0 Topley - 8 McQuarrie Creek - 45 Houston - 94

A total of 124 chinook were sampled during broodstock collection and recorded as 35% adipose clipped, 65% wild and 70% male. As of April 2005 over 69,000 chinook fry from the 2004 egg take were doing well at the Toboggan Creek Hatchery. During the egg take (early August) water temperatures were recorded to be 24 degrees Celsius. Many fish died unspawned and it is estimated that only 20 to 30 females above Knockholt successfully spawned. General size of the fish suggested a good portion of 4 year olds, lower than normal 5 year olds and some large females that could have been 6 year olds. No estimate for chinook is given because of the unknown but considerable prespawn mortality from the exceptionally warm water.

Coho - The counting fence near Houston operated from August 19 to Oct. 25th. The count through the fence was 380 with 105 coho being adipose/CWT as fry and 44 were adipose Right Maxillary/CWT from smolt tagging. Panels were pulled Sept 24th and again Oct 12 to 18th because of high water and debris. During the time the panels were down staff did visual counts and recorded 40 going over the fence. Counting was also done during the night under lights, however no fish were seen and the counts evolved to a 7:30 am to 7 pm shift on days the panels were down. The fish did not seem to start moving until 10:30 am. Due to high water during peak spawning times surveys below the fence were not done, so the 380 estimate is the count of fish that went above the fence only. (Note the 40 overfence are included in the 380).

The egg take used 13 female and 11 males and took approximately 36,130 eggs.

Unusual Fish Condions:

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Note all sockeye captured in 2004 appear to be stream spawners. See Rationale for chinook.

#### **Unusual Stream Conditions**

See rationale for chinook for comments about warm water conditions.

#### **General Comments:**

Sockeye - DNA samples collected from the Houston fence indicate that the Bulkley sockeye are not strays from Nanika or an other known stock. Fish access was explored this year. None of the beaver dam complexes seemed impassable although low water levels at Bulkley Falls likely prevented migration into either Maxan or Bulkley Lakes. It is hoped that adult surveys will continue and possibly smolt trapping at the mouth of Maxan Lake. Juvenile surveys would be confounded by a large kokanee population.

Chinook - Brood stock collection used 19 females and 85 males. As of November the hatchery had approximately 70,000 alevins from 2004 egg take.

Days of the Month:	Estimate Method:	Estimate Classification:	Reliability	Annual Estimate:	Estimate Stage:
1-10 = A	1 = Peak Live Plus Dead	Type 1 = True Abundance, high resolution	Low	-1 = N.O. (None Observed - Stream inspected but	P = Preliminary
11 - 20 = B	2 = Peak Live Plus Cumulative Dead	Type 2 = True Abundance, medium resolution	Medium	no fish observed, even though conditions	NF = Near Final
21 - 31 = C	3 = Area Under the Curve	Type 3 = Relative Abundance, high resolution	High:	would permit enumeration)	F × Final
	4 = Fixed Site Census	Type 4 = Relative Abundance, medium resolution		-2 = UNK (Unknown - Information not adequate	
	5 = Expert Opinion	Type 5 = Relative Abundance, low resolution		to estimate escapement, (ie. Too few	
	6 = Redd Count	Type 6 = Presence or Absence		Inspections, poor counting conditions, etc.)	
	7 = Lake Expansion			-3 = N.I. (Species Not Inspected.)	
	8 = Mark and Recapture - Petersen			-4 = D.N.S. (Does Not Spawn - Species not known	
	9 = Mark and Recapture - Jolly-Seber			to spawn in this system)	
	10 = Addition/Subtraction				
	11 = Multiplication/Division				
	12 = Other				

CreatedBy:

Affiliation: North Coast Stock Assessment Division

B. Finnegan

February 14,2005 14:47

UpdatedBy: Dan Wagner April 21,2005 11:14

Printed: 21/06/2005 8:09:40 AM



STREAM IDENTIFICATION

Watershed Code: 46-0000-000-000-000-000-99

Stream Name: BULKLEY RIVER - UPPER

Year: 2003

Location: BULKLEY / MORICE

Area: 4

DATES of INSPECTION

Aug 15 Dec 31

#### SPAWNING RUN TIMING and ESTIMATED NUMBER

Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8 Dead Pitch, 9 Tag Recovery, 10 Other

Reliability: Low, 1, 2, 3, 4, 5, High

	- OA MINISTER STATE								
(1) SPECIES	(2) ARRIVAL IN STREAM mth. day	DA START mth. day	(3) TES of SPAWNIN PEAK mth. day	NG END mth. day	(4) # of OBS.	(5) MTH.	(6) REL.	(7) TOT. ON GROUNDS	(8) OPTIMUM ESCAPE.
SOCKEYE						10		UNK	300
соно						10	16	2126	7500
PINK	1/2				0			N/I	500
сним					0			-4	C
CHINOOK						14	2	1280	2000

#### **UNUSUAL CONDITIONS**

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio:

#### PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
- (B) Particulars of scouring of spawning beds or change in stream course :
- (C) Water levels flow, normal, abnormal. If abnormal, details should be given:

#### **BIOLOGICAL CONDITIONS**

- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity) :
- (G) New Obstructions (location, nature and recommendations):

GENERAL COMMENTS (brief description of final estimate calculation):

CHINOOK:

Chinook spawner assessment was carried out by helicopter Aug. 19 for a total count of 1020 chinook observed between the Morice River junction and Bulkley Falls. Over 79% occupied the section between Richfield Creek mouth and Knockholt. The fish were well distributed in this major

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spawning area. A total of 266 different chinook were sampled during egg collection this year. This sample was composed of 55% wild and 45% adipose clipped fish.

Visibility during the assessment flight was very good in most sections. Chinook that were spawning were clearly visible with the exception of the Richfield section where over hanging trees were a problem. As in previous years a comparative ground count was done in the vicinity of McQuarrie and Richfield Creeks to verify accuracy of the aerial count. From the flight and ground count information the chinook spawning stock of four to six year olds was estimated at 1280. Very few jacks were seen. The four year old component was much weaker than last year with five year olds being dominate in the population. The fish were large this year because of the large 5 year old component and the cool water conditions contributed to the general good condition of the fish.

#### Aerial count by section:

Above Bulkley Falls	not flown
Meanwhile Creek	51
Topley	37
Richfield Creek	34
Perow Station	213
McQuarrie Creek	69
Below McQuarrie Ck	445
Below Knockholt	1
Houston	170
in Buck Creek	not flown
Total for flight	1020

The chinook egg take was from 19 females for a total of 64,860 eggs. Sperm was collected from fifty nine males. All males were released back to the stream.

Note: An additional heli inspection was done (Aug 15) in areas which are usually not inspected for a count of 279 chinook. These fish are not accounted for in the estimate above. This was done to maintain comparability of estimate to past years.

#### COHO

The Upper Bulkley Fence near Houston was operated from August 25 to Oct 24. The count was 1799 coho through the fence and 327 (as estimated from redd measurements not spawner counts) below the fence. Fence operation stopped after the 24th because of high water levels. It is estimate over 90% of the run was past the fence by then. Peak migration was around Sept 23 to 26 as in previous years. Number of CWT fish at the fence was 408.

The coho egg take was from 16 females for a total of 48,370 eggs. Sperm was taken from 32 different males.

#### Sockeye

Three adult sockeye were also captured at the fence. DNA was taken from these fish and they were not Nanika and were not directly matched to any DNA baseline. They may have been part of the Bulkley/Maxan Lake stock.

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STREAM IDENTIFICATION

Watershed Code: 46-0000-000-000-000-99

Stream Name: BULKLEY RIVER - UPPER

Year: 2002 Area: 4

Location: BULKLEY / MORICE

Dec 31

DATES of INSPECTION

SPAWNING RUN TIMING and	<b>ESTIMATED</b>	NUMBER
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Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8

Dead Pitch, 9 Tag Recovery, 10 Other

Reliability: Low 1 2 3 4 5 High

(1) SPECIES	(2) ARRIVAL IN STREAM mth. day	START mth. day	(3) ATES of SPAWNIN PEAK mth. day	IG END mth. day	(4) # of OBS.	(5) MTH.	(6) REL.	(7) TOT. ON GROUNDS	(8) OPTIMUM ESCAPE.
SOCKEYE				, , , , , , , , , , , , , , , , , , ,	0			N/I	300
соно						10	2	990	7500
PINK					0			N/I	500
СНИМ					0			-4	C
снімоок						14	2	1100	2000

#### **UNUSUAL CONDITIONS**

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio: Coho enhancement and classroom incubation activities with Coho, Chinook and Sockeye. For more information contact the Smithers Community Advisor

#### PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
- (B) Particulars of scouring of spawning beds or change in stream course :
- (C) Water levels flow, normal, abnormal. If abnormal, details should be given:

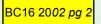
#### **BIOLOGICAL CONDITIONS**

- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity):
- (G) New Obstructions (location, nature and recommendations):

#### GENERAL COMMENTS (brief description of final estimate calculation):

The Upper Bulkley counting fence operated again this year from August 31 to Oct. 31 for a count of 990 (465 female & 525 Male) coho of which 297 (30%) were adipose clipped. Approximately 23% of the coho enumerated at the fence had been tagged by the Wet'suwet'en Coho Population Estimate Program at Moricetown. It was reported that the fence was never breached and there were no problems with fish not wanting to enter the

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live box and passing through the fence. However, by comparing survival to catch data(Upper Bulkley to Toboggan) from the Moricetown CWT sampling, and assuming this comparison is reflected in the escapement, it is estimated that 4000 Bulkley coho should have escaped to spawned. The number of spawners down stream of the fence would have been 3010 if the fence count is accepted as total. Some of these spawners may have migrated up the Morice to spawn, as has been noted in the past. There was some coho spawning noted below the fence in the Upper Bulkley River, however conditions for counting were not good so no count was done. Certainly what was seen below the fence gave no indication of 3000 plus spawners.

Coho egg take done, 40,000 approximately.

Two groups of coho fry (2001 brood) were released in the Upper Bulkley Oct. 2nd to 4th 2002. One group to Buck Creek with adipose fin clip and CWT and the other group to the Upper Bulkley designated as smolts with an adipose and right maxillary clip and CWT. The total number of fry released was 47,750 at 6.10 grams.

A helicopter count for chinook was done Aug. 19th for 673 visible spawners. Visibility during the assessment was fair to good. Spawning fish were clearly visible while chinook in deeper pools were more difficult to enumerate. Groundtruthing of the heli count was done the same day in the McQuarrie Creek area for a count of 134 chinook compared to 82 from the air. That resulted in the use of a correction factor of 1.63 for the entire survey area resulting in the escapement estimate of approximately 1100 chinook.

A chinook egg take was done with approx. 60,000 taken to the Toboggan Creek hatchery for incubation. A total of 15 females and 54 males were used for the egg take. Males were released live. 300 different chinook were sampled, 56% were wild, 39% adipose clipped and 5% ventral clipped.

Chinook count by section:

Above Bulkley Falls - 0 Meanwhile Creek - 0 Topley - 2 Richfeild Creek - 8 Perow Station - 173 McQuarrie Creek - 48 Below Mcquarrie Creek - 267 Below Knockholt - 26 Houston - 94 in Buck Creek 55

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STREAM IDENTIFICATION

Dead Pitch, 9 Tag Recovery, 10 Other

Watershed Code: 46-0000-000-000-000-099

SPAWNING RUN TIMING and ESTIMATED NUMBER

Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8

Stream Name: BULKLEY RIVER - UPPER

Year: 2001

Location: BULKLEY / MORICE

Area: 4

DATES of INSPECTION

Dec 31			

#### Reliability: Low, 1, 2, 3, 4, 5, High (3)(4) (5)(6) (7)(8) ARRIVAL IN DATES of SPAWNING # of TOT. ON **OPTIMUM** OBS. GROUNDS ESCAPE. STREAM SPECIES START PEAK END MTH. REL. mth. day day mth. day mth. day mth. UNK 10 300 SOCKEYE 4 2200 7500 соно UNK 500 PINK 0 CHUM 0 -4 4 2000 CHINOOK 3 5600

#### UNUSUAL CONDITIONS

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio:

#### PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
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- (C) Water levels flow, normal, abnormal. If abnormal, details should be given:

#### BIOLOGICAL CONDITIONS

- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity) :
- (G) New Obstructions (location, nature and recommendations) :

#### GENERAL COMMENTS (brief description of final estimate calculation):

Chinook - No hatchery brood stock taken this year. On August 17th a heli count of chinook was done. A total of 3343 (including 49 in Buck Creek) chinook were counted between the Morice junction and Bulkley Falls. Over 71% were observed between Richfield Ck. and Knockholt. Visibility during the flight was good. The chinook were actively spawning and were easy to count. Those holding in pools were more difficult. Two comparative ground counts were done near McQuarrie Creek & Richfield Creek to verify the aerial count accuracy. 503 chinook were sampled and

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another 438 were visually inspected for sex and marks. It is estimated that 76% of the run was wild, 25% adipose clipped. 55 adipose clipped heads were recovered. Only a few jacks this year. The four year old component of the run was much less than last year with most of the fish being five year olds. Over 50% of the run was female. The fish were healthy with very little pre-spawning mortality. (Info from Toboggan Ck Sal & Sthd Enhancement Society). 58 chinook were counted at the coho fence mentioned below.

Coho - The fence (located 6km up stream from the confluence with the Morice) was operated between August 21(evening) and Oct. 31. The first coho through the fence was Aug. 24. The peak migration through the fence was between Sept. 24 to 26 with 741 coho. Four coho were captured and released above the fence on the last day of operations. The count was 2197 (1140 females, 1057 males). 53 females were used for hatchery brood stock, 163,085 eggs taken & sperm taken from 55 males. 2072 coho were released above the fence. The fence was not laid down at any time this year. Marks indicate that 65% of the run was hatchery stock. A few coho may have been below the fence after it was pulled. A Heli count of 36 coho between the Morice confluence and the fence was made Oct 24.

Sept. 27 heli count between McQuarrie Ck to falls - 43
Oct. 18 heli count between Morrice Confluence and fence - 87
Oct. 18 heli count between Richfield Creek and McKilligan Rd. - 226

Oct. 24 heli count between McKilligan Rd and Topley - 194

Oct. 24 heli count between Bulkley/Morice confluence to fence - 36

The coho estimate is a combination of the fence count and aerial inspections.

Pink - 14 pink counted at fence.

Sockeye - 3 sockeye counted at fence.

Sthd - 20 counted at fence.

The fence information is from the Smithers Community Advisor.

The coho heli enumerations are from Stock Assessment Nanaimo and the fence count information comes from the Community Advisor in Smithers.

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D. Wagner

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STREAM IDENTIFICATION

Year: 2000

Location: BULKLEY / MORICE

Area: 4

**DATES of INSPECTION** 

Stream Name: BULKLEY RIVER - UPPER

Watershed Code: 46-0000-000-000-000-000-99

Dec 31

#### SPAWNING RUN TIMING and ESTIMATED NUMBER

Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8

Dead Pitch, 9 Tag Recovery, 10 Other

Reliability: Low, 1, 2, 3, 4, 5, High

											<del></del>	
(2) (3) ARRIVAL IN DATES of SPAWNING STREAM START PEAK END						ND	(4) # of OB\$.	(5) MTH.	(6)	(7) TOT. ON GROUNDS	(8) OPTIMUM ESCAPE.	
mth.	day	mth.	day	mth.	day	mth.	day	i			!	
		·		<u> </u>				0			N/I	300
:				<u> </u>								
		·		:					10	1	800	<b>7</b> 500
		:		:				0			N/I	500
· · · · · · · · · · · · · · · · · · ·						· • · · ·		0		<u></u>	-4	
				:					10	3	2560	2000
	ARRIV STRE	ARRIVAL IN STREAM	ARRIVAL IN STREAM STA	ARRIVAL IN DA' STREAM START	ARRIVAL IN DATES of S STREAM START PEA mth. day mth. day mth.	ARRIVAL IN DATES of SPAWNIN STREAM START PEAK mth. day mth. day mth. day	ARRIVAL IN DATES OF SPAWNING STREAM START PEAK EI mth. day mth. day mth. day mth.	ARRIVAL IN DATES OF SPAWNING STREAM START PEAK END mth. day mth. day mth. day	ARRIVAL IN STREAM START PEAK END OBS.  mth. day mth. day mth. day mth. day 0  0	ARRIVAL IN STREAM START PEAK END OBS. MTH.  mth. day mth. day mth. day mth. day  10	ARRIVAL IN START PEAK END OBS. MTH. REL.  mth. day mth. day mth. day mth. day  0  10 1  0  10 1	ARRIVAL IN STREAM START PEAK END OBS. MTH. REL. GROUNDS  mth. day mth. day mth. day mth. day  10 1 800  N/I

#### **UNUSUAL CONDITIONS**

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio:

#### PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
- (B) Particulars of scouring of spawning beds or change in stream course :
- (C) Water levels flow, normal, abnormal. If abnormal, details should be given:

#### **BIOLOGICAL CONDITIONS**

- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity):
- (G) New Obstructions (location, nature and recommendations):

#### GENERAL COMMENTS (brief description of final estimate calculation):

Chinook - Broodstook collection took place between Aug. 21 & 24. 66,167 eggs were taken from 18 females and sperm from 62 different males. Males were released after use. On August 21 a heli count of chinook was done. A total of 1929 were observed between the Morice junction and Bulkley Falls. Over 70% were observed between Richfield Ck and Knockholt. Visibility during the flight was good. Chinook that were actively spawning were easy to count. Those holding in pools were more difficult. Did two comparative ground counts around McQuarrie Creek to verify

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aerial assessment accuracy. Sampled 518 individual chinook, estimate 69% wild 31% adipose clipped. 65 adipose clipped heads recovered. Very few jacks this year. The four year old component of the run was very strong. 60% of the chinook captured this year were males.

Coho - There continues to be considerable discussion concerning the escapement to the Upper Bulkley. The following is a brief summary of the information available:

The fence count was 167 coho of which 47 were taken for hatchery brood stock. The fence was laid down twice due to high water for three hours each time. The area was observed during those periods and no fish were seen to pass.

On Sept. 27th a heli inspection counted 150 coho in the Upper Bulkley above the confluence.

On Oct. 11th Noast Coast Stock Assessment(Naniamo) did a heli inspection for coho and counted 552 coho below the fence. Of the 552 coho, 100 were down stream of the Bulkley/Morice confluence in the Lower Bulkley, 290 just at the confluence, 30 in the Upper Bulkley just upstream of the confluence and 132 in the Upper Bulkley above that.

It has also been confirmed that coho of Upper Bulkley coho origin migrated into both Toboggan and Kathlyn Creeks.

Using CWT and Alaskan catch information in comparison to Toboggan Creek, it is forecasted that 983 coho should have returned to the Upper Bulkley.

The 800 estimate assumes that 800 coho of Upper Bulkley origin returned and spawned. They may have gone above the fence unnoticed, spawned below the fence in the Upper Bulkley, some very likely spawned in Toboggan and Kathlyn Creeks and others may have spawned in other locations.

The coho egg take for incubation in the Toboggan Creek hatchery was 73,263. Surveys were done on both Richfield and Byman Creek. No coho seen in Richfield, saw 3 coho and 2 redds in Byman Creek(as reported by Nadina Community Futures).

D. Wagner

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#### **DEPARTMENT of FISHERIES and OCEANS** REPORT of SALMON STREAMS and SPAWNING P.

STREAM IDENTIFICATION

Year: 1999 Area: 4

Location: BULKLEY / MORICE

Oct 05

Watershed Code: 46-0000-000-000-000-000-992

DATES of INSPECTION Oct 22 Oct 28

Stream Name: BULKLEY RIVER - UPPER

SPAWNING RUN TIMING and ESTIMATED NUMBER

Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8

Dead Pitch, 9 Tag Recovery, 10 Other

Reliability: Low, 1, 2, 3, 4, 5, High

(1) SPECIES	(2) ARRIVAL IN STREAM mth. day	STA	RT	(3) ATES of S PEA mth.	PAWNIN K	ND day	(4) # of OBS.	(5) MTH.	(6) REL.	(7) TOT. ON GROUNDS	(8) OPTIMUM ESCAPE.
SOCKEYE						 	0			N/I	300
соно								10	4	1550	7500
PINK							0		1	N/I	500
СНИМ							0			-4	0
CHINOOK				Aug	С	 	3	14	2	690	2000

#### **UNUSUAL CONDITIONS**

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio:

#### PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
- (B) Particulars of scouring of spawning beds or change in stream course :
- (C) Water levels flow, normal, abnormal, if abnormal, details should be given:

#### **BIOLOGICAL CONDITIONS**

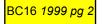
- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity):
- (G) New Obstructions (location, nature and recommendations):

#### GENERAL COMMENTS (brief description of final estimate calculation):

The coho fence count and the chinook information comes from the either the Toboggan Ck, Salmon & Steelhead Enhancement Society or the Community Programs in Smithers. The heli coho inspections on Oct. 05 and 22 were done by Stock Assessment with counts of 57 and 160 respectively.

The coho counting fence operated without incident from Aug.31 to Nov. 02/99. 1073 coho were counted, 80% were hatchery stock. 128 coho had be

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tagged at Moricetown. Based on the surrvival to catch information (Bulkley CWT's at 40% of Toboggan CWT's in Alaska)and the male/female ratios (0.8:1 in Bulkley and 1.4:1 Toboggan) it appears that the Bulkley fence count missed the early portion of the run resulting in an estimated coho escapement of 1550. The estimate of 1550 appears in colum 7 "Tot. On Grounds" no adjustment was made for the 39 coho seen in Buck Creek. The Buck Creek "Tot. On Grounds" reads as Unk. The 39 Buck Creek coho therfore are included in the 1550!!!! The year 2000 should see a new fence installed just upstream of the present fence. 140,000 coho egg take was completed.

The Chinook estimate is from one heli and two ground checks. The number of jacks was high. It is estimated that 62% were wild fish and 38 % hatchery. 95,955 chinook eggs were taken from 31 females and sperm from 81 males. All males were released back into the stream.



STREAM IDENTIFICATION

Year: 1998

Location: BULKLEY / MORICE

Watershed Code: 46-0000-000-000-000-000-99 1

Area: 4

**DATES of INSPECTION** 

Oct 18 Oct 19 Nov 07

Oct 14 Nov 10

SPAWNING RUN TIMING and ESTIMATED NUMBER

Stream Name: BULKLEY RIVER - UPPER

Methods: 1 Walk, 2 Float, 3 Plane, 4 Helicopter, 5 Redd Counts, 6 Spot Check, 7 Strip Counts, 8

Dead Pitch, 9 Tag Recovery, 10 Other

Reliability: Low, 1, 2, 3, 4, 5, High

(1) SPECIES	(2) ARRIV STREA	AL IN	STA		(3 ATES of S PEA	PAWNIN	IG EN	ın	(4) # of OBS.	(5) MTH.	(6) REL.	(7) TOT. ON GROUNDS	(8) OPTIMUM ESCAPE.
Or LOILS	mth.	day	mth.	day	mth.		mth.		:	WIII.	NEL.		
SOCKEYE			: :						:	10		UNK	300
соно	SEPT	A	:		<u></u>				<u>:</u>	10	2	317	7500
PINK									0	104	1	N.O.	500
CHUM			i						0			(-4)	
CHINOOK							-+		:	4	3	1100	2000

#### **UNUSUAL CONDITIONS**

Enhancement activities, unusual mortality, obstructions, changes in habitat, unusual water levels, variations in sex ratio: EGGS FROM 44 COHO FEMALES WERE TAKEN FOR HATCHERY BROOD STOCK. AVE. FECUNDITY IS 3200 EGGS PER FEMALE. EGGS WERE TAKEN FROM 24 CHINOOK AND SPERM FROM 68 DIFFERENT MALES. THAT MAKES A TOTAL OF 100,000 CHINOOK EGGS AND 140,000 COHO EGGS

PHYSICAL CONDITION of SPAWNING GROUNDS

- (A) Evidence of erosion and silting. Give extent or percent of stream bed affected:
- (B) Particulars of scouring of spawning beds or change in stream course :
- (C) Water levels flow, normal, abnormal, if abnormal, details should be given:

**BIOLOGICAL CONDITIONS** 

- (D) Particulars affecting distribution by species. Note changes from normal:
- (E) Comments on predators (numbers compared to other years):
- (F) Evidence of digging up eggs (location, severity) :
- (G) New Obstructions (location, nature and recommendations):

#### GENERAL COMMENTS (brief description of final estimate calculation):

THE BULKLEY RIVER FENCE WAS OPPERATED FROM SEPT. 04 TO NOV. 10. LOCATED APPROX. 6KM UPSTREAM FROM THE CONFLUENCE WITH THE MORICE. WEATHER CONDITIONS AND IMPROVEMENTS TO FENCE PERMITTED THE FENCE TO REMAIN IN

Signature	Person Preparing Report



PLACE CONTINUOUSLY. THE COHO ESTIMATE IS THE ACTUAL FENCE COUNT. AN UNKNOWN # OF COHO DID SPAWN IN THE 6KMS BELOW THE FENCE, FROM THE INFORMATION PROVIDED IT IS MORE THAN 8. ALSO IT IS POSSIBLE A FEW FISH WERE ABOVE THE FENCE BEFORE IT WAS INSTALLED. THIS IS WHAT IN KNOWN ABOUT THE 317 FENCE COUNTED COHO:

- SOME COHO SPAWNED IN TRIBUTARIES ABOVE THE FENCE. THE SYSTEMS CHECKED ARE: BUCK N/O, RICHFIELD 6 TO 8 REDDS, BARREN N/O, BYMAN 2 REDDS & MacQUARRIE N/O. MOST COHO SPAWN IN THE MAIN BULKLEY AND SEEM TO CONCENTRATE WHERE THE TRIBS. ENTER THE MAIN RIVER. 45 FEMALE COHO WERE RETAINED FOR HATCHERY BROOD HOWEVER ONE DIED . 43 MALE COHO WERE TAKEN FOR BROOD STOCK AND 24 MORE FOR GENE BANKING. 140,000 COHO EGGS WERE TAKEN FOR THE HATCHERY. THE MALES WERE RETURNED BACK TO THE RIVER LIVE WITH THE HOPE THEY WOULD SPAWN SOME MORE NATURALLY. OF THE WILD FISH 48% WERE FEMALE, 52% MALE. OF THE HATCHERY RETURNS 56% WERE FEMALE, 44% MALE. 69% OF THE FISH WERE HATCHERY AND 31 WILD. FOR FUTHER INFO. SEE THE "BULKLEY RIVER FENCE REPORT 1998" THE CHINOOK EGTIMATE COMES FROM THE TODOGGAN CK. HATCHERY. THEY FLEW THE SYSTEM BY HELICOPTER FOLLOWED UP WITH GROUNDTRUTHING AND SAMPLED 377 DIFFERENT FISH TO ESTIMATE THAT 62% OF THE RUN WAS WILD.

2 SOCK. AND 14 STHD WERE ALSO CAUGHT AT THE FENCE. 90,000 CHINOOK EGGS WERE TAKEN FOR THE HATCHERY. 24 FEMALES AND 68 MALES WERE USED IN THE CHINOOK EGG TAKE. MALES WHERE RELEASED ALIVE ALL FEMALES WERE KILLED.

Signature	Person Preparing Report	_

# DEPARTMENT OF FISHERIES AND OCEANS ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

Watershed code 46 - 0000 - 000 - 000 - 000 - 000 - 992	<sup>Year</sup> 1997	
Gazetted Name (map name) Bulkley River(above Morice Confluence)	District No. 08	Subdistrict No
First Local Name	Statistical Area 04	Subdistrict Name
Flows Into Bulkley River(lower)/Skeena River		

Date(s) Inspected

	Month	Day		Month	Day		Month	Day		Month	Day
1.	Nov	13	2.			3.			4.		
6.			Ģ.			7.			8.		
9.			10.			11.			12.		

Spawning Run Timing And Estimated Escapement Numbers

1. Species	2. Arriva Strea	ıl in	Dai	tes an	3. d Duratio		Spawning	j	4. No. of Obser.	5. Methods		7. Est Total on ground	8. Optimum Escapemer	
			Sta	rt	Pea	k	Ene	<u> </u>	j					
	Month	Day	Month	Day	Month	Day	Month	Day				•		
SOCK												N/O	300	
соно									see below	4, 10		Unk	7500	
PINK												N/O	500	
CHUM												(~4)		
CHIN									see below	1,4	3	764	2000	

#### Additional Comments

#### **Physical Conditions of Spawning Grounds**

- A. Evidence of erosion and silting. Give extent or percent of stream bed affected.  $\Rightarrow$
- B. Particulars of scouring of spawning beds or change in course of stream.  $\Rightarrow$
- C. Water levels flow, normal, high, abnormal. If abnormal, details should be given.  $\Rightarrow$

#### **Biological Conditions**

- D. Particulars of distribution of spawning salmon over the stream bed.  $\Rightarrow$
- E. Comments on predators. ⇒
- F. Evidence of digging up of eggs by later spawning fish.  $\Rightarrow$
- G. New obstructions (nature and recommendations). ⇒.

#### Comments on any other conditions affecting this stream or enumerations

H. A counting fence was in operation again this year during the coho migration but had to be pulled Oct. 15 due to high water. The chinook estimate is from a flight mid August and spot ground inspections. The results of the ground counts and the Heli. flight are compared to estimate total escapement. Also 336 chinook were sampled during the year approx. 46% were wild 54% wild. Chinook brood stock was taken 100,000 eggs from 37 females and 75 males. Males were released after use.

23 coho were counted at the fence near Houston. Only 5 were wild. 13 female coho were taken for hatchery(Taboggan) brood stock, 1 released. Males were partially millked and released. Byman and McQuarrie creeks were inspected for spawners several times by the local communitee group. No fish observed.

A mark recapture program was undertaken near Moricetown Canyon. Over 600 coho were tagged. It is estimated that 6000 to 8000 coho passed through the canyon. 25 of the taggs showed up at Toboggan Creek and 2 at the Houston fence. The destination of the other taggs was not determined however it is suspected that their is considerable main stem spawning in both the Bulkley & Morice Rivers.

Nov. 13 heli inspection (Morice confluence to Topley) 2 redds and 2 coho seen. Visibility poor in some areas.

DFO		
Organizati	on preparing report	***

BC16 1996

# DEPARTMENT OF FISHERIES AND OCEANS

#### ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

Watershed code 46 - 0000 - 000 - 000 - 000 - 000 - 99	2. Year 1996	
Gazetted Name (map name) Bulkley River(above Morice Confluence)	District No. 08	Subdistrict No
First Local Name	Statistical Area 04	Subdistrict Name Smithers
Flows Into Bulkley River(lower)/Skeena River		

Date(s) Inspected

	Month	Day		Month	Day		Month	Dау		Month	Day
1.	Mid Aug		2.	See Below		3.			4.	<u>-</u>	- "
5.			6.			7.			8.		
9.			10.			11.			12.		

Spawning Run Timing And Estimated Escapement Numbers

1. Species	2. Arrival in Stream							4. No. of Obser.	5. Methods	6. Reliabi lity	7. Est Total on ground	8. Optimum Escapement	
			Sta	Start		Peak		End		ļ			
	Month	Day	Month	Day	Month	Day	Month	Day			İ		
SOCK			-								_1	N/O	300
соно									see below	1,10	3	230	7500
PINK										1		N/O	500
CHUM													
CHIN									see below	1,4	3	1027	2000

#### **Additional Comments**

#### **Physical Conditions of Spawning Grounds**

- A. Evidence of erosion and silting. Give extent or percent of stream bed affected.  $\Rightarrow$
- B. Particulars of scouring of spawning beds or change in course of stream.  $\Rightarrow$
- C. Water levels flow, normal, high, abnormal. If abnormal, details should be given,  $\Rightarrow$

#### **Biological Conditions**

- D. Particulars of distribution of spawning salmon over the stream bed.  $\Rightarrow$
- E. Comments on predators. ⇒
- F. Evidence of digging up of eggs by later spawning fish.  $\Rightarrow$
- New obstructions (nature and recommendations). ->.

#### Comments on any other conditions affecting this stream or enumerations

H. A counting fence was in operation again this year during the coho migration from approx. Sept. 02 to Nov.01. The fence had to be let down for two days during a high water even and problems with a build up of leaves. The chinook estimate is from a flight mid August and spot ground inspection. The results of the ground counts and the Heli. flight are compared to estimate total escapement. 818 chinook were counted from the air between the Morice junction and Bulkley Falls. Also 357 fish were sampled during the year approx. 60% were wild fish. Chinook brood stock was taken between Aug 19 & 21.

34 steelhead were counted past the fence. This is the first recorded count of steelhead above the fence.

170 coho were counted at or just below the fence. 61 were wild and 109 were hatchery. The estimated escapement comes from comparing coded-wire tags sampled in Canadian troll and net fishireies and comparing them to Toboggan Creek returns. 50,00 coho eggs were taken for brood stock.

