



REVISED ANADROMOUS STREAM CATALOG OF
SOUTHEASTERN ALASKA

Haines Area Stream Survey - Special Report

By:
John Edgington

1980

ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revision will be made via errata sheets. Major revisions will be made in the form of revised reports.

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SOUTHEASTERN ALASKA

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By

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HAINES AREA STREAM SURVEY - SPECIAL REPORT

INTRODUCTION

Highway development and annual sustained timber sales in the Haines area prompted a fisheries stream survey of the Haines area for potential fisheries impact during the period 16 July to 28 July 1979. Standard survey methods were used on foot surveys while large streams were sampled in representative areas using a helicopter. Glacial melt combined with heavy rains hindered habitat observations in many of the streams. After this experience, late fall is recommended as a survey time, when leaves are fallen, glaciers are frozen, and chum and coho spawners may be present.

Physical Aspects of Haines

Temperature:

Geology and weather of the Haines area are sufficiently different from the majority of Southeastern Alaska to warrant discussions of possible limiting factors acting on the fisheries habitat. Instantaneous temperature observations show the water habitat to be colder than other streams in Southeastern and to be influenced predominantly by the glacial nature of many of the watersheds.

To draw some insight from weather trends, the existing data for average annual temperature in °F were plotted as well as the annual total precipitation and are presented in Figure 1. Graphing of the weather data was facilitated by averaging the data by six year groupings starting with 1926. It appears from viewing the graph in Figure 1, that precipitation has trended lower from the 1951-56 period to the 1975-78 period. Temperatures have remained fairly consistent and appear to be slightly warming toward the end of the 1975-78 period. If a warming trend does continue then favorable conditions for salmon egg survival may increase due to less deep gravel icing. However, the decreasing trend of the annual mean precipitation may indicate a limiting effect on the amount of rearing area available to coho and king salmon.

Soil Related Concerns:

Soils appeared generally thin, overlaying a mantle of glacial till. Avalanche or slide areas are generally evident, although timber windthrow was not obvious over the selected areas of this survey.

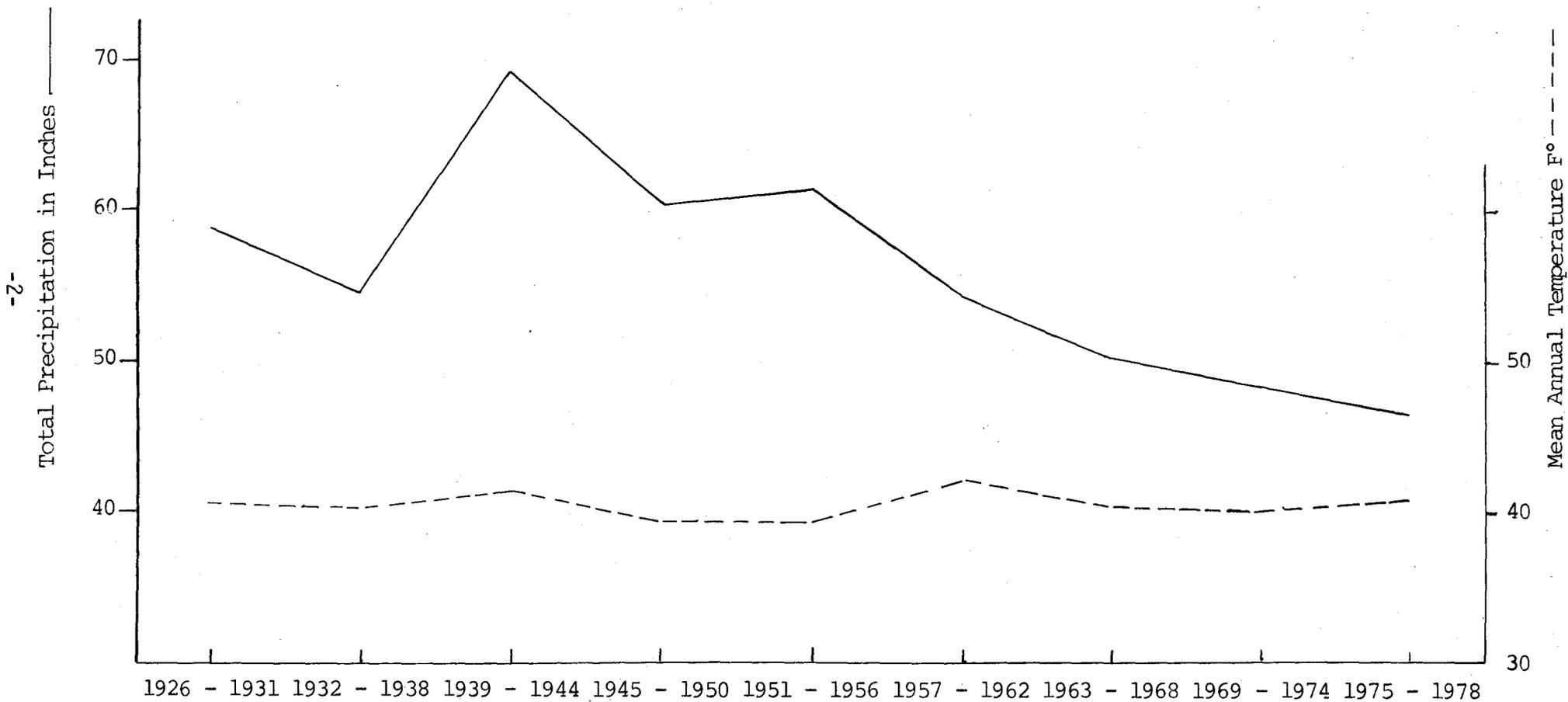
Past logging practices using caterpillar tractors scarified the land surface to the point that sand and related fines were released downslope in the areas surveyed.

Streams Surveyed

Many streams in the Haines area have numbers assigned to them although they are not listed in the "Important Waters Catalog"¹. A few streams were found to have productive fish habitat and have been assigned numbers.

¹ Catalog of Waters Important for Spawning and Migration of Anadromous Fishes. Region I, revised, March 1975. Authority: A.S. 16.05.870.

Figure 1. Six year average values from 1926 to 1978 showing trends of total precipitation and average mean temperature for the Haines area.



Highway Streams:

The determination of the possible effects of a project to widen the Haines Highway was one objective of this survey. Each stream crossing the highway was surveyed as well as side sloughs that may be important spawning or rearing areas. Generally, loss of rearing habitat will be the greatest impact of widening the road. Sparse spawning habitat was noted in the immediate area of the road on most streams. Culvert placement was the most obvious problem noted and will pose a problem during the widening.

Old Logging Areas:

Mile 38, (115-32-53). An old clearcut area borders this stream. The Commercial Fisheries Division hand cleaned the stream in 1972 to recover chum and coho spawning gravel. The stream had up to 24 inches of mud and organic debris overlaying the gravel and trapped by wood debris. Cleaning did reduce the major surface load, but the gravels are still firmly embedded in fines. Coho and cutthroat trout were present in good numbers. In the future, standard logging practices in Haines should require that no logging debris enter the stream.

Herman Creek, (115-32-47). The upper watershed has been logged and it appears that all debris was removed from the stream. The stream section in the old logging area is completely silted over from bank to bank and appears to be a result from the logging.

Little Salmon River, (115-32-45). The Little Salmon was logged on both sides in an area of slight gradient toward the mouth. Slash was so bad one could barely walk through it and spruce reproduction was poor. Effects on the stream were difficult to assess due to the glacial nature of the stream. However, the bottom was of a silt, sand substrate.

Enhancement Potential:

The Haines area possibly holds more promise for fisheries enhancement work than any area in Southeastern. The fish resources in the glacial, cold streams that most salmon species spawn in could be improved with hatcheries and/or spawning channels.

Rearing areas were very limited in the Klehini and Chilkat River basins. From the air one would think the area abounds in rearing waters, but unfortunately many of the oxbows are closed to fish movement. Creative habitat management on the pond areas along the airport could increase rearing coho abundance appreciably. Deepening the existing ponds, creating additional ponds, and regulating flow are all possible approaches. The Little Boulder and Big Boulder Creeks are very limited in rearing areas. The only chinook fry trapped on these systems was in a shallow side slough where temperatures of the water were a few degrees warmer.

The extensive alluvial banks of the Klehini would be excellent areas for a bulldozer to gouge interconnected pools off the sides of the chinook spawning streams where eventually the pools would stabilize into warmer rearing areas.

Even if annual maintenance were required, it would appear to be a feasible method to help a dying segment of our chinook salmon population in South-eastern Alaska to recover.

LEVEL III STREAM SURVEY METHODS

Introduction

The intent of establishing the following methodology for stream surveys is to provide a minimum standard for a mix of stream parameters that will adequately describe the habitat of the stream that controls fish production. The Level III survey is flexible and brief enough to allow the surveyor to move quickly along the stream and its tributaries entirely or used as a sample of sections from larger streams. The emphasis on efficiency and time is placed so that the fish/stream resource of Alaska can be cataloged in a timely manner and in many instances for the first time. The Level III implies that the groundwork of Levels I and II have been completed for identification and collation of existing stream data. Most significantly the investigator will be discovering new fish streams and this survey will supply the information for Levels I and II.

Frequency of Stations

Two different methods of mapping can be used, depending on time, stream type, and availability of aerial photos. The type of mapping used will determine the frequency of stations. The single line schematic must employ a station at least every 1,000 feet of reach. A reach is defined for this survey as an area of stream that has similar gradient and correlative stream features. Normally, the measurements between stations are continuous and become part of the data recorded at the station. Total stream length and station placement are estimated from the aerial photo when a line schematic map is drawn. When drawing the detailed schematic map the sections of the stream measured become the stations and their frequency is determined by the stream length conveniently measured using optical tape. Those parameters sampled at 1,000 foot stations are also noted on the detailed schematic mapping at the same frequency. It is suggested that the surveyor walk the streams to the furthest upstream limit to start the survey. By starting upstream, the surveyor gains an idea of the amount and complexity of the stream features that will be recorded and time can therefore be allotted accordingly.

- 1) a. Record date, surveyor, and responsible agency.
b. Record weather conditions as to: rain, clear, overcast, or snowing.
- 2) Record air temperature with hand-held thermometer. Take air temperature in shade. Record to nearest degree either °C or °F and note time of day, AM or PM or use military time.
- 3) Record stream temperature with hand-held thermometer immediately after taking air temperature using the same method as for air temperature.
- 4) Identify water sources such as lake, ground water, snow melt, glacial, surface runoff, etc.

- 5) Record pH to the nearest half increment using a Universal Wide-range color wheel or electronic pH meter. The pH should be taken above the intertidal zone.
- 6) Record stream water turbidity as:
 - a. Clear-bottom distinctly seen through 4 or more feet of water.
 - b. Slightly turbid-bottom is indistinct at 1 to 4 feet.
 - c. Turbid-bottom visible in less than 1 foot.
- 7) Record stream water color as:
 - a. Colorless
 - b. Light brown
 - c. Dark brown
- 8) Record aquatic vegetation as to density and type as follows:
 - a. Type:
 1. Mosses
 2. Filamentous algae
 3. Skunk cabbage
 4. Lily pods
 5. Other (specify)
 - b. Amount:
 1. Dense - every rock has abundant vegetative growth
 2. Medium - $\frac{1}{2}$ of the rocks have vegetative growth
 3. Sparse - vegetative growth seldom observed
- 9) Record stream flow in CFS. Requires use of Embody method (Welch 1948).
 - a. Select a uniform stream channel containing all the upstream flow.
 - b. Average depth across the channel is computed by measuring the depth of water at uniform horizontal intervals across the stream and dividing the sum of depths by the number of intervals plus 1.

Volume of flow is computed by the formula:

$$R = \frac{W D A L}{T}$$

where,

R = rate of flow in cubic feet per second

W = average width of channel section tested

D = average depth in feet

A = constant
1) - 0.8 loose rocks, coarse gravel
2) - 0.9 mud, sand, hardpan, bedrock

L = length in feet of channel section tested

T = average time in seconds required for a float to traverse the length of channel section.

- c. If a current meter reading in feet per second is available, the formula becomes:

$$R = W D A V$$

In the absence of current meters when surface current velocity is available by the float method: if the channel is not more than 2 feet deep, multiply the surface current rate by 1.33; if 10 feet or more in depth, multiply the surface current rate by 1.05; for intermediate depths, interpolate between these two values.

- 10) Describe natural or artificial stream barriers or impoundments. Terrain permitting, the barrier height will be measured with a clinometer, otherwise a visually estimated height will suffice. In surveying a suspected barrier, the area upstream should be thoroughly searched for the presence of rearing fish species and fish bones on the upper banks. A photo and narrative of the barrier should be given with comments on possible rehabilitation.

- 11) a. Qualitatively describe the upland or upper streambank vegetation other than canopy according to the following:

Type:

1. Conifers (spruce/hemlock)
2. Hardwoods (alders)
3. Shrubs (salmonberry, blueberry, etc.)

4. Forbs (skunk cabbage)
5. Grasses/sedges (muskeg)

The upper bank vegetation becomes important if timber leave areas are to be recommended. The description of the vegetation on the upper bank should note the presence of windthrown timber, large areas of alder or any condition of the forest that would have an influence on the stream.

The type of vegetation is noted on the map with the appropriate symbol. The upland slope is measured with a clinometer and also noted on map by category as follows:

- 0 - 20%
- 21 - 40%
- 41 - 60%
- above 60%

- b. Qualitatively describe the stream canopy by standing midstream, looking up and noting the canopy as:
 1. Completely covers stream
 2. Moderately covers stream
 3. Or is open above stream
- 12) Rearing fish species are one of the most important aspects of the survey and every effort should be made to collect and identify all species and determine their general distribution and relative abundance. Unfortunately, there is the case when excellent habitat occurs while few or no fish can be collected. It must be left to more intense investigations to determine why the habitat is not producing.

The surveyor has the option to use a fine-meshed dip net, stream seine, or electro-fishing unit, but minnow traps baited with preserved pink salmon eggs are recommended.
- 13) Mature salmon and trout are counted when in schools or when dispersed on the spawning gravels. Tabulate numbers by stream reach or note on the map numbers by species and location. The presence of fish bones are very important where noted during the survey, especially for those streams with no past escapement record.
- 14) Rearing habitat is assessed primarily by the presence and type of pools and the quantity and quality of cover. Each stream reach is qualified as to rearing habitat when using the line schematic map, whereas, when using the detailed schematic map, rearing habitat is depicted and described in the narrative.

Assess pool size by length versus width:

- a. Average length or width greater than the average of the stream width.
- b. Width or length equal to the width of the stream.
- c. Pool narrower than the average stream width.

Assess pool type by depth:

- a. Depth greater than 2 feet.
- b. Depth intermediate (12" to 24").
- c. Depth shallow, scouring less than 12".

Assess pool-riffle frequency as a ratio representing the ratio of the average length of pools to the average length of riffles and is expressed as a percentage as follows:

- a. 75% - 25%
- b. 50% - 50%
- c. 25% - 75%

The important cover producing instream debris are described in the stream reach narrative, depicted on the map, and qualified as to:

- a. Excellent
- b. Good

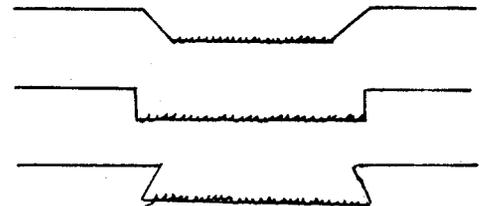
- 15) Stream gradient is measured using a clinometer at each station or more frequent if necessary.
- 16) Gravel compaction is noted at each 1,000 foot station by merely digging one's boot into the gravel and noting whether the gravels are:
 - a. Firm
 - b. Moderately loose
 - c. Or loose
- 17) Bank stability - This method is the same as the Level IV survey so far as it has developed. If hydrology studies are available for updated information on bank stability, assessment can be omitted.
 - a. Upper bank slope - determine percent of slope of the upper bank (for at least 30 m distance up the slope if possible) on both left and right sides of the stream and record.

b. Lower bank material stability - enter appropriate code from reference sheet.

- | | |
|--------------------|---|
| 1 - good stability | banks consist almost entirely (>90%) of (1) soil with well-developed vegetation cover/root masses and/or (2) exposed soil with high proportion (>65%) of rock material and/or (3) bedrock. No evidence of active erosion. |
| 2 - fair stability | banks consist of (1) $\geq 50\%$ of bank cover with well-developed vegetation cover/root masses and/or (2) exposed soil with moderate proportion (40-65%) of rock and/or (3) $\geq 50\%$ of the banks consist of |
| 3 - poor stability | banks consist of (1) <50% of bank area with well-developed vegetation cover/root masses or (2) exposed soil with small proportion (<40%) of rock and (3) virtually no bedrock. |

c. Lower bank type - enter appropriate code from reference sheet.

1. Gently sloping (level - 45° slope)
2. Steeply sloping (45° - 90°)
3. Undercut



d. Indicators of potential soil movement - enter the appropriate code from reference sheet.

Several features of the upper bank indicate movement of soil in the recent past or potential soil movement. The occurrence of these conditions indicate areas potentially vulnerable to logging. Strips of "pioneering trees" (willow, alder) or even-age stands of Sitka spruce which are younger than the surrounding trees indicate previous soil mass movement. At some locations, a very thin soil layer may be observed to lie atop bedrock with attendant potential for soil slippage. Also, the occurrence of steep-side "V-notch" drainages on the upper bank slope indicates a potential for debris torrents. The occurrence of these conditions should be noted either as a "yes" or "no".

- 18) Include in the general stream narrative and show on the map obvious soil hazard conditions such as V-notches, slumps, mass wasting, blue clay, braided stream channels and windthrow areas as they relate to the stream.
- 19) Stream bottom composition according to the National Research Council Grading Scales, are classified as follows:
 - a. Detritus - organic debris
 - b. Silt less than 0.00246"

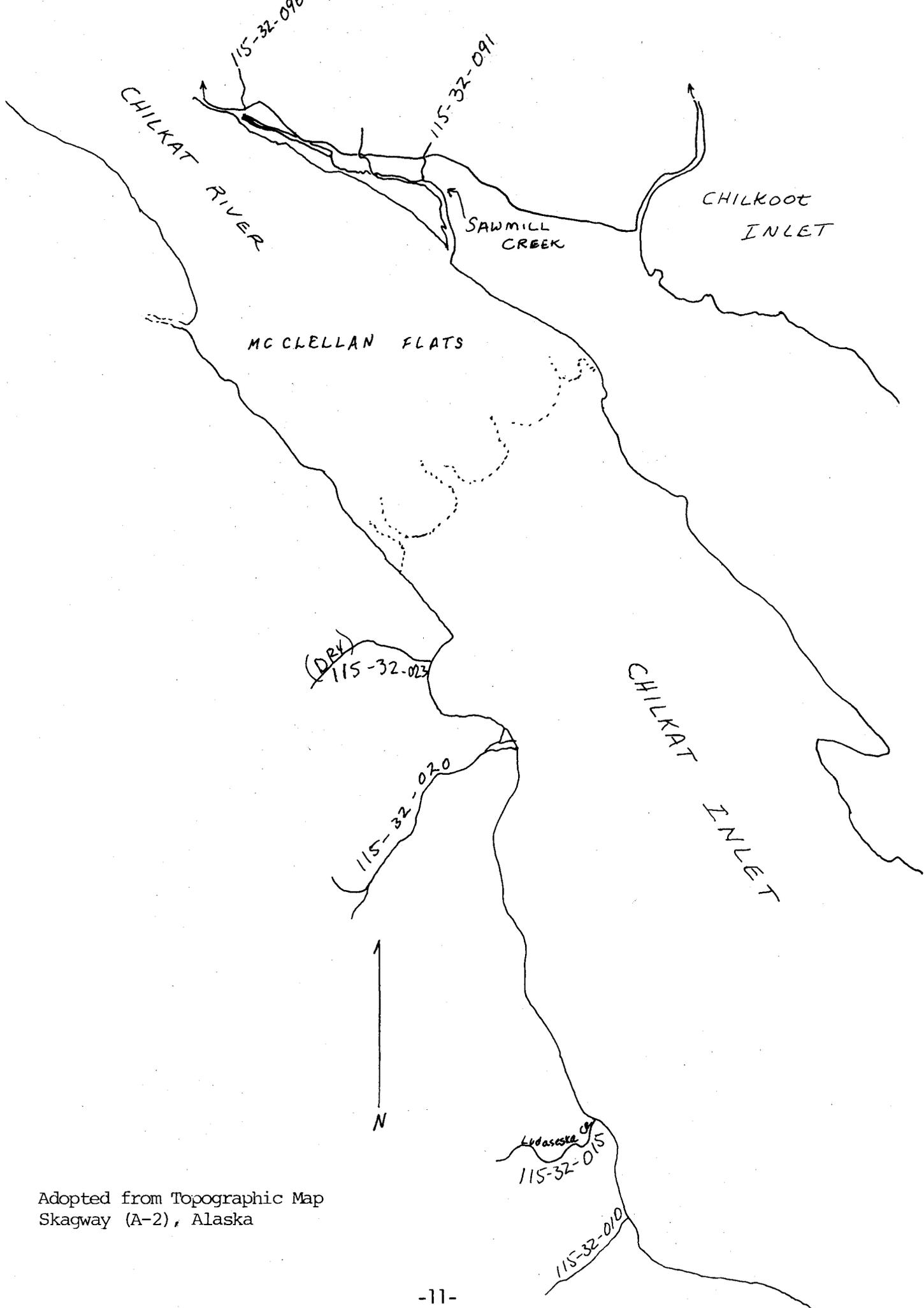
- c. Sand 0.00246" to 0.1"
- d. Gravel above 0.1" to 2.5"
- e. Cobble above 2.5" to 10"
- f. Boulder above 10" to 161"
- g. Bedrock

When estimating the available spawning, the gravel composition is noted as a percentage of the area, i.e., 20% sand

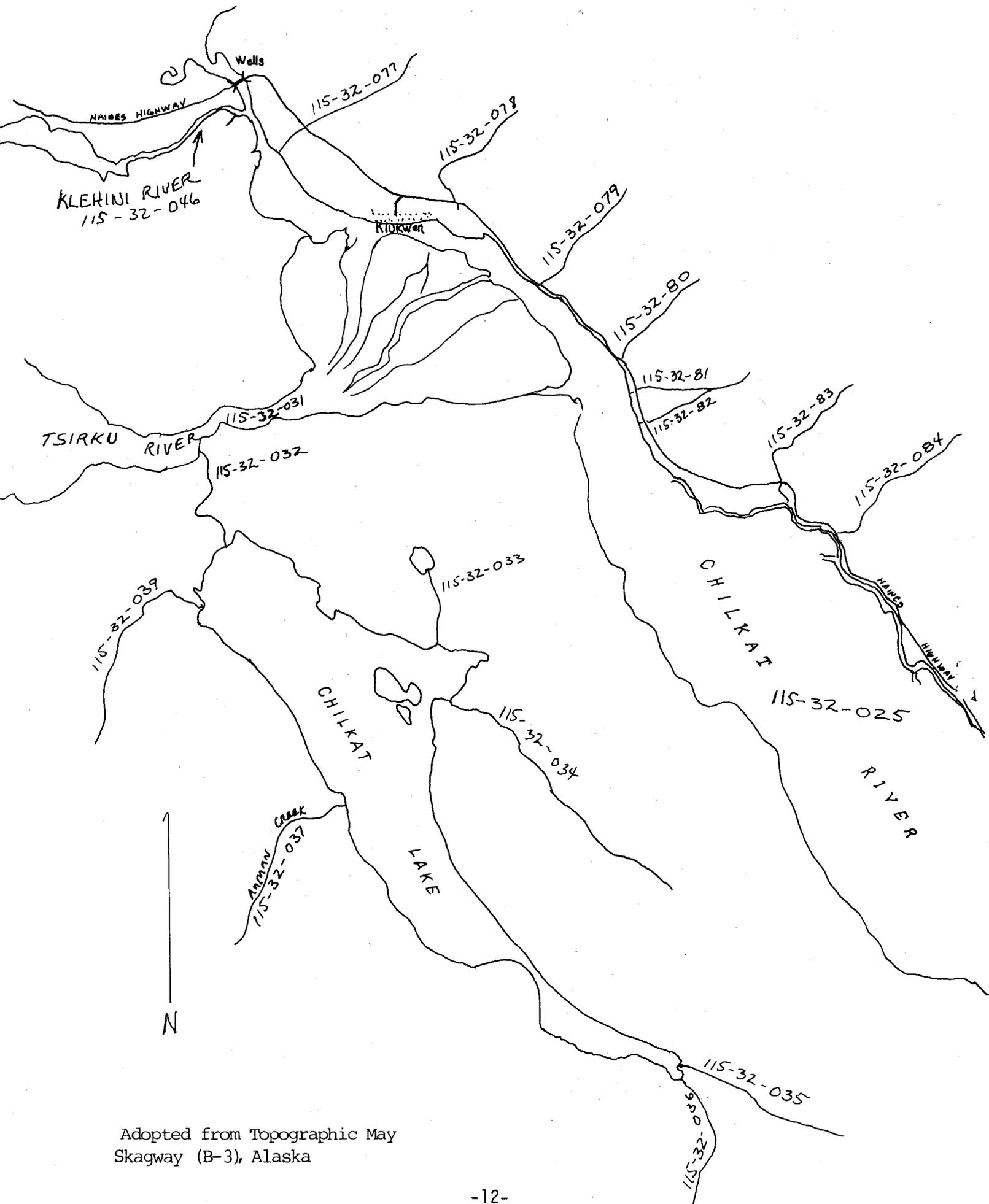
30% 2" gravel

50% 5" cobble

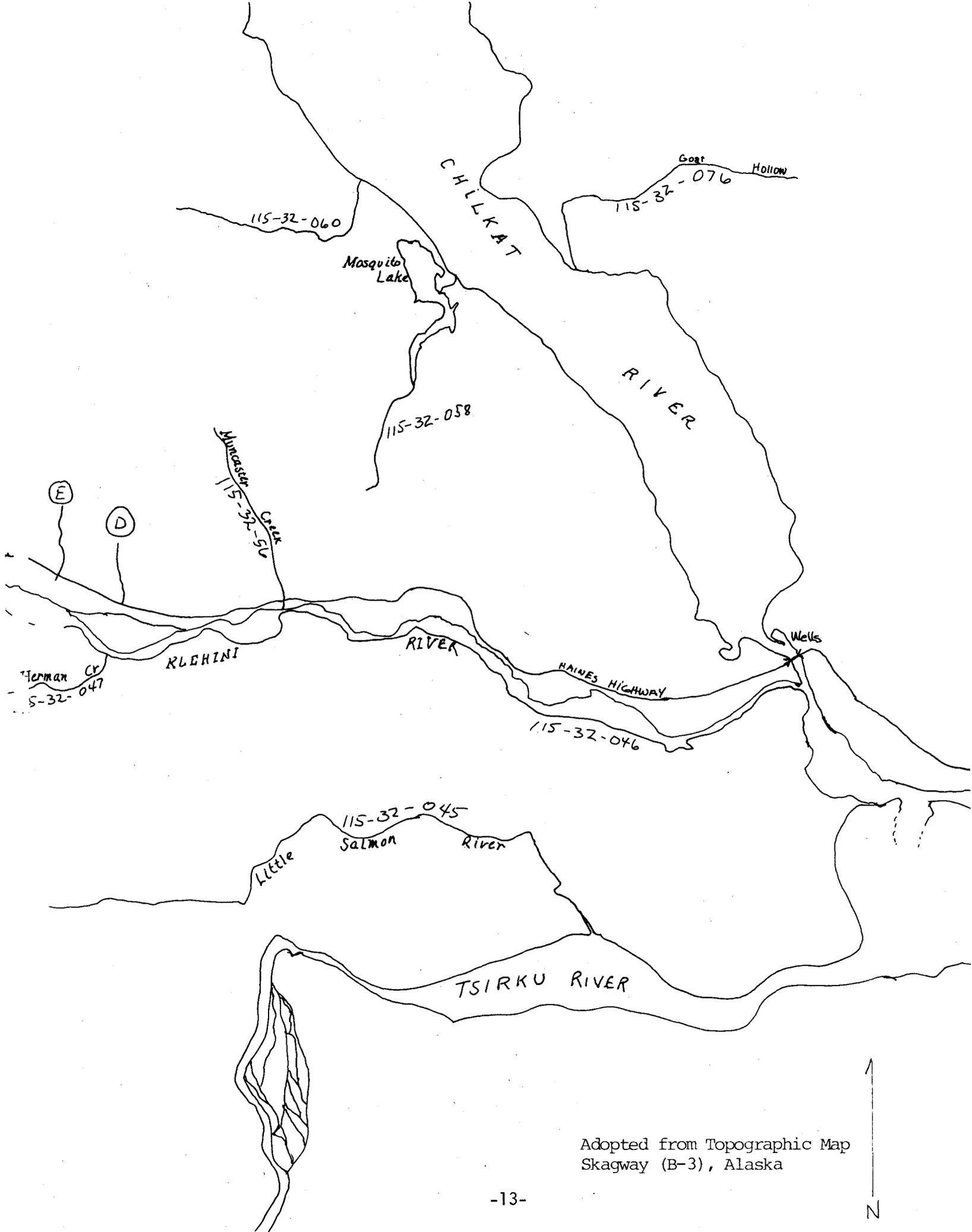
- 20) Average stream width becomes available from the station measurements.
- 21) Average depth is taken at each station from three segments across the stream. The cumulative readings are divided by $N + 1$ to allow for the zero depth at each bank.
- 22) Available spawning area - As a parameter of a stream's production potential for anadromous salmon, the amount and quality of the spawning gravel is of singular importance. To arrive at the area of spawning gravel, the surveyor measures the length of the reach and/or station and by applying an average for the respective width, computes the area of the wetted stream channel. Using the gravel composition and compaction tests, the surveyor makes a judgment as to the usable spawning gravel and assigns a percentage of the stream area that is available for spawning and further qualifies the ASA as to
 - a. Excellent
 - b. Good
 - c. Fair
- 23) Photo documentation of the mouth or intertidal area, mid-reach and headwaters areas of each stream are made as a baseline coverage while other objects of interest are encouraged such as lakes or tributaries.