	DFO
Signature	Organization preparing report

# DEPARTMENT OF FISHERIES AND OCEANS ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

				V - 11E/111	10 711	<u> </u>	44 141147	a r or	DLAII	ONO
STREAM	I IDENTIFI	CATION				,	Year:	0	]	
Watershed code	·				<del></del>	-	District No.	95	Subdistrict (	No.
Gazetted name (	mapname)					_	Statistical Area	8	Subdistrict !	
First local name	Bulkley	River (c	upper)			_  [			Smil	Hers_
First local figme	J		·			1	Month	Day	Month	Day
Second local na	me					$\neg \square$	Tence at	Houston S	apt or	
Flows into	62 /	(1)	1. 6	,		-	Fue 18	heli In		
	awir Bull	<u> 2 (ey) - 5/1</u>	eana L	1 way	<del></del>			141, 12	spect 1	ori
						-	· · · · · · · · · · · · · · · · · · ·			
SPAWNING	G RUN TIM	ING AND E	STIMATE	D NUMBI	ER (inst	ructions	on flip	side)	L	
1	2		3		4	5	6	7		8
SPECIES	ARRIVAL IN STREAM	DATES OF D	URATION OF	SPAWNING END_	NO. OF	METHODS	1 55.14	EST. TO		OPTIMUM ESCAPEMENT
	Month Day	Month Day	Month Day	Month Day			, ( <u>ere</u>			LSCAFEMENT
SOCKEYE					-	1,10	12	20		300
<u> </u>								ļ		
СОНО 2					+	1,10	12	50		7500
PINK 1							1	NIC	$\overline{}$	
2								11.70		500
CHUM 1										
2					_ ]					
CHINOOK 1										
UNUSUAL	00101710	1		<u> </u>		4	2	350	2	2000
(A) Enhar (b) Unusu (C) Obstri (D) Large (E) Unusu	eal mortalities, uctions or chang variations in sex ially high or low	se biological actives in habitat with ratio or unusual water flow level d	recommendat	l-a						
ADDITION										<del> </del>
(A) Evide	. CONDITION (	OF SPAWNING nd slitting. Give ex	GROUNDS tent or percen	t of stream bed	affected .					· · · · · · · · · · · · · · · · · · ·
	••••••									
(B) Partic	ulars of scouring	of spawning bed	s or change in	course of stre	am					
****									• • • • • • • • • • • • • • • • • • • •	
(C) Water	levels flow, norn	nal, high, abnorm	al. If abnormal	, details should	d be given					
BIOLOGICA	AL CONDIT	IONE				<u></u>			• • • • • • • • • • • • • • • • • • • •	
		on of spawning s	almon over the	stream had			<del></del>	<del></del>	-	
	• • • • • • • • • • • • • • • • • • • •						• • • • • • • • • • • • •			
(E) Comm	nents on predato	rs								
		eggs by later sp								
		are and recomme								
									• • • • • • • • • • • • • • • • • • • •	
OMMENTS	S ON ANY	OTHER CO		·····						
(K) .33	1 Chair	OTHER CO		1 1.	,	/ . /		<del></del>		
ha	Lory 2	44 Chin	ink (1.0		nspect	ten. G	meb	y/. 9.69	gg an.	Lik
39	Cuho we	we tale	n for s	7. S. W. W.	Lock.	79.4.10. TL	Lucy.	en Mar.	ا برجوب	alem
be	m. t.le	fence	at Hace	fon No	: Calo	المرتبب	Lpas	t He	force	e Law
Wa	ter como	litures 1	ray has	ne ban	a L	refor.	8.07	Her cal	a we	(e
	)	1/2				2.	111	/	- بوسان ن	
<del></del>	Signature	· · · · · · ·			le/	Fisher Officer	/ Person Pre	paring Repor	<i>516</i>	

#### NSTRUCTIONS FOR SPAWNING RUN T NG AND ESTIMATED NUMBER 1 Provision is made for two spawning runs per species. If only one run exists, use Line 1. Date entry: a) Month: enter first three letters (Aug) or (Oct) 3 b) Day: enter date (12) or (04) enter letter codes as follows - (A) 1 - 10th (B) 11 - 20th (C) 21 - 31st or 4 Number of times each species is present in stream during inspection. 5 Inspection method used. Enter up to 4 methods per species. ■ Walk Helicopter Strip Counts Float Redd counts Dead Pitch Other Plane Spot Check Tag Recovery 6 Reliability of spawning population estimate (based on conditions and number of stream visits). 1 2 Low 3 5 High If the stream has been inspected, enter best estimate of total annual escapement. If the stream has been inspected, but no fish word soon even though water conditions would permit enumeration, enter N.O. (None Observed). If juvenile fish only were observed, enter J.P. (Juveniles Present). C) If the enumerator(s) observed indications that an inspected stream was frequented by fish, but were unable to make an estimate because of water conditions, enter U.K. (Unknown). If the stream was not inspected, for whatever reason, enter N.I. (Not Inspected). 8 Enter if available. Observed by the Hawson volunteer group closing 30,4 inspections below the fence to the Monie hier confluence. Mission creek a local name for a creek was the localism of the Bulliley/Morice was inspected of times on foot by the Houston volunteer group under the direction of the community advisor. We coho were observed. 109,820 Che eggs taken to Toboggom Creek Hatelery 60,000 co " " " " " "

BC16 1994

# DEPARTMENT OF FISHERIES AND OCEANS ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM	IDENTIFIC	CATION					Year:	94	
Watershed code							District No.	Subdistr	riat No.
Gazetted name (m	apname)						Statistical Area	Subdist	rict Name
First local name	Up	res Bull	ley K	iver_		_	DATES OF IN		riflers
						_	Month	Day Mont	h Day
Second local nam	e						Aug	17	
Flows into		r Bul	W. 1. 1	0.			Periode		Libery crew
	own	K Par	Cay 1				from	Toboggan	<del>-                                     </del>
SPAWNING	RUN TIM	NG AND E	STIMATE	D NUMBE	R (ins	truction	s on flip	side)	\
SPECIES	ARRIVAL IN STREAM	START	OURATION OF	END	NO OF OBSER	5 метног	S RELIA- BILITY	EST. TOT. NO. ON GROUNDS	OPTIMUM ESCAPEMENT
SOCKEYE 1	Month Day	Month Day	Month Day	Month Day		10, 4		N/0 -	300
2				-			→ }		1
соно ,					-	10, 7		Clark	7500
1					1			NID -	500
5 bink									
CHUM 1									
2		-							<u> </u>
CHINOOK 2		-		-		10, 4		400 -	2000
UNUSUAL (		L						L	J L
(A) Enhand (b) Unusua (C) Obstru (D) Large	OR UNUSUAL Coment or intensal mortalities. Intimes or chang variations in sexally high or low	se biological acti es in habitat with ratio or unusua	recommenda number of jac	ks.					
ADDITIONA	AL COMME	NTS							
	CONDITION (			at of stream box	d affacted				
(B) Particu	lars of scouring	of spawning be	ds or change i	n course of stre	am				,
•••••									
(C) Water	levels flow, norr	nal, high, abnorr	nal. If abnorma	ıl, details shoul	d be given				
BIOLOGICA	L CONDIT	IONC				<u> </u>		***************************************	
(D) Particu	<del></del>		salmon over th	ne stream had					
*****									
(E) Comm	ents on predato	rs	•••••	***********					**********
(F) Eviden	ce of digging up	eggs by later s	pawning fish ,						
*****		•		•••••					
		<u></u>	····		<u>.</u>		<u>,,,</u>	<u></u>	<u></u>
COMMENTS									
(K) 1.3.3 V.G. 60	ncleliza	ere cou	ut.ed. p.a. 	et. t.be. f.e. erawez x d 12 l	P2+4R.:	Howa	nertle	ferree we 14.32 & c	
fal	Car by	oboggan		L. hate	ler.g.	1.5.164-12 <del>14</del> 1	Q		
* * * * * * * *									

Signature

Fisher Officer / Person Preparing Report

### DEPARTMEN OF FISHERIES AND OCEANS



#### ARBUAL REPORT OF SALMOR STREAMS AND SPANNING POPULATIONS

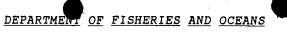
STREAM	IDENTIFICATION	Year 199	3			
atersh	ed code	District	No.	0 8	Bub-Dis	t No. 10
azette	d name Bulkley River upper	Statistic	al	Area		-Dist.Name rs
irst l	ocal name		_			
Becond	local name	Dates of		Day	Month	Day
lows i	nto Bulkley River lower	. <u>08</u> <u>08</u>	<u>:</u>	18 / 28 /		:
	<u>Skeena River</u>		: <u>.</u>	'/,-		<u>:</u>
TANNIN	G RUN TIHING AND RETIKATED NUK	BER				
	ARRIVAL < SPAWNING	>				
SPECI				MTHDS	RELIA- BILITY	
SOCKEYE	1:_/:_/	,	_/	<u>4</u>	<u>2</u>	<u>N.O.</u>
	1 : / : / :			<u>*10</u>	3	100
соно	2	:				
PINK	1 : / : / : .	/:_	/	<u>4</u> 	<u>2</u>	N.O.
СНИМ	1 : / : / :	/:	_/			
CHINOOF	1 : / : / :	/: / :	_/	4	3	1,100
	ESCAPEMENTS					
	300 / СОНО 7,500	/ PINK	_	<u>500</u>	_/ CHUM	<u></u>
PHYS (A)	ONAL COMMENTS SICAL CONDITION OF SPAWNINING OF Evidence of erosion and silting bed affected. None noted.  Particulars of scouring of spastream. None noted.	g. Give ex				
(c)	Water levels flow, normal, hig should be given. "Above norm	h, abnorma nal".	a l .	If abno	rmal, de	tails
BIOLOGI	CAL CONDITIONS					
	Particulars of distribution of bed. <u>Houston to Bulkley Fall</u>	spawning ls; well so	s a cat	lmon ove tered th	r the st roughout	ream system.
	Comments on predators	later spa	a w n	ing fish	· -	
( g )	then the Bulkley Falls.	recomendat:	ion	s) <u>Non</u>	e noted,	<u>other</u>
COMMENT (K)	rs on any other conditions Affi Actual Counts: August 18 August 28	Chinook <u>677</u>	s s	TREAM		
	A good portion of the fish fish seen on Aug. 18. San	n <u>counted</u>	on Mik	Aug. 28, e O'neil	are the	e same Igan Creek

Hatchery, suggests the escapement figure closer to 1,100 fish.

"Over 50% of these chinook were hatchery marked".

\* Note: Enumerated by fence count at Houston, B.C.

Fishery Officer/Person Preparing Report



#### ARRUAL REPORT OF SALMOR STREAMS AND SPANNING POPULATIONS STREAM IDENTIFICATION

				ON						9 2			
Watersh	ed c	o d e						District No. 08 Sub					t No. 10
Gazette	dna	me	Bulk	ley R	iver	uppe	e r	Stat	istic	cal	Area	sub Smithe	-Dist.Name
First 1	ocal	name	1					Data	E	T			
Second I	loca	I nam	· e				<del></del>	Mo: Au	nth g.		pection Day 17 /	Month	Day:
Flows in	nto					Wer		Au	<u>g.</u>	<u>:</u>	<u>27 /</u>		;
										<u>:                                     </u>	/_		<u>;                                    </u>
PRIRWATA	g RU	R TIM	ING A	AND E	BTIM	ATED R	URB	K K					
-			RRIV	A.T.	< S	PAWNIN	1G >						
SPECII	_	IN	STRE	AM S	TART	PE Mth	EAK Day	M t l	b Day		MTHDS	BILITY	EST. TOT.
SOCKEYE	2								:				<u>N.O.</u>
соно	1 2		-!	/	_ <u>:</u>	_/	:	_/	:	_/_	Fence	<u>1</u>	80
	1		<u>;</u>	_/	_;		:	_/	:	_/_			N.O.
PINK	2		<u>:</u>		_:		_;	_/	_:_	/.			
CHUM	1 2		: :	_/	:	_/	:	_/		_/			
CHINOOK	1 2		:-	/	:		:	_/	<del></del> :_		4	3	1,400
				_/ co	но _	7,50 CHINOC	OK _		PINK ,000		<u>500</u>	<u>/</u> CHUM	
ADDITION PHYSI	NAL ICAL Evid	COMME COND	NTS ITION		SPAWI	CHINOC  NINING	OK _ G GR	2  OUND:	<u>,000</u>  <b>s</b>			_/ CHUM	
ADDITION PHYSICAL CONTROL CONT	NAL ICAL Evid	COMME COND ence affec	NTS OITION of er	V OF	SPAWI nand	CHINOC NININC	G GR	OUND:	,000 S ve ex	ten	t or pe		stream
ADDITION PHYSICAL COLUMN COLUM	NAL ICAL Evid bed Part stre	COMME COND ence affec icula am.	CONTS OF THE STATE	V OF	SPAW	NINING d silt g of s	G GR	OUNDS	ye ex	t e n	t or pe	rcent of	stream se of
ADDITION PHYSICAL COLUMN COLUM	NAL ICAL Evid bed Part stre	COMME COND ence affec  icula am. r lev ld be emp.	NTS ITION of er ted.  rs of	V OF	SPAW	NINING d silt g of s	G GR	OUNDS	ye ex	t e n	t or pe	rcent of	se of
ADDITION PHYSICAL ADDITION PHY	NAL ICAL Evid bed Part streshout	COMME COND ence affec  icula am. r lev ld be emp. CONDI icula	ENTS ITION of er ted.  rs of els f give	V OF	SPAWIN and uring	NININO d silt	G GR ing	OUNDS. Givening	ye ex beds	or	t or pe	rcent of	stream se of tails Cius)
ADDITION PHYSICAL (A) E	NAL ICAL Evid bed Part streshout CAL Part:	COMME COND ence affec  icula am.  r lev ld be emp.  CONDI icula 70	ENTS ITION of er ted.  rs of els f give TIONS rs of % of	V OF cosio	SPAWIN and uring	NININO d silt g of s  mal, h remely below	pawingh Loof:	OUNDS. Givening	ye ex beds normalith h	or l. nigh	t or pe	rcent of in cour rmal, de gree cel	stream se of tails Cius)
ADDITION PHYSICAL (A) E	NAL ICAL Evid bed Part stre tate chou t CAL comme	COMME COND ence affec  icula am. r lev ld be emp.  CONDI icula 70 ents ence	ENTS ITION of er ted.  ra of els f give  TIONS rs of % of on pr of di	Y OF cosio	SPAWIN and uring norm Ext:	NINING d silt g of s mal, h remely below Eagl	pawing Loomer to the control of the	OUND: OUND: Ound Ound Ound Ound Ound Ound Ound Ound	beds to rma ith h	or l. high	t or pe  change  If abnote (21 de)	rcent of in cour  rmal, de gree cel  r the st	stream se of tails cius)
ADDITION PHYSICAL (A) E	NAL ICAL Evid bed Part stre CAL Commo	COMME COND ence affec  icula am. r lev ld be emp.  CONDI icula 70 ents ence	rs of give	Y OF cosio	SPAWIN and uring norm Ext:	NINING d silt g of s mal, h remely below Eagl	pawing Loomes.	OUND: OUND: Ound Ound Ound Ound Ound Ound Ound Ound	beds beds ith h	or l. nigh	t or pe  change  If abnot (21 de  mon ove	rcent of in cour  rmal, de gree cel  r the st	stream se of tails cius) ream
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#### DEPARTMENT OF FISHERIES AND OCEANS

ANNUAL REPORT OF SALMON STREAMS AND SPANNING POPULATIONS

STREAM	IDEN	TIFICATI	ON		¥	• a r	1991			
Natersh	ed co	d • `			D	istri	.ct No.	0.8	aid-du8	t No. 10
Gasette	d nam	• Bulk	ley Riv	er uppe	r 8	tatis	tical	sub Smithe	-Dist.Name	
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8 e c o n d	local	n m m e		<del> </del>		Mont		Day	Month	Day:
Flows i	nto	Bulkley	River		_	08	:_	26/_		:
	·	<u>DACCIIA</u>	KIVCI.			10		<u>*28/_</u>		<u>:</u>
SPAWNIN	G RUN	TIMING	AND EST	INATED N	UNBE	R				
		ARRIV	AL <	SPAWNIN	1G ≥					····
SPECI		IN STRE	AM STA	ART PE	EAK					EST. TOT.
SOCKEYE	1	:		Pay Mth	:	<u>/</u> —	:/			N.I.
соно		09_:01		/	:	/	-:/	_ 10	_ 4	300
PINK	1 -			/	:	/	: /			_ N.I
CHUM	1 _	•	/	//	:	/	:/			
CHINOOK				16 / 08					_ 4	1.200
	_			· · · · · · · · · · · · · · · · · · ·						
		300	/ сон	7.50 CHINOC	00	/ P:	NK 000	500 	/ CHUM	
ADDITIC	NAL C	OMMENTS								
	Evide			PAWNINING			exter	it or pe	rcent of	stream
( 7 )										
	strea		r scoul	ing of s	· Pawn	ing i			in cour	30 01
(c)		d be giv		ormal, b	igh,	abno	ormal.	If abno	rmal, de	tails
	Parti			ribution	of s	pawn:	ing sa	lmon ove	r the st	rwam
	b • d ⋅									
				up eggs			a b # A U	ing fish		
( <b>G</b> )	New C	bstructi	ons (a	sture and	d rec	. O M . D	dation	*) <u> </u>		
								· · · · · · · · · · · · · · · · · · ·		
COMMEN				ITIONS A						
(K)	Col	no enumer	ated a	t countir	ng f	ende	<u>in Hou</u>	ston R		
	COL	inting fe	nce in	pter flic Houston	est	<u>t. 5</u>	<u>0 coho</u>	<u> </u>		
	Ch: by	inook est Toboggan	imates Creek	based or hatcher	n hei v sta	licop aff d	ter fl uring	ights, a the summ	nd <u>obser</u> er.	vation
-										
(HAP	, DIAC	RAH, OR	H 1 A T - T	DT}		01	1.	1/2	11 1 - 12 m	a L.

Fighery Office/Person Preparing Report

DEPARTMENT OF FISHERIES AND OCEANS

ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM IDENTIFICATION

YORK 1990

							_	JIBCI.	100	٠.	08	Sub-Dist,		
atershe	d cod			name or proper uniform lady	azetted name Bulkley River (Upper)							Sub-Diet-Nan		
The	area	abov				River		tati:	Stice	91 F	भा ७०		-Die- chers	
irst lo	cal r	eme					[	ates	of :	Insp	ection			
econd 1		name Skee		Rive				Eng	th umera ad Sa	ate	by th	Month e Houstor EP (count	n Ste	èel-
Lows in	to	>K94	, II &			recebbraghase (Boarter) en en en estado Mi	14444WIII.	head Society & SEP (counting fence at Houston, B.C).						
							,		······································	:	/_			
PAWNING	RUN	TIMI	ING	AND	ESTIM	ATED N	IUMB	ER						
SPECIE		IN S	TRE	AM	START	PAWNIN PE	AK	E			MTHDS	RELIA- BILITY		. TOT.
	1	onth	Day :			Mth /					*10	4		0
OCKEYE	2		_ *	_/_	:	_/	-							
оно	1 _		:	_/_	:	/		/	*	_/	*10	_ 4		965 _
	1			/	*	/	:	/	*		*10	_ 4		0
INK	2 _			_/_		_/		_/	=	_/				
	1		:										<del></del>	
HUM	2 _		_:	_/_	:	_/			:					
HINOOK	1 _		;						:		**6	3	**********	300 _
OCKEYE		300			соно _	7,50 CHINO	00 _ 0K	/ F	PINK ,000		500 _			
OCKEYE  DDITION PHYS	NAL C ICAL Evide bed a	300 OMME COND nce	NTS ITI( of e	ON O	F SPAL	CHINO(	G GF	ROUNDS	,000 S ve ex	kter	t or p	ercent of	str	eam
PHYS	NAL C ICAL Evide bed a	300 COMME COND nce	NTS ITI( of e	ON O	F SPAL	CHINO(	G GF	ROUNDS	,000 S ve ex	kter	t or p		str	eam
DDITION PHYS.	NAL C ICAL Evide bed a Parti	OMME COND nce offec	NTS ITI( of e ted	ON O	F SPAU	CHINOC WNINING and silt	G GR	ROUNDS	beds	xter	/ or p	ercent of	etr	eam >f
OCKEYE  DDITION PHYS: (A) 1  (B)	NAL C ICAL Evide bed a Farti etres water shoul	300 COMME COND nce ffec cula	NTS ITI( of e ted	ON O	F SPAVion an	MNINING wilt	G GF tine spav	ROUNDS	beds	el.	or postang	e in cour	ee c	eam )f
OCKEYE  DDITION PHYS (A)   (B) (C)  SIOLOGI (D)	NAL C ICAL Evide bed a Farti etres water shoul	OMME COND nce ffec cula m.	NTS ITI( of 4 ted re 6	ON OPEROS  flooven.	F SPAL ion an couri w, no	MNINING wilt	G GF ting epav high	ROUNDS	beds	eal.	The or position of the change	ercent of	ee c	eam )f
OCKEYE  DDITION PHYS (A)   (B)   (C)	NAL C ICAL Evide hed a Farti stres Water shoul CAL C	300 COMME COND nce ffec cula um.	NTS ITI( of eted	ON OPEROS  floven  of so	F SPAL ion an couri w, no	MNINING wilter of the control of the	G GR	ROUNDS g. Giv wning	beds	eal.	The or position of the change	ercent of e in cour ormal, de	ee c	eam )f
OCKEYE  DDITION PHYS: (A)   (B)   (C)  SIOLOGI (D) (C)	NAL C ICAL Evide bed a Parti etres Water ehoul CAL C Parti bed. Comme	OMME COND nce fffec cula m.	NTS ITI( of etad read read read read read read read re	of sof contract of	F SPAL ion an couri w, no	MNINING wilter of the control of the	G GF	ROUNDS  On, Given and the second and	beds norma	sal.	- chang  If abn	ercent of e in cour ormal, de	ee c	eam
OCKEYE  DDITION PHYS: (A)   (B) (C)  SIOLOGI (D) (C) (C)	NAL C ICAL Evide bed a Parti etres Water ehoul CAL C Parti bed. Comme	OMME COND nce fffec cula m.	NTS ITI( of etad read read read read read read read re	of sof contract of	F SPAL ion an couri w, no	mg of mal,	G GF	ROUNDS  On, Given and the second and	beds norma	sal.	- chang  If abn	ercent of e in cour ormal, de	ee c	eam
OCKEYE  DDITION PHYS (A)   (B) (C)  SIOLOGI (D) (E) (F) (G)	NAL C ICAL Evide hed a Parti etres Water shoul CAL C Omme	OMME COND nce ffec cula im. lev.d be	NTS ITI( of ed) re of eels gi	of sof constant of	F SPANION AND COURT IN THE CONDITY the	MNINING mg of mal, Normal bution	G GR spau	ROUNDS  On, Givening  An, ab  Spaw  Late  CTING  Soci	beds norma	eal.	ream EP cour	ercent of e in coun formal, de	etail	eam  of
OCKEYE  DDITION PHYS: (A)   (B)   (C)  SIOLOGI (D) (E) (G)  COMMENT (K)	NAL C ICAL Evide bed a water whoul CAL C Parti bed. Comme Evide X*EN Hous **EN Hous **C  865 est "Of hate	OMME COND need fifeed with the Kenthalian condition is the control of the control	NTS ITI( of ted red red red on other atio o, bk eco s ba 3365 y fi	of some	couri  w, no  listri  ators  ying u  condit  the  provi ed thr  on 12  cour  with	MNINING mg of mg of mal, Norma bution  From the control of the con	ok  G GR  BPA  BPA  PAFFE  Bead  A To  Che flast  364  Bemai	ROUNDS  On, Given and The second and	beds norma ning r wp ndate in Ck froe ence s cok	sal.	ream  ing fig  ing fig  conflictery  found	ercent of e in coun formal, de	ce a . 10 Moriarea	t /90, ce Riv

# DEPARTMENT OF FISHERIES AND SEANS ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM IDENTIFICATION  Walarshed code  Gazelled name (mapname)  Bulkley River (Upper) - the area above  the Morice River	District No. Subdistrict No
Gazelled name (mapname) Bulkley River (Upper) - the area above the Morice River	08 10
- the Motice River	Statistical Area Subdistrict Name Smithers
CITO TIOI 200 TIME	DATES OF INSPECTION
irst local name	Month Day Month Day
Second local name	Refer to tally sheet
Flows into Skoena River	from tence counts.
SROOMA FILE	
PAWNING RUN TIMING AND ESTIMATED NUMBER (instruct	ions on flip side)
TO DATES OF DURATION OF SPAWNING NO. OF OBSER OF START PEAK END OBSER	HODS BILITY ON GROUNDS ESCAPEMENT
Month Day Month Day Month Day Month Day	*10 4 9 300
OCKEYE 1	
соно	*10 4 1,500 7.500
2	*10 4 2 500
PINK 2	
1	
CHUM 2	
CHINOOK 1 Sun 15 Aug 15 Aug 26 Sep 10	*10 3 500 2,000
NUSUAL CONDITIONS	
(b) Unusual mortalities.  (C) Obstructions or changes in habitat with recommendations. (D) Large variations in sex ratio or unusual number of jacks. (E) Unusually high or low water flow level during spawning period.  (DDITIONAL COMMENTS  PHYSICAL CONDITION OF SPAWNING GROUNDS  PHYSICAL CONDITION OF SPAWNING GROUNDS	
(A) Evidence of erosion and sitting. Give extent of porosion	***********
(B) Particulars of scouring of spawning beds or change in course of stream	
	3 1 .
(C) Water levels flow, normal, high, abnormal. If abnormal, details should be given the hot summer	may have affected egg survival
NOLOGICAL CONDITIONS	· · · · · · · · · · · · · · · · · · ·
3IOLOGICAL CONDITIONS  (D) Particulars of distribution of spawning salmon over the stream bed	
3IOLOGICAL CONDITIONS  (D) Particulars of distribution of spawning salmon over the stream bed	in the Topley area
(E) Comments on predators  (B) OLOGICAL CONDITIONS  (C) Particulars of distribution of spawning salmon over the stream bed  (E) Comments on predators  Some harassment by people	in the Topley area
(E) Comments on predators  (E) Evidence of digging up eggs by later spawning fish	in the Topley area
(E) Comments on predators  (F) Evidence of digging up eggs by later spawning fish  (G) New obstructions (nature and recommendations)  (B) Comments on predators  (C) New obstructions (nature and recommendations)  (B) New obstructions (nature and recommendations)  (C) Dame opened (at least 10)	in the Topley area.  At Knockholt and McQuarrie Ck.  O) on Oct. 26th and 27th.
(E) Comments on predators  (F) Evidence of digging up eggs by later spawning fish  (G) New obstructions (nature and recommendations)  (B) New obstructions (nature and recommendations)  (C) New obstructions (nature and recommendations)	in the Topley area
(B) Particulars of distribution of spawning salmon over the stream bed  (E) Comments on predators  (F) Evidence of digging up eggs by later spawning fish  (G) New obstructions (nature and recommendations)  (B) New obstructions (nature and recommendations)  (C) New obstructions (nature and recommendations)	in the Topley area
(D) Particulars of distribution of spawning salmon over the stream bed  (E) Comments on predators  (E) Evidence of digging up eggs by later spawning fish  (G) New obstructions (nature and recommendations)  (B) New obstructions (nature and recommendations)  (C) New obstructions (nature and recommendations)	in the Topley area.  At Knockholt and McQuarrie Ck.  b) on Oct. 26th and 27th.  HIS STREAM  mainly the SEP counting fence
(E) Comments on predators  (B) New obstructions (nature and recommendations)  (C) New obstructions (nature and recommendations)  (E) Comments on predators  (C) New obstructions (nature and recommendations)  (E)	in the Topley area.  At Knockholt and McQuarrie Ck.  b) on Oct. 26th and 27th.  HIS STREAM  mainly the SEP counting fence ts were provided by Toboggan C
(E) Comments on predators  (B) New obstructions (nature and recommendations)  (C) New obstructions (nature and recommendations)  (E) New obstructions (nature a	in the Topley area.  At Knockholt and McQuarrie Ck.  b) on Oct. 26th and 27th.  HIS STREAM  mainly the SEP counting fence ts were provided by Toboggan C

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### BULKLEY RIVER FISH FENCE TOTALS/1989

	H20	LEVEL	# COHO	CHINOOK	STEELHEAD	SOCKEYE	PINK	WHITEFISH
26/8/89		11.00	1.00	4.00	3.00			
27/8/89		11.00	2.00	2,00	3.00			
28/8/89		11.00	0.00	5.00				
29/8/89		11.00 11.00	14.00 11.00	2.00 1.00				
30/8/89 1/9/89		10.50	15.00					
2/9/89		10.50	0.00					
3/9/89		10.50	0.00					
4/9/89		10.75	0.00 0.00					
5/9/89 6/9/89		10.75 .11.00	34.00					
7/9/89		10.50	19.00					
8/9/89		9.50	22.00					
9/9/89		8.50 8.25	Ø. ØØ Ø. ØØ					
10/9/89 11/9/89		8.00	3.00				2.00	
12/9/89		7.75	0.00			5.00		
13/9/89		7.50	6.00			2.00		
14/9/89		7.25 7.25	0.00 1.00			1.00		
15/9/89 16/9/89		7.20	0.00					
17/9/89		7.00	0.00					
18/9/89		7, 25	1.00					
19/9/89		7.75	0.00			1.00		
20/9/89		7.5 <b>0</b> 7.25	57.00 101.00			- 1.00		
21/9/89 22/9/89		7.23 6.50	136.00			3.00		
23/9/89		7.00	138.00					
24/9/89°		6.50	10.00					
25/9/89		6.75	24.00					
26/9/89		6.75 6.50	1.00 1.00					
27/9/89 28/9/89		6.50	1.00					4.00
29/9/89		7.50	421.00			1.00		3.00
30/9/09		7.50	165.00 16.00			1.00		1.00
1/10/89 2/10/89		7.00 7.50	0.00					
3/10/89		7, 25	Ø. Ø0					
4/10/89		7.00	0.00		1.00	7		
5/10/89		7.50	13.00		1.00	<i>o</i>		
6/10/89		7.25 8.00	21.00					
7/10/89 8/10/89		7.50	11.00					
9/10/89		7.50	0.00					
10/10/89	9	7.50	28.00			•		
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14/10/8		8.00	0.0					
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18/10/8		9.00	15.0					2.00
19/10/8		9.00	39.0					_
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21/10/8		10.00 10.00	0.0					5.00
22/10/8 23/10/8		10.00			•			
24/10/8		10.00	3.0					
25/10/8	99	10.50						
26/10/8	39	10.50						
27/10/6		11.00 11.75						
28/10/8 29/10/8		11.50			(a)	•		
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31/10/6	39	11.00	0.0	o B	A STATE OF THE PARTY OF THE PAR			
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2/11/89 مصرتهاله	s GF i	11.00 11.00 A	1,339.6		20 4.	00 9.0	0 2.	00 21.00
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## DEPARTMENT OF FISHERIES AND OCEANS

#### ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STRE	STREAM IDENTIFICATION												Year:	1988	<del></del> _			
watersned	code					<del></del>				····	7		District	t No.	08	Subdistrict No.		
Gazetted na	ıme (ma	pname)	BULK	LEY RI	VER	(U	PPEF	?)					Statisti	cal Area		Subdistrict Smithe		
First local n	ame			,							-		DATES	S OF IN	SPECTION			
<u> </u>							_				_		Mon	nth	Day	Month	Day	
Second loca	al name												Aug		20	<u> </u>		
Flows into											_	-	Aug		21 22		_ <del> </del>	
			Skee	ena Riv	er —					· · · · · · · · · · · · · · · · · · ·		ł	Aug		23	<del></del>	<del>-                                    </del>	
												+	Aug		24	<del> </del>	<del></del>	
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SPAWN	ĪNG	RUN	TIM	ING A	ND E	STIM	ATE	D NUI	иве	R (inst	ruc	tion	S OI	n flip	side)	<del></del>		
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1	- {}	ARRIV	AL	DATE	SOF	DURATIO	N OF	SPAWNII	NG	NO. OF	۱ ۱		- 1 1,	RELIA-	EST. TO	T NO.	OPTIMUM	
SPECIES	الـــــــــــــــــــــــــــــــــــــ	IN STRE	AM		ART	PEA		END		OBSER.	ME	THOD		BILITY	ON GRO		ESCAPEMENT	
		Month	Day	Month	Day	Month	Day	Month	Day		_	_	—) [					
SOCKEY	Ε'		1	<u>_</u>							<u> </u>		- - - -		N. I		<u> </u>	
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PINK	2	_					-						71	_				
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CHINOO	κ <sup>1</sup>	Aug	1	Aug	5	Aug	15	Aug	30	4		1	_	4	1,	000		
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				water flov														
ADDITIO	<u>A</u> NC	L CO	MME	ENTS														
PHYSI	CAL	CONDIT	ION	OF SPAV	VNING	GROU	NDS											
(A) E	viden	ce of eros	sion a	nd silting.	Give e	xtent or p	ercen	t of strea	m bed	affected							,	
			· · · · · ·		<i>.</i>			<i></i>									,	
(B) F	Particu	lars of sc	ouring	g of spawr	ning be	ds or cha	inge i	n course	of strea	am								
<b>.</b>																	,	
(C) V	Vater I	levels flov	v, nori	mal, high,	abnorr	mal. If abi	norma	l. details	should	l be given								
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BIOLOG							• • • • • •	<u></u>		······		· · · · · · · ·					····	
						salmon o	ver th	a stream	hed	Meanwl	nile	e ar	ea :	30. F	Richfiel	d Cr.	80,	
(5)	ai titil			uarrie														
																	,	
(E) C	Jomm	ents on p	redato	ors		• • • • • • • • •	· · · · · ·			• • • • • • • • • • • • • • • • • • • •						• • • • • • • • • • • • • • • • • • • •		
(F) E	Eviden	ce of digg	ging u	p eggs by	later s	pawning	fish .									• • • • • • • • • • • • • • • • • • • •		
(G) N	New of	bstruction	ns (nat	ture and re	ecomm	endations	s)										<b>.</b>	
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Al Klopfenstein