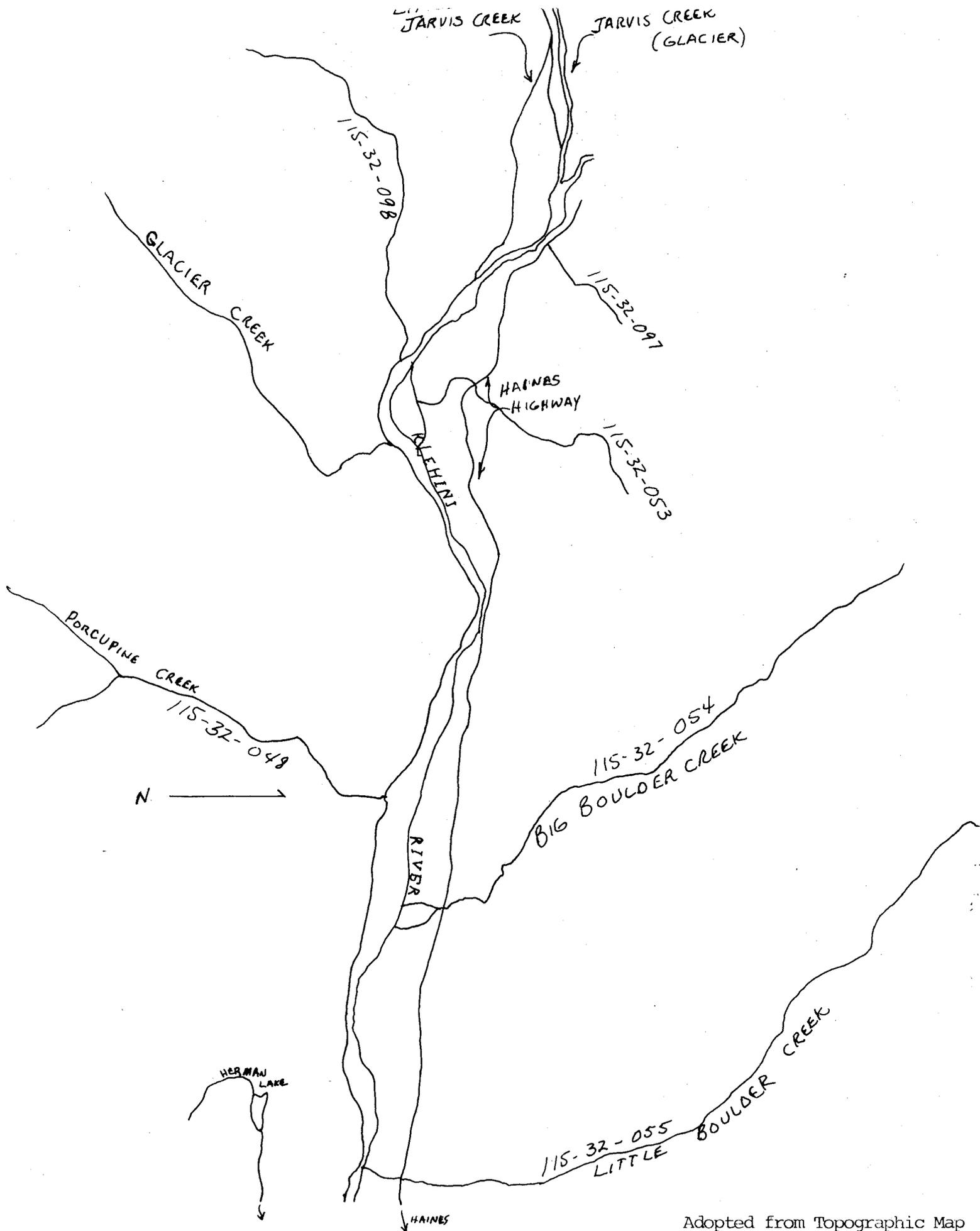
Adopted from Topographic Map
Skagway (A-2), Alaska



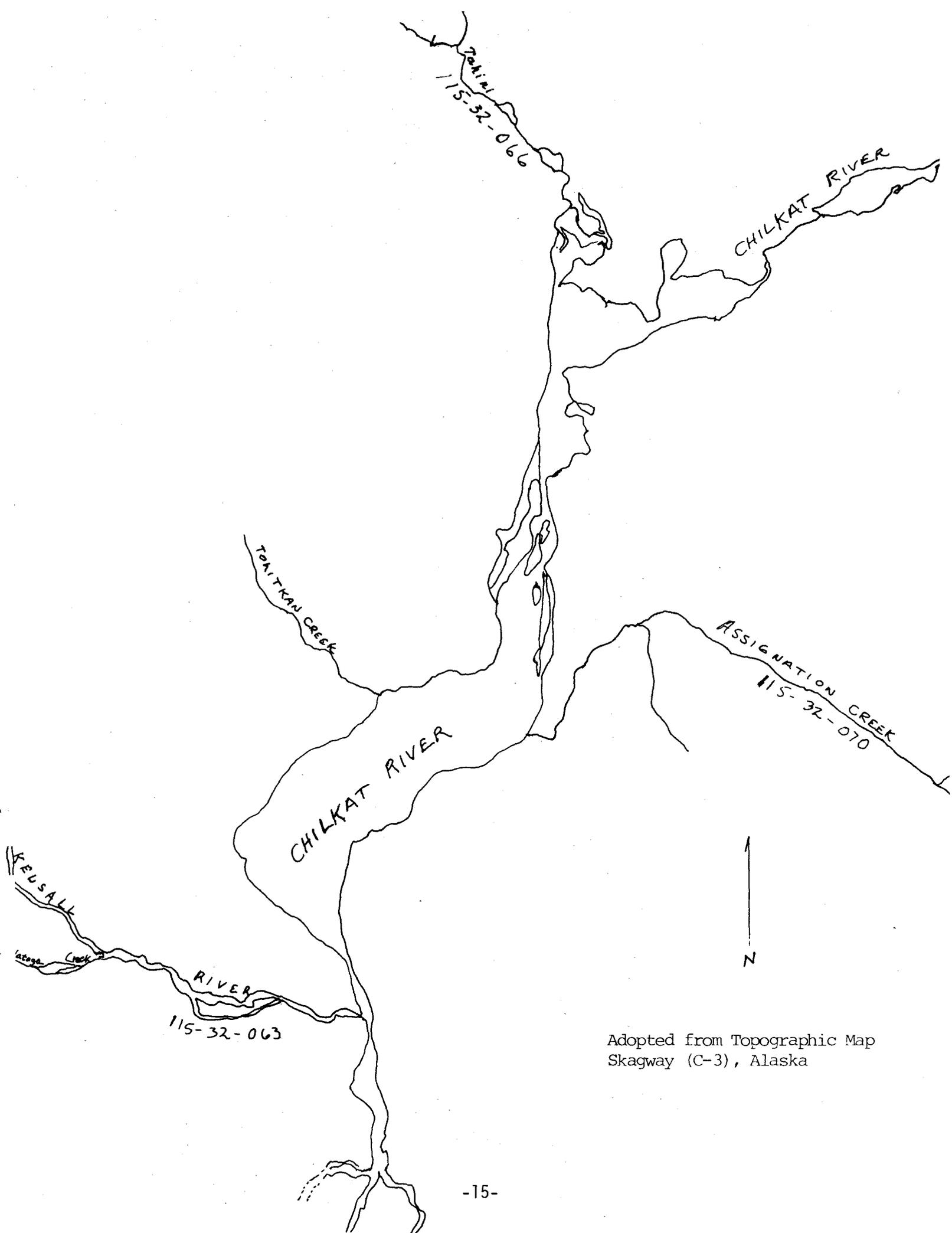
Adopted from Topographic Map Skagway (B-3), Alaska



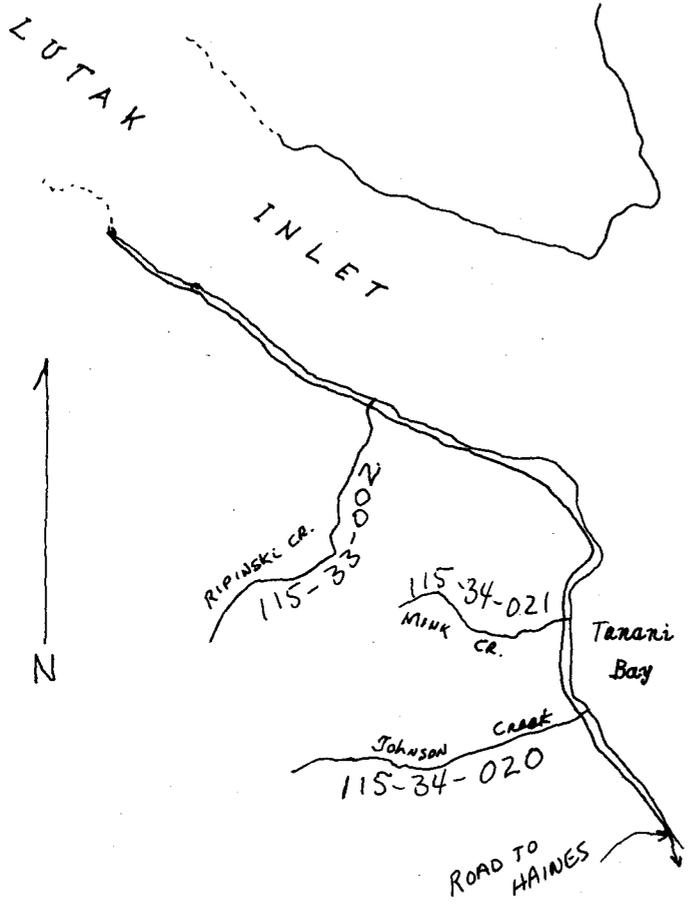
Adopted from Topographic Map
Skagway (B-3), Alaska



Adopted from Topographic Map Skagway (B-4), Alaska

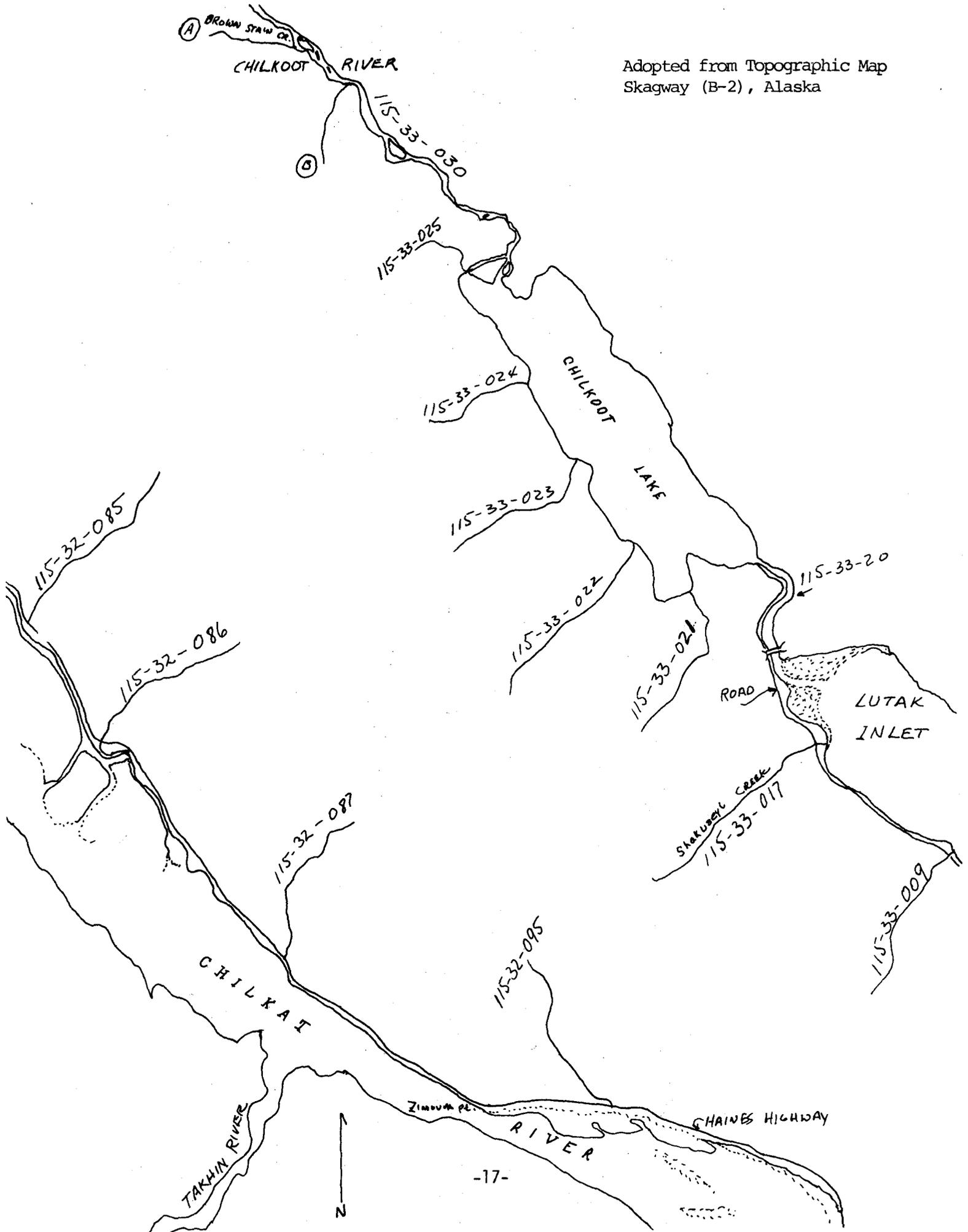


Adopted from Topographic Map
Skagway (C-3), Alaska



Adopted from Topographic Map
Skagway (B-2), Alaska

Adopted from Topographic Map
Skagway (B-2), Alaska

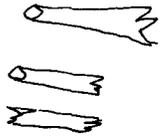


Typical Map Symbols

 standing tree

 windthrown trees

 alder, broad leaf trees

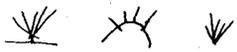
 wood debris

 logging stumps

 log jam

 beaver activity

  brush, salmonberry, etc.

 grass

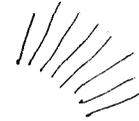
 skunk cabbage

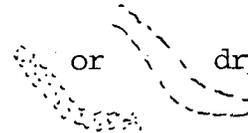
 riffles

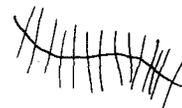
 torrential flow

 pool

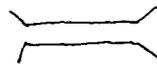
 boulders, rock

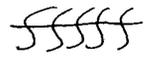
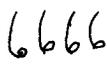
 steep bank, can be bedrock

 or dry channel

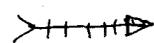
 bedrock outcrop

 road

 bridge

  water falls



 fish bones

 devil's club

 fireweed

 standing snag

 dry gravel

District 15: Haines; Chilkat and Chilkoot River Systems

7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H ₂ O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
115-32-091 (new) Sawmill Ck. E. Trib.	25%	43/57	Fair	70	56	8.0	Open	Willow	7
115-32-091 (new) Sawmill Ck.	50%	50/50	Excellent	69	53	7.7	Mostly Closed	Alder	1
115-32-090 (new) Airport Ck.	0%	100/0	Good	64	43	7.5	Mostly Closed	Alder	1
115-32-095 (new) "Cutthroat Creek"	25%	100/0	Excellent	72	58	7.7	Down Open - Up Closed	Willow Alder	3
115-32-087 (new) Old#WCl	33%	38/62	Good	63	45	7.7	Moderate Open	Willow	15
115-32-086 River Basin Study 148	0%	100/0	Poor	66	45	7.5	Closed	Willow Cottonwood	20
115-32-085 River Basin Study 133	20%	60/40	Excellent	51	48	7.7	Open	Shrubs Hardwoods	55
Mile 17	0%	0/100	Good	55	45	7.5	Open	Willow Cottonwood	Less than 0.5
115-32-083 (new)	0%	100/0	Good	61	47	7.5	Moderate	Grass Forbs	9.7
Mile 20.5	-	-	-	-	-	-	-	-	-

Berg, Walker, Thayer,
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
Light Brown	Yes	No	Yes	Stream/0 Falls 20°	33	205/63	Stream primarily rearing area with fish out-migrating through marsh during times of high runoff. 20°gr. falls impassable to fish. Cutthroat, Coho fry. Private rd. house & water hose.
Clear	Yes	No	Yes	2°	61	385/117	Excellent rearing pools below road, containing coho, cutthroat, Dolly Varden. Horse trail goes right through one pool.
Light Brown	Yes	Grass in Channel	Yes	Less than 1°	0	60/18	Grass in channel is a possible barrier. Rearing coho present.
Clear	Yes	No	No	Less than 0.5°	56	135/41	Upstream choked with equisetum. Heavily silted substrate, coho fry, cutthroat, Dolly Varden.
Clear	Yes	50%	Yes	3°	147	645/197	Steep above road. Below Haines Highway opens into good rearing area.
Clear	Yes	No	No	0.5°	0	250/76	Stream difficult to walk, culvert near mouth blocked. Gillnet set on Chilkat River off mouth.
Clear	Yes	No	No	2°	147	1510/460	Culvert needs to be checked for blockage. Pools abound with coho, Dolly and cottid fry.
Clear	Yes	Greater Than 50%	Yes	2°	-	-	Steep gradient, mountain runoff, several 1-2" fry seen at mouth, but would not enter trap.
Clear	Yes	No	Yes	0.5°	0	500/152	Culvert blocked by firmly imbedded plank, creating barrier. Culvert greater than 2° gradient. Gravel above is armored with torrential flow.
-	-	-	-	-	-	-	Intermittent surface runoff. Not a salmon stream.