Fisher Officer / Person Preparing Report

FP0699/BC16's

Signature

## DEPARTMENT OF FISHERIES ANDOCEANS

#### ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM	STREAM IDENTIFICATION									Year: 1987				
AABTet Stilled Code		- <del></del>							7	Dist	rict No.	08	Subdistric	10
Gazetted name (n	naonama)								-	Stat	istical Area		Subdistric	t Name
		ЛКІЕУ	Rive	r (abo	ve H	ouston	ı)						Smith	ners
First local name										$\overline{}$	lonth	SPECTION Day	Month	Day
Second local nam	ie .									Se	ept	4	Sept	end
Flows into		abine R												
		torne n			_	_								<del></del>
SPAWNING	DI IN TIM	INIC AI	ID F	STIM	ATE	D NII IN	ARE	R /ine	truction	ne /	on flin	side)	<u> </u>	
1	2	ING A	<u> </u>	3	<u> </u>	D NOI	VIDE	4	5	Ϊ,	6	7	ī ]	8
SPECIES	ARRIVAL	I .		OITÁRUC				NO. OF	METHO	200	RELIA-	EST. TO		OPTIMUM
SPECIES	Month Day	Month	ART Day	PEA! Month	K Day	END Month	Day	OBSER.	METHOL	08	BILITY	ON GRO	UNDS	ESCAPEMENT
1		July		Aug		Aug		2	10		4	1:	2	
SOCKEYE 2														
соно 1		Sept	15	Oct	15	Nov	15	2	10		3	18	8	
2										$\bot$				
1 PINK		_ Aug		Aug	<u> </u>	Aug	<u> </u>	2	6			N	.0.	
2							<del> </del>		<u> </u>	_				
CHUM 1					_		ļ	<b> </b>		_				
2		-		-	-	-	<del> </del>	1		$\dashv$	-	ļ		
CHINOOK		Aug	15	Aug	30	Sept	30	$\frac{2}{2}$	1	_	4	2	50	
UNUSUAL					1	<u> </u>	<u> </u>		L					
(A) Enhar (b) Unusu (C) Obstr	OR UNUSUAL Concernent or intential mortalities, uctions or chang variations in sevially high or low	se biologio ges in habi cratio or u	cal act tat wit	h recomm Il number	of jac	ks.								
ADDITION	AL COMME	NTS									_			
	. CONDITION nce of erosion a					it of strea	m hed	attected						
(A) Evide	nice of erosion a	ng siting.	GIVE C	Atont or p	Jei Ceri	10131164	III Dea	anected		• • • • •	. ,			
(B) Partic	ulars of scouring	of spawn	ina be	eds or cha	nae ir	course o	of stre	am						
(C) Water	r levels flow, nor	mal, high,	abnor	mal. If ab	norma	I, details	should	d be giver	. Wate	er	level	was low	durin	g
	August - S			<u></u>	<u></u> .									
BIOLOGIC	AL CONDI	TIONS												
(D) Partic	culars of distribu	tion of spa	wning	salmon o	over th	e stream	bed .							
				· · · · · · · · · · · ·							. ,			
, ,	nents on predate			• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • •								
	nce of digging u												nrovim	etelv
	obstructions (na 100 Spring													
,,,,,	should be							.,,,,,,,						
COMMENT			R C	ONDIT	ION	IS AFF	EC	TING T	тніs s	TR	EAM			
	A counting	fence	D #1 was	O MEAN instal	S: Led	at bea	aver	dam i	n Houst	ton coh	Sept :	to ear	ly Nov	ember.
	Local angles				ice.	ike	N	eil to	ok som	e, .ei	ggs.f.ç	r Tobog	gan Ha	tchery
	Coho con	n+ cm +1			· · · · · ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
	Coho can e	nter tr	178.8	system	al 8	a rate	uati	٠ <u></u>			<u></u>			·· <u>······</u>

Al Klopfenstein

Fisher Officer / Person Preparing Report

## DEPARTMENT OF FISHERIES AND OCEANS

#### ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM	/ IDENT	IFIC	ATIO	N							Yea				
Watershed code										$\neg$	Dis	1986 trict No.	ე გ	Subdistrict	No. 10
		·· · · · · · · · · · · · · · · · · · ·								_	Sta	tistical Area		Subdistrict	
Gazetted name		ılkle	y Rive	r (a	bove H	ioust	on)							Smith	
First local name												TES OF INS	SPECTION Day	Month	Day
Second local na	ıme				<u></u>						Aug 20				50,
Flows into											$\vdash$	ept	04 20		
	Sk	eena	River	•								ct	20		
COAMBIBL	C DUN	T 1 8 4 1	INIC AI	ur. c	STING	<u> </u>	D NU II	400	B (Inc.			on film	oldo)		
SPAWNIN	2		ING A	י טוי	3	416	יטאו ט	VIDE		5			7		8
1	ARRIV	AL	DATE	S OF I	ر الحا DURATIO	N OF	SPAWNII	NG	MO. OF	l '		6	EST. TO	] T. NO.	OPTIMUM
SPECIES	IN STRE	Day	ST Month	ART Day	PEAI Month	K Day	END Month	Day	OBSER.	МЕТНО	DDS	BILITY	ON GRO	UNDS	ESCAPEMENT_
1	July		July	-	July	-	Aug		0	1	$\Box$	$\begin{bmatrix} 1 \end{bmatrix}$	NO		700
SOCKEYE 2					•		•								
COHO 1	Sept	_	Sept	-	Oct	_	Nov	_	0	1,6		1	NO		1 000
2															
1 PINK		·		-			,421 F		0						
2		1						-	-						
CHUM 1							-		l						
2	<del> </del>		****					-			=				
CHINOOK	July	-	Aug	15	Aug	20	<u>Sept</u>	10	2	1,4	,6	4_	450		2 000
Ļ	J L	LLI TIOI	NS			i		i I				<u></u>		·	
MARK BOX	UNUSUAL CONDITIONS  MARK BOX FOR UNUSUAL CONDITIONS  (A) Enhancement or intense biological activities.														
🔲 (b) Unus	ual mortaliti	es.	-												
D (D) Large	ructions or o	in sex	ratio or u	nusua	Inumber	of jac	ks.								
ADDITION	LAL COM			rievei	auring sp	awnin	g perioa.								
	L CONDIT			VNINO	G GROUI	NDS									
(A) Evide	ence of eros	ion an	d silting.	Give e	xtent or p	ercen	t of stream	m bed	affected						
						• • • • •						• • • • • • • • • •			
(B) Parti	iculars of sc	ouring	of spawr	ing be	eds or cha	nge ir	course o	of strea	ım			• • • • • • • • • • • • • • • • • • • •			
													• • • • • • • • • • • • • • • • • • • •		
(C) Wate	er levels flow														
BIOLOGIC	AL CON														
	iculars of dis			wning	salmon o	ver th	e stream	bed	Chinoc	k gen	era	lly he	Ld. betwe	en Hou	ıston
	and K	nock	holt i	n Ju	ıly. C	hino	ok ma	jorit	y spav	vn Kno	ckh	olt to	Bulkley	Falls	5
(E) Com	iments on pi	edato	ıs				· · · · · · · · · · · ·								
(F) Evide	ence of digg	jing up	eggs by	later s	pawning	fish .									
(G) New	obstruction	s (nati	ure and re	comm	endations	s)									
					· · · · · · · · · · · ·					• • • • • • • • • • • • • • • • • • • •					
			<u></u>	<u></u>	<u></u>	· · · · · ·	· · · · · · · · · · · · · · · · · · ·								
COMMENT															
(K)	One c	ninc	ok obs	erve	d ente	ring	Bulk]	ey I	ake or	Sept	4	<i>.</i>			
								· · · · · · ·							
			• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •										
						• • • • •					••••				

Sighature Sighature

Fisher Officer / Person Preparing Report

BC16 1985

## CHARTMENT OF FISHERIES AND OCE

## ANNUAL REPORT OF SALMON STREAMS AND SPAWNING POPULATIONS

STREAM IDENTIFICATION		
Watershed code 46-0000-000-000-000-992	District Na.	Subdistrict No.
Gizetted name (mapname) BULKLEY RIVER	Statistical Arab	Managamont Area
First local name		onth Day Year
BULKLEY RIVER ABOVE HOUSTON Second local name	Date first inspected	1985
BULKLEY RIVER (ABOVE HOUSTON) Flows into	Date ≀ast inspected	
Note: Place correct any street identification data that	Total no. of inspections	
Note: Please correct any stream identification data that is wrong.		
SPAWNING RUN TIMING AND ESTIMATED NUMBER (instructions	on flip side)	
1 2 3 4	5 6	7
SPECIES IN STREAM START PEAK END OBSER.		· _ · _ · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _
Month Day Month Day Month Day Month Day		
SOCKEYE 1	-	_
	_	
COHO 1 2		
PINK 2		
	<del>-    </del>	
CHUM 2	<u> </u>	
CHINOOK 1 08 20 08 20 1	y F	350
CHINOGK 2	-11	
STEELHEAD		
2		
CONDITIONS		
Mark box for unusual conditions.		
(A) Enhancement or intense biological activities.		
(B) Unusual mortalities.  (C) Obstructions or changes in habitat with recommendation		
(D) Large variations in sex ratio or unusual number of ja (E) Unusually high or low water flow level during spawning		
	ig period.	
ADDITIONAL COMMENTS PHYSICAL CONDITION OF SPAWNING GROUNDS		
(A) Evidence of erosion and silting. Give extent or percent of stream bed affected		
(B) Particulars of scouring of spawning beds or change in course of stream:		······
		***************************************

FF01 8411HB

DIO	LOGICAL CONDITIONS
1 1	Particulars of distribution of spawning salmon over the stream bad.
י ישו	-articulars of distribution of spawning salmon over the stream bed.
	,
(E) c	Comments on predators.
( <b>F</b> ) ∈	Evidence of digging up eggs by later spawning fish.
OBS	TRUCTIONS
/G\ s	Passable or impassable.
1	If nil, indicate from mouth to furthest point of access.
(H) ^	Nature of obstruction.
(3.4)	
(I) E	Distance from mouth of stream.
(J) E	Do you recommend that the obstruction be removed?
111	so, attach report stating your reasons and describe nature and extent of the spawning grounds above obstruction.
COM	MMENTS ON ANY OTHER CONDITIONS AFFECTING THIS STREAM
(K)	Section 3 is date of actual count and may not be
	peak spawning time everal walks were some during lat.
	August by SEP crow, lacking for egg take on
	chimooks
-	
<b>D</b> -3	
_	In this form to:
	on Escapement System Co-ordinator ic Biological Station  Fishery Officer/Person preparing report
	imo, B.C. V9R 5K6
, , , , , , , ,	imo, B.C. V9R 5K6
	Signature 2
INST	RUCTIONS For "Spawning Run Timing & Estimated Number"
1	Draviolan is made for three analysis are a second of the s
	Provision is made for two spawning runs per species. If only one run exists, use Line 1.
2	Date entry: a) Month: enter first three letters (Aug) or (Oct)
	b) Day: enter date (12) or (04)
3	or enter letter codes as follows - (A) 1-10th (B) 11-20th (C) 21-31st
4	Number of times each species is present in stream during inspection.
5	Inspection method used. Enter up to 4 methods per species.
	A - fixed wing A/C D - boat G - other (enter details in section (K))
	B - helicopter E - fence
	C - stream bank F - stream walk
6	Reliability of spawning population estimate (based on conditions and number of stream visits).
	A - high B - average C - low
	a) Enter best estimate of total annual escapement.
7	b) If species expected but none observed, enter: NO
	c) If species expected but number unknown, enter: UNK
	o, a oposios prosent pat number diknowii, shter tim

FP-0699

DISTRICT	NO.	8

	UAL REPORT	OF SALMON	STREAM AND	SPAWNING	GROUNDS		<i>D</i> 0	YEA	·	1984	
l.	ey River (a	hove Moric	e River)	LOCAL	NAME)						
FLOWING INTO	·	,DOVC MOIIC	DATES STREAM	INSPECTED							
	ey River		July	26, Aug 1	<u> </u>						
genero	tch of this stream Il outline of topog point. These ske	raphy along the	stream portions	s of stream bed	where spawning	evant data occurs, et	such	as location	n of ot n relat	struction to s	ons, ome
PARTICULAR	S OF SPAWNING	AND SPAWNIN	IG CONDITION	is - (Draw lin	es through names	of salmon	that	do not fre	uent t	nia atro	
SPECIES	ARRIVAL IN STREAM	DATES OF START	DURATION OF PEAK	SPAWNING END	TOTAL NO.	SIZE OF		BROOD YEAR SYMBOL		EXRAT	
SOCKEYE					N.O.						
SPRINGS					200		x				
COHOE					N.O.						
PINKS					N.O.						
STEELHEAD											1
CHUMS								<del></del>			
NOTE: Estima	te Number of Pare	ent Fish on Spav	vning Grounds o	and indicate by	placina letter in	Column or	 ovide	to show	GDDrov	imate a	
Thus: 1 - 5 50 - 10 100 - 30	0 A 0 B 0 C	300 - 500 - 1 1000 - 2	500 D 1000 E 2000 F		2000 - 5000 G 5000 - 10000 H 10000 - 20000 K			200 500	00 - 5 00 - 10 ver 10	0000 L	umner:
	"N" used it is re-			fish on spawni	ng grounds be sh	own.					
	NDITION OF SP		<del></del>			-			<del></del> -		
(A) Evidence o	f Erosion and Sile	ing - Give Exte	ent or % Stream	Bed Affected	Nil		······		••••••	•••••••••••••••••••••••••••••••••••••••	
(B) Particulars	of Scouring of Sp	awning Beds or	Change in Cou	irse of Stream	Nil						
(C) Water Lave	Is (Low, Normal,	W:=L AL====1	\ 1C AL 1		. No	mal			*********		
(0)	13 (20 <b>w</b> , 1101ma),	riign, Abnormai	, is Aphormal,	derdils should	be given		********	**************			
								•••••			
BIOLOGICAL											
(A) Porticulors Bridge	of Distribution o	f Spawning Salm pove Housto	on over the Str	eam Bed	Scattered	l spawn	ers	from F	ores	tdale	•
(B) Comments	e Predators	inglers,		•••••••••••••••••		•••••				************	
(C) Fuidance -	f Digging up of E			Nil							
	Digging up of L	ags by Lafer Spe	owning Fish								
OBSTRUCTION	S										
(A) Passable o	r Impassable	Passab.	le		<del></del>						
	ate from mouth to										
	bstruction										
	om Mouth of Strea										
	ommend that the O								•		
	h report stating y				the spawning ar	ounds abo	o abs	truction)			
COMMENTS ON	I ANY OTHER C July 26 cour	ONDITIONS AF 1t-no fish	FECTING THE but some	IS STREAM Lamprey n	ear Falls						
	lug 1 count-	-33 Chinool	k and many	rfry						************	
	lug 2 count-										
	lug 14 count	t-3 Chinool	k near McC	uarrie Cr	eek						
	lug 21 count		o.)e		×						
					Λ						

Environnement Canada

Fisheries

Pêches

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DISTRICT NO	•	

ANNUAL	REPORT	OF	SALMON	STREAM	AND	SPAWNING	GROUNDS
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YEAR .. 1983

	OAL KEI OKT											
NAME OF STRE	AM (MAP NAME)			(LOCAL N.	AME)							
FLOWING INTO	Bulkley Riv	er (above	Morice Riv	er) !					_			-
	Bulkley Kiv	e <b>r</b>	<b>A</b> ug 19									
				form, showing in								
				of stream bed will date every five ye		occur	s, ere	E., ITS	location	in relat	ion to s	ome
DARTICIU AR	S OF SHAWNING	AND CRAWNII	NC CONDITION	S - (Draw lines	sheareh name	-6.00	Uman	that a	do not fre	augas el	ie etra	am )
	ARRIVAL		F DURATION OF		TOTAL NO.	T	E OF		BROOD	_	EXRAT	
SPECIES	IN STREAM	START	PEAK	END	ON GROUNDS	HVY.	MED.	LT.	SYMBOL	м	r	JACKS
SOCKEYE					25 ▲			<u> </u>	<u></u>			ļ
SPRINGS					400 D		X					<u> </u>
COHOE					N.O.				}	<b>\</b>	<u>.</u>	
PINKS					N.O.				ļ			
STEELHEAD												
CHUMS						$\vdash$			<u> </u>	<b>†</b>	<u> </u>	
	. N. I. 15			. i		<u> </u>	<del></del>	L	<u> </u>			
				and indicate by pl			mn pr	0V100				vmbers
Thus: 1 - 5 50 - 10			500 D 1000 E		200 <b>0 -</b> 5000 G 5000 - 10000 H					)00 -    5 )00 -  10		
100 - 30	00 C	1000 -	2000 F	11	0000 - 20000 K				* C	over 10	0000 N	
* Where letter	"N" used it is r	equested approx	imate number of	fish on spawning	grounds be sh	nowπ.						
PHYSICAL C	ONDITION OF S	PAWNING GRO	UNDS									
(A) Evidence	of Erosion and Si	lting — Give Ex	tent or % Stream	Bed Affected	Nil							
(B) B		:	Chasas is Ca.	urse of Stream		Nil						
(B) FORTICUION												
						* *						
(C) Water Lev	els (Low, Normal	, High, Abnormo	al). If Abnormal,	details should be	e given		, O.T.H	<del>171</del>	•••••••	•••••••	••••••	
BIOLOGICAL	CONDITIONS											
(A) Particular	s of Distribution	of Soowning Sal	mon over the Str	eam BedS	ockeye we	re s	s <b>e</b> er	рр	F/W T	ecn.	arou	ad
(~) / 0///2010/	the Knockh	o⊥t area	mon over me on									
(B) C	· • • • • • • • • • • • • • • • • • • •		ople, bear	s and birds						************		•••••••
(D) Comments	re Freddtors	······································								•••••••		***********
***************************************	••••••			· · · · · · · · · · · · · · · · · · ·						••••••	••••••	
(C) Evidence	of Digging up of	Eggs by Luter S	powning Fish		W.1.1	• • • • • • • • • • • • • • • • • • • •		*******		***************************************	••••••	
	······································											••••••
OBSTRUCTIO	NS											
(A) Passable	or Impassable	Impassab	le							•••••		•••••
				from Forest	dale down	stre	eam					
ŀ	Obstructionb			***************************************		********		**********		************	••••••	**********
												•••••••
				wns leam fr	xwbutkre	غىدىر	ĸĘ.	•••••		••••••		•••••
(D) Do you re	commend that the	Obstruction be	removed?	LS		•••••				• • • • • • • • • • • • • • • • • • • •	•••••	••••••
(If so, att	ach report stating	your reasons a	nd describe natu	re and extent of	the spowning g	round	s abo	ve ob	struction)			
COMMENTS C	N ANY OTHER	CONDITIONS	AFFECTING TH	IS STREAM	<del>_</del>							
			••••••				••••••	•••••		******		•••••••
***************************************	lug 19 - Sp			·····				••••••				
	ug 17 - So	ckeye betw	een 1∠8-12	9 km on rai	lway mark	ers	nea	r Kı	nockho.	Lt.		
	*************************	***************************************	******	•••••								
					7	(	`	$\supset$				
F-3481 (DEV	10/71) =				Derr	2.	<u></u>	W	mvi	w		· · · · · · · · · · · · · · · · · · ·

DISTRICT NO. 8B.C.

		T OF SALMON	STREAM AN	ID SPAWNING	GROUNDS .				YEA	R 19	82	
l .	EAM (MAP NAME)			ILOCA	NAME)							
FLOWING INTO	alkley Riv	ver (above										
	y River	2.4.4.5	DATES STREA	M INSPECTED	er emer 1							
NOTE: A ske	tch of this strea	m is required on	the bock of this	s form, showing	in addition to re	leven	- dat		or less out			
de meno	מססו וס שיווויטט וו	ography along the ketches should b	Stream portion	s of stream had	lubaca c	occu	rs, e	c., its	location	in relat	ion to	ons, some
PARTICULAR	S OF SPAWNIN	G AND SPAWN	NG CONDITIO	NS - (Drow lir	es through nome	s of s	almo.	that	do not fre	quent t	his stre	om \
SPECIES	IN STREAM	START	PEAK	F SPAWNING	TOTAL NO.	317	10 3	RUN	BROOD YEAR SYMBOL	GIVE	EXRAT	1011
SOCKEYE			I CAK	END	CA GROOMDS	HVY.	MED.	LT.	SYMBOL		F	JAG
SPRINGS			/		7700		-	77	<del> </del>	<del> </del>	<u> </u>	-
СОНОЕ		Aug Aug	Aug	Sept	0000	+	<del> </del>	X	ļ- <b>-</b>		ļ	┼
PINKS		nue	Sept	Oct_	_ UNK	-	-:	: <del></del> -				-85-
STEELHEAD	_ ·			<del></del>		├		ļ				_
CHUMS	- · · <del></del>								ļ <u>.</u>		ļ	
		l			<u> </u>	L	<u>.</u>	:	ļ			
NOTE: Estimot	e Number of Par	ent Fish on Spar	≪ning Grounds o	and indicate by	placing letter in	Colu	ng na	ovide	to show	сэргох	imate n	umbe
Thus: 1 - 50 50 - 100			500 D		200 <b>0 -</b> 5000 G						0000 L	
100 - 300		1000 -			5000 - 10000 H 10000 - 20000 K					00 - 10° ver 10°	M 0000	
Where letter '	'N'' used it is re	equested approxi	mate number of	fish on spawni								
		PAWNING GROU										==
						-						
A) Evidence of	f Erosian and Sil	lting - Give Ext	ent or % Stream	Bed Affected .	Nil.						• • • • • • • • • • • • • • • • • • • •	
				·····								
3) Particulars	of Scouring of S	pawning Beds or			•							
C) Water Level	s (Low, Normal,	High, Abnormal	). If Abnormal,	details should !	oe givenL.C	,W.	•					
***************************************				***************************************					***********	,	*************	
IOLOGICAL C	CNOLTIONS											_
A) Particulars	of Distribution o	d Spawning Salm	on over the Stre	om BedS0	attered t	hro	ugì	out		,,		7
				•••••••••••			·····					
R) Comments re	Predotors	1.0.					••••			· · · · · · · · · · · · · · · · · · ·	·····	
		· · · · · · · · · · · · · · · · · · ·					******					
E) Evidence of	Digging up of E	ggs by Later Spa	wning Fish	Nil.								,
***************************************	****				••••••••••••••••••••••••		********			••	•••••	••••
BSTRUCTIONS												
· · · · · · · · · · · · · · · · · · ·												
) Possoble or I	lmpussable	Passab <b>l</b> e	•••••						• • • • • • • • • • • • • • • • • • • •			
If Nil, indica	te from mouth to	furthest point o	foccess							<b></b>		
		m									• • • • • • • • • • • • • • • • • • • •	
		bstruction be rer										·····•
		1.0									··	
		our reasons and			he spawning gro	unds	above	obstr	uction)			
MMENTS ON .		ONDITIONS AF										
	-	***************************************	***************************************	••••••	······································		••••••		·····			
			•••••	·	,	•••••		· · · · · · · · · · · · · · · · · · ·	•••••			
	••			***************************************	:							
•••••		·····										******
				***************************************	***************************************					•••••	•••••••••••	•••••
					9 0		•		,		<b></b>	•••••
1-3-3481 (11/75)					J. `~	W	m	-0	ul	7		

				CEREAL	ALID	CDAWNING	CDOUNDS
ANNUAL	KEPUKI	υF	SALMUN	SIKEAM	ANU	SPAWNING	OKOUND3

YEAR ...19:11

NAME OF STREAM (MAP NAME) (LOCAL NAME)															
Balkler	niver (ab	ve Morios	mixer)	MINSPECTED											
	RIVER (DOL														
	al outline of topo point. These sk					occurs,	, er.,	, 115	iocanon	m rejoi	1011 10 3				
PARTICULAR	PARTICULARS OF SPAWNING AND SPAWNING CONDITIONS - (Draw lines through names of salmon							that do not frequent this stream.)							
SPECIES	ARRIVAL		F DURATION OF		TOTAL NO.	SIZE			BROOD	GIVE SEX RAT					
	IN STREAM	START	PEAK	END	ON GROUNDS	HVY. N	ED.	LT.	YEAR SYMBOL	_ M	F	JACKS			
SOCKEYE				<u> </u>	N.O.					ļ	<del> </del>	<del>  </del>			
SPRINGS		_346•	Au	Sept.	C 250			X	Δ.	ļ					
соно <b>є</b>										<u> </u>					
PINKS							_				ļ				
STEELHEAD	<u></u>				_					<u> </u>					
CHUMS															
NOTE: Estima	ite Number of Par	ent Fish on Spa	wning Grounds	and indicate by	placing letter in	Colum	n p∵o	video	to show	approx	cimate n	umber:			
Thus: 1 - 5	60 A	300 -	500 D		2000 - 5000 G						0000 L				
50 - 10 100 - 30			1000 E 2000 F		5000 - 10000 H 10000 - 20000 K						M 00000 N 00000	,			
	"N" used It Is r								. •						
				Trisii on spawiii	ng grounds de si		_								
	ONDITION OF S														
(A) Evidence	of Erosion and Si	lting — Give Ex	tent or % Stream	n Bed Affected .		wht	••••			•••••					
**********	***************************************		****************	.,.,.,			••••			•••••••					
(B) Particular	s of Scouring of S	pawning Beds o	r Change in Co	urse of Stream	N13	<b></b>	••••	• • • • • • • • • • • • • • • • • • • •							
										•••••					
(C) Water Lev	els (Low, Normal	, High, Abnorma	il). If Abnormal,	, details should	be given	Low				• • • • • • • • • • • • • • • • • • • •					
								•••••							
DIOLOGICAL	CONDITIONS														
				D 1 (1)			<b>.</b>		(* n. n.)						
(A) Particular	s of Distribution									114·44·2		··· ASSET 611 C			
_															
(B) Comments	re Predotors		wolf & bla	rds-light-											
										•••••	<b></b>				
(C) Evidence	of Digging up of	Eggs by Later S	pawning Fish	N11				·····							
							····				·····				
OBSTRUCTIO	NS														
(A) Passable a	or Impassable		<b>314</b>	,,											
	icate from mouth	_													
	Obstruction														
	rom Mouth of Stre														
	commend that the														
	ich report stating				the spawning g	rounds	at ov	e ob	struction)						
COMMENTS O	N ANY OTHER			HIS STREAM											
	Sketch on	agou I poi	. V •					•••••		• • • • • • • • • • • • • • • • • • • •	<b></b>				
						•••••									
					.,		••••	···	· · · · · · · · · · · · · · · · · · ·	••••••	•••••				
***************************************										••••••					
									10						
				<i>-</i>	What.	4	4 -	4	est.		•	]			
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**Fisheries** 

Pêches

DISTRICT NO. B. B.C.

	ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS							YEAR 1900						
	AM (MAP NAME)			ILOCAL							-			
FLOWING INTO		bove kori	DATES STREAM	M INSPECTED	per Bulkley	rivor	-							
NOTE: A sket genera	twos (bolow tch of this stream il outline of topog point, These ske	is required on graphy along th	the back of thi	s form, showing as of stream bed	in addition to rel where spawning	event data	such	as location i	n of a	bstructi ion to 1	ons, some			
PARTICULAR	S OF SPAWHING	AND SPAWN	IING CONDITIO	INS - (Draw line	s through names	of salmon	that	do not free	went t	his san				
SPECIES	ARRIVAL IN STREAM	DATES (	PEAK	F SPAWNING END	TOTAL NO.	SIZE OF		BROOD YEAR SYMBOL						
SOCKEYE		_								<u> </u>				
SPRINGS			Sept	Sept	D 500		A			n.	$\prod$			
COHOE		- <del>-</del>			4 7					L	] /			
PINKS														
STEELHEAD					· -									
CHUMS					<del>                                     </del>		$\vdash$			Ī	Ī			
NOTE: Estima	te Number of Pare	ent Flah on Sp	awning Grounds	and indicate by	placing leaves in	<u> </u>			<u> </u>		<u> </u>			
Thus: 1 - 50 A 50 - 100 B		300	- 500 D - 1000 E	and indicate by placing letter in Column p 2000 - 5000 G 5000 - 10000 H				rovided to show approximate numbe 20000 - 50000 L 50000 - 100000 M						
100 - 30			- 2000 F		10000 - 20000 K					0000 N				
* Where letter	"N" used it is re	quested appro	ximate number a	if fish on spawni	ng grounds be sh	own.								
PHYSICAL CO	ONDITION OF SE	AWNING GRO	DUNDS											
(A) Evidence o	of Erosion and Sil	ting - Give E	xtent or % Stream	m Bed Affected		11 ht					•••••			
***************************************			***************************************		*******************					••••	•••••			
(B) Particulars	of Scouring of S	pawning Beds	or Change in Co	ourse of Stream		I.	11.			Δ	••••••			
	······				***************************************	····		•••••		•••••	•••••			
(C) Water Leve	els (Low, Normal,	High, Abnorm	ai). If Abnormai	, details should	be given		1	LO17e	**********	•				
***************************************	*************************	*******************************	***************************************											
PIOLOGICAL	CONDITIONS													
BIOLOGICAL	CONDITIONS			D.				<b>V</b>	- 1 4	<b>A</b>				
1757 177 17	of Distribution of			treom Bed		ered r	•••••••		·········	•••••	•••••••			
	re Predators			wolf, i bi	the state of the s						••••••			
(C) Evidence of Digging up of Eggs by Later Spawning Pish							***************************************		*********	•••••				
								***************	•••••	**********	••••••			
***************************************	•••••••				***************************************	*******	••••••		**********	*******	••••••			
OBSTRUCTION	15													
(A) Passable a	r Impassable		******************************	Pacca <b>ble</b>							χ.			
	cate from mouth t													
	Obstruction													
	om Mouth of Stree													
	ommend that the (								•••••	*********	********			
	ch report stating				the spawning gr	ounds abo	ve obs	truction)						
COMMENTS OF Sketci	N ANY OTHER O	n .												
licavy	beaver cot	vity on l	ipper halk	1037.		-								
Rosido	nto report		*************************	and conce	up to Bulk	ley lek				***********	•••••••			
					••••••••••	********	··········			************	*******			
84947 *********************	***************************************	************************************	***************************************	***********************		•••••••	····	·····	••••••		••••••			
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Pêch**es** 

DISTRICT NO. 8. B.C.

	ANNUAL REPORT OF SALMON	STREAM	AND	SPAWNING	GROUNDS
ı	NAME OF STREAM (MAP NAME)			ILOCAL	NAME)

1979

Sulk]	loy river	(Above h	oueton)2	}								
FLOWING INTO	·		DATES STREAM	INSPECTED	٠							
	river (50											
genere	tch of this stream al outline of topo a paint. These sk	graphy along the	Streem portions	of stream had w	here spowning	levant accur	t data 's, etc	such ., its	as location i	on of ol in relat	ion to :	ions, Iome
PARTICULAR	S OF SPAWNING	AND SPAWNI	NG CONDITIONS	- (Draw lines	through names	of so	lmon	that c	lo not fre	uent ti	nis stre	
SPECIES	ARRIVAL IN STREAM	DATES OF	PEAK	SPAWNING END	TOTAL NO.	SIZI	E OF	RUN	BROOD YEAR SYMBOL	GIVES	EX RAT	TTO IN
SOCKEYE	:					HVY.	MED.	LT.		м.		JACH
SPRINGS		Aug Sop	t t	Qct.	D 500			X	$\frac{B}{D}$	-	+	
COHOE				<u>, n</u>			-			-	<del> </del>	<del> </del>
PINKS					N.O.		` .		A S.O.	<u> </u>	<u> </u>	<u> </u>
STEELHEAD	<u> </u>				N.O.	<u> </u>			28			<u> </u>
CHUMS											<u> </u>	ļ.,
NOTE: Estima	to Humber of Par	ana Etak — Sam	<u></u>			<u></u>			L	L	<u>L</u>	1.
Thus: 1 - 5 50 - 10 100 - 30	0 A 0 B	300 - .500 - 1 1000 - 1	500 D 1000 E 2000 F	: : 10	2000 - 5000 G 5000 - 10000 H 5000 - 20000 K		nn pro	Pided	200 500	approx 00 - 5 00 - 10 ver 10	0000 L	vmbe:
PHYSICAL CO	ONDITION OF SE	PAWNING GROU	INDS									==
PHYSICAL CONDITION OF SPAWNING GROUNDS  (A) Evidence of Erosion and Silting - Give Extent or % Stream Bed Affected												
(B) Particulars of Scouring of Spawning Beds or Change in Course of Stream												
B) Particulars of Scouring of Spawning Beds or Change in Course of Stream												
(C) Water Levels (Low Normal High Abnormal) (6 Abnormal Junior Low)												
(C) Water Levels (Low, Normal, High, Abnormal). If Abnormal, details should be given												
												•••••
BIOLOGICAL				<del></del>								
(A) Particulars	s of Distribution o	of Spawning Salm	on over the Stree	ım Bed	Sockeye Springs	be]	itte	res	orati	ucho	ut.	********
(B) Comments :	re Predators		ceur,	wolf & l	oirds lig	ht.	•••••••	******		************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
(C) Evidence o	f Digging up of E	ggs by Later Sp	owning Fish	Î	L1.	······	•••••••••••	*********	······································	***********		
***************************************	***************************************	***************************************	••••••	*************************	*******	····	********	·····				
OBSTRUCTION	IS									-		_
(A) Passable o	r-Impassable		Pas	sable						•.,		
	cate from mouth to	furthest point o	of occase					- }				
	bstruction		ens 30-	and beave	r dams	<b>** ** **</b> · · · · ·	•	********	**************	••••••	**********	********
	om Mouth of Strea	m	Throughou		***********************							
(D) Do you reco	ommend that the C	bstruction be re	moved? AB	required	each ye	ar.	********	******	************	***********		******
(If so, urrac	h report stating )	our reasons and	describe nature	and extent of th						••••••••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	*******
COMMENTS ON	ANY OTHER C	ONDITIONS AS	FECTIVE TIME		powining gre		0000	OBSY	ruction)			<u> </u>
ے برو	ston on Ta	/b repor	Tt_		***********************							
304·	Lor jams removed this year by S.E.P. Pulldozer contract.											
	AGI- CHEB (	otthed D	y Cuerdie:	ns.								
***************************************	***************************************		***************************************									
******************	· •••••••	*******************************	*******************************	*******	******	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	••••••					
											•••••	••••••
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DISTRICT NO. 8. B.C.

ANNUAL REPORT OF SALMON STREAM AND	SPAWNING GROUNDS
	(LOCAL NAME)
STREAM (MAP NAME)	į

YEAR .... 1978

E OF STREAM	(MAP NAME)	er above Ho	ouston	(LOCAL N.							<del></del>	
OWING INTO	No Save Have	aton	Remiler b	A COSLCIAN					<del></del> -			<u> </u>
TE: A sketci	of this stream outline of topog	is required on the	ne back of this f stream portions brought up to d	ate every five y	ear 5.							
	OF SPAWNING	AND SPAWNIN	IG CONDITIONS	S - (Draw lines	through names	of so	lmon	that d	o not freq	uent th	EX RAT	om. }
	ARRIVAL	DATES OF	DURATION OF	JI AUTO	TOTAL NO.		MED.	LT.	YEAR SYMBOL	M	•	JACKS
SPECIES	IN STREAM	START	PEAK	END	A 50			λ	C			
CKEYE	1	Aug	Aug	uept	D 400	-	A		ñ.O.	}	l	
RINGS	<u></u>	\u00e4ug	Aug	Oct	P 1200	X			A	L	<u> </u>	1
OHOE		Aug	Sept	Sept	N.R.				N.O.		<u> </u>	
INKS		Aug	Aug	+ Copt		T	1				\	
TEELHEAD				<del>                                     </del>	1	1						
HUMS			swning Grounds	<u> </u>	placina letter i	n Col	umn p	rovide	ed to show	v appro	ximate	number
hus: 1 - 5 50 - 10 100 - 30	0 A, 0 B 0 C	300 - 500 - 1000 -	- 500 D - 1000 E - 2000 F		5000 - 10000 I 10000 - 20000 I	H K			50	000 - 000 - 1 Over 1	00000	M
Where letter	"N" used it is	requested appro	ximate number o	f fish on spawn	ing grounds be s	shown	-					
HYSICAL C	ONDITION OF	SPAWNING GRO	xtent or % Strea		Uma halas	L <sub>m</sub> 7	kle:	· fa	lla. t	Leht	curv	86
A) Evidence	of Erosion and	Silting - Give E	xtent or % Stres	m Bed Affected	HVY OGTON		ALO,	<del></del>				
and lo	g jams			***************************************						421A	 18	
(B) Particula	s of Scouring of	Spawning Beds	or Change in C	ourse of Stream	log Jame	er De	ave	r ua	ALIPS ESSAN	9.4.4.	•••	
<b>D)</b>   ailiouis			mal). If Abnorma									
BIOLOGICAI	CONDITIONS			Sauce Bed 5	ockeye to )	axa	na és	i5u <b>l</b> i	cley La	kes,		ng
e con	0 80044 mr	hear. Wolf	kley falls, birds lig		rated to 1							
1	ts re Predators .	***************************************						<b></b> .				
(C) Evidence	e of Digging up	of Eggs by Late	er Spawning Fisl	n11								
OBSTRUCT	IONS											
	1 1	passable		*******************				<b></b>				•••••••
(A) Possob	le or impassable	with to furthest r	point of access			•••••				•••••	· · · · · · · · · · · · · · · · · · ·	
1		ICE JEES	& beaver d	2145							•••••	
	of Obstruction		ttered to b	ulkley fal	le .							
(C) Distant	ce from Mouth of	saka Obsessesiae	be removed?	en to enha	nce spavni	16 B	reas	s 		.,	•••••	********
(D) Do you	recommend that	I THE UPSTRUCTION	ns and describe	nature and exte	nt of the spawn	ing g	ound	s abov	e obstruc	tion)		
(If so,	attach report st	ating your reaso	NO APERCENT	C THIS STOFA	M							
			NS AFFECTING			n. 4		ian	const	ently	pul	ling
log	jam removal	L by native	hiring unc	ME DEST								
out	beaver dam	B •		••••		·····	•••••			.,,		**********
	***************************************		*************************	**********************	•••••	•••••						
			·····		/					••••••	······································	••••••
		•	*		1	/			ERY OFFICE			
F-3481 (R	EY. 10/71) F-381							FISH	LRT OFFICE			

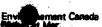


DISTRICT NO. 8, B.C.

#### ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

YEAR 1977

	33 a			LOCAL	NAME!						
FLOWING INTO	ey Kiver ab	ove Houston	DATES STREAM	INSPECTED		<del></del>	<u> </u>				<del></del>
bulkl	ey River be	low Houston			an positio	ned	at. I	cual	MOR.		
NOTE: A ske	tch of this stream	is required on t	the bock of this	form, showing	in eddition to re	<b>leva</b> n	t d <b>o</b> to	such	as locatio		
	point. These sk					•ccu	rs, etc	., its	location i	n relet	ion to some
PARTICULAR	S OF SPAWNING				s through name						
SPECIES	ARRIVAL IN STREAM	START	PEAK	SPAWNING	ON GROUND		E OF	RUN	BROOD YEAR SYMBOL	GIVE	REX MATIO IN
SOCKEYE		Aug	Aug	Sept	C 200	1	1	i	ن	<u>                                    </u>	
SPRINGS		Aug		Sept		+		<u>.</u>	]	<u> </u>	†
СОНОЕ		Aug	Sept		C 250	+	†	, i	C	<u> </u>	17 1
PINKS		Aug	Aug	Sept	N.R.	1	<del> </del>	<b></b>	N.U.	ļ. —	<del>1</del>
STEELHEAD		,,=6		Jope	445749	+	<del> </del>	<u> </u>	11.00		<del>                                     </del>
CHUMS				<del></del>	+	┿	<del> </del>	ļ	<u> </u>	<u>                                     </u>	<del>                                     </del>
MOTE: Estima	te Number of Par	ent Fish on Sper	l	and Indiants by	placina letter i	L. Cal.	ļ		l es abou		<u></u>
Thus: 1 - 5		•	50# D		2000 - 5000		pi				10000 L
50 - 10	6 B	500 -	1000 E	. :	5000 - 10000	1			500	00 - 18	0000 M
100 - 30	•	1000 -			10000 - 20000 1	-			* 0	ver 10	9000 N
	"N" used it is n			fish en spawsli	ng graunds ba s	hown.					
	ONDITION OF S				Hom halo		1610	· •	332 4	4	
	of Erosion and Si	-	65	Bed Affected	Mwy belo	W DU	TVTC	y 16	LLLB, C	78ur	crives
and log jams causes bank erosion.											
(B) Porticulors of Scouring of Spawning Bods or Change in Course of Stream Log Jams and Deaver dams numericas throughout											
(C) Water Levi	els (Low, Normal	High Absorpe	I). If Abnormal	details should	he given iso	rmal	low	1n	Aug.	**********	****************
			,,								
						••••••					***************************************
BIOLOGICAL	CONDITIONS	<del></del>									—/- = ··.
(A) Porticular	of Distribution	of Spewning Sela	non over the Str	anti Cas	ckeye to ra			e an	d Cree	K, 8]	ring and
cono s	cattered abo	ope parkiek	Talls and	below, pli	nk up to F	ple	y.				
(B) Comments	re Predators	ear & wolf,	nete and	jigging by	locals.	••••••		··· • • • • • • • • •			namenamen Takan
*************		*****************************	**********************	***********	:	••••••				********	
(C) Evidence	of Digging up of I	Eggs by Later St	reuning Fish	nil	Manager Research Manager	•••••					*******************
**********	M(3-10*** ==================================	*************		************		,	- · • • • • • • • • • • • • • • • • • •		**************		<b>**************</b>
OBSTRUCTION	NS										
		Passable				<del>,</del>		•		<del></del> -	<del></del>
	er Impossable		·····	**********************	*****************	71		·····	Δ.	w44-+4-q-	*************
	cate from mouth (	Log Jame	of stones BBC beaver	ciama			<b></b>		<del>()</del>	***********	**************
•	Obstruction	Seatt	ered between	*******************	and Fullel	ni.	112		**************		**************************************
	rom Mouth of Stre	<b>en</b>		es to enhar							****************
•	ommend that the		• • • • • • • • • • • • • • • • • • •	*********************	P 0 00 1 P 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	*********	· • • • • • • • • • • • • • • • • • • •	·· •• •••••		********	#*************************************
(If so, atta	ch report stating	your reasons on	d describe notu	re and extent of	the spenning	round	s abo	ve ebs	truction)		ni Salamenta
COMMENTS O Sketch	N ANY OTHER	CONDITIONS A	PFECTING TH	IIS STREAM							
uaru	lan reports	many beave	r activity	, two log	ans remove	ia ti	n <b>is</b> (	5 <b>025</b>	on at a	L COL	t of
	). near Upla										
					***************************************		<b></b>		***********		
40	******************************	* P*** * # * * * * * * * * * * * * * * *	**************************************	······································	, L	· · · · · · ·		7		ــــــــــــــــــــــــــــــــــــــ	***
061-3-3481 (11/	75)			*****		1				Lu	



				T Bearing							
*						* - 1		Di	STRICT: N	o	B. B.C.
ANA	IUALA	L REPORT	OF SALMON	4 STREAM A	ND SPAWNING	GROUNDS			· VE	. 1	1976
MAME OF STRE	FAM IN	(MAP NAME)			ILOGAL					***************************************	
Bu.	<u>lk]=-</u>	ey R. abo	ove Houstor	n to Karam	AM INSPECTED						•
Euli	Klass	y R. belr	ow Houston	Remi	lan ber Comm			.,			
NOTE: A .L.	tab at	of this stream	n is required on	the best of the	!~ <b>{</b>		levent	data such	as locati	on of o	hatrustions
genere knowe	i bojuzi	int, These sk	grapny along mi etches should i	pe puendit no to	ns of stream bed o date every five	where spawning years.	occurs,	, etc., its	location	in relat	ion to some
						es through names					
SPECIES		ARRIVAL N STREAM			or sentence	TOTAL NO.	SIZE	OF RUN	BROOD	GIVES	his stream.) BEX RATIO IN
SOCKEYE	<del> -</del> -	N STREAM	START	PEAK	END	ON GROUNDS	HYY. M	MED. LT.	SYMBOL	м	JAC 7
	<del> </del>		Aug	Aug	Sept	N.O.	$\sqcup \downarrow$		C 300		
SPRINGS	-		Aug	Ang	Sept	A 15		Ä	B 55		
СОНОЕ	<del> -</del> -		Aug	Sopt	Nov	A 22		х	F 1000		
PINKS	<u> </u>		Aug	Aug	Sept	N.R.			N.O.		
STEELHEAD							$\Gamma$			<del>                                     </del>	<del>                                     </del>
CHUMS		1								<del>                                     </del>	<del>                                     </del>
NOTE: Estimo	ite N	umber of Pare	mt Fish on Spo	wning Grounds	and indicate by	placing letter in	Column	provider	d en abow		
NOTE: Estimate November of Parent Fish on Spowning Grounds and indicate by placing letter in Column provided to show approximate number  Thus: 1 - 50 A 300 - 500 D 2000 - 5000 G 20000 - 50000 L											
100 - 300 C											
* Where letter	"N"	used it is re-	evested seprox	leste evelles af		ia Bronuge po spe innon - 50000 K			* Ov	ver 100	N 000k
BHYSICAL C	UND)	TION OF SP	AWNING GROU	IMP6	TISN ON SPOWNIN	g grounds be sho					···
						tion halon					
(A) Evidence and 10:	ما اه نشيخ	SOUR OLD SILL	ing – Give Exte Bank eros	ant or % Stream	Bed Affected	Hvy below	nnlki	ey fal	.ls, ti	cht c	urves
***************************************				****************	,			************	, <del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	*****	
(B) Perticular	s of	falls	awning Beds or	Change in Cou	rse of Stream	1.0g jame, er	ad be	aver d	ama fro	m Kn	ockholt
(C) Water Lev	els (i	-ow, Normal, I	High, Abnormal	). If Abnormal,	details should t	e given	*******		***************************************		***************************************
************		"orma"	l this sea	son due to	continued	rain ouring	p mik	rot.ion	······································		************
BIOLOGICAL	CONSI								<del></del>		***************************************
					star all.	71				<del></del>	
(A) Perticular	s of 🗁	istribution of	Spanning Salm	on over the Stre	ram Bed	eye to haxa	m i(	(foxy (	Jrk), e	prin	<b>5</b> 18
GHU TV			THOUS DOIL	TAN LUTTE	pink soatt	ered below	falls	3			***************************************
(B) Comments	re Fra	edators	ars and Too	'al Resider	nce(nete &	jigging)	***********			***************************************	***********
***********		***************************************	***************************************	************	***********	***************************************				.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************
(C) Evidence	of Digas	ging up of Eg	gs by Later Spa	rwning Fish	nil			******************************	***************************************	*****	
		······································	************		***************************************		******	***************************************	******************	*********	*******************
OBSTRUCTIO						***************************************			******************		*************
			ansable t	o incress of	th good wat						
Ī							•••••	· •••••	************		*******************
						******************************	••••••		***********	***********	
			202 June 11	ni beiver	dams scatte	red	••••••	******************		***************************************	***************************************
(C) Distance f	rom Mo	outh of Stream	Letheen		and bulkle				***************	************	
(D) Do you red	Ommen.	d that the Ob:	struction be ren	noved?	o enhance r	iver		***************************************	*****************	********	
						e spewning grou				***********	***************************************
						a shanistic firm	nds abo	ive obstru	ction)		
Sketch	on"15	115 renor	NDIEIUNG A	FECTING THIS	FTREAM	4.7		· ·			

1975 report indicated 32 beaver dams and 6 log jams between knockholt and bulkley falls the same conditions prevailed in 1976 as reported by the "wardian 081-3-3481 (11/75)



Environment Canada

Environnement Cana**da** 

Bulkley river above liouston to Maxan lake.

Fisheries

NAME OF STREAM (MAP NAME)

F-3481 (REV. 10/71) F-381

Pêches

DISTRICT NO. 8. B.C.

### ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

YEAR 1975

_	dver belo							<del></del>				
cenera	ch of this stream   outline of topog point. These ski	rephy along the	stream portions	of stream bed	in addition to rel where spawning years.	evant occur	data s, etc	such ., its	as location i	n of ob n relati	struction to s	ons,
					es through names	of so	mon	that e	o not free	uent th	is stre	oen.)
1	ARRIVAL		F DUNATION OF		TOTAL NO.	SIZ	OF	RUN	BROOD	GIVE \$	EXRAT	10 IN
SPECIES	IN STREAM	START	PEAK	END	ON GROUNDS	HVY.	MED,	LT.	YEAR SYMBOL	<u> </u>	-	JAC
CKEYE	1	Aug	Aug	Sept	.B 64₁			*	H.O.		<b>\</b>	<b>h</b>
RINGS	ř ·	Aug	AUG	Sept	D 500			X	0 7	2.0	<i>y</i> -	<u>r</u>
OHOE		Aug	Sept	<b>koa</b>	A 28			I	G		<u> </u>	<u>_</u>
NKS					N.O.				D	<u> </u>		丄
<b>FELHEAD</b>												<u></u>
HUMS	<u> </u>											
DTE : 5 - 41	An Number of Pa	rent Fish on Sor	twains Granads	and indicate b	y placing letter in	Colu	ımn pı	rovide	d to show	арргоз	cimote :	numi
nus: 1 - 5 50 - 10 100 - 30	50 A 50 B 50 C	300 - 500 - 1000 -	500 D 1000 E 2000 F		2000 - 5000 ( 5000 - 10000 F 10000 - 20000 F	; !		:	200 500	000 -	50000 L 00000 A 00000 F	;
Where letter	"N" used it is	requested appro	cimate number of	fish on spawi	ning grounds be s	hown.						
HYSICAL C	ONDITION OF	PAWNING GRO	UNDS	<del>-</del>								
() Evidence	of Erosion and S	ilting – Give E	xtent or % Stream	n Bed Affected	, Lie	ar .		<del></del>		•••••		
3) Particular	a of Scouring of	Spawning Beds	or Change in Co	urse of Stream	nil	••••••					40.	
***************************************			••••••			Lou			•••••	<del></del>		
	CONDITIONS	n of Spawning S	olmon over the S	fream Bed	cattered	fro	n Ki	nosi	knolt	to l	Bulk	Les
					s, birds			<b></b>	á		••••••	
B) Comment	s re Predators		*************************								•••••	
C) Evidence	of Digging up o	f Eggs by Later	Spawning Fish	nıı								
DBSTRUCTION	DNS							-				
	or Impassable	P	assable						***************************************		IJ.	
					***************************************						-	
					,	*******		······································	***************************************			
	apammand that t					*******						
<del></del>					nt of the spawning							
COMMENTS Ch	ON ANY OTHE	R CONDITIONS Be . The !	AFFECTING	THIS STREAM beaver control	ams and 6	lo	€ <b>J</b>	am <b>s</b>	(not	ato	p <b>ya</b> s	8
*********				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								••••
***************************************	************************	·			. 5. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	•••••	, , . <b></b>		***************************************		*******	******
***************************************	0±440		***********************				. ,					
			•			******				********		
***************************************	******************************											

PISHERY OFFICER

(LOCAL NAME)

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Till



Fi 3461 (REV. 10/71) F-881

Environment Environ

•		ches			· ·		DIS	STRICT N	o8	u.u
ANN	UAL REPORT	OF SALMON	STREAM A	4D SPAWHING	GROUNDS			YE	1 (	974
mikley	PLYOP RD	ove Houst	on to sa	KAN Hake	L NAME)					
LILLEY INTO	river bel	ov liqueto	DATES STRE	AM INSPECTED		<del></del>				
NOTE: A ske	tch of this stream	m is required on	the back of thi	s form, showing	in addition to re	levant data	such	as locati	on of ob	structions
					. )					
SPECIES		DATES O	F DURATION O	MS - (Draw fin F SPAWNING	es through names	of salmon	that e	la not fre	quent thi	s stream.
	IN STREAM	START	PEAK	END	ON GROUNDS	HVY. MED.	LT.	BROOD YEAR SYMBOL	GIVE SE	X RATIO:
SOCKEYE		ug	Aug	Sopt	C 200		×	A	<del>                                     </del>	<del>   **</del>
SPRINGS					N.O.			С		
COHOE		Aug	Sept	Hov.	C 200		X	E	<del>  </del>	
PINKS					N.O.			D .		
STEELHEAD									<del>                                     </del>	
CHUMS				<del></del>	<del></del>			·		
NOTE: Estimo	e Number of Par	ent Fish on Spo	enina Graunda	and ladicate be	placing letter in			<u></u>		
1 1 30mi	) A	300 -	500 D	and molecule by		Column pro	ovided			
50 - 100 100 - 300	).c	500 - 1900 -	1000 E 2000 F		2000 - 5000 G 5000 - 10000 H 10000 - 20000 K			500	00 - 500 00 - 1000 ver 1000	M 90
Monro letter	'N' used to is re	quested approxi	mate number of	fish on spewni	ng grounds be she	wn.		•	1000	00 N
PHYSICAL CO	NDITION OF SE	AWNING GROL	NDS							
B) Particulars	of Scouring of S	powning Bods or	Change in Cou	urse of Stream	Some from	dive	rsic	ns.	·····	······································
C) Water Level	ls (Lew, Normal,	High, Abnormal	). If Abnormal,	details should (	LC be given	)U	•••••••	************	······································	
HOLOCICAL C				***************************************	***************************************	***************************************	······			***************************************
HOLOGICAL C		<del></del>		Li Li	pper endon	1=				
A) Particulars	of Distribution o			eam Bed	*************************					
5) Comments re	Predators			olves, be	er and bi	rds.	••••••	•••••••		
C) Evidence of	Digging up of E	as by Later Se	remina Fish		ar.	** **************	•••••••	*************	••••••	·····
****************	*******************	*****	***********************	***************************************	*****************************	***************	••••••			*************
BSTRUCTIONS								***************************************		
) Pesseble or	Impossable		P	essable.						
					*********************	•••••••	••••••		*********	
If Nil, indica			Sca Sca	ttered lo	e jame en	d beav	cr (	dame	************	***********
If Nil, indica				*****************	<b>—</b> •		'			••••••••••
If Nil, indica Neture of Ob	struction	ņe	tween kn	ocknolt a	nd Sulile	V 13:14	St .	**********		
) Distance fre	m Mauth of Strae		tween an	ocknolt a	nd Sulide: with sort	at tjo A inli	8. 00s			***********
Distance from	m Mouth of Strae nmend that the O	bstruction:be-re	EWOON AN	h curules	nd Sulkle	of Llo	ន. o៌ន	***********		******************
Distance from  ) De you recen  (If se, attach	m Mauth of Street nmend that the O o report stating y	bstruction be re	moved?describe nature	o and extent of	nd Bulitle With spri	of Llo	ន. o៌ន	***********	****************	**************
Distance free ) De you recen (If se, ettech	m Mouth of Strae nmend that the O	bstruction be re	moved?describe nature	o and extent of	nd Sulkle	of Llo	ន. o៌ន	***********		•••••••••••
Distance from  ) De you recen  (If se, attach	m Mauth of Street nmend that the O o report stating y	bstruction be re	moved?describe nature	o and extent of	nd Sulkle	of Llo	ន. o៌ន	**********		

PIONENY OFFICER

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Environment Canada Environnement Canada

Fisheries

Pêches

..... E. 5.C.

	DIST	RICT NO.		•••••
ANNUAL REPORT OF SALMON	STREAM AND SPAWNING GROUNDS	YEAR	1973	
NAME OF STREAM (MAP NAME)	(LOCAL NAME)		**************************************	
bulkley river above Houston	to Haram Lake		,	
LOWING INTO	DATES STREAM INSPECTED			
bulkley river below Houston	Frequently by Fishery officers and Guardia	n from	vonalds	1.10
OTE: A sketch of this stream is required on general outline of topography along the known point. These sketches should b	the back of this form, showing in addition to relevant data such a			

SPECIES	AKRIVAL	DATES OF DURATION OF SPA		NS — (Draw lines through name spawning TOTAL NO	TOTAL NO.			RUN				
	IN STREAM	START	PEAK	END	ON GROUNDS	HUV	Lurn.	L7.	YEAR	-	T -	Tanun
SOCKEYE		hugust	August	Cortember	J 300			Λ	is e : i e			†****
SPRINGS		August	August	jeptember	± 850		-	1	+ 66	<b></b> -	<del> </del>	†
СОНОЕ		ingust	eptember		F 1000		<del>                                     </del>	À.			<del> </del>	┼—
PINKS		august		rentember	D 500			1	5 73 5 71		<del> </del>	<del>                                      </del>
STEELHEAD					700		-	-	0 71		<del> </del>	<del> </del>
CHUMS				<u> </u>		<u> </u>						<u> </u>

NOTE: Estimate Number of Parent Fish on Spawning Grounds and indicate by placing letter in Column provided to show approximate number:

Thus: 1 - 50 A	300 - 500 D	2000 - 5000 G	20000 - 50000 L
50 - 100 B	500 - 1000 E	5000 - 10000 H	50000 - 100000 M
100 - 300 C	1000 - 2000 F	10000 - 20000 K	* Over 100000 N
* Where letter "N" used it is	requested approximate number of fish	on spawning grounds he shows	

BIOLOGICAL CONDITIONS  (A) Porticulars of Distribution of Spawning Salmen over the Stream Bad and Cono Beattlefell in Upper areas above wills, pinks scattlefel to Take and Foxy Teek, spring stream above incuston.  (B) Comments re Predators.  (C) Evidence of Digging up of Eggs by Later Spawning Fish  (C) Evidence of Digging up of Eggs by Later Spawning Fish  (A) Passable or Impassable assable with good water levels.  (B) Notice of Obstruction  (C) Distance from Mouth of Stream	PHYSICAL CONDITION OF SPAWNING GROUNDS
to calkley falls.  (C) Water Levels (Low, Normal, High, Abnormal). If Abnormal, details should be given the farther spring run off, low during migrations August and reptember.  BIOLOGICAL CONDITIONS  (A) Porticulars of Distribution of Spawning Salmon over the Stream Bed the Cond Beatterful in Upper areas above this, pinks scatterful to turkey alls in lower streams. Booked houselone of very alls in lower alls, pinks scatterful to turkey alls in lower of Very beat and birds.  (B) Comments to Predators olives, near and birds.  (C) Evidence of Digging up of Eggs by Later Spawning Fish til.  (C) Evidence of Digging up of Eggs by Later Spawning Fish til.  (A) Possable or Impassable to Grand to furthest point of access the first indicate from mouth to furthest point of access the first indicate from Mouth of Stream to Chiefe the Nockholt was its clustion to full life fulls.  (C) Distance from Mouth of Stream to Chiefe the Nockholt was its clustion to full life fulls.  (B) Notice of Obstruction to Stream the Obstruction be removed?	(A) Evidence of Erosion and Silting - Give Extent or % Stream Bed Affected 35% between bulkley falls and Housto river meanders in tight curves causing bank washouts and siver lone.
BIOLOGICAL CONDITIONS  (A) Porticulars of Distribution of Spawning Salmon over the Stream Red and CODO BCALLETCU In Upper arcase above and Foxy reck, spring stream above foundation.  (B) Comments re Predators	(B) Particulars of Scouring of Spawning Beds or Change in Course of Stream LOG James Louvy Trans Rockholt Static
(A) Porticulars of Distribution of Spowning Salmen over the Stream Bed and Cono Brattered in upper areas above 1118, pinks scattered to dikiey alia in lower stream above mountain.  (B) Comments re Predators	(C) Water Levels (Low, Normal, High, Abnormal). If Abnormal, details should be given thigh caring spring run off, low during migrations August and waptember.
Struction above investors olves, near and hirds.  (B) Comments re Predators olves, near and hirds.  (C) Evidence of Digging up of Eggs by Later Spawning Fish hil.  OBSTRUCTIONS  (A) Passable or Impassable has been stated as a second of access his indicate from mouth to furthest point of access his indicate from mouth to furthest point of access hours of Obstruction hours of Obstruction hours are very usual scattered.  (C) Distance from Mouth of Stream houghfull total in the Pulkitey falls.  168.  168.	BIOLOGICAL CONDITIONS
(C) Evidence of Digging up of Eggs by Later Spawning Fish.  OBSTRUCTIONS  (A) Passable or Impassable Sasable with good water levels.  If Nil, indicate from mouth to furthest point of access  (B) Nature of Obstruction Log James, Seaver dails scattered.  Setween Enockholt Caracia Catation to Fulkiey Salls.  (C) Distance from Mouth of Stream Legs.	THE PARTY OF THE MINISTER WINDS WINDS AND THE PROPERTY OF THE
OBSTRUCTIONS  (A) Passable or Impassable tassable with good water levels.  If Nil, indicate from mouth to furthest point of access  (B) Nature of Obstruction Log James Beaver and Scattered.  C) Distance from Mouth of Stream brockholt cakade Ctation to Pulkiey falls.  (C) Distance from Mouth of Stream Less Less Less Ctation to Pulkiey falls.	
(A) Passable or Impassable	(C) Evidence of Digging up of Eggs by Later Spawning Fish Ril.
(A) Passable or Impassable	OBSTRUCTIONS
(C) Distance from Mouth of Stream  — ctween Enockholt c.k.ii. Station to Fulkiey falls.  (D) Do you recommend that the Obstruction be removed?	(A) Possoble or Impossoble : assable with good water levels.
C) Distance from Mouth of Stream ——Common FinderHold Concil. Station to Fulkicy -alls.  D) Do you recommend that the Obstruction be removed?	If Nil, indicate from mouth to furthest point of access
D) Do you recommend that the Obstruction be removed?	(C) Distance from Mouth of Stream -etween knockholt C.R.R. Station to bulkley falls.
(If so, attach report stating your reasons and describe nature and extent of the spawning grounds above abstraction)	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	(If so, attach report stating your reasons and describe nature and extent of the spawning grounds above obstruction)
COMMENTS ON ANY OTHER CONDITIONS AFFECTING THIS STREAM	COMMENTS ON ANY OTHER CONDITIONS AFFECTING THIS CENTER.

COMMENTS ON ANY OTHER CONDITIONS AFFE	CTING THIS STREAM
Heavy beaver activity in area a	bove bulkley falls to bulkley bake.
	***************************************

B.C. 23

# SALMON STREAM OBSTRUCTION REPORT

	chetmustion reported in surley giver
	information concerning obstruction reported in Eulkley River
	etween knockholt C.K.k. Station and bulkley falls creek or
	into culkley diver below houston.
y Inspector	in "Salmon Stream Spawning Report F. 381"
ated canuary	7th, 1974 , as follows Heavy log jams (17) counted during 1973 in
	area as above, 3 destroyed by fire and resaining debris pulled out with
	tractor, I removed by tractor and I diversion out through, I diversion at
- 4	terrow pushed out with tractor and river diverted. Second dose work to prote
	railway bed near Perrow.
	ion of obstruction including length, width, depth, composition,
(1) Descripti	ustly cottonwood trees fallen in from bank washout we to 200 feet in longth
tc. LOE James 16.	20 feet in nighth. Resty beaver dams across river up to 7 feet in highth
scattered through	ghout to bulkley bake across river.
(2) Benefits	that would result from the removal of the obstruction (immedia
long term)	which charactent for 4 spictes of selion, out ye-conomial carine,
the principalities of	oen neglected for past & years will take a long term once vor to increve to
	oct together the state of the s
consistion.	
	and a state of tidewater at
(3) Location	of obstruction in relation to accessible roads or tidewater as
the case may	be bighery 16 in many cases and side roads, C.M.: will assist with gas
car on railway	in many areas when required.
	the least on of the
71. 1 - DAA434+	ies for transporting men and equipment to location of the
	ies for transporting men and equipment to location of the
	ies for transporting men and equipment to location of the
obstruction _	trucks and U.S.S. gas car on railwdy.
Obstruction (5) Can Wor	k be done by hand labour and explosives or is heavy equipment
Obstruction (5) Can Wor	k be done by hand labour and explosives or is heavy equipment
(5) Can wor	trucks and U.S.S. gas car on railwdy.