District 15: Haines; Chilkat and Chilkoot River Systems

7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H ₂ O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
Approx. 1.5 mi. S. of Klukwan on Haines Hwy.	-	-	-	-	-	-	-	-	-
115-32-078 (new)	2.5%	40/60	Good	52	44	8.0	Open	Grass Forbs	0.5
Approx. 0.7 mi. S. of Wells on Haines Hwy.	-	-	-	-	-	-	-	-	-
115-32-076 (new) Goat Creek	20%	0/100	Poor	62	46	7.7	Moderate Open	Spruce	80
115-32-070 (new) Assig- nation Ck. Riv.B.Styl05	0%	100/0	Good	57	45	8.0	Open	Willow Cottonwood	300
115-32-066 Tahini Riv.	0%	5/95	Poor	60	46	7.75	Open	Spruce Cottonwood	350
Tohitkah River Basin Study 136	-	Mostly Riffle	-	-	-	-	Mostly Closed	Spruce	-
3rd trib. to Kelsall on right.	8%	0/100	Poor	54	41	7.5	Open-some overhanging brush	Spruce Hemlock Willow	80
115-32-060 (new)	12%	0/100	Poor	71	52	8.0	Open above - Closed below	Spruce Alder Willow	35
115-32-058 (new) Misquito Lake Inlet	26%	15/85	Good	71	51	7.5	Mostly Closed	Spruce Alder Willow	3

Berg, Walker, Twayer,
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
-	-	-	-	-	-	-	Intermittent surface runoff. Not a salmon stream.
Clear	Fair	Yes	Culvert	0.5°	12	310/95	Primarily a rearing area. Cutthroat, coho fry noted. Culvert has 2' drop, small winding stream through mud and grass.
-	-	-	-	-	-	-	Dry channel - No fisheries potential.
Milky	No	Less than 50%	Yes	10°	54	263/80	Constant bed shifting, flooding, very steep gradient.
Turbid	No	Yes	No	0.5°	0	230/70	Grass in channel, abundant moose sign, Dolly Varden present. Evidence of repeated flooding.
Turbid Gray/green	Yes	No	Yes	20°	0	1090/332	Barrier falls can be bypassed by using other channel. Torrential flow prevents spawning.
-	Yes	-	-	Steep	-	Air Survey 2 mi./3220	Not surveyed due to lack of a suitable helicopter landing area.
Pale-milky	No	No	No	4°	102	490/149	Old bridge may collapse into stream. Area previously clearcut. Little conifer re-growth. Reputed spawning stream for king and chum.
Milky	No	Yes	Possible Velocity	4°	105	640/195	Stream near road and culvert composed of large cobble-boulder. Torrential water goes on to gravel area then cuts through silt and mud and winds between willow.
Clear	Yes	Yes	Possible Jams	-	16	155/47	Slow riffles in area walked, however, beyond is overhanging willow, alder and spruce.

District 15: Haines; Chilkat and Chilkoot River Systems

7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H ₂ O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
115-32-056 Muncaster Creek R.B.Sty.112	25%	5/95	Poor/fair	53	47	8.0	Open	Spruce	14
115-32-099 (new) 31 mi Slough Source "D"	50%	30/70	Good	71	44	8.0	Open	Willow Alder	6.7
115-32-099 (new) 31 mi Slough Source "E"	33%	15/85	Good/fair	70	43	8.5	Mostly Open	Spruce Alder Willow	8
115-32-055 Lt.Boulder Creek R.B.Sty.114	8%	0/100	Poor	51	44	7.5	Open	Cottonwood	80
115-32-054 Big Boulder Creek R.B.Sty.116	11%	8/92	Poor	59	49	7.7	Open	Hemlock Spruce	320
115-32-053 River Basin Study 117A	37%	5/95	Good	59	49	7.5	Moderate Closed	Willow Alder	9
115-32-097 (new) Mi. 39.5 Haines Highway	34%	15/85	Good But no fry	56	49	8.75	Open at Mouth and Highway	Willow Alder Spruce	2-3
Little Jarvis	10%	100/0	Poor	58	40	7.5	Open	Spruce Cottonwood	60
115-32-098 (new) N.of Glacier Creek	34%	5/95	Fair	59	43	8.0	Mostly Open	Alder Cottonwood	56
Glacier Creek	0%	0/100	None	-62	37	Unable to take	Open	Willow Alder Spruce	200

Berg, Walker, Thayer,
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
Clear	Yes	Less than 50%	Yes	4°	219	582/177	Falls is a barrier - 582' from outlet.
Clear	Yes	Yes	Approx. 1400'	1°	815	1435/438	Most all of this portion of slough is excellent spawning area, good gravel, clear water. Many chum bones found.
Clear most of stream	Fair	No	No	1°	776	1665/508	This section has some areas of good gravel, but high mineral silt load. Has good rearing areas.
Pale Milky	No	No	No	3°	474	1605/489	Occupied cabin along stream. Torrential flow banks appear to have been contoured by cat-work. Old pipeline crosses stream.
Glacial Milky	No	Less than 50%	-	3°	616	3440/1049	Swift flow with constant bed changing.
Clear	No	No	No	3°	241	900/274	Stream has been cleared in the past. Stream passes through clearcut and old homestead. Man-made dam and logging debris should be removed. Contains Dolly, cutthroat and coho.
Clear	-	Less than 50%	Yes	1°	685	1738/530	Saw-cut alder in streambed possible low flow block. Much human activity in stream; tire-tracks, garbage and dams.
Milky	Moderate	No	No	1°	72	205/63	Area once intensively logged. Stream bottom covered with silt. Decaying vegetation releasing hydrogen sulfide gas.
Murky	Yes	No	No	1°	606	525/160	Good gravel, fair riffles, in lower stream. Upper area too steep and rocky for spawning. Rearing king fry.
Muddy turbid	No	No	No	6°	-	-	Mineral exploration in area. Flow was so swift that stream substrate constantly changing.

District 15: Haines; Chilkat and Chilkoot River Systems

7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H2O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
115-32-048 River Basin Study 122	70%	0/100	Poor	56	40	8.0	Open	Willow Spruce	120
115-32-047 Herman Ck.	73%	10/90	Fair	66	41	8.0	Moderate Open	Spruce Willow Cottonwood	40
115-32-045 Little Salmon	0%	-	Fair	62	42	8.0	Moderate Open	Willow Alder Cottonwood	80
115-32-039 (new) Snooky Ck. R.B.Sty. 145	39%	15/85	Poor/Fair	64	46	8.5	Upper Open Bottom mod Closed	Willow Spruce	150
115-32-038 (new) Anman Creek R.B.Sty. 127	85%	0/100	-	67	52	8.0	Moderate	Willow Spruce	10
115-32-037 (new) Eagle Creek R.B.Sty. 128	25%	6/94	Poor	51	43	8.0	Open Closed in braided area	Willow Alder Cottonwood	53
115-32-035 (new) River Basin Study 129	0%	100/0	Good	59	45	7.7	Open	Willow Spruce	25
115-32-034 (new) River Basin Study 130	72%	52/48	Good	64	50	8.0	Closed	Alder Willow Spruce	10
115-32-033 (new) River Basin Study 131	0%	40/60	Fair at Mouth	61	55	8.0	Moderate Open	Spruce	3
North Pyramid Harbor	0%	-	-	59	-	-	Open	Spruce	0

Berg, Walker, Thayer.
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
Glacial Milky	No	Less than 50%	-	0.25°	836	520/159	Very swift with some bed shifting.
Clear	Yes	Less than 50%	-	1°	3058	1763/538	Old clearcut area upstream. Excellent spawning habitat in lower section.
Pale Milky	No	No	No	1°	0	100/30	Area once intensively logged - much debris remains, removal of debris may flush silt from substrate. Some coho.
Clear to slight Color	No	No	No	3°	817	825/252	Sixty sockeye spawning in mid-section. Stream channel changing. Bald eagles, bear kill salmon. Periodic flow fluctuations.
-	-	No	No	2°	87	100/30	Most spawning off mouth. Compact gravel. Sockeye in side slough and jumping of mouth.
Clear	No	No	No	5°	346	1360/415	A lot of bed-changing, possible rearing in braided area. Some areas too swift for spawning 30 sockeye off mouth.
light gray slightly turbid	Yes	No	No	Less than 0.5°	0	-/-	Creek was above flood stage, making survey difficult. Brown bear and moose present.
-	Moderate	Less than 50%	No	1.5°	332	685/209	Some mass wasting. Lower 150' heavily used by sockeye salmon. Upper reaches of first left trib. appears to be excellent coho habitat.
Clear	Yes	50%	-	3°	0	225/69	Limited potential due to small size may be fair rearing area.
-	Yes	-	-	50%	-	-	Stream is intermittent - presently dry.

District 15: Haines; Chilkat and Chilkoot River Systems

7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H ₂ O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
115-32-020 (new) South Mouth	7%	2/98	Poor	67	44	7.5	Closed	Alder	85
115-32-015 (new) Ludaseska Creek	5%	10/90	Negligable	59	41	7.7	Moderate Open	Spruce	40
Terminus of Davidson Gl Chilkat Inlet	0%	0/100	Poor	59	41	7.7	Moderate Open	Spruce	15
Johnson Ck. Lutak Road	2%	15/85	Poor	60	55	8.0	Moderate Open	Spruce Alder	2
Mint Creek Lutak Road	25%	5/95	Fair	62	53	7.5	Moderate Open	Spruce Alder	3
Rapininski Creek	0%	0/100	0	65	-	-	Open	Spruce Upper area	30
115-33-009 (new)	0%	0/100	Poor below road	65	47	7.5	Open	Spruce Upper area	25
Shakuseyi Creek	0%	0/100	Poor below road	65	51	7.5	Open	Spruce Upper area	20
115-33-020 Chilkoot Lake Outlet	-	0/100	Cottids in tide pools	-	-	-	Open	Spruce well away from stream	Over 1000

Berg, Walker, Thayer,
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
Slightly Milky	No	No	No	2°	83	545/166	Flashy stream with several channels, substrate sand and silt. Old logging activity along stream. Three mouth branches.
Glacial Milky	No	Less than 50%	-	6°	40	800/244	Swift water with bed shifting.
Glacial Milky	No	Less than 50%	-	55°	-	-	Very steep, swift, with a great deal of bed shifting.
Clear	Yes	No	No	15°	3	155/47	Stream very limited due to size, large cobble and boulder substrate.
Clear	Yes	Yes	No	4° approx.	121	606/185	Stream small in size, good ITZ spawning.
Clear	No	Yes	Culvert	10°	0	Approx. 300/91	Highly unstable, wasting and shifting streambed, gradient 10% Recent cat work in streambed plus survey stakes.
Clear	No	No	Possibly at culvert	4°	0	150/46	Torrential water flow, wasting banks. Stream cat-dozed, survey stakes in stream. May be limited spawning at ITZ.
Clear	No	No	Culvert	6°	0	152/46	Torrential water flow, wasting banks, survey stakes in stream. May be limited ITZ spawning.
Silty	Yes	Yes	No - weir nearby	1°	-	700/213	Jumpers off mouth. Fucus in ITZ, stream too large to survey using conventional methods.

District 15: Haines; Chilkat and Chilkoot River Systems

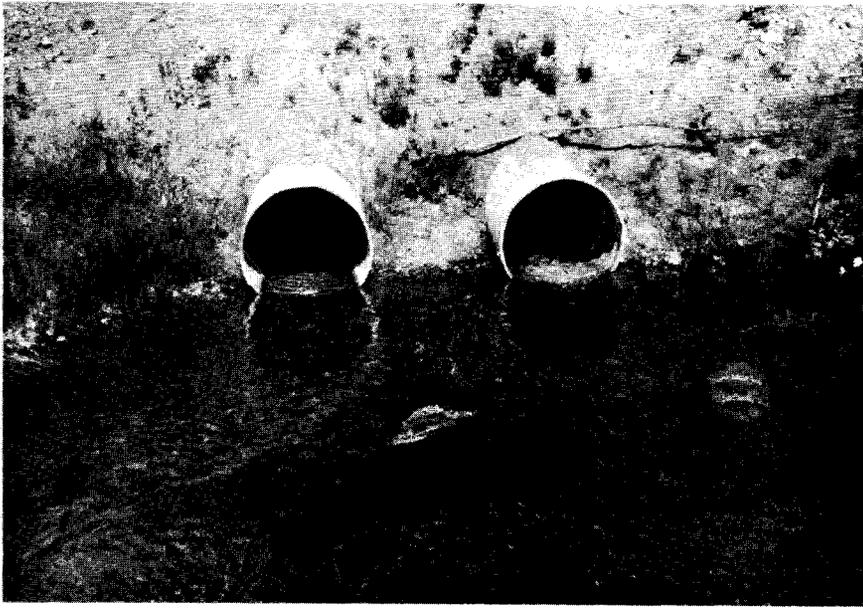
7/79 Stream No.	For Area Surveyed ASA (%)	Pool/ Riffle	Rearing Habitat	Air Temp. (°F)	H ₂ O Temp. (°F)	pH	Canopy	Forest	Flow (cfs)
115-33-022 (new)	30%	0/100	Poor	63	46	7.5	Mostly Closed	Spruce	50
115-33-023 (new)	10%	10/90	Poor	64	47	7	Open	Spruce Hemlock Alder Willow	22
115-33-024 (new)	0%	2/98	Poor	67	53	7.5	Closed	Spruce Hemlock	10
115-33-025 Glory Hole	12%	100/0	Good	63	42	7.5	Closed (Glory Hole open)	Willow Spruce Devils Club	3.86
115-33-030 Lower Chilkoot	5-10%	0/100	Poor	67	48	7.5	Moderate Open	Willow Spruce	Branch Surveyed 22
115-33-030 Upper Chilkoot	55%	-	Good	67	47	7.0	Open	Willow Spruce	-
Cascade Ck. Chilkoot River trib.	0%	0/100	Poor	66	47	7.0	Open	Alder	90
Brown Stain Creek	80%	17/83	Excellent	63	42	7.0	Closed	Willow	20

Berg, Walker, Thayer,
Eastwood, Edgington

H ₂ O Color	Soils Stable	Aquatic Vegetation	Barriers	Average Stream Gradient	ASA m ²	Length Surveyed F/M	Remarks
Clear	No	No	Yes	10°	333	325/99	Bed changing and slides, steep upper area. Log jam creates barriers, stream flashy. 35 sockeye at mouth in Chilkoot Lake.
Clear	Fair	Yes	Possible velocity	5°	26	243/74	Very low fisheries value, no potential noted. Spawning possible at edge of lake or stream mouth.
Clear	Yes	Less than 50%	Yes	5°	0	480/146	Small stream, swift and steep. Blowdown area at mouth on edge of Chilkoot Lake.
Clear	Moderate	Less than 50%	No	0.5°	1004	515/157	Cutthroat present, originates in upwelling spring fed "Glory Hole", good sockeye area. Dolly Varden, 75 sockeye in Glory Hole, 16 redds. Much bear activity.
Silty turbid	Yes	No	No	0.5°	8	150/46	Swift, turbid, ASA difficult to evaluate because of turbidity. Good riffles but silty substrate.
Turbid	-	No	No	2°	2330	780/238	1 hr. trapping yielded 15 Dolly Varden, coho fry. Mature sockeye observed spawning. Numerous bear signs.
Clear	No	No	No	13°	0	approx. 400/122	Stream steep, cascading over large boulder and cobble. No spawning habitat or rearing.
Clear	Yes	No	No	1.5°	636	385/117	Much bear activity, heavy sockeye activity. Bridge acts as good resting area. Abundant coho fry.

115-32-091

Tributary to
Sawmill Slough





115-32-091
Tributary



115-32-091
 South of Airport
 7/26/79 14:00
 Walker/Eastwood
 Clear sky
 Air: 70°
 Water: 56°
 pH: 8.0
 Flow: 7 cfs
 Light brown water

Stream primarily rearing area with fish outmigrating through marsh during times of high spring runoff.