	Yes		·
What would	be the most suitable time	to have the	work in hand from
	of loss of fish in the eg		
	it's lowest anter condition for		
river 15 ac	To b Toucha direct		
Estimated of	ost of removal under head	ings "Rental	of equipment, mat
ial and la	our" (details under headi	ng of "labou	r" should include
number of	men required).		. •
i shows - i c	m 5 mon en noed in burning to 1	work fire fight	ing equipment during
11	corestry allows and equipment	- vert. Power	MM. Y4)
-entel -cui;	ment - Tractor	,	2,
vaterial-	mizite, tools, food and loughn	s il required	4,
	time it will take to complete or 3 years due to limit		. 1
orn spr. d	over / or 3 years due to limit	of approx. 1 m	inth per year to ensur
orn spread Towest wasor	over 2 or 3 years due to limit committees.  7th, 1974	of approx. 1 is	inth per year to ensur
orn spread Towest wasor	over 2 or 3 years due to limit committees.  7th, 1974	of approx. 1 m (Signed) // (Title) rish	inth per year to ensur
orn spr. at lowest wasor  **Commany  **Comma	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	inth per year to ensur
Towest water	over 2 or 3 years due to limit committees.  7th, 1974	(Signed) / rish (Address)	onth per year to ensur
Towest water	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
Towest water	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
Towest water	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
Towest water	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
orn spr. at lowest wasor  **Commany  **Comma	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
orn spr. at lowest wasor  **Commany  **Comma	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
orn spr. at lowest wasor  sermany	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur
ore spread Towest wasor  **Emery  **Color Smither	over 2 or 3 years due to limit committees.  7th, 1974  S. B	(Signed) / rish (Address)	onth per year to ensur

DISTRICT NO. 0. D.C.

#### ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

CANADA	MORE NEI G		ON TINEAU							,		
AME OF STRE		above ile	ouston	(LOGAL	NAME)							
LOWING INTO	<u> </u>		DATES STRE	AM INSPECTED								
ulkley r	iver balo	w houston	1 Period	ically								
		•		•	in addition to rele e spawning occur						_	
		be brought up to			• apawing occur.	.,	,		on III 1010	.,	V	
PARTICULAI	RS OF SPAWN	ING & SPAWNI	NG CONDITIO	DNS - (Draw II	nes through nomes o	f salm	on the	at do n	ot frequent	this stre		
SPECIES	ARRIVAL	T	F DURATION OF		TOTAL NO.		E OF		BROOD		· · · · · · · · · · · · · · · · · · ·	IO IN :
OCKENE	INSTREAM	START	PEAK	END	ON GROUNDS	HVY.	MED.	LT.	SYMBOL	м	-	JACKS
OCKEYE		Sept.	Sept	Sept.	C 300	<u> </u>	-	×	ur.	<b> </b>		
PRINGS		au,	Aug.	sept.	B 55	<u></u>	ļ	X	C	50	50	
COHOE		wept.	oct.	.ov.	3 2500		2.		F	50	_50	
PINK\$		AUE.	Sept.	Jept.	P 450	Х.	ļ	ļ	GR	50	50	
STEELHEAD			ļ			<u></u>	<u> </u>	ļ		.		
CHUMS		l				<u> </u>			<u> </u>			
	te Number of Pa	rent Fish on Spo	wning Grounds	and indicate b	y placing letter in	Colu	mn pi	ov ide	d to show	approxi	mate ni	ımber:
Thus		200			2000 5000				•	0000 -	r0000	1
1 - 50 50 - 100			500 D 1000 E		2000 - 5000 G 5000 - 10000 F					0000 - 0000 - 1		
100 - 300	С	1000 -	2000 F		10000 - 20000 K	:			*0	ver 100	000	N
*Where letter *	'N" used it is re	equested approx	imate number of	fish on spawn	ing grounds be sh	own.						
PHYSICAL C	ONDITION OF	SPAWNING G	ROUNDS									
					2 ,5							
(A) Evidence o	f Erosion and S	ilting • Give-Ext	ent or % Stream	Bed Affected								
					eliabet bar							
(B) Particulars	of Scouring of	Spawning Beds o	or Change in Ca	ourse of Stream	slight by		لللك	3115	<b></b>			=
(C) Water Leve	is (Low, Norma	l, High, Abnormo	i), if Abnormal	, details should	d be given $10$	พ						
									<b></b> -			
BIOLOGICAL	CONDITIONS											
(A) Particulars	of Distribution	of Spawning Sal	man aver the Si	bream Bed	Scattered	tlir	<b>0</b> 07	hou	t.			
(A) Famiculars	OI DISTRIBUTION	or spawing sor	mon over me J				.2243		. <b>2.7</b>			
(R) Comments			birde	light.								
(b) Comments												
					1.							
												- <b></b> -
DBSTRUCTIO												-
(A) Passable o	r Impossable _		passab.	le.								
(If so, atta	ch report stating	your reasons a	nd describe nat	ure and extent	of the spawning g	round	s abo	ve ob	struction)			
COMMENTS OF	N ANY OTHER (	CONDITIONS A			··· <del>·</del>				,.			
			·									
							<b>-</b>					

# DISTRICT NO. 8 B.C

	EAM (MAP NAME)	ulklev m	UA w	(LOCAL	HAME)					
FLOWING INTO	0	ulkley ri	DATES STRE	AM INSPECTED						
MINICA	river bel	ow Housto	n Period	iicallw						
MUIE: A ske	tch of this succession									
		m is required on r along the stre be brought up to								
PARTICULA	RS OF SPAWN	ING & SPAWNI	NG CONDITIO	200						. some x
SPECIES	ARRIVAL	DATES	F DURATION OF	SPAWNING	s through names	of salmo	n that de	not freque	nt this st	reem \
OCKEYE		START	PEAK	END	ON GROUNDS	s <del> </del>	OF RUN	YEAR	) GIVE	SEX RA
PRINGS		ļ ————			22.0	+ +		. SYMBO	<u> </u>	
OHOE		Aug.	Aug	Same	1.0.	++		<del></del> -	<del></del>	<b> </b>
INKS		Sopt.	Oct.	Nov.	0 100	╂ ┼-	<del>⊼</del>	- C	50	-50
		нас.	407	Sept.	£ 600		X	F	50	50
TEELHEAD			<u> </u>	Dept.	C 100			N.R.		
HUME				<del> </del>	<del> </del>					
OTE: Estimate	Number of Pare	ent Fish on Spaw	ning Grands	<u></u>	I					
Inus			ming Grounds a	nd indicate by p	lacing letter in	Column	provide	d to show	a pproxi	mate nu
i - 50 A 50 - 100 B	\ 3	300 -	300 D		2000 - 5000 G					
100 - 300 C		500 - 1 1000 - 2	000 =		5000 - 10000 H				0000 - 3	
here letter "N	" used it is requ	uested approxim	ote number est		0000 - 20000 K				000 - 1000 er 1000	
Veren				sh on spawning	grounds be sho	wn.			_	"
TSICAL CO	NDITION OF S	PAWNING GRO	DUNDS							
Evidence of (	Erosion and Silti	ng - Give Exten		5.0						
		- CITO EXIGN	r or % Stream Be	d Affected 2	9 					
	. Ca									
drifted ats of	Scouring of Spa									
		wning Beds or C	Change in Course	e of Stream	none					
		wning Beds or C	Change in Course	e of Stream	none					
		wning Beds or C	Change in Course	e of Stream	none					
Water Levels (	(Low, Normal, H	wning Beds or C	Change in Course	e of Stream	none					
Water Levels	(Low, Normal, H	wning Beds or C	Change in Course	e of Stream	none	ow.				
Water Levels (	(Low, Normal, H <b>ONDITIONS</b> Distribution of S	wning Beds or C	Change in Course	e of Stream	none	ow.				
Water Levels (	(Low, Normal, H	igh, Abnormal).	If Abnormal, det	e of Stream tails should be a	none	thro				
Water Levels (	(Low, Normal, H	wning Beds or C	If Abnormal, det	e of Stream	none	thro				
Water Levels (	(Low, Normal, H	igh, Abnormal).	If Abnormal, det	e of Stream tails should be a	none	thro				
Water Levels ( LOGICAL CI Particulars of (	(Low, Normal, H  ONDITIONS  Distribution of S  redators	igh, Abnormal).	If Abnormal, det	e of Stream tails should be g	none	thro				
Water Levels ( LOGICAL CI Particulars of (	(Low, Normal, H  ONDITIONS  Distribution of S  redators	igh, Abnormal).	If Abnormal, det	e of Stream tails should be g	none	thro				
LOGICAL CO Particulars of I	(Low, Normal, H  ONDITIONS  Distribution of S  redators	igh, Abnormal).	If Abnormal, det	e of Stream tails should be g	none	thro				
LOGICAL CO Particulars of Comments re Povidence of Dig	(Low, Normal, H	igh, Abnormal).  pawning Salmon  by Later Spawn	If Abnormal, det	e of Stream tails should be g	none	thro				
LOGICAL CE	(Low, Normal, H  DISTRIBUTIONS  Distribution of S  redators  gging up of Eggs	igh, Abnormal).  pawning Salmon  by Later Spawn	If Abnormal, det	e of Stream tails should be a	none	thro				
LOGICAL CE	(Low, Normal, H  DISTRIBUTIONS  Distribution of S  redators  gging up of Eggs	igh, Abnormal).  pawning Salmon  by Later Spawn	If Abnormal, det	e of Streamtails should be s	none  piven lo  cattered	thro				
LOGICAL CO Particulars of Comments re Polyvidence of Dig RUCTIONS	CLOW, Normal, H	igh, Abnormal).  pawning Salmon  by Later Spawn	If Abnormal, det  over the Stream  Bix  ing Fish  pussabi	e of Stream tails should be g	none  piven lo  cattered	thro				
LOGICAL CO Particulars of I Comments re Providence of Dis	ONDITIONS  Distribution of S redators  agging up of Eggs  assable  listance from mo	wning Beds or C igh, Abnormal).  pawning Salmon  by Later Spawn  uth to furthest p	If Abnormal, det  over the Stream  Bir  ing Fish  DUSSAD	e of Stream tails should be g	none  piven lo  cattered	thro				
Comments re Providence of Dispersion of Impersional Providence of Dispersion of Impersional Providence of Obstructure of Obstr	ONDITIONS  Distribution of S redators  agging up of Eggs  assable  listance from mo	igh, Abnormal).  pawning Salmon  by Later Spawn  uth to furthest p	If Abnormal, det  over the Stream  Bir  Bir  pusseb  oint of access	e of Stream tails should be g	none	thro	TE; not	ıt.		
Comments re Providence of Dispersion of Impersional Providence of Dispersion of Impersional Providence of Obstructure of Obstr	ONDITIONS  Distribution of S redators  agging up of Eggs  assable  listance from mo	igh, Abnormal).  pawning Salmon  by Later Spawn  uth to furthest p	If Abnormal, det  over the Stream  Bir  Bir  pusseb  oint of access	e of Stream tails should be g	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the origin	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the origin	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the origin	CLOW, Normal, H CONDITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction  outh of Stream  d that the Obstra	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the origin	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the original	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the original	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		
Comments re Possible or Imperior of Obstructions of ture of Obstructions of ture of Obstructions of the original of the original	CLOW, Normal, H COMPITIONS  Distribution of S redators  gging up of Eggs  assable listance from mo ction buth of Stream d that the Obstruct out stating your of	wining Beds or Country of the second of the	If Abnormal, det  If Abnormal, det  over the Stream  Bir  DBSRED  oint of access	e of Stream  tails should be a  Bed Si  Pds medium	none	thro	TE; not	ıt.		

### DEPARTMENT OF FISHERIES PACIFIC REGION

DISTRICT NO. 8 BACA

PACIF	AC KEOIOI		I CTOEAU AN	ND SPAWNIN	G GROUNDS	;					
NADA		T OF SALMON	A 2 IKEAM AI	(LOCAL HAME	)						
OF STREAM	(MAP HAME)	above Houst	on								
INE INTO		j.'		ly during	ere con						
luley riv	or polow !	ouston				vant d	ata such	as location	of obst	ruction	٠,
E. A sketch	of this stream	is required on the	back of this for	rm, showing in a	ddition to rele awning occurs	, etc.,	its locat	ion in relat	ion to s	ome kno	wn
eral outline (	ot tobodiching		avery five ve	ars.							
nt. These ske	tches should b	brought up to do		S (D lines	through names o	fsalme	n that do	not frequent	this stre	om.)	_
RTICULARS	OF SPAWNI	NG & SPAWNIN	DURATION OF S	PAWNING	TOTAL NO.	SIZE	OF RUN	BROOD YEAR SYMBOL	GIVE SE	EX RAII	JACK
PECIES	ARRIVAL IN STREAM		PEAK	END	ON GROUNDS	HVY.	MED. LT				
		START Supt	Sept	Sept	V 20		X	NR NR	50	50	
CKEYE	Auge	<del>-</del>	Aug.	Sept.	C 150		X	P	60	50	
RINGS	Aug.	AU.5	Oct.	Rove	E 600	'	X	E	50	50	_
OHOE	Auge	Sopt	080.						<u> </u>		<u> </u>
INKS			-			<del>                                     </del>			1	1	
TEELHEAD	<del></del>				<u> </u>	╁	<del> </del>				
HUMS					<u> </u>	ــــــــــــــــــــــــــــــــــــــ	<u> </u>	J-d to sho	w approx	cimate r	umbe
FILIMS 1	Number of P	orent Fish on Spo	wning Grounds	and indicate by	placing letter !	,, Colu	'wu bion	ned to she			
OTE: Estimo Thus	te Number of 1				2000 - 5000	G			100-0	-	
1 - 50	<b>A</b>	-	500 D		5000 - 10000				50000 -		
50 - 100			. 1000 E		10000 - 20000				*Over 10	00000	N
100 - 300	C	1000 -	2000 F	ti k znawnit	a arounds be s	how n.					
Where letter	"N" used it is	requested approx	imate number of	tish on spowan	.g g						
PHYSICAL (	CONDITION	F SPAWNING C	ROUNDS		20% 1	enk	eros1	on			
		Silting - Give Ex	ctent or % Stream	Bed Affected							
(A) Evidence	of Erosion and	•									1
				( Stream		n21					<del></del>
(B) Porticula	rs of Scouring (	of Spawning Beds	or Change in Co	DUISE OF STREETIN							
							low				
			mal) If Abnorma	i, details shoul	d be given						
(C) Water Le	vals (Low, Nor	mal, High, Abnor	mai). Il Abileille		·						
							_==				
						<del></del>			ić to	laka.	
BIOLOGIC	AL CONDITIO	JM2		C. Had	Springs t	ind (	(c)	BOR COMP			
(A) Particul	ors of Distribut	ion of Spawning	Solmon over the	Siteam bed							
(-7											
			irds	Tiene							
(B) Commer	nte re Predators							<b></b>		<b></b>	
(C) E	a of Diagina v	p of Eggs by Late	er Spawning Fisl	h							
(C) Eviden	ce of 5.995 -	,									
										\	
OBSTRUC	CTIONS				asable					!	
				Ler	9840 <b>79</b>						
(A) Passol	ble or Impassab	le				<b>-</b> -		<del>_</del>			- <b>-</b>
If Nil,	indicate distar	ice from mouth to	furthest point o	t access	e fame so	tte	rod th	roughou	t to	laka.	
	of Obstruction	nce from mouth to	:XG		0 0		<i>_</i>				
) B) Noture	of Obstruction										
(C) Distar	ice from Mouth	of Stream		7.	<b></b>						
(D) Do vo	u recommend th	nat the Obstructio	n be removed?	nature and exte	ent of the spaw	ning g	prounds o	bove obstr	uction)		
(!f so.	, attach report	ot the Obstructionstating your reason	ons and describe	i ilui oro	_						
1											
TONNEN	TS ON ANY OT	HER CONDITION	NS AFFECTING	THIS STREAM	ics stroom	cles	re:Ke	pro ject	•		
COMMEN	10% of jan	a and dame	LOBOAGG DA	=T11001 =01							
<u> </u>			_								
ļ							<b>-</b>				
<u> </u>											

DISTRICT NO. 1

YEAR 1969

# ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

Lower E			ton	i	NAME)							
	•		DATES STRE	EAM INSPECTED				<del>-</del>				
NOTE: A also			- requ	ently dur	ing spe	Wal	1/3-					
general outlin	cn of this strea to of topograph	m is required on y along the stra	the back of thi	s form, showing	in addition t	o relev	ant dat	a such	os lesas	lon of -		
			a a serial tibi	e years.		-	-		161	GLIOU IC	some :	ions, know
PARTICULA	RS OF SPAWN	IING & SPAWN	ING CONDITI	ONS - (Draw lin								
SPECIES	ARRIVAL IN STREAM	DATES	OF DURATION O	F SPAWNING	TOTAL	nes of s	almont	hat do	not freque	nt this st	fream.)	
SOCKEYE		START	PEAK	END	ON GROU	NDS -	YY, MED		YEAR	GIVE	SEX RA	_
SPRINGS		<del> </del>	<del></del>				7	<del> </del>	<del>                                     </del>	<del> </del>	<del> </del> -	J.
COHOE		August	August	Sept.	£ 120		+-	120	64 Z	<del>: </del>	┼─	$\vdash$
PINKS		Lepte	Cot.	Oct.	F 150			<u>X</u>	J			╀_
STEELHEAD		August	August	Sept.	C 200	-	+	1.	1	<del></del>	ļ- <u>-</u> -	L
<u>-</u>	<del></del>			1	0 200			X	250	1	<u> </u>	_
CHUMS					<del> </del> -			<del> </del> -		Li		
NOTE: Estimate	Number of Par	ent Fish on Spa	wning Grounds o	and indicate by p								
1 - 50 /					rucing lette	in Co	umn pr	ovided	I to show	approxi	mate n	ım be
50 - 100 E	-	300 -	500 D 1000 E		2000 - 500							
100 - 300 (	-	1000 -	2000 F		5000 - 1000					0000 -		
Where letter "N	l" used it is rec	quested approxim	nate number of f	ish on spawning	0000 - 2000	) K				er 1000		
DHACO TO THE				rsn on spawning	grounds be	hown.						
HISICAL CO	NDITION OF	SPAWNING GR	OUNDS									
A) Evidence of	Erosion and Silt	ina - Give Fyta	nt or 97 St	led Affected								
		C = III = AIG	or 70 Stream is	ed Affected	20%		<del>-</del>					
) Water Levels	(Low, Normal, I	High, Abnormal).	. If Abnormal, de	etaile about t		<del></del>						
				orders should be	given <u>id</u>	uren.	L					
OLOGICAL C				should be	given <u>iir</u>	urm.	l				·	
OLOGICAL C	ONDITIONS											
) Particulars of	ONDITIONS  Distribution of	Spawning Salmo	n over the Co									
) Particulars of	ONDITIONS Distribution of	Spawning Salmo	n over the Stream	m Bed	ks scat	tero	c, c	oho	to 1	ake,		
Particulars of  BDEITUR  Comments re P	ONDITIONS Distribution of ACALLORG	Spowning Salmo Go Pain 11ght	n over the Stream	m Bed 1757)	ks scat	tere	C, (	opo	to 1	ske,		
Particulars of  BDEITUR  Comments re P	ONDITIONS Distribution of ACALLORG	Spawning Salmo	n over the Stream	m Bed 1757)	ks scat	tere	C, (	opo	to 1	ske,		
Particulars of  BDTTTES  Comments re P  Evidence of Di	ONDITIONS Distribution of ACALLORG	Spowning Salmo Go Pain 11ght	n over the Stream	m Bed 1757)	ks scat	tere	C, (	opo	to 1	ske,		
Particulars of  BDTTTER  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp	ONDITIONS  Distribution of ACALLORG  redators	Spowning Salmo Ode Prin 11ght Is by Later Spaw	n over the Stream	m Bed 195m	ke scat	tere	C, (	coho	to 1	ske,		
Particulars of  BITTIES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp	ONDITIONS  Distribution of SCALLERO  redatorsii  gging up of Egg	Spawning Salmon Spawning Salmon Spawning Salmon Spawning	n over the Stream	m Bed 195m	ke scat	tere	C, (	coho	to 1	ske,		
Particulars of BDZILLS  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp	Distribution of SCALLCYC Predators if	Spowning Salmoneds  Price Light  Is by Later Spow  LUSSEDIA  Booth to furthest	n over the Stream	m Bed <u>1217</u>	ke sost	tere	C, (	coho	to 1	ske,		
Particulars of BDTTTE  BDTTTE  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp  If Nil, indicate  Noture of Obstra  Distance from M	ONDITIONS  Distribution of SCALLCRO redators in increased	Spowning Salmoned of the Light Spowning Spowning Spowning Salmoned of the Spowning S	rover the Stream	m Bed 125m	ke sost	tere	C, (	coho	to 1	ske,		
Particulars of BDTTTE  BOTTE  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp  If Nil, indicate  Nature of Obstra  Distance from M	Distribution of SCALLCYC redators is gging up of Egg	Spowning Salmoneds  Price Light  Is by Later Spow  LESSED 10  LOUIS TO THE STATE OF LIGHT 19 14 14 14 14 14 14 14 14 14 14 14 14 14	rning Fish 111	m Bed Pin	ks sost	tere		roho	to 1	ske,		
Particulars of BDTTTE  BOTTE  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp  If Nil, indicate  Nature of Obstra  Distance from M	Distribution of SCALLCYC redators is gging up of Egg	Spowning Salmoneds  Price Light  Is by Later Spow  LESSED 10  LOUIS TO THE STATE OF LIGHT 19 14 14 14 14 14 14 14 14 14 14 14 14 14	rning Fish 111	m Bed Pin	ks sost	tere		roho	to 1	ske,		
Particulars of BDTITES Comments re P Comments re P Evidence of Di STRUCTIONS Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	ONDITIONS  Distribution of SCALLERO  redators in 1  gging up of Egg  godination for the country of Stream and that the Obstruction your stating your	Spowning Salmon Co. Spowning Salmon Spowning Salmon Co. Spowning S	point of access  act 11 must	m Bed 1911	ks sost	tere		roho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	m Bed 1911	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES  Comments re P  Evidence of Di  STRUCTIONS  Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		
Particulars of BDTITES Comments re P Evidence of Di STRUCTIONS Passable or Imp If Nil, indicate Nature of Obstra Distance from M Do you recomme (If so, attach rep	Distribution of SCALLERS  Gredators in Greda	Spawning Salmon Sa	point of access  act 12 may be scribe nature on	hout to 1	E. Sont	terc	bove of	2 cho	to 1	ske,		

DISTRICT NO. B. 3.C.

YEAR 1958

#### ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

CANADA	MOAL KEI O	ICT OF SALM	ON STREAM	AIND 31 A11111	no oncone	, ,					
NAME OF STRE				(LOCAL NA	ME)						
LOWING INTO	Bulkley Riv	/or Area .	DATES STREAM	INSPECTED	<del></del>						
	bulkley M	l ver	ł	kly during	Eng Pay						
			he back of this f	_							
			m portions of str				_	_			
point, These s	ketches should b	se brought up to	date every five y	rears.							•
PARTICULA	RS OF SPAWNI	NG & SPAWNI	NG CONDITIO	NS - (Draw lines	through names o	of salmo	n that do t	not frequent	this sto	reom.)	
SPECIES	ARRIVAL		F DURATION OF		TOTAL NO.		OF RUN	BROOD YEAR			TIO IÑ S
	INSTREAM	START	PEAK	END	ON GROUNDS	HVY.	MED. LT.	SYMBOL	м	F	JA C K≤
OCKEYE										<u> </u>	<u></u>
PRINGS	Aug. 10	Lug. 25	Sept. 5	Cept.	L 125		x	64 F	40	60	20
ОНОЕ	Sept. 13	Cct. 1	Cot. 15	10v. 18	F 1000		*	€5 3	45	45	10
PINKS	Aug. 15	Aug. 20	Sept. 10	Sept. 30	0 150		×	66 A	50	50	<u> </u>
TEELHEAD								1			<u> </u>
CHUMS									<u> </u>	<u> </u>	†
NOTE: Estima	te Number of Par	rent Fish on Spa	wning Grounds a	nd indicate by p	lacina letter in	Colum	n provide	d to show	a pprox	imate r	um ber:
Thus	-										
1 - 50			500 D		2000 - 5000 0				0000 -		
50 - 100 100 - 300			1000 E 2000 F	,	5000 - 10000 F 10000 - 20000 K				0000 - Ver 100		M N
			mate number of f					·	ver 100	1100	14
PHYSICAL C	ONDITION OF	SPAWNING GI	ROUNDS								
(A) Evidence o	of Erosion and Si	Iting - Give Exte	ent or % Stream E	Bed Affected	n1	1					
B) Particulars	of Securing of S	Sogwaina Bade o	r Change in Cou	rea of Straum		nil					
(5) / 4///00/4/5	or occurring or a	promission of	. Change in Cool						<b>_</b>		
(C) W						 7	iortiál				
(C) Water Leve	is (Low, Normai	, Migh, Abnorma	1). If Abnormal, a	details should b	e given						
BIOLOGICAL	. CONDITIONS									<u> </u>	
(A) Particulars	of Distribution	of Spawning Sali	mon over the Stre	om Bed							
	- <b></b>	<b></b>									<b>_</b>
(B) Comments	re Predators				nil						
(2)								<b>-</b>			
/C) F	( D)					nil					
(C) Evidence o	of Digging up of	Eggs by Later S	pawning Fish _								, <b>-</b>
											<b>-</b>
OBSTRUCTI	DNS										
(A) Passable a	r Impassable			iassabl	with goo	d wet	er lev	cls			
			est point of acc								
				•							
(C) Distance f	om Mouth of Stre	eam									
	ommend that the ch report stating		removed? nd describe notur	e and extent of	the spowning a	rounds	above ob	struction)			
	<u> </u>										
COMMENTS O	N ANY OTHER O	CONDITIONS AF	FECTING THIS	STREAM							
			173 # 164 f:	ervor dams						·	· <b></b>
<del>-</del>				<del></del>							
								<del>-</del>			
·											<del></del> -
; 							1-1	[p	<i>9</i> [2.		<b>-</b>
<b>-</b> -						41	PZ	PH	/Le,	1	•
F-381			_			<i></i>	F1:	HERY OFFIC	E 7		

DISTRICT NO. 8,3.0. FISHI	RY OFFICER	L.J. Gelley	YEA	<b>R</b> 1967
NAME OF STREAM	ley River Uppe	r IFLOWING II	NTO Sulkley Rive	r Lower II
DATES ON WHICH STREAM IN	SPECTED	Weekly duning	800	
NOTE:	5,10,125	meekly during	sea son	
A sketch of this stream is data such as location of obstruc- stream bed where spawning occ sketch has once been made ava	rions, general o urs, etc., its loc ilabl <b>e, it may</b> be	uttine of topograp cation in relation e referred to in fo	ohy along the stream	m, portions of Int. When suc
<del></del>				ADITIONS
1 Dates of demostry \ c.	Sockeye Sp	0 - + 3	Pinks Steelh	ead Chums
Dates of duration) Start     of run	Aug.	15 Oct. 1 30 " 18	Aug. 25	<del></del>
) End		10 Nov. 10	Sept. 15	<del></del>
2. Total number of grounds		E600	C 250	
3. Size of run - hvy. med. It.	lt.	med	lt.	
4. Compare with total number				
for broad year using symbol	В	E	A	
<ol><li>Give sex ratio in) Male</li></ol>	45%	50%	50%	
percentages ) Female,	45% 10%	50%	5 <b>0</b> %	
Jacks_	•			
NOTE: Draw lines through name	ies of salmon the	it do not frequent	this stream.	
6. PHYSICAL CONDITION OF	SPAWNING G	POLINIDO		
(A) Evidence of Erosion and	Silting - Give	Extent or % Strea	m Bod Affected	nil.
(B) Particulars of Scouring	of Spawning Bed	s or Change in Co	Nurse of Strong	nil.
<del></del>				
(C) Water Levels (Low, Nor low at star	mal, High, Abn	ormal). If Abnor	mal, details should	be given
Tow at star	t of season bu	t normal after	fall rains.	
7. BIOLOGICAL CONDITION	<u> </u>			
(A) Particulars of Distribution	on of Spawning S	almon over the S	treambed 50	od
(B) Comments re Predators				
(C) Evidence of Digging up	of Eggs by Later	Spawnina Fish		
			nil.	
8. OBSTRUCTIONS				
<ul><li>(A) Passable or Impassable</li></ul>		n.a.		
(B) Nature of Obstruction				
(C) Distance from Mouth of S	tream			
(D) Do you Recommend that t	he Obstruction I	e Removed?		
(ii so, attach report stati	ng your reasons o	ind describe natu	re and extent of the	e spawning
8.001193 GDOAG ODZIIOCIIOI	ì. <i>)</i>			s spawning
9. COMMENTS ON ANY OTHE	R CONDITION	S AFFECTING TH	HIS STREAM	
bue to low water s	prings only go	t to Knockholt	but with fell re	ine
cohoe reached Bulk	ley Lake.		July William 18	tins
	<del></del>			
		<del></del>		<del></del>
10. NOTE: Estimate Number of F	arent Fish on Sp	awning Grounds	and Indicate by Pla	rcina Latter in
	how Approximat	e Number: Thus	a.ouio by Fic	A reliet tu
I - 30 A	300 - 500 D	2000 - 5000		0 - 50000 L
50 - 100 B	500 - 1000 E	5000 - 10000	) H 50000	) - 100000 M
	000 - 2000 F	10000 - 2000	K * Over	100000 N
* Where letter "N" used it is be shown.	requested appro	ximate number o	f parent fish on ma	ıwning group-i
be shown.	• •	-	, , , , , , , , , , , , , , , , , , , ,	

DISTRICT NO. \_\_\_\_\_

YEAR \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

CANADA							•							
NAME OF STRE				(LOCAL HAN	4E}									
LOWING INTO	p <b>or Bulkl</b>	cy Piver	DATES STREAM	I INSPECTED									<del>-</del>	
	Bulkley			L'ec	er Tran	dunt		1344	2~*3					
	-		he back of this fo								catio	n of ob:	structio	กร,
general outlin point, These s	e of topography ketches should b	along the stream be brought up to	m portions of str date every five y	eam bed where s rears.	pawnin	g occur	s, etc.,	its I	ocati	on in	relai	tion to	some kr	nwo
PARTICULA	RS OF SPAWN	ING & SPAWUII	NG CONDITION	<b>1S</b> - /0 1:	41									
SPECIES	ARRIVAL		DURATION OF			AL NO.		OF		BRO	QOD		eom.) EX RAT	10 IN %
	INSTREAM	START	PEAK	END	ON GF	ROUNDS	HVY.	₩€D.	LT,	sym	BOL	м	F	JACKS
OCKEYE							ĺ							
PRINGS	Aug 15	Aug 15	Aug 30	Sept 10	c.	200			Χ	62	P	45	45	10
COHOE	ct 1	Oct 1	∪ct 28	liov 10	E	600		λ		61;	-	50	50	ELA
PINKS	Aug 25	Lug 25	Sept 15	Sept 30	C.	250				65		50	50	EII
STEELHEAD			•											
CHUMS													•	
40TE; Estimo	te Number of Par	rent Fish on Spar	wning Grounds a	nd indicate by pl	lucing	letter in	Colun	an pre	ovíde	d to s	how	approxi	mate ni	ım ber:
Thus		•••												
1 - 50 50 - 100			500 D 1000 E			5000 G 10000 H							50000 I	
100 - 300		1000 -				20000 K						ver 100		и 
Where letter '	'N'' used it is re	quested approxim	mate number of fi	ish on spawning	ground	s be sho	wn.							
DUVSICAL C	ONDITION OF	CDAWNING OF	I OUL NO.											
A) Evidence o	of Erosion and Si	Iting - Give Exte	nt or % Stream B	Sed Affected	<u>i.</u>	L								
														~
B) Particulars	of Scouring of S	pawning Beds or	Change in Cour	se of Streum		1								
			). If Abnormal, d											
TON III	Hil fell	rains .		<u>-</u>	J.on	For	wel							
BIOLOGICAI	CONDITIONS							_						
(A) Particulor	of Distribution	of Spawning Sale	non over the Stre	am Bod	go	od								
(B) Comments	re Predators			<u> </u>		· 								
(C) Evidence	of Diaging up of I	Eggs by Later Sc	awning Fish	\$/ <b>5</b> T										
,		- <b>3</b> 3- ", "-:												
DBSTRUCTU	nue .													
		_		<del></del> .				_						
			with goo											
If Nil, indi	rate distance fra	om mouth to furth	est point of acco	:33										
B) Nature of (	Obstruction													
(C) Distance f	om Mouth of Stre	am	~~~~~~~					<b>.</b>						
D) Do you rec	ommend that the	Obstruction be r	emoved? d describe nature					· <b>-</b>						
(it so, atta	ch report stating	your reasons an	d describe nature	e and extent of t	he spa	wning gr	ounds	cbov	e obs	struct	ion)			
COMMENTS O	N ANY OTHER C	ONDITIONS AF	FECTING THIS	STREAM										
			r levels		mai		ine	اهــــــــــــــــــــــــــــــــــــ	n I v	_re	ncì	ed_		
			h-fall- <i>r</i> a											
		y	"# <del>1.186." # [</del> []		a ug	eri <b>o</b> d	7211	L27, <b>2</b> 1	- Y	TOTAL S	8			
									<b>-</b>					
-381	1								F151	HERY C	FFICE			