Width 2' (.6m)
 50% loose gravel
 50% sand
 Slow riffles throughout
 ASA 40%, poor, insilted

Width 8' (2.4m)
 5% cobble, 5% sand,
 90% pea gravel
 Slow riffles throughout
 ASA 60%, poor, insilted
 Gradient 1°

Trap 30min. set,
 1 cutthroat

80' (24.3m) 1 coho

60' (18.2m)
 Bearing 68°

Bearing 73° Private
 Garden gravel road

"A" frame
 cabin

No cover, no rearing
 fish noted
 Impassable to fish
 Cascades
 over boulder
 20° gradient

Rearing cohos
 in pool

6" outthroat

65' (19.8m) P = 5'x5'x5"
 30' (9.1m)

Slow riffles
 throughout

Width 14' (4.3m)
 10% sand, 10% gravel
 pool/riffle 70/30

Haines-Highway

Pool = 14'x 12'x 2'
 3'x 3' patch of organic
 debris in pool

field mouse

Water hose for gas station
 Open canopy throughout

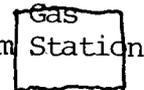
35' (10.6m)

35' (10.6m)

Width 2' (.6m)
 60% gravel, 40% sand

Trap, 35 min. set
 3 cutthroat
 4 coho

0° slope on downstream
 side of road



Spawning area

Fair rearing, good
 overhanging cover
 bearing 226°

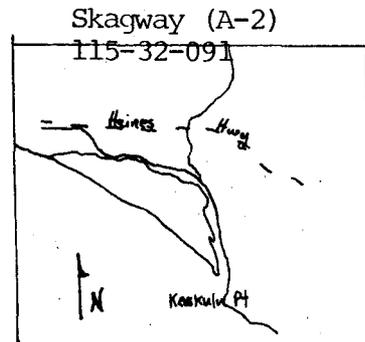
insilted gravel

80'x 2'x 40% = 64ft² (5.9m²)
 60'x 8'x 60% = 288ft² (26.7m²)

Equisetum

Willow
 3" deep

Stream spreads out through
 equisetum marsh, few coho fry



Name: East Sawmill Creek
Latitude: 59 14 30 N
Longitude: 135 29 40 W
Geodetic Map No: Skagway (A-2)
Location: 1.5 miles on Haines Hwy

Catalog No: Tributary of 115-32-091
Former Stream No: _____

Work Area: Haines - Skagway
Watershed Length: Approx. 0.6 miles
Drainage Area: 0.37 square miles
Water Supply Type: Surface runoff

Trails & Survey Routes: Road access

Aerial Survey Notes: N/A

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Stream very good rearing area, with many cutthroat and coho in the stream.

Schooling Areas: None noted

Spawning Areas: 32.6m² for area surveyed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Good cutthroat stream.

LAND USE (history, present, proposed): Residential area also commercial use,
gas station and many houses.

REHABILITATION POTENTIAL: None needed.

SOILS: Stable

GAME RESOURCES (species, use, habitat): One vole or shrew noted.



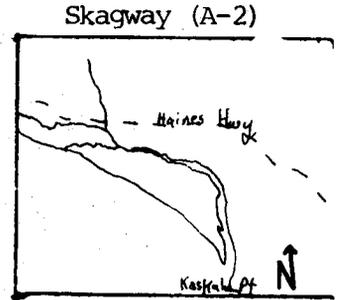
Weather: mostly sunny
 Air: 69°F
 Water: 53°F, clear
 pH: 7.7
 Flow: 1 cfs

115-32-091
 Source of water for
 airport flats
 7/26/79 15:00
 Thayer/Berg

Over 100 coho fry observed
 Mostly closed canopy

Excellent rearing - good pools, good cover
 Pool/riffle 50/50

.4 x 80 x 6 = 18
 .65 x 140 x 3 = 43
 ASA = 6lm²

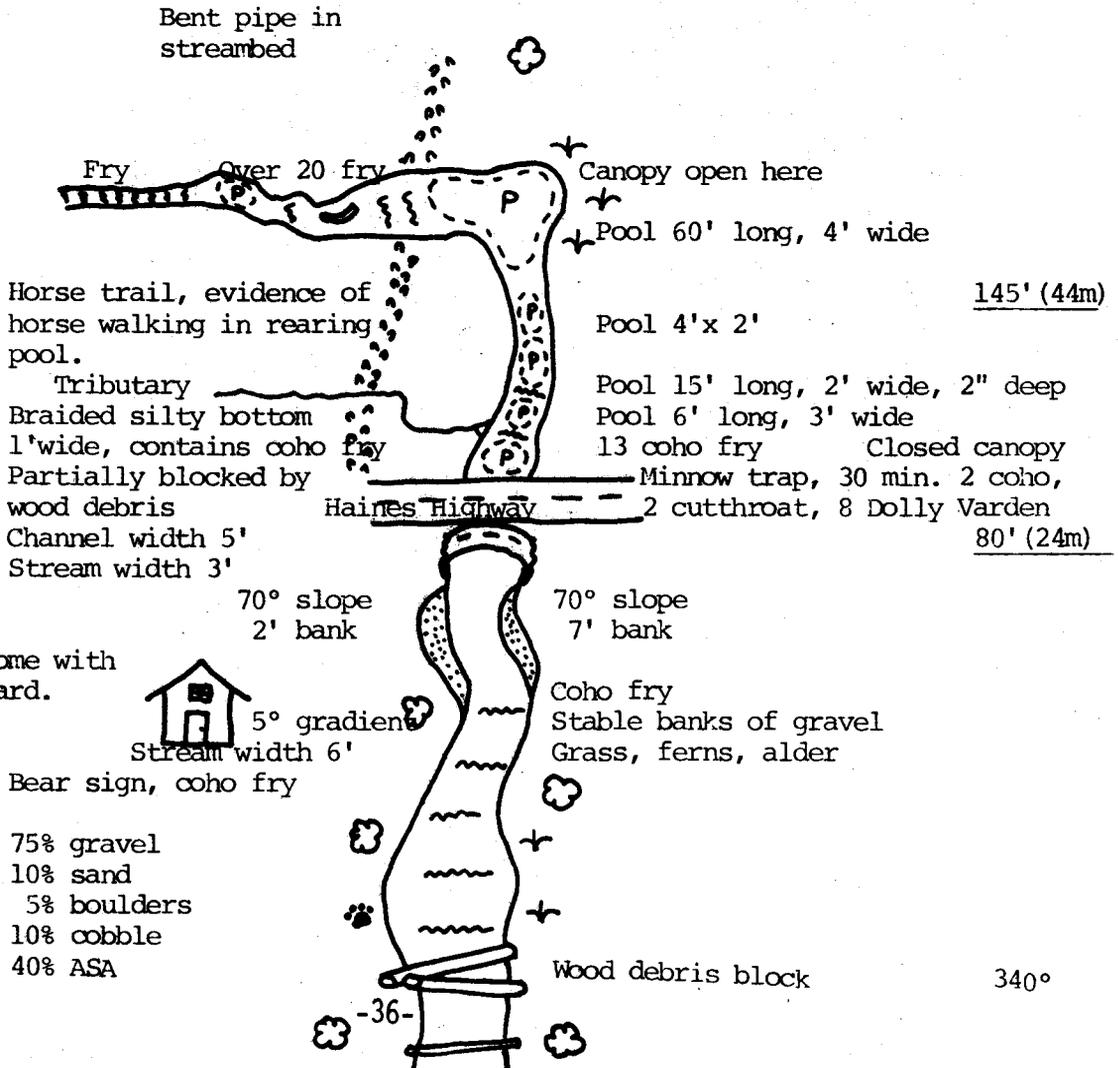


385' (117m)
 90°

235' (71m)

90% gravel, 10% sand, 65% ASA (limited by flow)
 less than .5° gradient

Stream 18" wide
 0° grassy banks, then
 willow and alder.



Name: Sawmill Creek
Latitude: 59 14 30 N
Longitude: 135 30 5 W
Geodetic Map No: Skagway (A-2)
Location: 2.2 miles on Haines Highway
empties into Sawmill Slough

Catalog No: 115-32-091
Former Stream No: _____
Work Area: Haines -Skagway
Watershed Length: 0.75 miles
Drainage Area: 0.50 square miles
Water Supply Type: Mountain runoff

Trails & Survey Routes: Stream easy to walk. Horse trail on one side.

Aerial Survey Notes: Survey by air difficult due to closed canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Abundant coho fry present.

Schooling Areas: None noted.

Spawning Areas: None noted.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Minnow trapping produced 8 juvenile Dolly Varden and 2
juvenile cutthroat trout.

LAND USE (history, present, proposed): Horse trail crosses stream bed, right in
the middle of a good rearing pool. Old bent pipe lies in stream bed. A private
home lies along creek upstream of highway where creek flows under Haines Highway.

REHABILITATION POTENTIAL: Rerouting of horse trail may provide a minimal benefit.

SOILS: Stable

GAME RESOURCES (species, use, habitat): Bear sign upstream, airport flats may
be good migratory bird and passerine.

PEAK ESCAPEMENT RECORD

115-32-091

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
11/4/76			20 Coho	
12/1/76			7 Coho	
10/23/79			1 Coho	

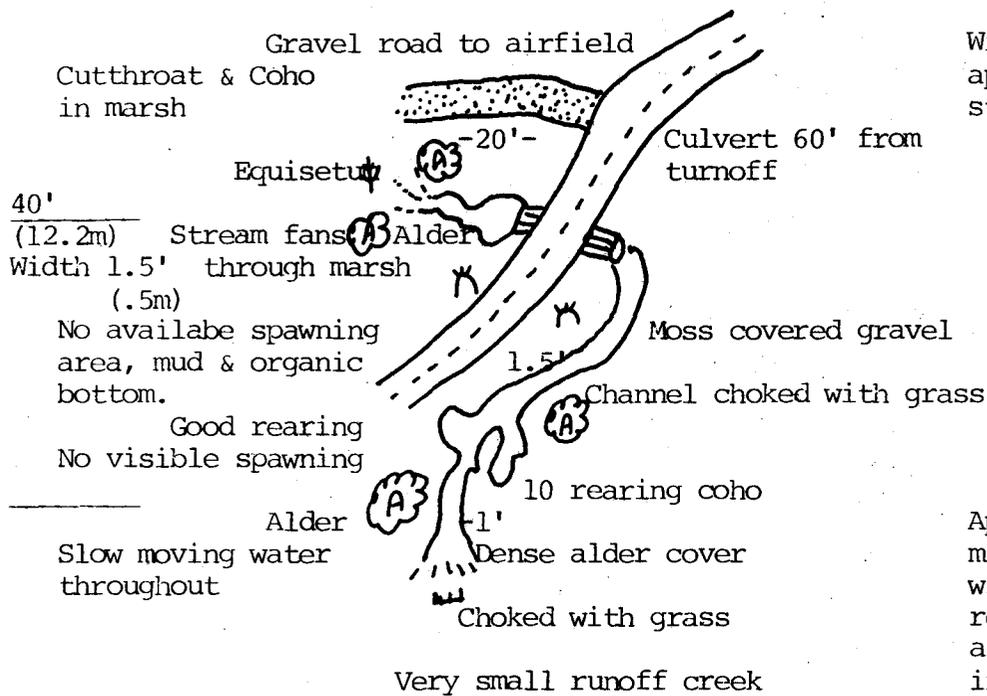
115-32-090

North end of airstrip



115-32-090
 North end of runway
 7/21/79 11:15
 Walker

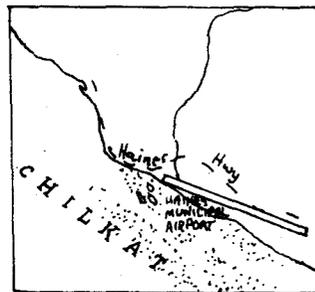
Air: 64°
 Water: 43°
 pH: 7.5
 Flow: 1.0 cfs
 Color - light brown



Widening road will apparently not harm stream.

Appears to be intermittent flow, with rearing fish remaining in pool areas until high water in spring.

Skagway (A-2) (B-2)



Name: Airport Creek
Latitude: 57 14 58 N
Longitude: 135 31 30 W
Geodetic Map No: Skagway (A-2) (B-2)
Location: Northwest end of Airport

Catalog No: 115-32-090
Former Stream No: _____
Work Area: Haines -- Skagway
Watershed Length: 1.0 miles
Drainage Area: 0.50 square miles
Water Supply Type: _____

Trails & Survey Routes: Road access

Aerial Survey Notes: Not necessary

Anchorage: Not necessary

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Good rearing for coho

Schooling Areas: None observed

Spawning Areas: None observed for area surveyed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Cutthroat in stream.

LAND USE (history, present, proposed): Airport is built over marsh area
where stream turns.

REHABILITATION POTENTIAL: Not needed

SOILS: Stable

GAME RESOURCES (species, use, habitat): None noted.

PEAK ESCAPEMENT RECORD

115-32-090 Airport Creek - Haines

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
11/4/76			20 - Coho	Includes 6 below road
12/1/76			20 - Coho	Below road

115-32-095

Above road



115-32-095

At mouth emptying
into Chilkat River

Water, clear, 58°F
 Flow less than 1 cfs
 Open canopy
 Substrate covered with brown sediment

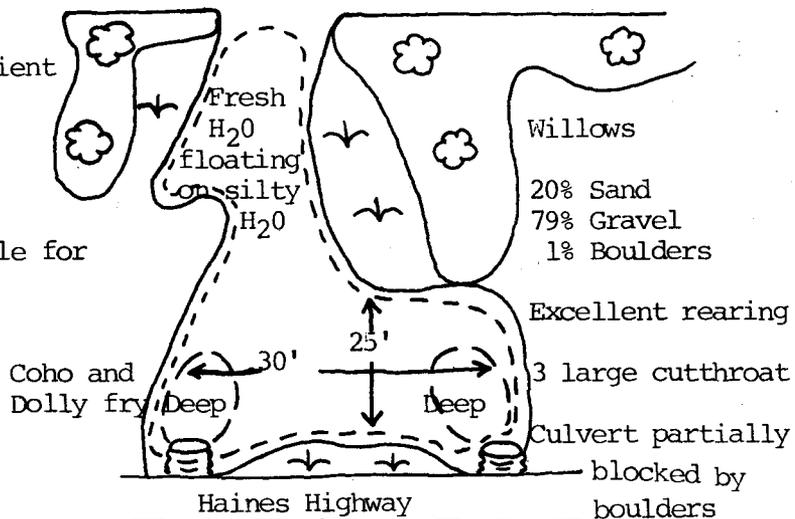
115-32-095
 7/26/79 16:00
 Thayer

Chilkat River

Less than 0.5° gradient

Abundant fry

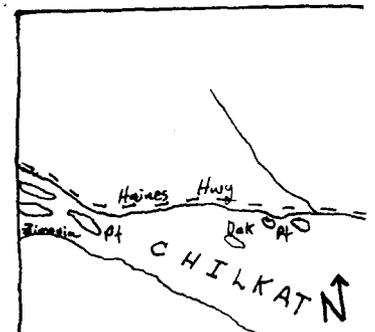
Could use more riffle for spawning, 50% ASA
 56m² ASA



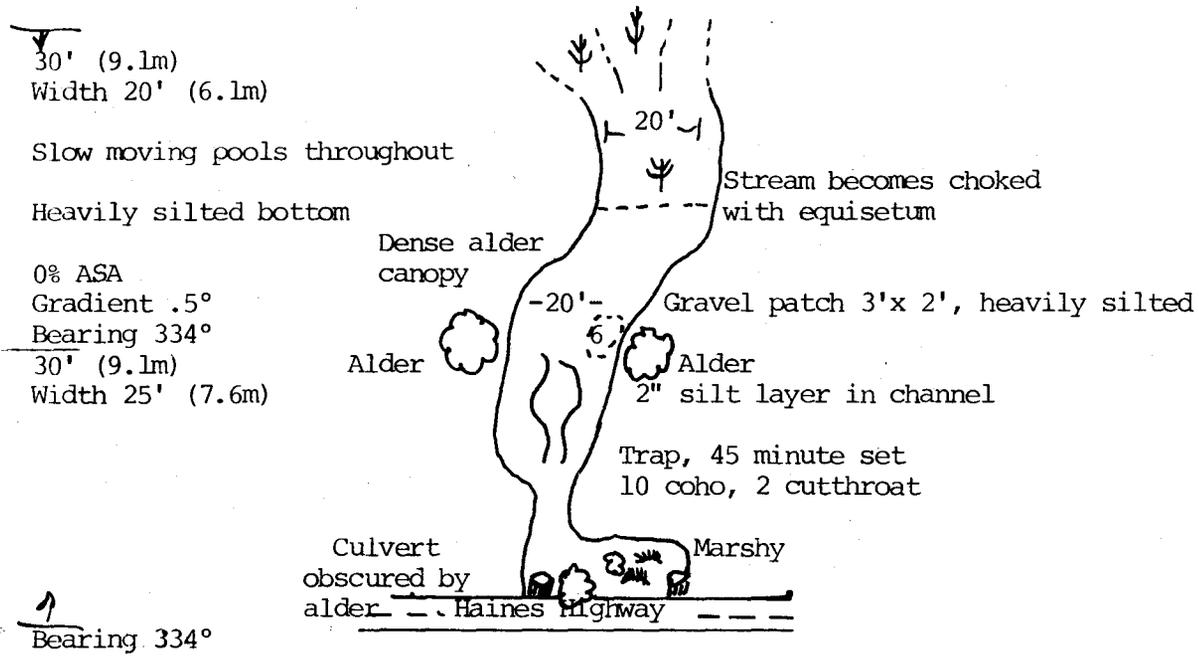
50'

145°

Skagway B-2



Cutthroat Creek
 7/26/79 15:50
 Walker/Berg
 Clear
 Flow - est 3 cfs



Name: Cutthroat Creek
Latitude: 59 15 59 N
Longitude: 135 35 40 W
Geodetic Map No: Skagway B-2
Location: 6.7 miles on Haines Hwy

Catalog No: 115-32-095
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.5 miles
Drainage Area: 0.66 square miles
Water Supply Type: Surface runoff

Trails & Survey Routes: Road access

Aerial Survey Notes: Possible at mouth, clear water, open canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho, Dolly Varden and Cutthroat all observed in this stream. Not much spawning area but excellent rearing.

Schooling Areas: Large pool below road.

Spawning Areas: 56m²

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Very good stream with nice large cutthroat and Dolly Varden char present.

LAND USE (history, present, proposed): Haines highway crosses creek.

REHABILITATION POTENTIAL: Culverts need cleaning to allow fish passage.

SOILS: Stable

GAME RESOURCES (species, use, habitat): None noted.

Weather: overcast
 Air: 63°F
 Water: 45°F, clear
 Flow: 15 cfs
 pH: 7.7

115-32-087
 10 Miles Haines Highway
 7/20/79
 Berg

645'
 (195.4m)

Waterfall and cascade through bedrock and boulders. Flows off steep mountain.

305°
 10%
 300'
 (90.9m)

15' average width

Stable banks 50% bedrock
 30% boulder
 Poor spawning and rearing habitat here. 10% cobble
 10% gravel

sedge/grasses

Elderberry

20/80 p/r
 $0.1 \times 300 \times 15 = 41.3 \text{m}^2$ ASA 10% ASA
 10.89

Very swift flow
 2' deep with cascades

Dense alder obstructs stream.

345'
 (104.5m)

10% ASA
 10/90 p/r

Pipeline

$0.1 \times 190 \times 10 = 17.5 \text{m}^2$ ASA
 10.89

305°
 6%
 190'

Stream narrows to 10' and increases gradient substantially

Sheer rock cliff for 800'+
 Clean bottom substrate (57.6m)
 60% cobble
 30% gravel Round/smooth
 10% sand moderately silty.

Pool - 40' long, 15' wide, 1' deep.

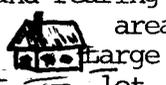
155'
 (46.9m)

Excellent spawning and rearing area

Dense overhanging willow

Trap#2

Restaurant & Tavern



Large lot

Warehouse



2 C/F F=30 min.
 3" Dolly

15' average riffle width. 100% gravel
 80% ASA

1.5" Coho
 25°
 2%
 80'
 (24.2m)

$0.8 \times 15 \times 80 = 88.2 \text{m}^2$ ASA
 10.89

Patches of organic debris deposits in stream.

Haines Highway

Vegetation grows to and overhangs banks.
 Salmon bones

Water level is above the culverts

14 coho fry observed rearing along banks

Grass and sedge floodplain

Alder

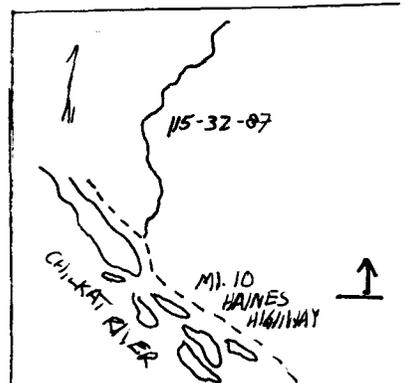
Aquatic invertebrates in profusion on bottom of pool near banks.

Trap#1
 1 C/F
 4" coho smolt
 F=30 min.

100/0 p/r
 0% ASA
 100% gravel bottom

Excellent rearing area

Chilkat River
 -47-



Name: Ten Mile Creek
Latitude: 59 52 26 N
Longitude: 135 40 50 W
Geodetic Map No: Skagway B-2
Location: 10 miles on Haines Highway

Catalog No: 115-32-087
Former Stream No: River Basin Study
Work Area: Haines - Skagway
Watershed Length: 2.0 miles
Drainage Area: 1.5 square miles
Water Supply Type: _____

Trails & Survey Routes: Easily hiked as stream flows at edge of large lot used by construction company.

Aerial Survey Notes: Difficult because small willow, alder and assorted vegetation grows to and over channel in many stretches.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Spawning area: 147m² ASA

Schooling Areas: Large pool below culvert

Spawning Areas: Limited to area from culvert to approximately 150' above culvert. This area has excellent riffles and gravel for spawning.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Caught Dolly Varden and observed cutthroat trout fry in stream, but size of stream limits production and angling potentials.

LAND USE (history, present, proposed): Presently flows under Haines Highway and through a large lot used by a construction company and restaurant/tavern.

REHABILITATION POTENTIAL: None needed.

SOILS: Generally stable rocky soils.

GAME RESOURCES (species, use, habitat): No sign observed and history is unknown.

PEAK ESCAPEMENT RECORD

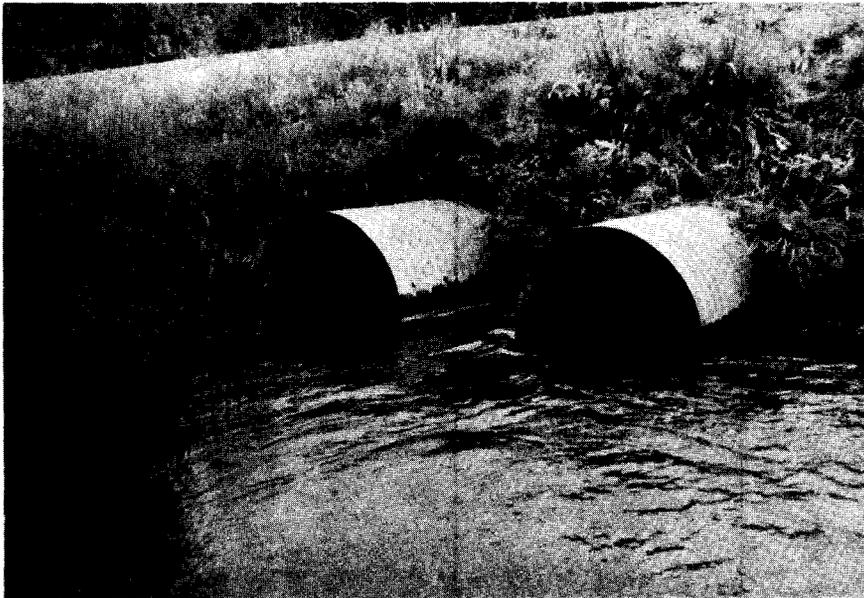
15032-087

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/25/60	5			
9/12/60	2			
8/10/78	3			



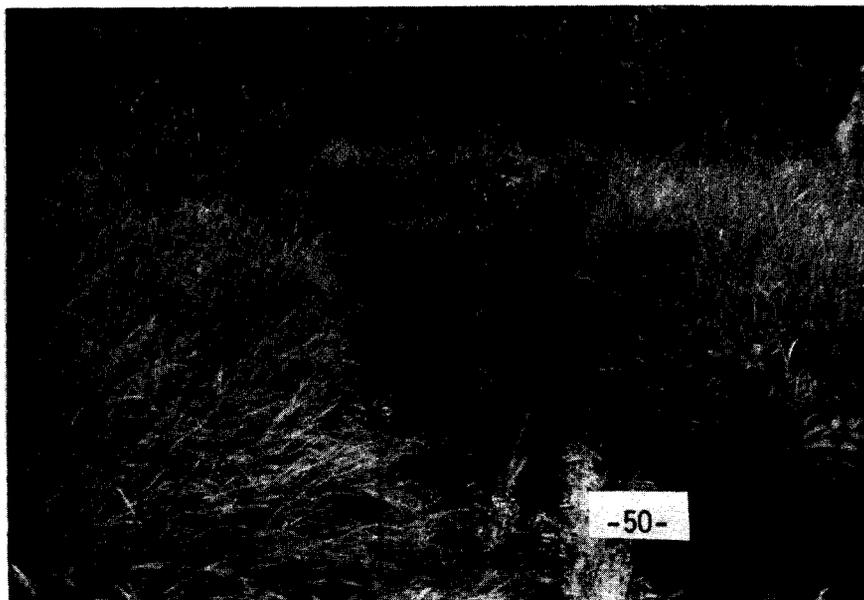
115-32-086

Below road



115-32-086

Above road



115-32-086

Below road

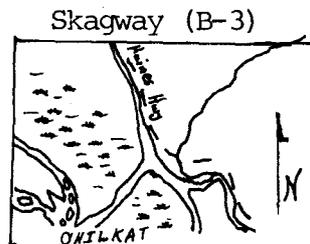
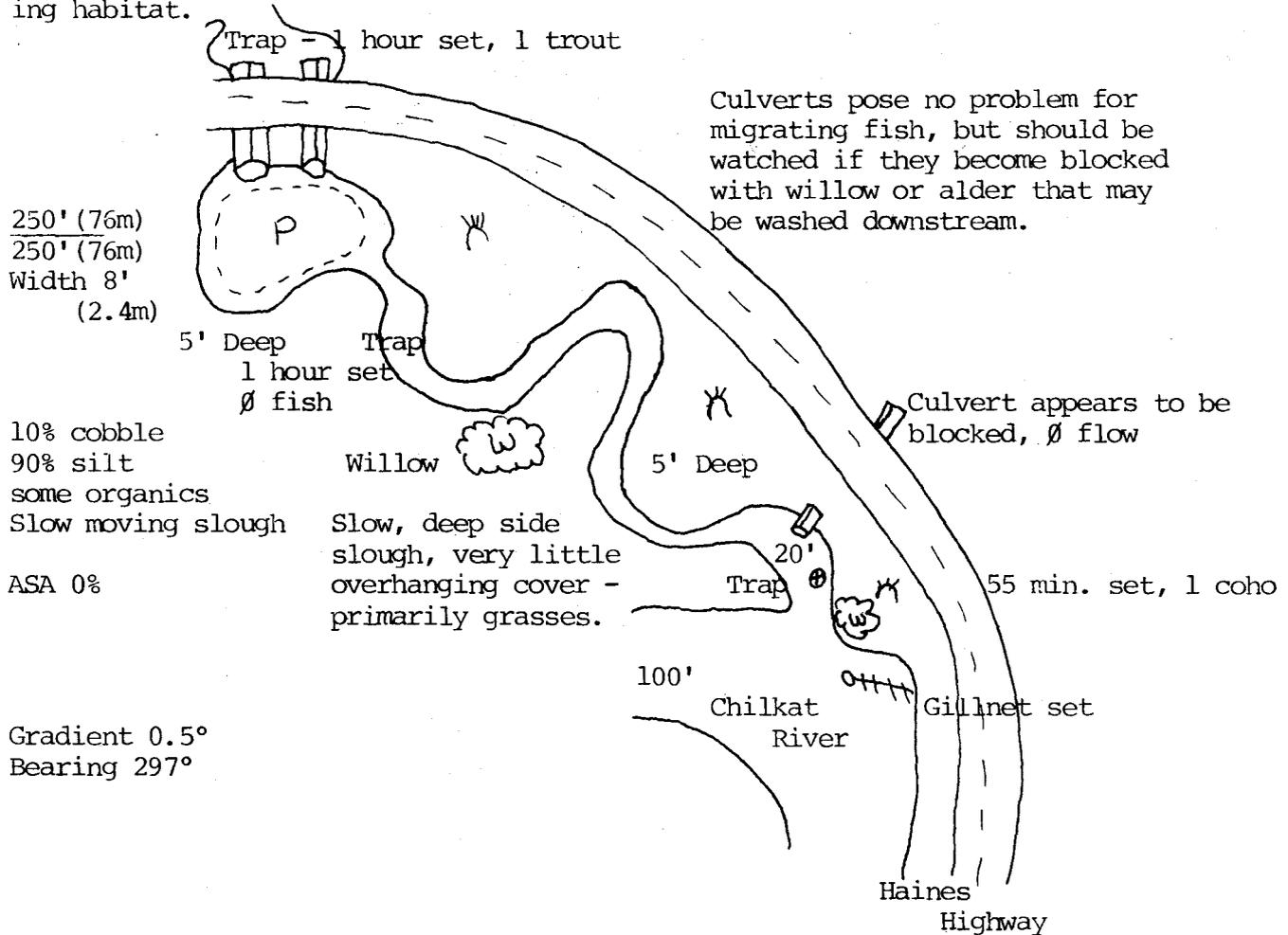
115-32-086

Upper area



115-32-086
 7/20/79 14:40
 Walker
 Weather: overcast
 Air: 66°F
 Water: 45°F, clear
 pH: 7.5
 Flow: 20 cfs

Above culvert stream over-rides it's banks in many places. Stream flows around roots of willow and alder, making walking extremely difficult. Flow has uncovered patches of 1" gravel that remains moderately firm in sand. Dense brush canopy with solitary cottonwoods. 100' on either side of stream is very marshy. Gradient 5° bearing upstream 183°. Good rearing habitat.



Name: _____
Latitude: 59 18 45 N
Longitude: 135 43 00 W
Geodetic Map No: Skagway (B-2)
Location: Mile #13 Haines Highway

Catalog No: 115-32-086
Former Stream No: River Basin Study
USFWS #148
Work Area: Haines - Skagway
Watershed Length: 1.75 miles
Drainage Area: 1.91 square miles
Water Supply Type: Runoff and melt from hanging glacier.

Trails & Survey Routes: Road access from Haines Highway

Aerial Survey Notes: N/A

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Surveyed by USFWS on 9/16/60 for 300 yards - no salmon or trout observed.

Schooling Areas: Large deep pool below road.

Spawning Areas: 0 ASA

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: One trout caught in trap. Two traps set for 1 hour.

LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: None needed.

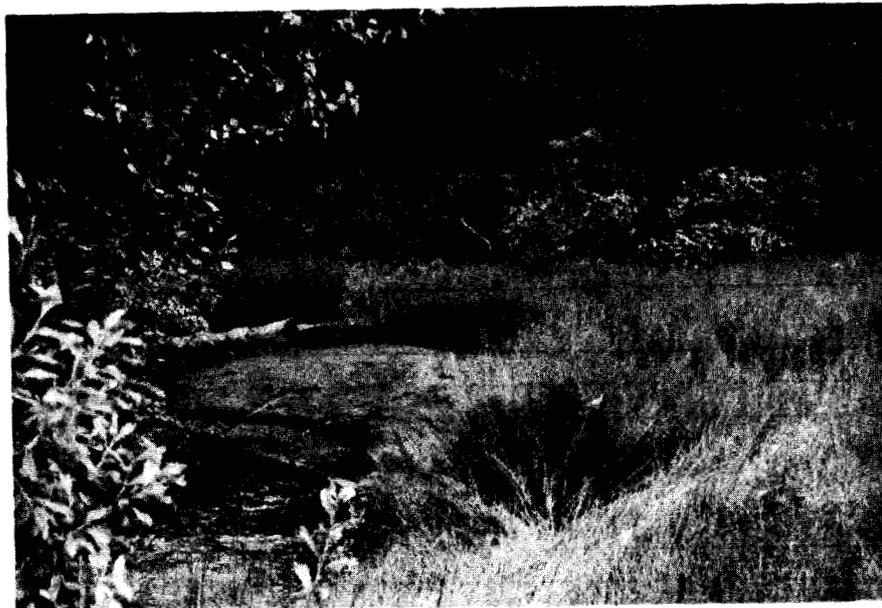
SOILS: Stable

GAME RESOURCES (species, use, habitat): None noted.