DIS	TR IC	TNC	6.D	C. F	ISHERY	OFFICER	L.J.	(elley		YEAR1	986
							-	<b>`</b>	TO Less	er Bulkley	
NA	ME (	OF ST	REAM	Map 1	Vame	n about Local N		WING IN	10		
					A INSPE		Wookly d	uring ope	mains con	80Ze	
		JIV W	MICH 3	IKEAN	4 1143LF						
NC	TË: A	sketo	h of thi	s strea	m is req	uired on t	the back of	this form,	, showing i	n addition to	relevant
										ne stream, po	
							i location i y be referr			own point. \	When such
3K.C	iren i	nas on	Ce Deen	Wase		•	•			IG CONDITI	ONS
					So	ckeye	Springs	Cohoe	Pinks	Steelhead	Chums
١.	Date	es of c	uration		t		Aug 15	Oct 18	Sort 29	*	·
	of ru	JN .		•	k		" 31 Sept 15	51 For 15	a SO		
2	T-4						B 200	- 1,000	¥ 60	···	
					s . lt		Lb	hed	i.t		
			with to								
	for	brood	year us	ing sy	mbol		F 50 %	E	B 50 F		
5.			ratio in				<del>4 00 %</del>	50 % 50 %	50 % % <b>60</b>	<del></del>	<del></del>
	per	centaç	jes	•	male					<del></del>	<del></del>
N	OTF.	• Dra	w lines	_	ks h_pames	of salmor	that do n	at frequent	this stream	0 -	
								•			
٥.							G GROUN			斑1	
	(A)	Evid	ence of	Erosio	n and Si	Iting - G	ive Extent	or % Stree	m Bed Affe	ected	· 
	(B)	Parti	culars o	f Scou	ring of	Spawning	Beds or Ci	nange in C	ourse of Sti	ream	Fit
	(C)	Wate	r Levels	(Low	, Norma	l, High,	Abnormal)	- MAbpor	mal, detai	ls should be o	iven
7.	BIO	LOG	ICAL CO	ONDI	rions						
	(A)	Parti	culars o	f Distr	ribution	of Spawn	ing Salmon	over the S	Streambed_	fair	
	(B)	Com	nents re	Preda	tors		a l'est	Ards			
	(C)	Evid	ence of	Diggi		f Eggs by	Later Spav	ming Fish_	E11		
8.	OBS	TRUC	TIONS	·			<del></del>				
•				Despon	ble		bosev.	ole etc			
					th of Str						
							tion be Rer				
		(If so	, attach	repor	t stating	your rea				tent of the sp	awning
		grou	nds abov	e obst	ruction.	)					
9.	co						IONS AFI				
		-				Ilation.	•	WALEF	ToAntme r	Arco log je	
					707			· · <u> </u>	<del></del>		<del></del>
	_	_,									<del></del>
I۵.	NO	TE: I	Estimat <b>e</b>	Numb	er of Pa	rent Fish	on Spawni	na Ground	and India	ate by Placir	a Letter in
		(	Column	Provid	ed to Sh	ow Appro	ximate Nu	mber: Thu	\$		···
			l - 50	A	;	300 - 500	) D :	2000 - 500	0 G	20000 -	
			50 - 100	-		500 - 100	0 E .	5000 - 100	00 H		100000 M
			00 - 300	_			0 F 10			* Over 100	• •
		Where		'N" us	ed it is	requested	approxima	ite number	of parent f	fish on spawn	ing ground

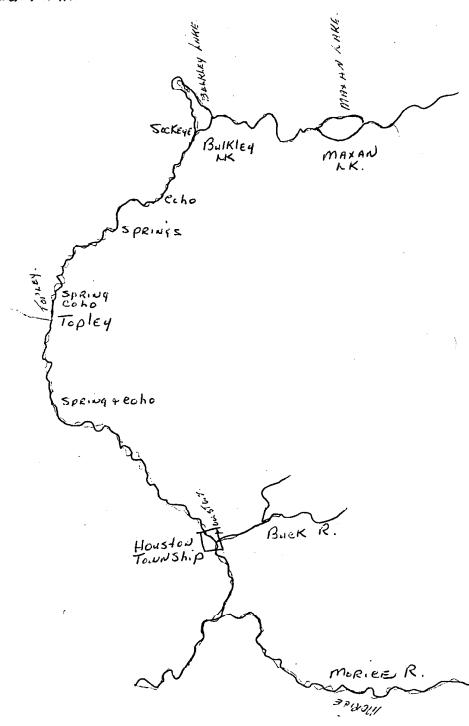
Sockeye Springs Conce Prints Steamers  1. Dates of duration) Start 10. 15. 15. 0at. 10. 15. 0at.	
ATES ON WHICH STREAM INSPECTED	
ATES ON WHICH STREAM INSPECTED	rant
A sketch of this stream is required on the back of this form, showing in addition to relevant at a such as location of obstructions, general outline of topography along the stream, portions tream bed where spawning occurs, etc., its location in relation to some known point. When ketch has once been made available, it may be referred to in following reports.  PARTICULARS OF SPAWNING AND SPAWNING CONDITIONS  Sockeye Springs Cohoe Pinks Steelhead Claration  Of run  Peak  13. 12. 12. 13. 13. 13.  Total number of grounds  14. 21. 13. 14. 25.  Size of run – hvy. med. It 14. 21. 15. 15. 25.  11. 21. 21. 21.  21. 21. 21.  21. 21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.  21. 21.	ant
ata such as location of obstructions, general outline of topography tream bed where spawning occurs, etc., its location in relation to some known point. When tream bed where spawning occurs, etc., its location in relation to some known point. When ketch has once been made available, it may be referred to in following reports.  PARTICULARS OF SPAWNING AND SPAWNING CONDITIONS  Sockeye Springs Cohoe Pinks Steelhead Cl  Dates of duration) Start  10. 18. 6at. 10.  11. 19. 18. 6at. 10.  11. 19. 18. 6at. 10.  2. Total number of grounds  10. 2 800 0 800  3. Size of run – hvy. med. It 14. 11. 15. 15. 15. 16. 11.  Compare with total number  11. 11. 11. 11. 11.	rant .
Sockeye Springs Cohoe Pinks Steelhead Cl  Dates of duration) Start	such
Dates of duration) Start	num#
of run  Peak  10. Run	·
) End Sopt 16. For 18.  2. Total number of grounds \$100 \$800 € 500  3. Size of run - hvy. med. It Lt. 11. Led. 11. 311. 1600  4. Compare with total number \$51. \$11.	
2. Total number of grounds 230 3. Size of run - hvy. med. It 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	
3. Size of run - hvy. med. IT 中央	
ICE DICOU YOU VAINE VAIN	
5 Give sex ratio in ) Male	
percentages ) Female	·
NOTE: Draw lines through names of salmon that do not frequent this stream.	
6. PHYSICAL CONDITION OF SPAWNING GROUNDS	
(A) Evidence of Erosion and Silting - Give Extent or % Stream Bed Affected	
(B) Particulars of Scouring of Spawning Beds or Change in Course of Stream	
(C) Water Levels (Low, Normal, High, Abnormal). If Abnormal, details should be give	n
(C) Water East (con) (con)	
7. BIOLOGICAL CONDITIONS	
(A) Particulars of Distribution of Spawning Salmon over the Streambed A few pairs on	FILLIDA
(R) Comments re Predators A fact birds.	
(C) Evidence of Digging up of Eggs by Later Spawning Fish	
8. OBSTRUCTIONS	
(A) Passable or Impossable Passable with good water levolu.	
(B) Nature of Obstruction	
(C) Distance from Mouth of Stream	
(D) Do you Recommend that the Obstruction be Removed?  (If so, attach report stating your reasons and describe nature and extent of the spawn	nina .
grounds above obstruction.)	
9. COMMENTS ON ANY OTHER CONDITIONS AFFECTING THIS STREAM	
Heavy beaver population on hombreters,	
10 NOTE FALL A NUMBER OF PROPERTY COMMENTS IN BIOGRAPHIC BIOGRAPHIC	etter in
10. NOTE: Estimate Number of Parent Fish on Spawning Grounds and Indicate by Placing I Column Provided to Show Approximate Number: Thus	
1 - 50 A 300 - 500 D 2000 - 5000 G 20000 - 500	000 L
50 100 B 500 1000 B 5000 H 50000 = 100	
100 - 300 C 1000 - 2000 F 10000 - 20000 K * Over 100000	) N
* Where letter "N" used it is requested approximate number of parent fish on spawning be shown.	grounds

DISTRICT NO. 2 FISHERY OFFICER	O.M. Bussey	YEAR	1964
NAME OF STREAM Bulkley (above Houst Map Name Local N	on) FLOWING IN	TO Skeens River	•
DATES ON WHICH STREAM INSPECTED	Regular weekly	inspections.	
NOTE:			
A sketch of this stream is required on the			
data such as location of obstructions, general stream bed where spawning occurs, etc., its			
sketch has once been made available, it may			. When such
·		SPAWNING COND	NITIONS
TARTICOLARS	C SIAMINING AINE	JIAMANA CON	7110143
	Springs Cohoe	Pinks Steelhed	id Chums
i. Daios di adiamoni, Sian	July 26 Aug 10		
01 1011 / 100K	Aug 10 Sep 5		
) End Sep 15 2 Total number of grounds C(300)	Sep 10 Oct 1 F(2000) C(200)	· · · · · · · · · · · · · · · · · · ·	
2. Total number of grounds (1300)  3. Size of run - hvy. med. It.	med med		*******
A. Camana with habit moulean		<del></del>	<del></del>
for broad year using symbol	E NO		
5. Give sex ratio in ) Male	50 50		
percentages ) Female 50	50 50	·	
Jacks			· · · · · · · · · · · · · · · · · · ·
NOTE: Draw lines through names of salmon	that do not frequen	t this stream.	
6. PHYSICAL CONDITION OF SPAWNING	GROUNDS		
(A) Evidence of Erosion and Silring – Gi		am Bed Affected	<b>zil</b>
(B) Particulars of Scouring of Spawning I	Beds or Change in C	ourse of Stream	mil
<del></del>			
(C) Water Levels (Low Normal High A	\haarmal\ If Abaa	الماني ماد ما المعام المسا	
(C) Water Levels (Low, Normal, High, A	Abnormal). If Abno	rmal, details should b	pe given
(C) Water Levels (Low, Normal, High, A  7. BIOLOGICAL CONDITIONS	Abnormal). If Abno	rmal, details should b	pe given
7. BIOLOGICAL CONDITIONS			
			oe given
7. BIOLOGICAL CONDITIONS	ng Salmon over the	Streambed	
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators	ng Salmon over the	Streambed	ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning	ng Salmon over the	Streambed	GVen
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators	ng Salmon over the	Streambed	ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS	ng Salmon over the	Streambed	ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable	ng Salmon over the	Streambed	ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction	ng Salmon over the ater Spawning Fish	Streambed	ail ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream	ng Salmon over the	Streambed	ail ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction	ater Spawning Fish	Streambed	ail ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream	ater Spawning Fish	Streambed	ail ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction  (If so, attach report stating your reason	ater Spawning Fish	Streambed	ail ail
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawnin  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction  (If so, attach report stating your reason grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION  It is suspected there is a very in	ater Spawning Fish on be Removed? ons and describe nated to the state of the stat	ure and extent of the	ail ail spawning distribution
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your reason grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.	ater Spawning Fish on be Removed? ons and describe nated incident of the state of t	ure and extent of the  THIS STREAM  Illegal fishing and as suggested by the	ail  mil  spawning  distribution  local B.C.
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your reason grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicate	ater Spawning Fish on be Removed? ons and describe nated in incident of: Estimated loss at that only 50%	ure and extent of the  THIS STREAM  Lilegal fishing and  s suggested by the  of the total escap	ail  ail  spawning  distribution  local B.C.
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your reason grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicated the other 50% (2000)	on be Removed? ons and describe not describe not ligh incident of the Estimated loss at that only 50%	ure and extent of the  THIS STREAM  Illegal fishing and a suggested by the of the total escap alcon and disposed	ail ail spawning distribution local B.C. cement is
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (if so, attach report stating your rease grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicate realized with the other 50% (2000)	ater Spawning Fish  on be Removed?  ons and describe nate  ONS AFFECTING  igh incident of :  Estimated loss at  te that only 50%  Springs) being ten	ure and extent of the  IHIS STREAM  illegal fishing and as suggested by the of the total escap aken and disposed s and Indicate by Pla	ail ail spawning distribution local B.C. cement is
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your rease grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicate realized with the other 50% (2000)  10. NOTE: Estimate Number of Parent Fish of Column Provided to Show Approx	ater Spawning Fish  on be Removed?  ons and describe not  ONS AFFECTING  igh incident of:  Estimated loss at  te that only 50%  Springs) being to  n Spawning Ground  imate Number: The	ure and extent of the THIS STREAM Illegal fishing and as suggested by the of the total escap saken and disposed s and Indicate by Plans	ail  ail  spawning  distribution  local B.C.  coment is  of.  cing Letter in
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your rease grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicate realized with the other 50% (2000)  10. NOTE: Estimate Number of Parent Fish of Column Provided to Show Approx 1 - 50 A 300 - 500	ater Spawning Fish  on be Removed?  ons and describe not  ONS AFFECTING  igh incident of:  Estimated loss at  te that only 50%  Springs) being to  n Spawning Ground  imate Number: The	Ure and extent of the  THIS STREAM  Illegal fishing and as suggested by the of the total escap caken and disposed s and Indicate by Pla s 00 G 20000	ail ail spawning distribution local B.C. cement is
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution of Spawning  (B) Comments re Predators  (C) Evidence of Digging up of Eggs by L.  8. OBSTRUCTIONS  (A) Passable or Impassable  (B) Nature of Obstruction  (C) Distance from Mouth of Stream  (D) Do you Recommend that the Obstruction (If so, attach report stating your rease grounds above obstruction.)  9. COMMENTS ON ANY OTHER CONDITION of Spring salmon from this area.  Conservation Officer would indicate realized with the other 50% (2000)  10. NOTE: Estimate Number of Parent Fish of Column Provided to Show Approx 1 - 50 A 300 - 500	ater Spawning Fish  fon be Removed?  ons and describe not  igh incident of:  Estimated loss ate that only 50%  Springs) being to  on Spawning Ground  imate Number: The  D 2000 - 500  E 5000 - 100	Ure and extent of the  THIS STREAM  Illegal fishing and as suggested by the of the total escap caken and disposed s and Indicate by Pla s 00 G 20000 00 H 50000	spowning  distribution local B.C. pement is of. cing Letter in - 50000 L - 100000 M

be shown.

## ## N. 112 4 mi

SCALE I wich: 4 miles



V

#### SALMON STREAM SPAWNING REPORT - PACIFIC AREA

in Anderer

be shown.

DISTRICT NO. 2 BC FISH	RY OFFICER	<u> </u>	Bussey		_YEAR _19	13
NAME OF STREAMBULLIAY RI	e Local I	ouston)FL( Name	OWING IN	TO Lower B	ulkley	<del></del>
DATES ON WHICH STREAM IN	ISPECTED	Regular 1	nepostions	<b>U</b> hroughou	t season.	
NOTE:						
A sketch of this stream is data such as location of obstruc- stream bed where spawning occ- sketch has once been made ava	tions, gener urs, etc., it	al outline s	of topograph in relation t	hy along the to some know	str <mark>eam, po</mark> r wn point.	tions of
PA	RTICULARS	OF SPAWN	IING AND	SPAWNING	CONDITION	<u>ONS</u>
	Sockeye	Springs	Cohoe	Pinks	Steelhead	Chums
Dates of duration) Start     of run	Sep 10	Aug 1 Sep 10 Sep 50	Oot 1 Nov 15 Dec 15			
2. Total number of grounds_		F (2000)		<del></del>		<del></del>
3. Size of run - hvy. med. It.	_1 t	ned	med			·
4. Compare with total number						
for brood year using symbo		<u>nr</u>	<u></u>			
5. Give sex ratio in) Male _ percentages ) Female		50 50	<u>50</u>			<del></del>
Jacks_					<del></del>	<del></del>
NOTE: Draw lines through no	mes of salmo	n that do r	ot frequent	this stream.		
6. PHYSICAL CONDITION C	F SPAWNIK	IG GROUN	un c			
(A) Evidence of Erosion an				m Red Affec	ted nil	
<del>*************************************</del>	· · · · · · · · · · · · · · · · · · ·			<del></del>		
(B) Particulars of Scouring	of Spawning	g Beds or C	hange in Co	ourse of Stre	am <u>nil</u>	<del></del>
(C) Water Levels (Low, No	ormal, Highy	Abronial	. If Abnorr	mal, details	should be g	iven
7. BIOLOGICAL CONDITION	45				<u>-</u>	
(A) Particulars of Distribut	ion of Spawr	ning Salmoi	n over the S	treambed	e Yeo	
Lew sockeys below M		entranco.	Spring of	ppeared at		11s.
(B) Comments re Predators				<del>-</del>	nil	<del></del>
(C) Evidence of Digging (	p of Eggs by	Later Spa	wning Fish_		mil	
8. OBSTRUCTIONS	<del></del>					<del></del>
(A) Passable or-Impassable	Bulkley Car	ayon. Pa	sable dur	ing certair	water lev	wls.
(B) Nature of Obstruction						= <del></del>
(C) Distance from Mouth of						
(D) Do you Recommend that						
(If so, attach report sta		isons and d	escribe natu	re and exte	nt of the spa	wning
grounds above obstructi	-	<b>*</b> 10.10.45	********			
9. COMMENTS ON ANY OT Hater level va riations						Bulley Palls
Spring escapement expos						
thinger riesery. Provi	mtative me	esures tal	com but of	rectivenes	not known	•
IO NOTE ENGINEE AL	C D					<del></del>
10. NOTE: Estimate Number o Column Provided to	r rarent Fish	on Spawni Mata Mira	ng Grounds	and Indicat	e by Placing	Letter in
I = 50 A	300 – 500		mber: 1 nus 2000 - 5000		20000 - 5	0000 L
50 - 100 B	500 - 100	_	5000 - 1000	_	50000 - I	_
100 - 300 C	1000 - 200	00 F 10	0000 - 2000	00 K 1	* Over 1000	
* Where letter "N" used i	t is requested	d approxima	ate number (	of parent fis	sh on spawnii	ng grounds

Marie de la companie 
H	DISIRICI NO	ions (Light					YEAR	
	NAME OF STREAM B	ulklov íd Map Nam	ver (above e Local	Count FIC	WING IN	TO lower	e "alkloy 811	- ne
E	PATES ON WHICH S	TREAM IN	SPECTED	o-ularly	Throughout	t sesson.	_	
	NOTE:							
	A sketch of thi	s stream is	required on	the back of	this form,	showing	in addition to	relevant
	and social as tocation	or obstruc	tions, gener	ot outline o	f topograpi		L	., .
•	itream bed where spa ketch has once been	willing occi	JES, etc if	s location ::	n relation !	o come ic		Vinen such
		PAG	TICLU ADD	JE CBAWAII	C TO IN TOI	iowing re	ports.	
		176	(TICODA(3)	JE SPANIN	ING AND	SPAWNII	NG CONDITION	<u> SMS</u>
_			Sockeye	Springs	Cohoe	Pinks	Steelhead	Chums
i	. Dates of duration			Aug 16	Sep 30			
		) Peak		0 10	Oot 25	<del></del>		
2	. Tota! number of g	End	D (400)	Sep 10	Nov 10			
3	Size of run - hvy	med. It.	lt.	<u>P(1500)</u> ⊮ed	ved.	)		· · · · · · · · · · · · · · · · · · ·
4	. Compare with toh	al number			1500			
_	for brood year usi	ing symbol.	#0	M C	F			
5	. Give sex ratio in			50	60			
	percentages	) Female,		53	50	<del></del>		-
J	NOTE: Draw lines t	Jacks hrough pag		Ab 1		.1.4		<del></del>
						this strear	n.	
0	. PHYSICAL COND							
	(A) Evidence of E	rosion and	Silting - G	ive Extent o	or % Stream	n Bed Affe	ected nt	1
	(B) Particulars of	accorning (	or spawning	Beds or Cho	ange in Col	urse of Sti	eom <u>ni</u>	1
	(C) Water Levels	(bown-Nor	mal. History	Abanani)	IS Abana	-1 -2 - 2 - 1 - 1	1 1 111 .	
_					II Abnorm	ai, defai	is should be gi	ven
/.	BIOLOGICAL CO	NOITION	S					
	(A) Particulars of	Distributio	n of Spawni	na Salman a	avor the Co		r:	
								mtrated beli
	(B) Comments re P	redators _		<del></del>			ni	
	(C) Evidence of [	ong op	or Eggs by I	ater Spawn	ing Fish		ni	<u> </u>
8.	OBSTRUCTIONS				·			
	(A) Passable or Imp	assable	Fascabl	o during 1	962 zater	lavele.		
	(B) Nature of Obst		Talls at	od Beaver	dama.	101010		
	(C) Distance from I	Mouth of S		ong stree		· · · · · · · · · · · · · · · · · · ·		<del></del>
	(D) Do you Recomm	nend that t	he Obstructi			t 1 madi	to conside	<del></del>
	, , , , , , , , , , , , , , , , , , , ,			on be Remo	Ved / No.			
	(D) Do you Recomm (If so, attach re	eport startr	ng your reaso	on be Remo ons and desc	ribe nature	and exte	ant of the some	/o
	grounds above	obstruction	ng your reasc ).)	ons and desc	ribe nature	and exte	ent of the span	ning
	grounds above	obstruction NY OTHE	ng your reason.) R CONDITI	ONS AFFE	cribe nature	and exte	ant of the span	ming
	grounds above COMMENTS ON A Although beaver	obstruction NY OTHE	R CONDITI	ONS AFFEC	CTING THE	S STREAM	A $\frac{A}{\sqrt{2}}$	ming
	grounds above COMMENTS ON A Although beaver during extremel	obstruction NY OTHE dame and y low was	ig your reason) R CONDITI Bulkley Se er sandition	ONS AFFE	CTING THE	s and extensions of the second	ent of the spaw	difficulties  year with
	grounds above COMMENTS ON A Although beaver during extremal	obstruction ANY OTHE dame and y low was	R CONDITI Bulkley Seer condition	ONS AFFECTION TO THE WORK COMMEN	CTING THE	s and extension of the same of	A signation	difficulties
9.	grounds above COMMENTS ON A Although beaver during extremel  mestrems attraction had	obstruction ANY OTHE dame and y low was tions.	R CONDITI Bulkley Fe or condition ater levels orisecsed for	ONS AFFECTIVE TO THE TOTAL TO THE TOTAL TO	TING THE GOOD SOME THE STATE OF	IS STREAM heserdor hitier of	A algration of the span	difficulties year with
9.	grounds above COMMENTS ON A Although beaver during extremal period than had NOTE: Estimate N	obstruction ANY OTHE dame and y low was tions. bean exp	R CONDITI Bulkley Fe er condition ater levels orlanced for arent Fish on	ONS AFFEC	CTING THE SOURCE	IS STREAM heserdor hitier of	A algration of the span	difficulties year with
9.	grounds above COMMENTS ON A Although beaver during extremal period than had NOTE: Estimate N	obstruction ANY OTHE dame and y low was tions. bean exp umber of P ovided to S	R CONDITI Pallaley Fe or condition ator levels or factor f: arent Fish on how Approx	ONS AFFECULE TO THE TOTAL OF BOTH YOUR SPONNING IMMEDIA OF BOTH YOUR TOTAL OF BOTH YOUR PROPERTY OF BOTH YOUR	CTING THE GOOD SOME THE STATE OF THE STATE O	S STREAM  NAME A TOOL  THE TOOL  TOO	A migration of offered this luring the on retar	difficulties  From with  tire migrati  ded.  Letter in
9.	grounds above COMMENTS ON A Although beaver during extremal period than had NOTE: Estimate N Column Pro	obstruction ANY OTHE dame and y low was tions. been exce umber of P ovided to S	R CONDITI Pullrley Fe er condition ater levels erfaced for arent Fish on how Approx 300 - 500	ONS AFFECALLS repro-	ETING THE BOOK SOME THE BOOK TO IT STATE AND SE Grounds as BOT Thus TO - 5000	s and external street of the s	A migration of offered this uning the on retarms by Placing 20000 - 500	difficulties  From with  tire signati  dedo  Letter in
9.	grounds above COMMENTS ON A Although beaver during extremel  the stream adoru perio than had NOTE: Estimate N Column Pro 1 - 50 A	obstruction ANY OTHE dame and y low was tions. been exce umber of P ovided to S	R CONDITI Pallaley Fe or condition ator levels or factor f: arent Fish on how Approx	ONS AFFECALLS represent worse considered	CTING THE GOOD SOME THE STATE OF THE STATE O	IS STREAM hasandon podinion hilter 6 a Impa we nd Indica  G H	A migration of offered this luring the on retar	difficulties  From with  tire migrati  dedo  Letter in  000 L 000 M

DISTRICT NO. 2.3.0. FISHERY OFFICER L.J. Gelley	_YEAR _	1961	
NAME OF STREAM Bulkley River (Above Bouston)  NAME OF STREAM Bulkley River FLOWING INTO Lower Map Name Local Name	Bulkley	River	
NOTE:  A sketch of this stream is required on the back of this form, showing in data such as location of obstructions, general outline of topography along the stream bed where spawning occurs, etc., its location in relation to some know sketch has once been made available, it may be referred to in following report	addition stream, vn point.	portions (	of
PARTICULARS OF SPAWNING AND SPAWNING		ITIONS	
Sockeye Springs Cohoe Pinks  1. Dates of duration) Start Stream to low to allow salmon entration of run  Peak  End  2. Tota! number of grounds  3. Size of run - hvy. med. It.  4. Compare with total number for brood year using symbol  5. Give sex ratio in) Male percentages  Female	Steelhea	d Chu	ms
Jacks	<del></del>	<del></del>	
6. PHYSICAL CONDITION OF SPAWNING GROUNDS			
(A) Evidence of Erosion and Silting - Give Extent or % Stream Bed Affec	ted		
(B) Particulars of Scouring of Spawning Beds or Change in Course of Street	mr		
(C) Water Levels (Low, Normal, High, Abnormal). If Abnormal, details	thould b	e given_	
7. BIOLOGICAL CONDITIONS			
(A) Particulars of Distribution of Spawning Salmon over the Streambed			
(B) Comments re Predators			
(C) Evidence of Digging up of Eggs by Later Spawning Fish			
8. OBSTRUCTIONS			
(A) Passable or impossable In good water levels only			
(B) Nature of Obstruction M.A.			
(C) Distance from Mouth of Stream			
(D) Do you Recommend that the Obstruction be Removed?  (If so, attach report stating your reasons and describe nature and exter grounds above obstruction.)	nt of the	spawning	
9. COMMENTS ON ANY OTHER CONDITIONS AFFECTING THIS STREAM			
Beaver dams are plentifull on this stream.	-		
,			
	·		
10. NOTE: Estimate Number of Parent Fish on Spawning Grounds and Indicate Column Provided to Show Approximate Number: Thus  1 - 50 A 300 - 500 D 2000 - 5000 G  50 - 100 B 500 - 1000 E 5000 - 10000 H  100 - 300 C 1000 - 2000 F 10000 - 20000 K **	20000	- 50000 - 100000	L
<ul> <li>Where letter "N" used it is requested approximate number of parent fish be shown.</li> </ul>	ı on spai	waing gro	unds

NAME OF STREAM				Engelson		YEAR	1960
MARIE OF STREAM	Map Nam	Above Ho	Name FL	NI DNIWO.	TOBu	kley R.	<del></del>
DATES ON WHICH	STREAM IN	ISPECTED_	Vandous. t	inas dumin	the Sec	a a com	
NOTE:			19T TOWN.	THOR GAS TO S	<del></del>	11001	
A sketch of t	his stream is	required or	the back	of this form.	showing	ir addition to	relevan
aata such as tocatio	on of obstruc	itions, gene	rai outline	of topograpi	hy alona i	ha chan n	
an acturbed where st	pawning occ	urs, etc., i	ts location	in relation (	to some kr	sawa anint	When ru
sketch has once be	en made ava	ilable, it m	ey be refer	red to in fol	lowing re	ports.	1111611 300
						NG CONDIT	IONS
		Sockeye	Springs	Cohoe	Pinks	Steelhead	Chum
I. Dates of duration	on) Start	5100 TR	Aug 18	Out. 20			
of run	,	<del>- Harth-1</del> (		N 1A			
0 - 1 1 1	) Ena		Sept. 5	Dec. 15			
2. Total number of	grounds	c	E				
<ol> <li>Size of run – hy</li> </ol>	y, med. It.	- <del>L4:</del>		Lt			
<ol> <li>Compare with to</li> </ol>							
for brood year	using symbol	Nil		E			
5. Give sex ratio	in) Male _	-176	20	80%			
percentages	) Female		80%				
	Jacks_		-•	<del>300% 00%</del>			
NOTE: Draw lines	through nar	nes of salma	n that do r	of frequent	this strong		
(C) Water Leve	ls (Low, No	rmai, High,	Abnormal)	hange in Co			
(C) Water Level	Is (Low, Noi	mai, High,	Abnormal)	. If Abnorm	al, detai	ls should be g	iven
(C) Water Level  Almos  BIOLOGICAL C  (A) Particulars	ls (Low, Noi ONDITION of Distributi	mal, High, S on of Spawn	Abnormal) y and lab	. If Abnorm	reambed	Is should be g	iven
(C) Water Level	of Distribution of Predators	mal, High,	Abnormal) y and lab ing Salmon g below h	over the Stocky Creek.	reambed_	is should be g	iven
(C) Water Level  Abnormation  (A) Particulars  (B) Comments re  (C) Evidence of	ONDITION of Distribution of Predators	mal, High,	Abnormal) y and lab ing Salmon g below h	over the Stocky Creek.	reambed	is should be g	iven
(C) Water Level  BIOLOGICAL C  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS	ONDITION of Distribution of Predators	on of Spawn 700 8 min None abs	Abnormal) y and lab ing Salmon g below * arred* Later Spaw	over the Stocky Creek.	reambed _ Suring	is should be g bookeye ju and Sockeye	ivenst below
(C) Water Level  BIOLOGICAL C  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS	ONDITION of Distribution of Predators	on of Spawn 700 8 min None abs	Abnormal) y and lab ing Salmon g below * arred* Later Spaw	over the Stocky Creek.	reambed_ Suring	is should be g bookeye ju and Sockeye	ivenst below
(C) Water Level  BIOLOGICAL C  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS	ONDITION of Distribution of Predators	on of Spawn 700 8 min None abs	Abnormal) y and lab ing Salmon g below arrents Later Spaw	over the Strong Creek.	reambed_ Sering	Is should be g	ivenst below
(C) Water Level Abard Abard Abard (A) Particulars (B) Comments re (C) Evidence of  OBSTRUCTIONS (A) Passable or In (B) Nature of Ob	of Distribution  Digging up  mpassable  pstruction	on of Spawn 700 s arin Your abs	Abnormal) y and lab ing Salmon g below arrents Later Spaw	over the Stocky Creek.	reambed_ Sering	Is should be g	ivenst below
(C) Water Level  Abard  Abard  Abard  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from	of Distribution Predators  Digging up  mpassable	on of Spawn 700 S arim Note abs	Abnormal) y and lab ing Salmon g below bereda Later Spaw	over the Strong Creek.	reambed_ Sering	Is should be g	ivenst below
(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (D) Do you Recon	of Distribution Predators  Digging up  mpassable  mpassable  mn Mouth of S  mmend that	on of Spawn 700 8 min Worke obs of Eggs by  During	Abnormal) y and lab ing Salmon g below arred Later Spaw	over the Strong Creek.	reambed	is should be g	st belo
(C) Water Level Abril (A) Particulars (B) Comments re (C) Evidence of  OBSTRUCTIONS (A) Passable or II (B) Nature of Ob (C) Distance from (D) Do you Recontlete (If so, attach	on Distribution of Distribution of Predators of Predators of Predators of Struction	on of Spawn 700 8 min None abs of Eggs by  During the Obstructing your reas	Abnormal) y and lab ing Salmon g below arred Later Spaw	over the Strong Creek.	reambed	Is should be g	st belo
(C) Water Level  Abray  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (D) Do you Recondly so, attach grounds above	on Distribution of Distribution of Predators of Predators of Predators of Struction	on of Spawn 700 8 min Note abs of Eggs by  During the Obstructing your reasen.)	Abnormal) y and lab ing Salmon g below  reads  Later Spaw  tion be Rem sons and de	over the Strong Crack.  ming Fish  sealmen di  noved?	reambed	dockeye jurand Sockeye	st belo
(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (D) Do you Recondly so, attach grounds above	on Distribution of Distribution of Predators of Predators of Predators of Struction	on of Spawn 700 8 min Note abs of Eggs by  During the Obstructing your reasen.)	Abnormal) y and lab ing Salmon g below  reads  Later Spaw  tion be Rem sons and de	over the Strong Crack.  ming Fish  sealmen di  noved?	reambed	dockeye jurand Sockeye	st belo
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(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (If so, attack grounds above  COMMENTS ON  Plant time so  there was plant  NOTE: Estimate	of Distribution of Distribution of Distribution of Predators of Predators of Predators of Digging upon the property of the Distriction of State of the Distriction of ANY OTH Distriction of Distriction of ANY OTH Distriction of Mumber of Distriction of Districti	on of Spawn 700 8 mm 700 8 mm 700 8 mm Fone obs of Eggs by  During the Obstructing your reasen.)  ER CONDIT	Abnormal)  y and lab  ing Salmon g below  reads  Later Spaw  tion be Rem sons and de	over the Strong Creek.  If Abnormal to over the Strong Creek.  If Abnormal to over the Strong Fish	reambed	tor, water	st belower
(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (If so, attack grounds above  COMMENTS ON  Plant time so  there was plant  NOTE: Estimate  Column	mpassable mend that report statice obstruction I ANY OTH	on of Spawn 700 8 mm 700 8 mm 700 8 mm Fone obs of Eggs by  During the Obstructing your reasen.)  ER CONDIT	Abnormal)  y and lab  ing Salmon g below  reads  Later Spaw  tion be Rem sons and de	over the Strong Creek.  If Abnormal to over the Strong Creek.  If Abnormal to over the Strong Fish	reambed	tor, water	st belower
(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (If so, attack grounds above  COMMENTS ON  Plant time so  there was plant  I - 50	of Distribution of Distribution of Distribution of Predators of Predators of Provided to A	on of Spawn 700 8 min 700 8 min 700 8 min Fore obe of Eggs by  During Stream the Obstruct ng your rease n.) ER CONDIT	Abnormal)  y and lab  ing Salmon g below  read  Later Spaw  tion be Rem sons and de  IONS AFF  in many y  on Spawnin  kimate Nur  D 2	over the Strong Creek.  If Abnormal to over the Strong Creek.  If Abnormal to over the Strong Fish	reambed	tor, water	too warn
(C) Water Level  Abnormal  (A) Particulars  (B) Comments re  (C) Evidence of  OBSTRUCTIONS  (A) Passable or In  (B) Nature of Ob  (C) Distance from  (If so, attack grounds above  COMMENTS ON  Plant time so  there was plant  NOTE: Estimate  Column	Digging up mpassable postruction month of S mmend that report stati re obstruction A Number of Provided to A	on of Spawn 700 8 min 700 8 min 700 8 min Foream the Obstruct ng your reasen.) ER CONDIT	Abnormal)  y and lab  ing Salmon g below  treads  Later Spaw  tion be Rem sons and de  IONS AFF  In many you  on Spawnin  kimate Num  D 2  E 5	over the Strong Crack.  over the Strong Crack.  oning Fish  coved?  scribe nature  ECTING TH  core and the  og Grounds a  nber: Thus	reambed_reambed_sering  detail   tor, water	too warm	