115-32-085
Marsh rearing area

115-32-085
Rearing and spawning area



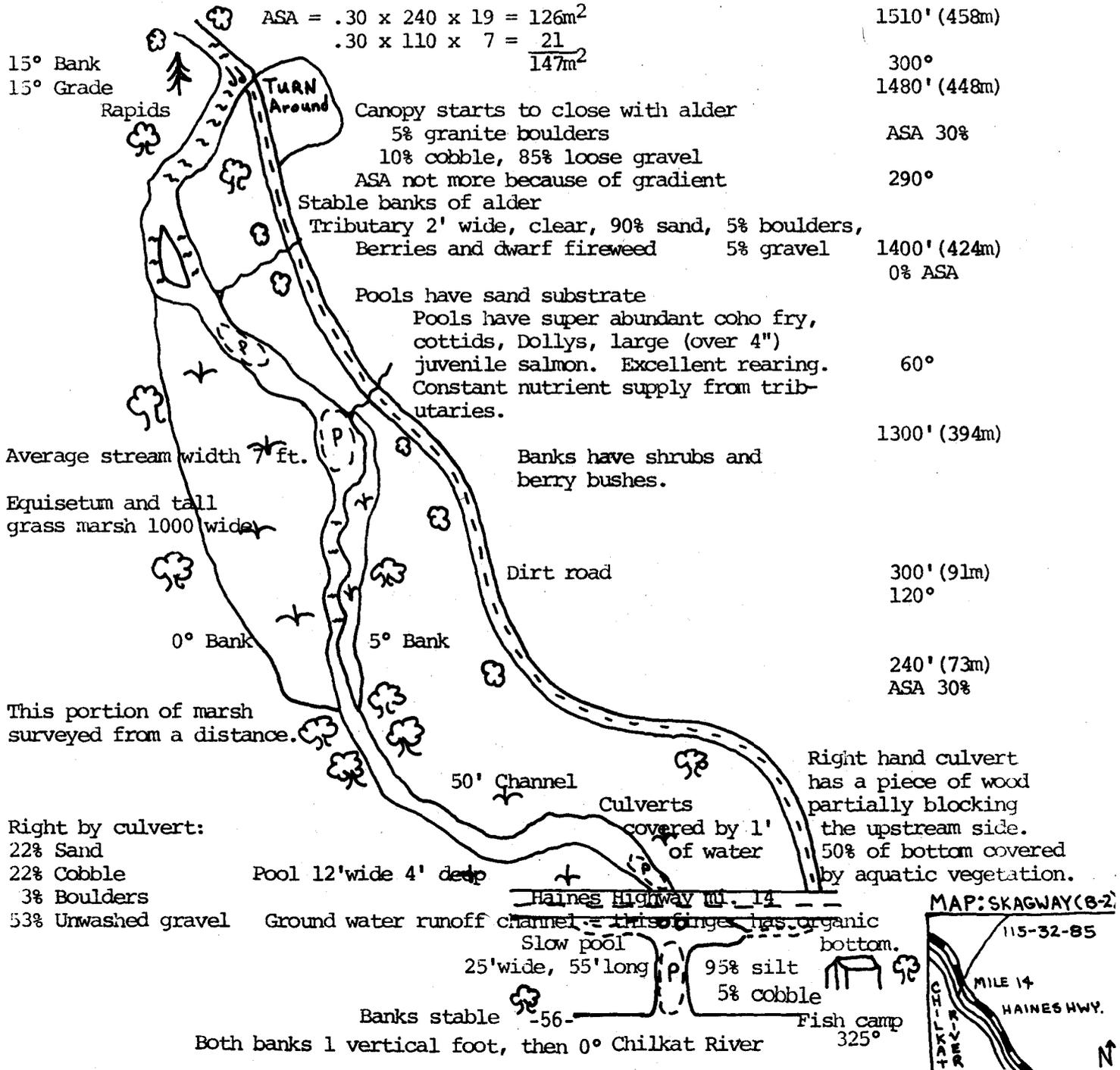


115-32-085
Upper area



115-32-085
Marsh flats

Weather: Overcast and rain
 Air: 51°F (11°C)
 Water: 48°F (9°C)
 Clear
 pH 7.7
 Open canopy
 High water
 55 cfs
 P/R 60/40



Name: _____
Latitude: 59 19 52 N
Longitude: 135 44 35 W
Geodetic Map No: Skagway (B-2)
Location: Mile 17 Haines Highway

Catalog No: 115-32-085
Former Stream No: River Basin Study

Work Area: Haines
Watershed Length: 1.8 miles
Drainage Area: 2.10 square miles
Water Supply Type: Runoff

Trails & Survey Routes: Unsurfaced road leading nearly to headwaters is passable via heavy-duty vehicle or on foot. Stream is difficult to walk as it is quite brushy and marshy.
Aerial Survey Notes: Air survey possible at mouth.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Alaska Fisheries Atlas lists this stream as a spawning area for coho, pink, and chum salmon.

ASA = 147m²

Schooling Areas: Large pool just inside mouth may be a schooling area.

Spawning Areas: Most gravel is near the mouth. Marsh substrate is sandy and above that is a steep boulder streambed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Dolly Varden and cutthroat trout present in rearing pools. Rearing coho abundant.

LAND USE (history, present, proposed): Turn-around near headwaters shows evident use. Several subsistence fish camps at mouth. Stream flows under Haines Highway.

REHABILITATION POTENTIAL: Culverts could be periodically checked for blockage.

SOILS: Stable

GAME RESOURCES (species, use, habitat): Marsh looks like a good bird habitat, but few birds were seen, perhaps because of the streams proximity to the Highway.

PEAK ESCAPEMENT RECORD

115-32-085

14 Mile Creek - Chilkat River Tributary

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/8/60	9			
9/12/60			15 Coho	
9/17/60		3		
11/16/76		13		Potential dike site

Weather: overcast, rain
Air: 55°F
Water: 45°F, clear
pH: 7.5
30° bearing
0% gradient (slough)
0% ASA

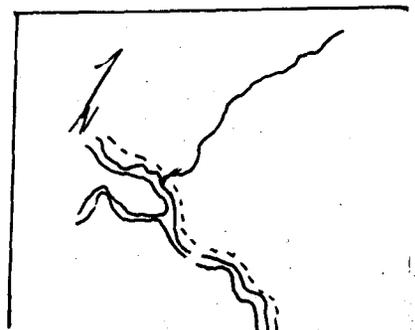
7-20-79

Berg

This stream flows steeply off a hill at mile 17 of the Haines Highway. The stream judging from it's channel size and flow, is an intermittent runoff type with an average width of 2' and a depth of 2"-4", probably not a producer of salmonids. Flow continues across the Haines Highway through an 18" culvert into a 5' deep side slough of the Chilkat River. The bottom of the slough is littered with organic debris, depositions of silt, and dense aquatic vegetation near the banks. The slough area averages 30' wide and proceeds for 150' before entering the main branch of the Chilkat River. It's average depth becomes 7'-10' before flowing into the Chilkat. Sedges, grasses, willow, cottonwood and alder grow in profusion over the banks of the slough. Substrate composition is 85% silt and sand and 15% gravel which was covered with a fine layer of silt and periphyton. The slough generally provides an excellent rearing habitat for juvenile salmonids.

Two minnow traps were set for two 30 minute effort with a catch per unit effort of 0. Several 1"-2" dark trout or char fry were observed near the trap at outlet of culvert, but they wouldn't enter the trap for positive identification.

Skagway B-3



Name: Mile 17 Chilkat River
Latitude: 59 21 20 N
Longitude: 135 45 51 W
Geodetic Map No: Skagway B-3 & B-2
Location: Mile 17 Haines Highway

Catalog No: _____
Former Stream No: _____

Work Area: Haines - Skagway
Watershed Length: 1.5 miles
Drainage Area: 1.62 square miles
Water Supply Type: Runoff and melt from hanging glacier and snow pack.

Trails & Survey Routes: Road access from Haines Highway.

Aerial Survey Notes: N/A

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Intermittent runoff probably not a salmonid stream.

Schooling Areas: None

Spawning Areas: None

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Some trout observed in slough but none seen in Creek.

LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: N/A

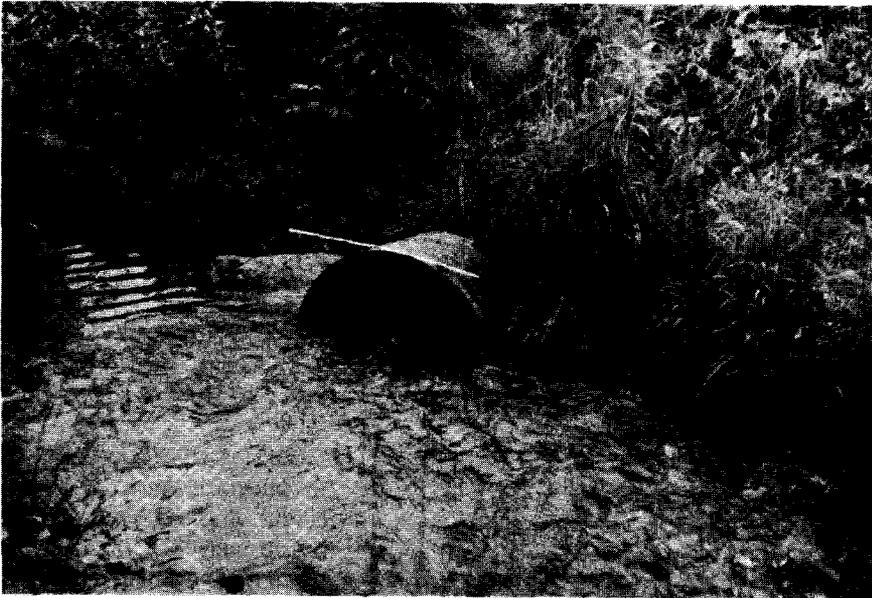
SOILS: Relatively stable

GAME RESOURCES (species, use, habitat): None noted



115-32-083

Above culvert



115-32-083

Culvert blocked



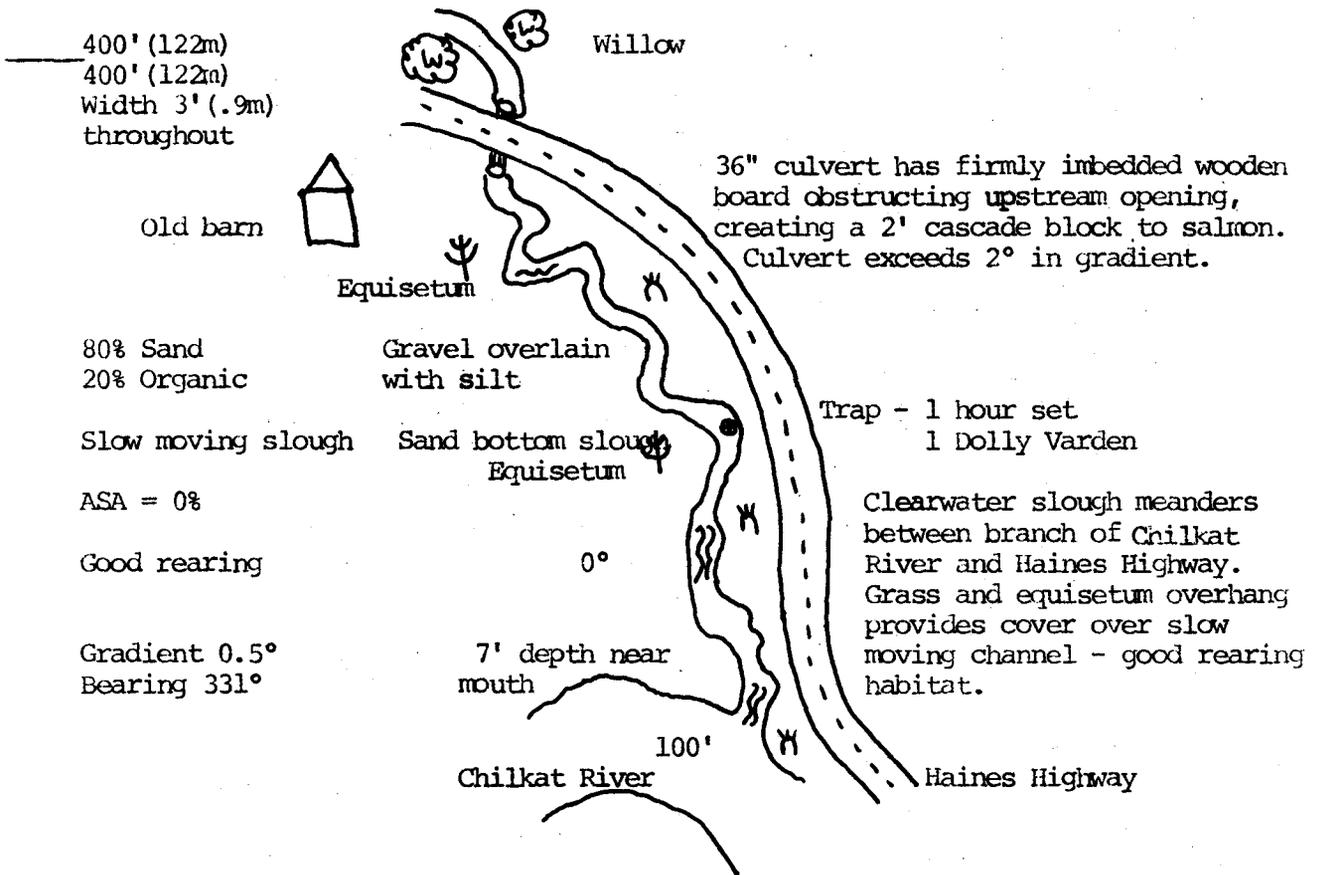
115-32-083

At mouth

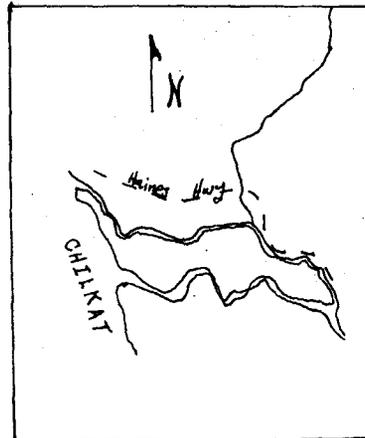
115-32-083

7/20/79 11:35
Walker, Edgington
Weather: light rain
Air: 61°
Water: 47°, clear
pH: 7.5
Flow: 9.7 cfs, high

For 100' above culvert, stream is braided in willow patch. Extremely hard pack granitic cobble and gravel. Torrential flow in narrow channel with gradient of 4°. Bearing 300°.



Skagway (B-3)



Name: Old Barn Creek
Latitude: 59 21 50 N
Longitude: 135 48 00 W
Geodetic Map No: Skaqway B-3
Location: 18.3 miles on Haines Hwy.

Catalog No: 115-32-083
Former Stream No: _____
Work Area: Haines - Skaqway
Watershed Length: 2.6 miles
Drainage Area: 1.6 square miles
Water Supply Type: Runoff

Trails & Survey Routes: Stream located on Haines Highway, below culvert equisetum marsh provides easy walking, above culvert stream braids through willow.

Aerial Survey Notes: Above culvert stream obscured by willow, impossible to see any schooling activity in turbid Chilkat River.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Schooling Areas: None noted.

Spawning Areas: Stream does not appear to have any available spawning area at this time.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: One Dolly Varden trapped in slough. Potential very limited due to size.

LAND USE (history, present, proposed): Stream bordered by old homestead.

REHABILITATION POTENTIAL: _____

SOILS: Stream meanders through equisetum marsh below culvert. Above culvert stream braids through willow.