DISTRICT NO B. B.C. FISHE	RY OFFICE	R H.J. F	ngelson		YEAR	1959
NAME OF STREAM Bulkley R. Map Name	above Hou	ston FL Nume	OWING IN	ITO Bulki	ey River	
DATES ON WHICH STREAM IN	SPECTED_M	any time	during th	e Segem		
NOTE:						
A sketch of this stream is data such as location of obstruc stream bed where spawning occusketch has once been made avail	Jrs. etc. it	s location	or ropograp	hy along	the stream, po	
PAR	TICULARS	OF SPAWN	IING AND	SPAWNI	NG CONDITI	ONS
	Sockeye	<b>S</b> prings	Cohoe	Pinks	Steelhead	Chums
1. Dates of duration) Start	Nil	Aur 5	0ot.20			
orrun ) Pcak		Ane la	Now.10			
) End		Camb E	Dan 35			
<ol> <li>Size of run – hvy. med. It.</li> <li>Compare with total number</li> </ol>		<u></u>				
for brood year using symbol		E	Ħ			
5. Give sex ratio in) Male		504	<del></del>			
percentages ) Female_		=				
Jacks						
NOTE: Draw lines through nam	es of salmor	that do n	ot frequent	this stream	·	<del></del>
7. BIOLOGICAL CONDITIONS  (A) Particulars of Distribution  (B) Comments as Products 16	n of Spawni	ng Salmon	over the St	reambed_	Springs spaw	med
(B) Comments re Predators 10	wer Max an	Creek.	Fox More	anzers s	or rortdale	Polle
(C) Evidence of Digging up	of Eggs by L	ater Spaw	ning Fish W	4.3		
						<del></del>
8. OBSTRUCTIONS						
(A) Passable or Impassable The (B) Nature of Obstruction	Water ond	itions al	lowed figh	to go o	vor Falls ab	ove Tonle
		beaver d	mg Were n	o hinder	ince to the	es Imem
(C) Distance from Mouth of Si	Team					and Thinking
(D) Do you Recommend that the (If so, attach report station	ne Obstructi	on be Rem	oved? W111	have to	be watched	low water
(If so, attach report statin grounds above obstruction		ns and des	cribe nature	and exte	nt of the spay	ning
						•
9. COMMENTS ON ANY OTHE	CONDITI	ONS AFFE	CTING TH	IS STREAM	1	
- Nany miles of good sy	pawning gro	und not 1	sed no	almon		
				<del></del>		<del></del>
IO NOTE EN						
10. NOTE: Estimate Number of Po Column Provided to St	arent Fish or	Spawning	Grounds a	nd Indicat	e by Placina	etter in
	An Labray	mone initial	peri inus			
	300 - 500 500 - 1000			G	20000 - 500	
100	00 - 2000		00 - 10000		50000 - 100	M 000
Where letter "N" used it is be shown.			0 - 20000	K 1	Over 100000	) N

 $\Delta J$ 

	ISTRICT NO. 2	•			•			<del>-</del>
	AME OF STREA	Map Name	e Local	Name			•	
D,	ATES ON WHIC	H STREAM IN	SPECTED_	Hany to	lmos durin			
	OTE:					,	, .	
st	A sketch of sta such as loca ream bed where etch has once b	spawning occi been made avai	tions, gene urs, etc., i liable, it m	ral outline ts location ay be refer	of topograph in relation red to in fol	hy along t to some ki lowing re	the stream, poi nown point. V	tions of then such
		<del></del> -	Sockeye	Springs	Cohoe	Pinks		—— Chums
1.	Dates of durat	tion ) Start	•				•	CHOINS
•••	of run	) Peak		Aug 17	Oct 20		nil	
		) End		3	Dec 15			
2.	. Total number	of grounds		00400	) P			
3.	. Size of run -	hvy. med. lt.		LT	LT			
4.	Compare with			_				
_	for brood yea	r using symbol		E	<u> </u>			
5.	Give sex ratio	oin) Male		even	- AAAB		<del></del>	
	percentages	) Female,	<del></del>				<del></del>	
	OTE: Draw lin	Jacks 	nos of salma	- ab-ma d	at formula	sl.?		
•	OIL: Didwill	ies inrough nar	nes or sarmo	on mar ao r	or rrequent	this stream	m.	
Ó.	PHYSICAL CO	O NOITION	F SPAWNIN	IG GROUI	<b>NDS</b>			
	(A) Evidence	of Erosion and	Siltina - C	Give Exten	or % Stream	m Red Aff	ected	
	<u>\$</u>	me changes at	round leg	jams aff	seted area	Yey amal	1	
	(B) Particula	rs of Scouring	of Spawning	Beds or C	hange in Co	urse of St	ream	
		<del></del>	W11					
	(C) Water Lev	vels (Low, No.  Very lew b	rmal, High,	Abnormal	If Abnorr	nal, deta	ils should be gi	iven
7.	BIOLOGICAL	CONDITION	5					
			-					
	(A) Parriculai	rs of Distributi	on of Spawr	uud Zalwoi	over the St	treambed .		
	a nwi n oa				44-3 - C-	·	202 2 -2	0.113
	_epringa	re Predators	- FILLIAN	eer Fores	tdale . Ce	ho en ri	ffles below	
	_epringa	re Predators_	A few es	eer fore	tdale . Ce	ho en ri	ffles below	Bulkley Lake
	(B) Comments	re Predators_	A few es	gles	tdale . Ce	ho en ri	ffles below	Lake
	(B) Comments	of Digging up	of Eggs by	gles	tdale . Ce	ho en ri	ffles below	Lake
8.	(B) Comments (C) Evidence OBSTRUCTION	of Digging up	of Eggs by	Later Spay	vning Fish_	ho en ri	ffles below	Lake
8.	(B) Comments (C) Evidence OBSTRUCTION	of Digging up	of Eggs by	Later Spay	vning Fish_	ho en ri	ffles below	Lake
8.	(B) Comments (C) Evidence OBSTRUCTION (A) Passable o	of Digging up  NS r Impassable	of Eggs by	Later Spaviii	vning Fish_	ho en ri	ffles belew	Lake
8.	(B) Comments (C) Evidence OBSTRUCTION (A) Passable of (B) Nature of	of Digging up  NS or Impassable Obstruction	o of Eggs by N: Passable Seme lo	Later Span	vning Fish_	ola	ffles belew	Lake,
8.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance f	of Digging up  NS or Impassable Obstruction from Mouth of	of Eggs by Ni  Passable Stream Alor	Later Spanil  at normal g jame and	wning Fish_ water lev	ola ma form	ffles belew	Lake,
8.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable o (B) Nature of (C) Distance f (D) Do you Re	of Digging up  NS or Impassable Obstruction from Mouth of scommend that	Passable  Seme low Stream Alon the Obstruct	Later Spanial  at nermal g jame and ition be Rei	water lev	ole en ri	ffles belew	Lake,
8.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable o (B) Nature of (C) Distance f (D) Do you Re (If so, atto	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report stati	Passable Seme local Stream Along the Obstructing your real	Later Spanial  at nermal g jame and ition be Rei	water lev	ole en ri	ffles belew	Lake,
	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable o (B) Nature of (C) Distance f (D) Do you Re (If so, atta grounds als	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report state bove obstructic	Passable Seme loc Stream Alon the Obstructing your readen.)	Later Spanish	water lev	els ms form mate Yes re and ex	abstructions T levels.	Lake,
	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance f (D) Do you Re (If so, atte grounds ale COMMENTS (	of Digging up  NS or Impassable Obstruction from Mouth of the commend that ach report stations on ANY OTH	Passable Seme log Stream Alor the Obstructing your readen.)	Later Spanil  at nermal g jame and ition be Rei isons and de	water lev L beaver da moved? escribe nature	ms form Yea re and ex HIS STREA	ehatructions Thereis.  tent of the spor	at lew
	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable o (B) Nature of (C) Distance f (D) Do you Re (If so, atta grounds at COMMENTS (	of Digging up  NS or Impassable Obstruction from Mouth of seconmend that ach report station ove obstruction ON ANY OTH	Passable  Seme low Stream Alor the Obstructing your reading.) ER CONDITIONS  Area this	Later Spanial  at nermal g jame and ition be Rei sons and de TIONS AFI	water level beaver da moved?	ela ma form re and ex HIS STREA	ehatruations r levels. tent of the spor	at les
	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable o (B) Nature of (C) Distance f (D) Do you Re (If so, atta grounds at COMMENTS (  D a plane  numerous ti	of Digging up  NS or Impassable Obstruction from Mouth of scommend that ach report station ove obstruction ON ANY OTH flight ever	Passable  Seme low Stream Alor the Obstructing your readin.) ER CONDITION area this	Later Spanial  at nermal g jame and ition be Rei sons and de TIONS AFI fall it w	water level beaver da moved?	ela ma form re and ex HIS STREA	ehatruations r levels.  tent of the sport M er were very	at les
	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance of (D) Do you Re (If so, atta grounds at COMMENTS (C)  n a plane  numerous ti reduces num	of Digging up  NS or Impassable Obstruction from Mouth of commend that such report station ove obstruction ON ANY OTH flight ever hreugh out the	Passable Seme local Stream Alors the Obstructing your readen.)  ER CONDITION TO See a local three in the Condition of the Con	Later Spanish at normal giams and description be Reisons and description of the fall it was fall it was good up	water level beaver da moved? escribe naturate tis here as the bear	els ms form re and ex HIS STREA hat beav d that s	abstructions r levels.  tent of the sport or were very one epidemic ings denbine	at les
۶.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance of (D) Do you Re (If so, atta grounds al COMMENTS (  n a plane  numerous ti reduces numerous ti	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report station ove obstruction ON ANY OTH flight ever hreush eut the	Passable Reme loo Stream Alor the Obstructing your readin.) ER CONDITION area this the length of political area this the of political area this	Later Spanial at normal at normal g jame and tion be Res sons and de TIONS AFI fall it w of stream gees up	water level heaver da moved?	ela ma form te and ex HIS STREA hat beav d that a	ehatructions r levels.  tent of the sport were very me epidemic ings cenbine	at les
۶.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance of (D) Do you Re (If so, atta grounds ale COMMENTS of n a plane numerous ti reduces num  with leg j  NOTE: Estimo	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report state bove obstruction ON ANY OTH flight ever hreugh eut the acte Number of	Passable Seme loo Stream Alor the Obstructing your readin.) IER CONDITION area this ne length (see fig.) Parent Fish	at nermal g jame and ition be Reisons and de TIONS AF fall it w of stream gees up at about on Spawni	water level beaver da moved?  ECTING To the meter to the beau as the beau and the median ditterned to	ela ma form te and ex HIS STREA hat beav d that a	ehatructions r levels.  tent of the sport were very me epidemic ings cenbine	at les
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۶.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance of (D) Do you Re (If so, attention of the comments of the co	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report station ove obstruction ON ANY OTH flight ever hrough out the act Number of on Provided to 50 A 100 B	Passable Seme lou Stream Alor the Obstructing your rea on.) IER CONDITION area this area this area this area this see A political and a politi	Later Spanish at normal s jame and r stream tion be Rei sons and do TIONS AFI fall it w of stream gees up t about on Spawni eximate Nu D O E	water level beaver da moved?  ECTING The neted to the beaute let is hepe as the beaute let it is moved:  The Grounds of the moder: Thus 2000 - 5000 5000 - 100005	ela ma form re and ex HIS STREA hat beav d that a ver cutt ff frem and Indic G H	ehatruations r levels.  tent of the sport of were very eme epidemia ings denbine aslmen migra ate by Placing  20000 - 50 50000 - 10	at lew wning
۶.	(B) Comments (C) Evidence  OBSTRUCTION (A) Passable of (B) Nature of (C) Distance of (D) Do you Re (If so, attores of grounds alt COMMENTS (  In a plane  Investment of  NOTE: Estimate  Toolum  1 - 5 50 - 100 - 5	of Digging up  NS or Impassable Obstruction from Mouth of commend that ach report station ove obstruction ON ANY OTH flight ever hrough out the act Number of on Provided to 50 A 100 B	A few as of Eggs by Ni Passable Stream Alor the Obstructing your ream.) ER CONDITION TO THE Passable Show Approximate the Show Approxim	Later Spanish	water level bearer da moved?  escribe naturate the bearer da the bearer	ela ma form te and ex HIS STREA hat beav d that a ver cutt ff from and Indic G H O K	ehatructions  r levels.  tent of the sport  or were very  me epidemic ings centine salmen migra ate by Placing  20000 - 50  50000 - 10	at law whing  tien. Letter in  0000 L 00000 M

Box 578, Smithers, B.C. Aug. 11th. 1958.

The District Supervisor of Fisheries, Box 218, Frince Rupert, B.C.

Lamproy - For commercial purposes. Kind attention Insp. Strachan.

lamprey are found at Maricetown Canyon at varying times of the year and in varying numbers. Usually the main run passes through the canyon in July and beginning of August. However there have been years in which Lamproy have been observed under the ica in the middle of the winter. I should not like to hazard a guess as to the numbers passing up stream as I have never attempted to make any sort of a count of them. The difficulties of fishing them commercially here would be the fact that it is on an Indian reserve and that I would doubt if permission could be received from the Indians to use those places most convenient to fish which are on the reserve. The Indians do fish them a certain amount for their own use.

There are several other main spanning grounds for Lamprey. There is a good run into the Upper Bulkley River and numbers are often seen at Dulkley Falls about half way between Topley and Forestdale. They could easily be taken here, except that it is sort of remote ( 35 mins walk.)

They are also found in varying amounts in almost all tributaries of the Bulkley but possibly the largest numbers ascend Lamproy Creek (flows into Forice River about 30 miles above Houston) They would however be quite difficult to capture.

W.K. Elliott, Fishery Officer. Copy for me Ellet for Information.

OUR PILE NO. 2-3

DEPARTMENT OF FISHERIES

office of District Biclogist,
Prince Rupert, B.C.
July 18, 1957.

Mr. 6. S. Reade, Supervisor of Fisheries, Department of Fisheries, Prince Rupert, B.C.

In reply to your letter of the 17th regarding lampreys and their effect on migrating adult salmon, I find there is not too much information on hand dealing with this topic. There are some known facts which may answer some of your queries.

As far as is known, lamprays are not believed to prey upon salmon while both are migrating upriver to their respective spawning grounds, The lampray assumes it's predatory nature while developing in the ocean, and when it enters the river en route to it's spawning grounds, feeding ceases. The cases of lamprays recorded as being attached to salmon may appear to be an act of predation, but possibly it could be only a method of transportation. In this connection, it would be of interest to examine a salmon with a lampray attached to determine the condition of the salmon, specially in the region where the lampray attached itself to the side of the fish.

Another point to consider when mentioning the Great Lakes problem, is that these are two different types of lampreys and two different species.

I shall look further into this question for further information and advise if there is any additional data that may be of value.

John. W. Stokes, District Biologist.

DISTRICT NO. 2. B.C. FISHERY OFFIC	ER W.K. El	liott	· · · · · · · · · · · · · · · · · · ·	Y'EAR	1967
NAME OF STREAM Bulkley River (above Map Name Local	e <u>Housto</u> rf).C   Name	WING IN	TO Bulkl	ay River mail	atream.
DATES ON WHICH STREAM INSPECTED	many times	during th	• венвоп	•	
NOTE:					
A sketch of this stream is required a data such as location of obstructions, gen stream bed where spawning occurs, etc., sketch has once been made available, it is PARTICULAR.	eral outline o its location i may be referre	of topograph n relation ( and to in fol	ny along i to some ki lowing re	the stream, po nown point. V	rtions of Yhen such
Sockeye	Springs	Cohoe	Pinks	Steelhead	Chums
Dates of duration) Start     of run		Nov. 3	None	N <sub>P</sub> ne ed Observed.	<del></del>
) End		30			
2. Total number of grounds	C	R			
3. Size of run - hvy. med. It.	Lta	Lt.			<del></del>
<ol> <li>Compare with total number for brood year using symbol</li> </ol>	Tr.	H			
5. Give sex ratio in) Male		40			
percentages ) Female		46			
Jacks	10	14			
NOTE: Draw lines through names of salr	non that do no	ot frequent	this strea	m.	
6. PHYSICAL CONDITION OF SPAWN	ING GROUN	IDS .			
(A) Evidence of Erosian and Silting - changes course quite often, f	Give Extent	or % Strea	m Bed Afl	fected <u>This s</u>	tream
(B) Particulars of Scouring of Spawni					
(C) Water Levels (Low, Normal, High High becoming very low and the 7. BIOLOGICAL CONDITIONS	n, Abnormal) en back to r	. If Abnorr	nal, deta	ils should be g	iven
(A) Particulars of Distribution of Sparactered over many miles of	wning Salmon	over the S	treambed	at top of r	iffles
(B) Comments re Predators <u>very</u>	few				
(C) Evidence of Digging up of Eggs I	y Later Spaw	ming Fish _	nil		
8. OBSTRUCTIONS				······································	
(A) Passable or Impassable <u>Passable</u>	at normal o	r high wa	ter.		
(B) Nature of Obstruction Log jame				Ween Toplev	t Forestdel
(C) Distance from Mouth of Stream_	· · · · · · · · · · · · · · · · · · ·				
(D) Do you Recommend that the Obstr	uction be Rem	noved? <u>Fal</u>	ls have	been surveye	d by C.N.R.
(If so, attach report stating your r	easons and de	scribe natu	re and ex	tent of the spo	wning
grounds above obstruction.)					
9. COMMENTS ON ANY OTHER CONI		<del></del>			
Spring Inspection was very diffi					
before the Beaver did too much d	am building.	<u> </u>			<del></del>
10. NOTE: Estimate Number of Parent Fis Column Provided to Show App 1 - 50 A 300 - 5 50 - 100 B 500 - 1 100 - 300 C 1000 - 2	oroximate Nur 00 D 2 000 E 5	ng Grounds mber: Thus 2000 - 5000 5000 - 1000	) G 0 H	20000 - 5 50000 - 1 * Civer 1000	00000 M
<ul> <li>Where letter "N" used it is request be shown.</li> </ul>	ed approxima	te number d	of parent	fish on spawni	ng grounds

Lox 578. Emithers. B.C. Culy 16th. 1957.

The District Supervisor of Fisheries, Prince Rupert, P.C.

#### Re. Facific Lamprey.

Each Year there are numerous Tacific Lamprey ascending the Bulkley River system to space. They can be found hanging to the rocks in the Moricetown Canyon and in the rocks of Bulkley Falls situated between Topley and Forestdale.

As the Lampray in the Great Lakes are causing considerable attention, I feel that it would be a good idea to have some study unde of these Lamprey. It is known they attach themselves to Salmen and Steelhead but in what numbers I do not know. Both Moricetown and the Bulkley Falls would be quite easy to place traps or control posts should it be deemed necessary.

Such year I have enquiries about these lamprey and I should like to have some expert opinion about controling them. Personally I have found about a dozen salmon with Lamprey attached. This does not show too much predation but it is sufficient for the public to begin asking questions.

> W.K. Elliott Fish:ry Officer.

a destable to the

Pistrict Supervisor. Frince Report, B.C., July 17, 1957.

F. C. Withler J. W. Stokes

#### Pacific Larveys in Sheens River System

Attached please find copy of letter from Inspector Elliott on the abovementic sed subject.

Chemons and Willy state that these lamprey attack salmon and trout, and we have numerous examples of the disc marks left by the lamprey.

Frequency in these cases the fish survived the attack.

You will note Inspector Elliott has record of about a dozen salmon with lactrey actually attached.

The question seems to be; can a pacific lamprey kill a salmon, and if so, is the mortality rate great?

If Improtor Elliott can find largery feeding on solmen it would be interesting to trap the largery and the solmen to see if the largery attack is fatal or not.

Please advise.

G.S. Reade.
DISTRICT SUPERVISOR OF PROPERTIES.

Encl.

Ne.c. W.K. Elliott

SALMON STREAM SPANITING REPORT

AANDE VERSE

DISTRICT NO. 2, B.C. FISHERY	OFFICER	R. Elliott	YEAR
NAME OF STREAM BUILLY RIVER ( A	LOCAL NAME	FLOWING INTO Bulkl	ey River main Stream.
DATES ON WHICH STREAM INSPECTED_ MON	y times druing	the Beason.	
NOTE:			
A SKETCH OF THIS STREAM IS REQUIS DATA SUCH AS LOCATION OF DESTROY INS STREAM BED WHERE SPANNING OCCURS, ETC. SKETCH HAS ONCE BEEN MADE AVAILABLE, I	, ITS LOCATION	IN RELATION TO SOME	KNOWN TOINT. WHEN SUCH
<u>PARTICUL</u> ARS	OF SPAWNING AND	SPANNING CONDITIONS	i.
SOCKE	YE SPRINGS	COHOE PINKS	STEELHEAD CHUNS
1. Dates of duration) START	Aug. 20	Oct 10 None	None
OF RUN		Observe:	d Observed.
) END	79	Nov. 30	
2. Total number of Grounds	16-4	Lt.	<del></del>
4. COMPARE WITH TOTAL NUMBER	•	•	
FOR BROOD YEAR USING SYMBOL	B 45	H 40	
5. GIVE SEX RATIO III) MALE PERCENTAGES ) FEMALE	45	66	
) JACKS	10		
NOTE: DRAW LINES THROUGH NAMES OF SAL	TON OC TAHT NOM.	FREQUENT THIS STREAM	1
6. PHYSICAL CONDITION OF SPANNING GRO	ni <b>lidz</b>		
(A) EVIDENCE OF EROSION AND SILT!	NG - GIVE EXTENT		ECTED
(8) PARTICULARS OF SCOURING OF SI	PAULIDIG DEOG OD C	MANGE IN COURSE OF S	TOFAU
This stream changes cours			
(C) WATER LEVELS (LOW, NORMAL, HI	GII, ABNORMAL)	IF ABNORMAL, DETAILS	SHOULD BE GIVEN
V. BIOLOGICAL CONDITIONS	normal at end	of season.	<del></del>
(A) PARTICULARS OF DISTRIBUTION (	DE SPAUMING SALMO	NH ANCO THE STOCKHOOM	at the top of riffle
scattered over many mile		- OVER THE STREAMSER	
(B) COMMENTS RE PREDATORS	very few		
(C) EVIDENCE OF DIGGING UP OF EGO	S BY LATER SPAWI	IING FISH.	
3. OBSTRUCTIONS			
(A) PASSABLE OR HIPASSABLE. PASS			
(B) NATURE OF OBSTRUCTION LOS	Jame, and many Forestdale	beaver dams. Fal	ls between Topley &
(C) DISTABLE FROM MOUTH OF STREAM			
(D) DO YOU RECOMMEND THAT THE OBS (IF SO, ATTACH REPORT STATING GROUNDS ABOVE OBSTRUCTION.)	TRUCTION BE REMO		been surveyed by C.H.R.
9. Comments on Any Other Compare		Ø 4	
Dams, with the result that w	ery for Coho w	o were definitely ere observed from	a noint about
2 miles below the falls to t			
There was sufficient spawnin			
			BY PLACING LETTER IN COLUMN
1-30 A 300-3		2000 <b>-</b> 5000 <b>G</b>	
me	000 <b>E</b>		20000~50000 L
		5000-10000 H	50000-100000 M
100-300 <b>C</b> 1000-3	∨ г	10000 <del>-</del> 20000 K	OVER 100000 N

			3Arijo	N STREAM STAN	TING REPURI		1/2	
DISTR	ICT NO	2, B.C.	FISHERY OF	FICER	W.K. Ellic	ott		1955
NAHE (	OF STREAM	BULKLE MAP NAM	RIVER (Abo	OCA! NAME	FLOWING IN	10 <b>Du</b> j	kley River 1	ain stre
DATES	OU MINICH	STREAM INS	-	times duri	AE Seeson.			
NOTE:	ON HITTORY	DIREMIT 1/15	-ECTED		6			
DATA S STREAM SKETCH	A SKETCH O SUCH AS LO M BED WHER H HAS ONCE	F THIS STRE CATION OF ( E SPAWNING BEEN MADE	EAM IS REQUIRED DESTRUCTIONS, G OCCURS, ETC., AVAILABLE, IT	MAY BE REFERRE	TO IN FOI	LLOWING RE	IN ADDITION THE STREAM, F KNOWN POINT. PORTS.	O RELEVANT PORTIONS OF WHEN SUC:
			PARTICULARS U	F SPAWNING AND	SPANNING (	CONDITIONS		
			SOCKEYE	0.111100	COHOE	PINKS	STEELHEAD	CHUNS
1. Da	ATES OF DUI FRUN		RT		Oct.6.	None	none	
•	,,,,,	) PEA	K	· · · · · · · · · · · · · · · · · · ·	Oct 26	ob serve	l observed.	
. To	OTAL NUMBER	ENE ( OF GROUND	·s	E.(900)	30v.30 G.(5.00	<u>~~~~</u>		
			•	Med.	Lt.	~ <u>/</u>		·
		TOTAL NUM					·	
FO	R BROOD YE	AR USING S	YMBOL		0			
G1	VE SEX RAT RCENTAGES	10 IN) MAL		50 50				
		) FEM ) JAC				·		
∩π::•	Down		NAMES OF SALMOR					
(8			ON AND SILTING					
			DURING OF SPANI					
(C)	) WATER L	VELS (LOW,	HORMAL, HIGH.	ABMORMAL)	F ABNORMAL	DETAILS	SHOULD BE GIVE	.ii
• <u>BIC</u>	CLOGICAL CO	SMOITIGHE	<del></del>		pa	5•	<del></del>	
(A)	PARTICUL rifi	ARS OF DIS	TRIBUTION OF S	PANNING SALMON	OVER THE S	STREAHBED_	at the top	of
(B)		RE PREDAT						· · · · · · · · · · · · · · · · · · ·
(C)	EVIDENCE	OF DIGGIN	G UP OF EGGS B	Y LATER SPAWNI	NG FISH			
OBS	TRUCTIONS				· · · · · · · · · · · · · · · · · · ·			<del></del>
(A)	PASSABLE	OR IMPASS	ABLE	Passable				
	NATURE U	F UBSTRUCT	10N Beaver	dams, Log	jams, Bull	ley fall		<del></del>
(C)	DISTAUCE	FROM MOUT	LOF STREAM	5 jams all t	the way, b	caver de	M 440. 441	<u> </u>
(D)	00 YOU R	ECOMMEND TO	HAT THE OBSTRUCTION.)	TION BE REMOVE REASONS AND	DESCRIBE N	ave been	yd beverus.	C.N.P.
COM	THE THE TAIL AS	DV OTHER OF	MOITIONS ISSUE		B	_		
		built soo	MANUTE THE PROPERTY OF	stream. Sev	eral dams	Were res	oved this y	er but
		Patte 800	n arter.			· · · · · · · · · · · · · · · · · · ·		
	· · · <del></del>							
. NOTE	: FSTIMAT	T Millions o	E DADEUT TO					
. ,,,,,,	PROVIDE	TO SHOW	F PARENT FISH ( APPROXIMATE NUI	DN SPAWNING GR YBER: TH <b>US</b>	OUNDS AND I	NDICATE BY	PLACING LETT	ER IN COLL
	<b>1-</b> 50	, А	300+500		2000-5000	G		
	50-10	⊙ в	500-1000	_	5000-10000	Н	20000-5000 50000-1000	<del>.</del>
	100-30	о <b>с</b>	1000-2000	-			50000-1000	••
				. 10	0000-20000	K	OVER 100000	) N

### 47)

#### SA<u>UJON STRE</u>NT SEAMHING REPORT

16 11.6			137	P NAME	****	LOCAL	. DAGE	-			rer	
								ng the son				
CCT*	::											
OAT/ STRE	A SUC EAN D TOH H	SMETCH C OH AS LOC ODD THERO WAS TROP	F THI ATION SPAN	S STREAM OF CEST HING BOO	I IS REQUING THE STORY OF THE S	IRED OF GENERAL IT	THE BACK TAL CUTLING LECONTION	OF THIS FO. LOF TOPOGRA THE RELATION TO TO IN FO.	NI, SHOWIN	C III . THE	ALDITION T STIZAM, PC	O RELEVANT RT10NS OF MHEN SUCH
	, , , ,		022,1					D SPANTING			· 6	
						IEYE	SPANIS	conte	PINS		STIEUE.U	ODU S
1.	DATE OF R	.s จะ อยถ	z.T10ii	) START	·			Oat 10	Hone		Heize	
	OF I	.01:		) PEAK ) END			OS BUA	Nov. 1			observed.	
	Тота	L DEVICER	OF G	ROUNDS _	· · · · · · · · · · · · · · · · · · ·		<b>7.</b>					
							#ed					
٠.	Comp.	ARG VITH DAGCD YE	TOTA	L HUMBER ING SYME	: 50 <b>L</b>		3	0				
; <sub>e</sub>								oven.				
	PERC	ENTAGES										
ict:	I <b>:</b> 0.	RAM LINE						FREQUENT T				
					LTHES GR			, , , , , , , , , , , , , , , , , , , ,				
	(A)	SADOLAS	E (F)	EROS ILII	AD SILT	11:G - G	NYC EXTEN	T OR S STRI	il Old Affi	EOTEO	nil	
								TORPSTRU  OHUBBE IN SU				
	(8)	MATICU	L/JS	CF SCOU	OFF S	DATE HIG	DEDS ON (	OH DBE IN C.	URSE OF ST	TRE II.	nil	
7,	(8) (C)	PARTICU	L/JS EVELS	CF SCOUR	OFF S	DATE HIG	DEDS ON (	CHURGE IN CU	URSE OF ST	TRE II.	nil	
7,	(8) (C) <u>DICU</u>	PARTICU BATER U	L/JS EVELS	CF SCOUN (LOW, II	OREAL, H	IVLENIEG	DEDS OK (	OH MEE IN C. IF ACROPPAL Irty all s	USE OF S	TRES.	mil	1
, .	(8) (C) <u>DICL:</u> (A)	PARTICU  WATER U  GREAT CU  AGRETICU	LACS EVELS COURT LACS pred	CF SCOUNT (LOW, II ICIS CF DISTIC	OREAL, H	IVAMETEG IGH, AC ICF SPAM	CEDS ON ( CORNAL).  TORNAL).  TORNAL SALLE	OH 1852 HE CO IF ACKORNAL Irty all s	TESE OF STATES	TRE J.	nil	of riffle
7 <	(8) (C) <u>DICL:</u> (A)	PARTICU  WATER U  GREAT CU  AGRETICU	LACS EVELS COURT LACS pred	CF SCOUNT (LOW, II ICIS CF DISTIC	OREAL, H	IVAMETEG IGH, AC ICF SPAM	CEDS ON ( CORNAL).  TORNAL).  TORNAL SALLE	OH JISE III CO IF AGRICANAL Irty all s	URSE OF STANKS	REQ.	nil	of riffle
, ,	(B) (C) DICE (A) (B)	MATCH U	LYSS EVELS CIDIT LYSS <b>pred</b> S RE	CF SCOUNT (LOW, H LOTS CF DISTR OVER	OREAL, H	IYMEHIG IGH, AD CF SPAN	DEDS ON ( DEDS O	OH JISE III CO IF AGRICANAL Irty all s	TESE OF STATES	TRES.	nil	of riffler
	(S) (C) DICT: (A) (B) (C)	PARTICU  MATER U  MAT	LYSS EVELS CIDIT LYSS <b>pred</b> S RE	CF SCOUNT (LOW, H LOTS CF DISTR OVER	OREAL, H	IYMEHIG IGH, AD CF SPAN	DEDS ON ( DEDS O	OH 1852 HE CO IF ACKORNAL Irty all s	TESE OF STATES	TRES.	nil	of riffle
•	(S) (C) DICT: (A) (D) (C)	PARTICU  MATUR U  GALL C  PARTICU  SOBTE  COLUMN  EVIDENCE  RUCTIONS	LARS EVELS COUNTS LARS STRE	(Low, III) (Low, III) (ICI)	OREML, H	CF SPAL	DEDS CR ( HORIVAL).  The and di HORIG SALLS HORIG SALLS TY few	OH JISE III CO IF AGRICANAL Irty all s	TESE OF STATES	TRES.	nil	of riffle
۰	(B) (C) (A) (C) (C) (C)	PARTICU  WATER LI  CO FALL C  PARTICU  GOSTAL  CO STATE  EVIDERCE  RUCTICUS  PASSABLI	L/JS EVELS GLUIT LUIS SIRE E OF L	CF SOULD (LOW, II)  ICTS  OF DISTRIBUTEDATION  DIEGURE	OREAL, H	IGH, ADDRY NAME OF SPANISS.  VOICE SPANISS.  VOICE SPANISS.	DEDS ON ( DEDS O	OH FISH	TRSE OF STATUS	BE I.	nil	of riffle
١.	(6) (C) (A) (B) (C) (A) (B)	PARTICUE BATTICUE BARTICUE BAR	L/US EVELS CIDIT L/US S RE E OF C	(Low, III)	OREAL, H	IGH, ACTORY HISTORY HI	DEDS OR ( DEDS OR ( DEGREAL).  The end di DENG SALLE  TY few ATEL SPAM  able.  Jame and	TF ACROPMAN  IF ACROPMAN  IF ACROPMAN  OF EVER THE  MING FISH  Bulkley F	URSE OF STANLE	at	nil	of riffle
ŀ	(B) (C) <u>Dict.</u> (A) (B) (C) (A) (B) (C)	PARTICUE  BARTICU  BA	LACIS CIDIT LACIS	(Low, III)	CHECK OF STREAM  THE	ISTRUCTION	DEDS CR ( HORRAL).  The and di HORRAL  HORRAL  THE SPANI  THE SPANI  THE AND ALL  T	IF ACROPMAN  IF ACROPMAN  ON CALL THE  SHEET FISH  Bulkley F  12 the way	TRSC OF 3	at saver	nil  the top of the to	of riffle
}.	(B) (C) <u>Dict.</u> (A) (B) (C) (A) (B) (C)	PARTICUE  BARTICU  BA	LACIS CIDIT LACIS	(Low, III)	CHECK OF STREAM  THE	ISTRUCTION	DEDS CR ( HORRAL).  The and di HORRAL  HORRAL  THE SPANI  THE SPANI  THE AND ALL  T	THE ACTION AND ACTION OF ACTION AND ACTION ACTION AND ACTION AND ACTION AND ACTION AND ACTION ACTION ACTION AND ACTION ACT	TRSC OF 3	at saver	nil  the top of the to	of riffled y & Forest
	(S) (C) (D) (A) (C) (CS) (A) (B) (C) (C) (D)	PARTICUE  MATUR U  GO LO L C  PARTICU  GO EDIT  EVIDENCE  PASSABLE  INTURE  DISTANCE  OF YOUR  GROUNDS  GROUNDS  GROUNDS  GROUNDS	LACIS EVELS  CIDIT LACIS FEE CR CF CR CF CR CR CCOM RECOM ATTAC ATTAC	(Low, III	CF STREAM THE CEST TH	Pass SY L  Pass STRUCTI  AFFECT	DEDS CR ( DEDS CR ( DEDS CR ( DEDCREAL).  The and di DEDCREAL  TO SPAMI  THE AND AND  THE A	IF ACROPMAN  IF AC	Alls. B. Palls I bave be into salms.	at saver	the top of	of riffle
	(S) (C) (A) (C) (CS) (CS) (A) (B) (C) (C) (D)	PARTICUE  MATER LE  GOLG L C  PARTICUE  COLUMN  EVIDENCE  PASSABLE  DATURE  DISTANCE  OF YOUR  (IF SO, GROUNDS  ANTS GOLD  RICHTY RE	LACIS EVELS GOOT LACIS AFA CF CR CF CR CF CR CF CR ATTACA	(LOW, HILLIAND AND AND AND AND AND AND AND AND AND	CF STREAT THE ORE T STATIRE OUTTONS THE OF	Pass Log STRUCTI	CEDS OR O	TREASE IN C.  IF ACROPMAN  IF A	STRUCTURE STRUCTURE STRUCTURE SALES	at saver	the top of	of riffle
	(S) (C) (A) (C) (CS) (CS) (A) (B) (C) (C) (D)	PARTICUE  MATER LE  GOLG L C  PARTICUE  COLUMN  EVIDENCE  PASSABLE  DATURE  DISTANCE  OF YOUR  (IF SO, GROUNDS  ANTS GOLD  RICHTY RE	LACIS EVELS GOOT LACIS AFA CF CR CF CR CF CR CF CR ATTACA	(LOW, HILLIAND AND AND AND AND AND AND AND AND AND	CF STREAT THE ORE T STATIRE OUTTONS THE OF	Pass Log STRUCTI	CEDS OR O	IF ACROPMAN  IF AC	STRUCTURE STRUCTURE STRUCTURE SALES	at saver	the top of	of riffle
3.	(S) (C) (A) (C) (CS) (CS) (A) (B) (C) (C) (D)	PARTICUE  MATER LE  GOLG L C  PARTICUE  COLUMN  EVIDENCE  PASSABLE  DATURE  DISTANCE  OF YOUR  (IF SO, GROUNDS  ANTS GOLD  RICHTY RE	LACIS EVELS GOOT LACIS AFA CF CR CF CR CF CR CF CR ATTACA	(LOW, HILLIAND AND AND AND AND AND AND AND AND AND	CF STREAM THE ORE T STATIRE OCTIONS OUTTONS AND GF.	Pass Log STRUCTI S YOUR AFFECT	CEDS ON CONTROL OF AND CONTROL OF THE SENS AND CONTROL	IF ACROPMAN  IF AC	STRUCTURE STRUCTURE STRUCTURE SALES	at saver	the top of	of riffler  y & Forest  by C.N.R.  SPANNING
. 1	(S) (C) (A) (C) (C) (S) (C) (S) (B) (C) (D) (C)	PARTICUE  BARTICUE  GRIGAL C  PARTICUE  CORRECT  EVIDENCE  PASSABLE  DATURE  DESTANCE  OF YOUR  (IF SO, GROUNDS  BARTS OF A  INTER OF A  I	LACIS EVELS COURT LACIS Fred CF CR C	(Low, managed (Low, managed)	CE STREAM THE ORE T STATIKE OCTIONS OCTIONS COMMENT CO	Pass Log STRUCTI	DEDS CR ( HORRAL).  The and di HORG SALM  TY few  ATT. SPAM  able.  Jame and  Jame and  HEASONS AF  HEASONS AF  HEG THIS S  is not w  of the	IF ACROPMAN  IF AC	Alls. Balls bave be the rain and a nur rous.	at saver	the top of	of riffles  y & Fores  by C.H.R.  SPANTING  Arough the
•	(S) (C) (A) (C) (C) (S) (C) (S) (B) (C) (D) (C)	PARTICUE  WATER U  GOING L C  PARTICUE  CONTRICT  EVIDENCE  PASSABLE  BATURE  DISTANCE  OF YOUR  GROUND  GROUND  ANTS ON A  LICENSE  PROVIDE  ESTIMATE  ESTIMATE  PROVIDE  ESTIMATE  ESTIMATE  PROVIDE  ESTIMATE  EST	LACS EVELS FOUNT LACS FOR CF CR CF CR CF CR CF CR CF CR ATTACA ATTACA ATTACA LIVER high TO	(Low, managed (Low, managed)	CE STREAM THE ORE T STATIC OCTIONS  PARENT F PROXIBAT	IGH, ACCORDING OF SPANIAL CONTROL OF SPANIAL CONTRO	DEDS OR (DEDS OR (DED SALE).  The end discussion of the sale.  SPANNING SALES  SPANNING SALES  SPANNING SALES  SPANNING SR: THES	TF ACROPMAN  IF ACROPMAN  ON EVEN THE  MING FISH  Bulkley F  The the way  EVED? Fall  STREAM SPENING  GROUNDS AND	Alls. B. Palls I bave be into raise. HDICATE	at saver	the top of	of rifflow  y & Forest by G.N.R.  SPARKING  Arough the
. 1	(S) (C) (A) (C) (C) (S) (C) (S) (B) (C) (D) (C)	PARTICUE  CONTICUE  CONTIC	LACIS EVELS  CIDIT LACIS FEE CR CF CR CCF CR CCG ATTACA AND V OT  IVOT  high  A	(Low, managed (Low, managed)	CE STREAM THE ORS T STATIRG UCTIONS THE ORS T STATIRG UCTIONS THE ORS T STATIRG UCTIONS THE ORS THE OR	Pass Log AFFECT TEH CHEE ENUISE TO DE THUES TO DE THUE TO DE	DEDS CR ( DEDS C	THE ACTOR ACCORDANCE OF ACCORD	Alls. B. Palls I shave be into a numer.  EDICATE	at shows at the sh	the top of	of riffled y & Forest by C.H.R. spanning arough the
. 1	(S) (C) (A) (C) (C) (S) (C) (S) (B) (C) (D) (C)	PARTICUE  WATER U  GOING L C  PARTICUE  CONTRICT  EVIDENCE  PASSABLE  BATURE  DISTANCE  OF YOUR  GROUND  GROUND  ANTS ON A  LICENSE  PROVIDE  ESTIMATE  ESTIMATE  PROVIDE  ESTIMATE  ESTIMATE  PROVIDE  ESTIMATE  EST	LACIS EVELIS GLOTT LACIS Fred CF GR CF GR CF GR CF GR ATTACA ATTACA LIVER LIVE	(Low, managed (Low, managed) (Low, m	CF STREAM THE ORS T STATIRE OCTIONS TOTAL CP OCTION TOTAL CP OCTIONS TOTAL CP OCTIONS TOTAL CP OCTIONS TOTAL CP OCTION TOTAL CP OCTIONS TOTAL	IGH, ACCORDING OF SPANIAL CONTROL OF SPANIAL CONTRO	DEDS ON OR CONTROL OF AND OF THE SPANNING SPANNI	TF ACROPMAN  IF ACROPMAN  ON EVEN THE  MING FISH  Bulkley F  The the way  EVED? Fall  STREAM SPENING  GROUNDS AND	ALLS. B. STRUMED D  ST	at to the second	the top of	of riffler  y & Forest  by C.M.R.  SPANNING  Arough the



OUR FILE No.

### DEPARTMENT OF FISHERIES

OFFICE OF

Box 578. Smithers, B.C. December 15th. 1954.

The District Supervisor of Fisheries, Frince Rupert, B.C.

UPPER BULKLEY RIVER.

Water conditions in this stream have been very high all season, log jans have not caused any hold up of salmon as far as can be ascertained. The water over Bulkley Falls has been of such a level that salmon have surmounted it without trouble.

The Canadian National Railways have done some survey work by the falls but as yet have not been informed of results or what their intentions are concerning its removal.

A further inspection of this stream is proposed for this winter when it can be inspected by snew shee.

W.K. Elliott Fishery Officer. B.C. 16

#### SALMON STREAM SEAWNING REPORT

**(**)

DISTRIC	т ко	T B.C	•FISHE	RY OFFICER	W.K.	Elliott			-	YEA.	1983	<del></del>
HALE OF	STREAD.					FLOWING H						
namer n	Martine and the		NAME INCREOTED		CAL NAME	ng the se	2.00					
	ar mindr s	WEN.	INSTECTION					•			· · · · · · · · · · · · · · · · · · ·	·
STREAL	DED THERE	SPAUL	ING OCCUP	RS, ETC.,	ITS LOCAT	BACK OF THIS TLING OF TO TION IN REL. FERRED TO H	ATION	TO SAME	10101.1	1 PC46.7	1011 TO 1, POR	RELEVANT TIONS OF THEN SUCH
			PAR	RTICULARS O	F SPAWILIN	IG AHD SPAN	V111G (	<u>ceratrici</u>	<u>.S</u>			
				SOCKEYE	4ISR2	igs coh	Œ	21.119		GTEH	10.11 × 1	211112
1. OAT	ES & DUI			<u></u>			8.					
O.F	NO.1	)	PEAK		Aug.		20			- · <del></del> -		
2. Tot.	AL BENDER				E. (		5000	B.(10	00			
					Med.	They(		۴.				
4. Con	PARL WITE	TOTAL	NUMBER		В.	P.		nil				
					50%	53;	6					
PER	CERTAGES		_		45% 2≰	48)						
		•				1,		*** *				
2015 ·	DRAFF LINE	C THE	<del>.</del>		THAT DO	NOT EDECUE.	IT THE	IS STRUA	15			
						NO! FILEGOE						
. <u>Fly</u>	<u> </u>	DITI [	OF SEAM	IIIG GROUND	<u>s</u>					ทร์	1	
5. <u>Fly</u>	<u> </u>	DITI [	OF SEAM	IIIG GROUND	<u>s</u>	CTENT OR S	STREAL	J BED AF	FZOTEC	n1	1	
5. <u>Fly</u>	<u>Sig : Co</u> Evidenc	DITIEL E OF E	OF SEAME ROSTON AL	HIG GROUND D SILTING	<u>s</u> - GIVE EX							
6. <u>PHY</u> (A) (B)	SIC L CO EVIDENO PARTICO	DITIET E OF E LARS C	OF SEAME ROSTON AL	HIG GROUND D SILTING NG OF SPAWN	S - GIVE EX	CTENT OR \$	IN COL	URSE OF !	STREN	n1	1	
6. <u>FHY</u> (A) (B)	SIG L CO EVIDENC PARTICE WATER L	DITIFE E OF E LARS C EVELS	OF SEAMI ROSTON AL F SCOURTE (LOW, MOR	HING GROUND D SILTHING NG OF SPAWN	S - GIVE EX ING PEDS  ABNORMAL	CTENT OR S OR CHANGE	IN COL	URSE (F )	STRENI S SHOU	. <b>n1</b>	<b>1</b>	
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G.S. Reade, Esq., Regional Supervisor of Fisheries, Prince Rupert, B.C.

The Following is the completion of the report of the conditions of logs jams etc. on the Bu lkley River.

On October 1st. Inspector Gelley and I started out to carefully inspect the balance of the Bulkley River and this time we decided to walk because of the low water in the Bulkley River. It took us two days to inspect this river which is about 30 to 40 miles by river and only 25 miles by road.

The following is the final summary of the number, type & size of the log jams etc. for total river. Bulkley River to Junction of Morice and Bulkley Rivers.

1.	Group of logs across river	17
2.	Small jam	13
3.	Medium Jam	4
4.	Large ding Jam	9
5.	Almost Impossible	2
6.	Considered Impossible	1
7.	Beaver Dams	6
8.	Falls	_1

Total of 53 obstructions

This river is a difficult question and would like to list a few of the points for your information and guidance.

It is not narigatable: navigable
 To clear this stream as has been done by stream clearers in the Babine Lake area would cost a tremendous amount.
 I have shown 53 obstructions which are scattered over approx.

60 miles of stream which is not entirely accessable. 2 Transporta: would be very difficult.

4. The actual removal of these jams would be very difficult as well because of the nature of the country.

5. This year the Coho are getting by all these obstructions and are spawning in Maxan Creek.

Should the Moricetown Fishway be put in then the Pink Salmon should come up. This stream is a likely place for them to spawn but would be unable to get very far up it because of their inability to get over difficult obstructions.

7. The falls, between Topley and Forestdale seems to be the about the worst place for them to get over and I should like to see some work done to make this easier for them .

Should the Aluminum Co. decide to take all the water out of the Nantka River then it might be necessary that Sockeye use the Bulkley River, this is only theory on my part but should be considered. As yet I have not seen any sockeye in this stream.

I should not like to make a recommendation for this work without an engineer going over the whole stream together with a Biologist to make an estimate of the cost and if this stream would take enough more salmon to warrant this expense.

W.K. Elliott

. Call Elling

Fisheries Inspector.



# DEPARTMENT OF FISHERIES OFFICE OF THE SUPERVISOR OF FISHERIES

File: 27-10

AT Prince Rupert, B. C. August 29th, 1949.

19

W. K. Elliott, Fisheries Inspector, Smithers, B. C.

Please reference your report on condition of Bulkley River from Bulkley lake to Topley.

when this inspection is completed please make specific recommendations for stream clearance so that the work can be planned for next year if it is not possible for the Fish Culture Development Branch to do it this year.

It would seem a job for a stream clearing crew and since these crews are now under the Fish Culture Development Branch the work should be under their direction and you should assume no responsibility in this respect.

It is considered that your responsibility is to locate points where work is needed, make recommendations through this office for stream clearance, and report to this office on completion of the work, whether or not it is considered satisfactory.

It will be appreciated that now this Branch has been established with qualified engineers in charge that they must assume responsibility for the funds expended.

G. S. Roado

A/Supervisor of Fisheries.

Smithers, B.C. Aug. 15th. 1949.

G. . Acade, Esq., Regional Supervixor of Fisheries. Prince Kupert, B.C.

The following is a short report of the conditions of log jams in the Bulkley hiver from Bulkley lake to Topley. a distance along the C.W.R. Hailway of about 11 miles, or about double that distance by river.

On July 14th. Inspector Gelley and myself started out for Bulkdey Lake to examine this stroum. By the time we were ready to start it was almost 4 P.M. However we started out and continued until unable to see and camped for the night. Morquitees terrific.

July 15th. Eain woke us up and so were on the river before 5 A.M. and continued on until about noon when we both were scaling wet and cold and hungry and decided to walk the 2 miles into Topley and have lunch. I found there a telegram asking me to be at Lytton on the 17th. thich was impossible so I had to discontinue the examination and Inspector gelies brought the cance around while I went have to Unikley "uke for the t wok. We both continued through to Smithers to arrange for our trip to the lower Fraser to study dip not methods.

The following is a summary of the number type and eise of log jams etc. found on this part of the Bulklay siver.

*	Group of Logs across stream	10
	Small Jem	-0
"	Med. Jun	ă
4	Large Jum	,
3	Almost imposmible	2
i	Considered Impossible	"
7	Beaver dams	
4	Falls	Ĭ

Total of

58 obstructions.

Until date knex kask I have been unable to find sufficient time to continue this examination. And now have not got a cance or other boat suitable to make this trip.

ragiveer wasen suggests that should the stream clearers at Babine lake run cut of work that I should put them to work on this etreum.

Pisheries Inspector.

BC16 1945 SOR

REPORT ON THE OBSTRUCTION AT MORICETOWN FALLS

## REPORT ON THE OBSTRUCTION AT MORICETOWN FALLS

## A Review of Conditions

From the preliminary studies of Moricetown Falls already made, both biological and engineering, it is now possible to make a rational approach to the problem of designing remedial measures and making a preliminary estimate of the cost of such measures.

It will be necessary first to review the biological data on hand so that a logical chain of reasoning will follow.

Dr. Milne states quite clearly in his report\*that the migration of fish upstream through Moricetown Falls is delayed and in some cases completely blocked at certain water levels. He further states that lower water levels aggravate this condition, and more specifically he defines the danger point as "the critical low observed after August 20 in 1945."

As will be seen later, it is a fair assumption that all upstream migrants could be affected by comparable water levels, as such water levels have occurred in previous years at various intervals throughout the migration time of the sockeye, springs, coho, pinks and steelhead. It will be necessary, therefore, to design fishway facilities to pass, if necessary, the entire run, numbering, according to Milne, 124,000 sockeye and coho alone in 1946, plus an unknown quantity of springs, pinks, and steelhead.

\* Major Obstruction - Movicetown Falls" - Appendix IV. Skeena River Report. By D.J. Milne Dr. Milne further states that the sockeye and spring runs commence about the beginning of July, continuing till after mid-August, at which time the coho, pink, and steelhead runs commence, continuing till approximately the end of September. At the periods of their peak intensity the sockeye runs reached as high as 8 per minute, or on a daily basis as many as 4,000 passing through in a ten hour day.

#### Suggested Remedial Measures

From the foregoing it will be seen that fishways at Moricetown must satisfy the following requirements:

- (1) They must pass fish successfully for all levels at or below the danger point occurring on August 20, 1945, and during the time the fish are migrating.
- (2) They must be sufficiently large to accommodate the peak of the run or approximately 8 fish per minute.
- (3) They must preferably be fishways that do not require the fish to jump between pools, as the pink salmon are notoriously poor jumpers.

In order to meet the requirements of (1) above, it is necessary to try and determine what water levels are likely to occur in a long period of years, and at what periods of time these levels are dangerous.

To do this, gauge readings at Moricetown Falls were related first to the new gauge at Smithers, and secondly to the

old gauge at Hazelton, for which records exist over the period 1927 to 1942. Fortunately, simultaneous gauge readings at the Falls and at Smithers were taken in 1945, 1946, and 1947 by the Research Board Biologists and the Dominion Water & Power Bureau respectively. A good corelation is then obtainable between these two points, and with minor corrections between these two and Hazelton. (See attached graph, Fig. No. 1)

From these it is possible to say that the discharge of the Bulkley at the critical level on August 20, 1945, was approximately 4400 c.f.s. at Smithers, with limits of accuracy probably not exceeding ± 500 c.f.s. On the same day the discharge at Moricetown would have been 5000 c.f.s. approximately, and 6100 c.f.s. approximately at Hazelton. The latter, with similar limits of accuracy as at Smithers, is shown as the red band on the attached composite of discharges of the Bulkley at Hazelton. (Fig. No. 2). The lines falling within this area and the shaded green area beneath, represent years in which the water levels dropped dangerously low over the period 1927 to 1942.

It will be noted that in at least two years (1938 and 1941) the water was at block levels during the peak of the sockeye run early in August, and in more than half the years it was at block levels during the peak of the coho, pink and steelhead runs.

The fishways to be built, must, therefore, pass fish over the range of water levels indicated by the shaded portion on the composite hydrographs. A vertical slotted baffle or Denil

type fishway eight feet in height would be required to provide a fishway that would automatically conform to this specification, and the slotted baffle type is the only one for which a practical, economical design exists at present. Fishways with 10 to 12 baffles each would be necessary to overcome the total drop of 10 to 12 feet through the canyon.

To meet the requirements under (2) above, a fishway on each bank, with pools six feet wide and ten feet long could pass approximately 5 fish per minute each without delay, or a total of 10 fish per minute. To meet this specified pool size, the fishways would have to be at least 150 ft. long, which would include entrance and exit channels.

In order to satisfy the requirements under (3) above, a vertical slotted fishway would be ideal. The pink salmon, and any others which preferred to, could swim through the fishway at any desired depth, with no necessity to surface at any time.

It becomes obvious then, that a fishway with vertical slotted baffles is the only practical fishway which satisfies all requirements, and it is recommended that this type of fishway, with the general dimensions stated above, be constructed at Moricetown Falls.

A sketch of the type of baffle and wall construction recommended is attached. (Fig. No. 3). The design is based on baffle dimensions tested in the Hydraulics Lab. of the University of B.C. by Professor E.S. Pretious, and in the field in the Farwell Canyon Fishways on the Chilcotin River. The baffle

details are similar to those planned by the International Pacific Salmon Fisheries Commission for use in the Hell's Gate low-level fishway, and were so designed as to permit ease and economy of construction under arduous winter conditions.

## Cost of Construction

Further reference to the composite hydrograph of the Bulkley will reveal the fact that the fishways will run dry at a discharge of approximately 2000 c.f.s. This limits the time of excavation of the lower parts of the fishway and the construction of the wall and baffle footings to the period January to April. This unfortunately corresponds to the period of cold weather in the area, and difficulties of working in sub zero weather will add considerably to the cost of the structures.

It is also emphasized that it is not at all certain that the water will be low enough during this period to allow the footings to be excavated and concrete poured, so that a small coffer dam might be required to ensure that this can be done. This again would add to the risk and cost of the project.

Mowever, construction can be started early in the fall, and progress timed so that only the essential work on the low parts of the structures will have to be done during the cold weather. Then as the weather becomes milder work can be speeded up so that the structures can be completed by the time the freshet covers them.

A summary of the approximate unit quantities involved in the structures follows; with approximate cost for each.

Solid Rock Excavation:

	1000 cu. yds. @ \$15.00	\$15,000.
2.	Forms:	
	7200 sq. ft. @ \$1.50	10,800.
3.	Concrete:	
•	200 cu. yds. @ \$60.00	12,000.
.4.	Aggregate:	
	400 cu. yds. @ \$5.00	2,000.
5•	Reinforcing Steel:	
	12,000 lbs. @ .20	2,400.
6.	Structural Steel:	
	46,400 lbs. @ .25	11,600.
7•	Access Roads - Preparing Site:	

8. Camp & Plant Costs:
Lump Sum 12,500.

Lump Sum

9. First Years Operating & Maintenance: 2,500.

5,000.

10. Contingencies (coffer dams, etc.) 6.200.

Total \$80.000.

It should be noted first that all unit prices such as steel and concrete are "in place" and include labor and operating costs.

secondly, if construction is started in the fall of any year, it will not be completed by the end of the fiscal year, so that the total should be broken into two parts, approximately \$60,000. being needed the first year and \$20,000. the following year.

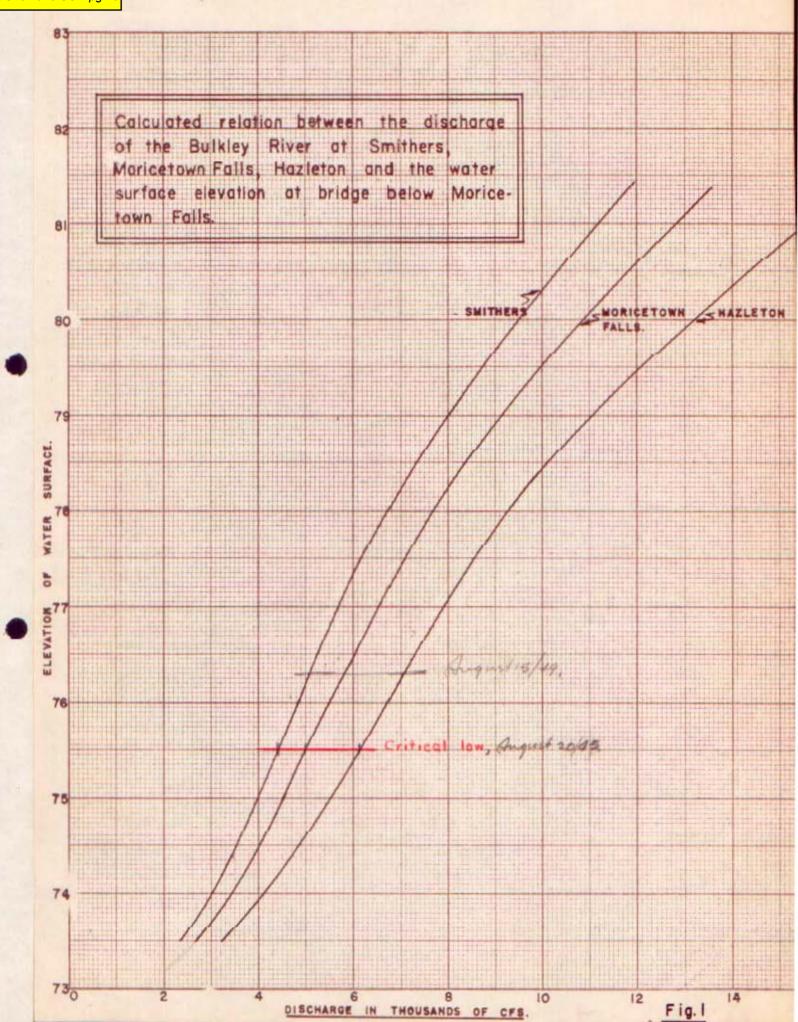
#### Justification of Expenditure

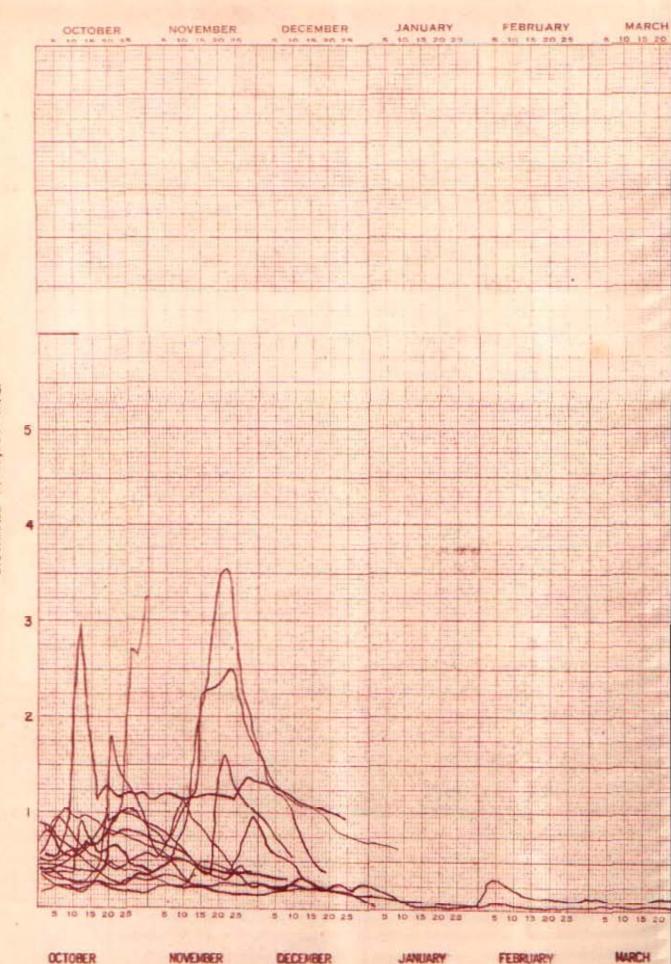
In order to justify the expenditure of \$80,000. on fishways at Moricetown Falls, it must be demonstrated that the benefits derived would more than offset this outlay.

From the hydrographs it was shown that approximately one half of the sockeye run could be blocked twice in 14 years. Based on a four year cycle, this means that at least every second cycle could be depleted by almost one half. It could be safely assumed then that if any onge cycle was affected thus it could not rebuild itself completely before a second period of depletion. This effect could be cumulative to the point where a complete cycle could be virtually wiped out. However, assuming for the moment that only one cycle is depleted by half, this could mean a loss of 20 - 40,000 fish every four years or an average of 5 - 10,000 per year. Being conservative, an annual loss of 5,000 fish would mean a loss to the industry of 416 cases having a value of \$8320. at \$20.00 per case. Capitalizing this figure at 3% would mean a capital loss of \$277,000. Thus the fishways could easily be justified on the basis of

protection of sockeye alone, without taking into account the other species at all. The other species, however, arriving at the falls at what is almost invariably a lower water stage, can be assumed to be more seriously affected than the sockeye, and therefore, there seems to be no valid reason left for doubt as to justification of the forementioned expenditures.

It is therefore recommended that the money to construct these fishways as described be appropriated and construction commenced in the early fall of 1950.





DISCHARGE IN 10,000 C.F.S.

NOVEMBER

DECEMBER

JANUARY

FEBRUARY

MARCH

Fig. 2