GAME RESOURCES (species, use, habitat): None noted.

PEAK ESCAPEMENT RECORD

115-32-083

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/10/78	7			

Name: _____
Latitude: 59 22 53 N
Longitude: 135 50 15 W
Geodetic Map No: Skagway B-3
Location: 20.5 miles Haines Highway

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.25 miles
Drainage Area: _____
Water Supply Type: Ground runoff

Trails & Survey Routes: N/A

Aerial Survey Notes: N/A

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
None - a intermittent surface runoff stream with no potential as salmon stream.

Schooling Areas: None

Spawning Areas: None

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: N/A

LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: N/A

SOILS: _____

GAME RESOURCES (species, use, habitat): None noted.

Name: _____
Latitude: 59 23 30 N
Longitude: 135 51 12 W
Geodetic Map No: _____
Location: 1.5 miles south on Haines
Highway (of Klukwan)

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skaqway
Watershed Length: 1 mile
Drainage Area: _____
Water Supply Type: Intermittent ground
runoff

Trails & Survey Routes: _____

Aerial Survey Notes: _____

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Not a salmon stream. Intermittent.

Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: _____

SPORT FISHERIES: _____

LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: _____

SOILS: _____

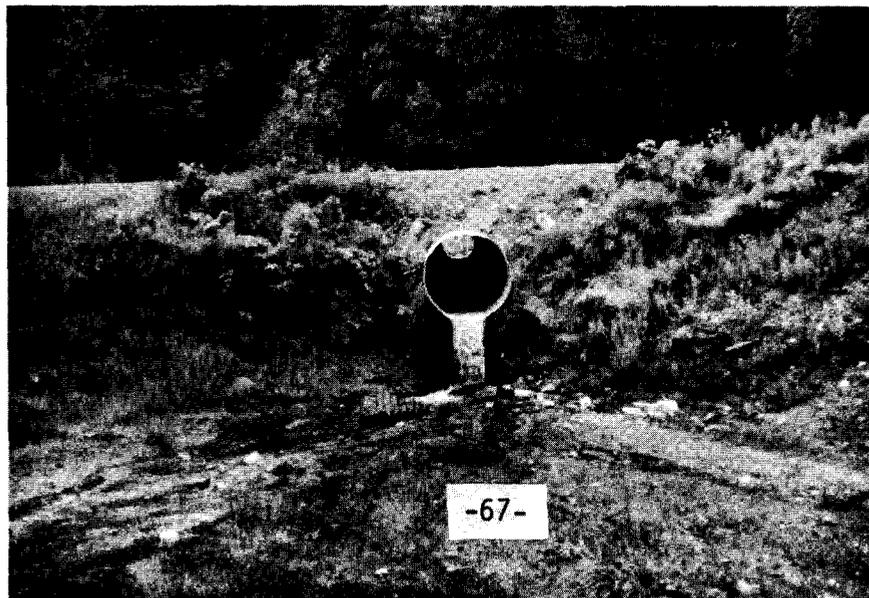
GAME RESOURCES (species, use, habitat): _____



115-32-078
Lower rearing area



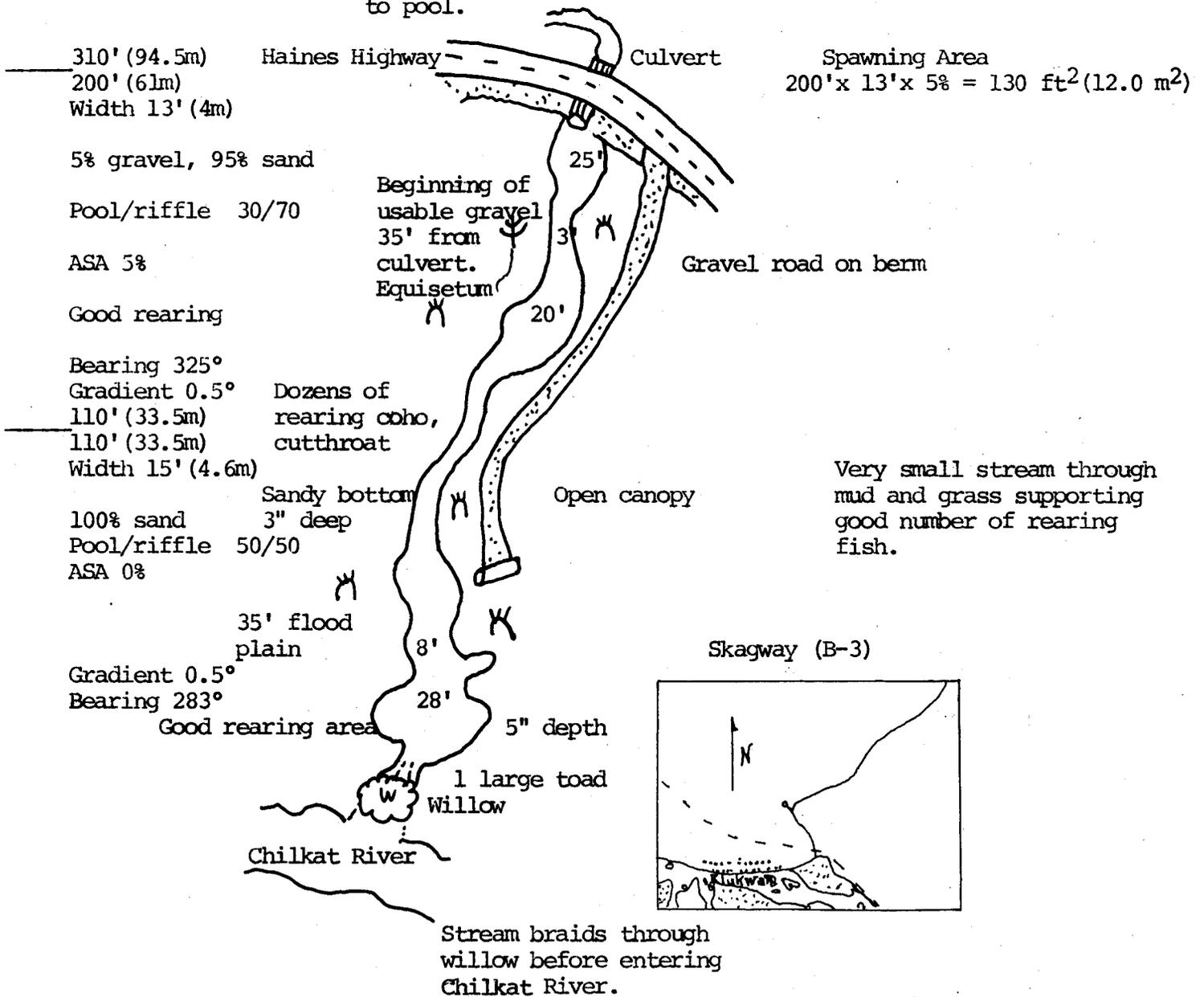
115-32-078



115-32-078
Culvert problem

115-32-078
 7/21/79 9:20
 Walker, Edgington, Berg
 Air: 52°
 Water: 44°
 pH 8.0
 flow 0.5 cfs
 clear

Above culvert stream meanders parallel to road. Little available spawning area, no rearing fish noted. Culvert appears to be blocked to migrating fish except at very high flow. 2' drop from culvert to pool.



Name: _____
Latitude: 59 24 00 N
Longitude: 135 52 25 W
Geodetic Map No: _____
Location: 0.3 Miles south of Klukwan
on Haines Highway

Catalog No: 115-32-078
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.5 miles
Drainage Area: 0.80 square miles
Water Supply Type: Surface runoff

Trails & Survey Routes: Easy access from Haines Highway

Aerial Survey Notes: _____

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho noted.

Schooling Areas: _____

Spawning Areas: Some spawning gravel below culvert 130 ft² or 12.0m² for area surveyed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Potential limited by small size - though many rearing cutthroat noted.

LAND USE (history, present, proposed): Crossed by Haines Highway - bordered by small gravel road.

REHABILITATION POTENTIAL: Culvert poses problem except at high flow - 2'

SOILS: _____

GAME RESOURCES (species, use, habitat): None noted



Not a salmon stream

East fork



Name: _____
Latitude: 59 24 25 N
Longitude: 135 55 10 W
Geodetic Map No: _____
Location: 0.7 miles south of Wells
on Haines Highway.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: Approx. 4 miles
Drainage Area: 2.23 square miles
Water Supply Type: Runoff - dry at time
of survey.

Trails & Survey Routes: _____

Aerial Survey Notes: _____

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Not a salmon stream.

Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: _____

SPORT FISHERIES: _____

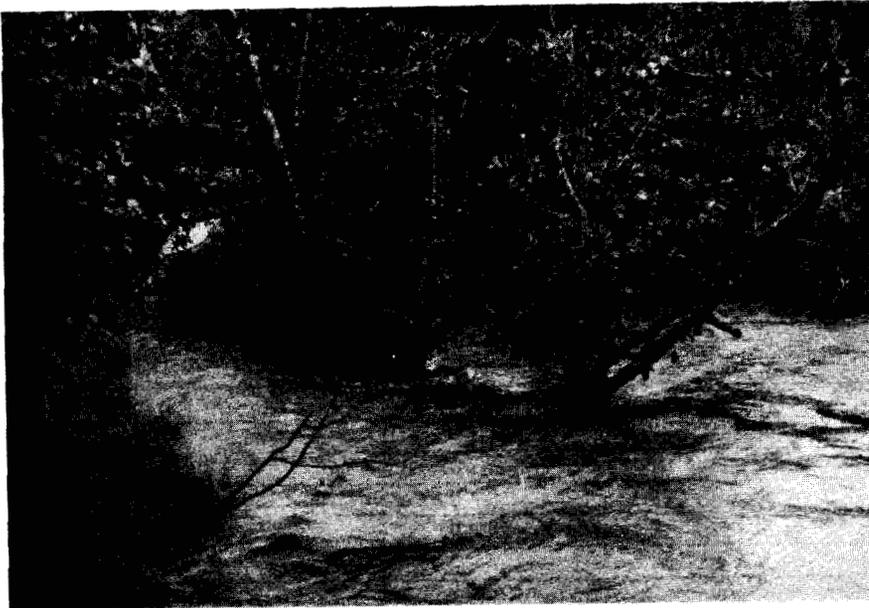
LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: _____

SOILS: _____

GAME RESOURCES (species, use, habitat): _____

115-32-076
Lower area



115-32-076
Unstable area



115-32-076



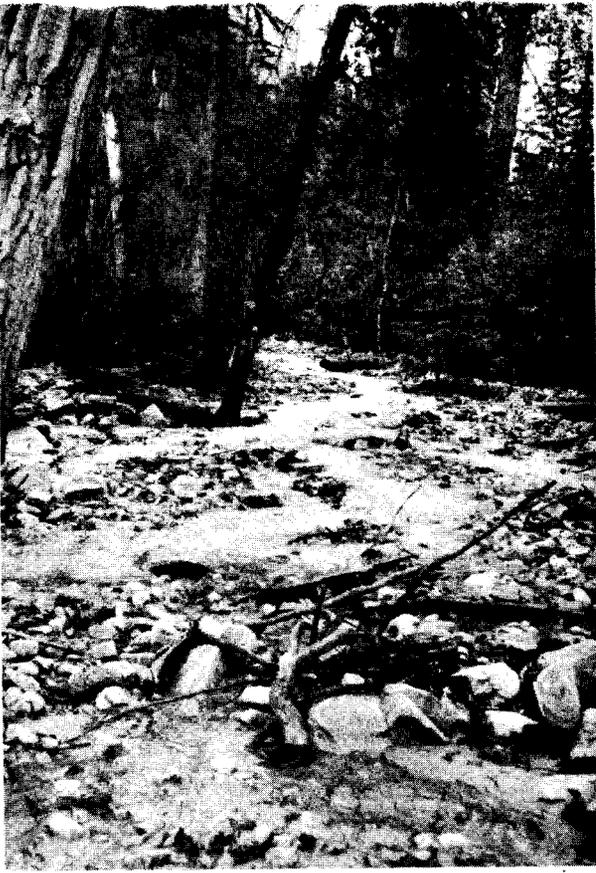
115-32-076
Upper floodplain



115-32-076
Lower area



115-32-076



115-32-076



115-32-076

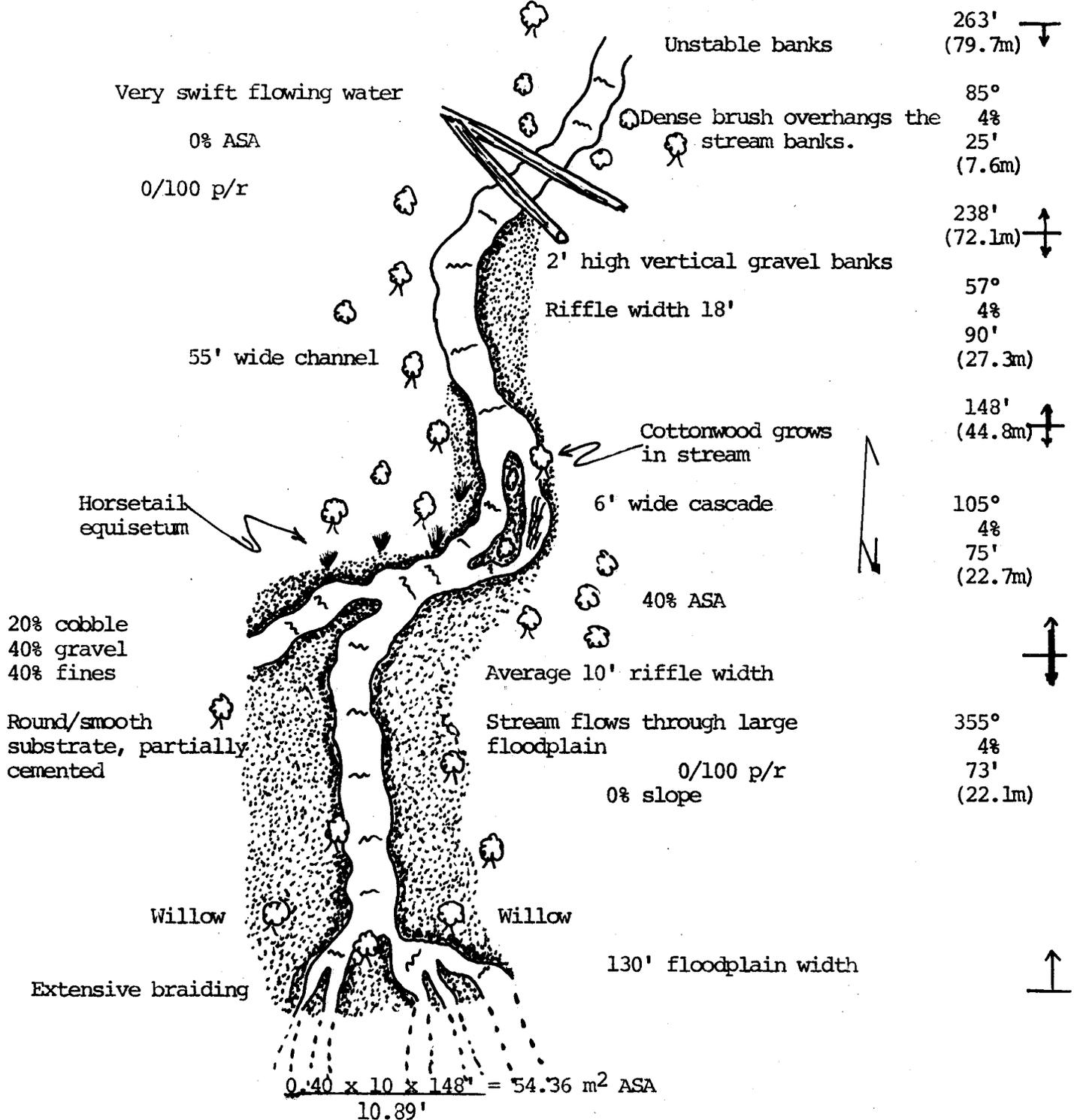
Lower area



115-32-076



Area where main channel flows off hill into extensive braided area



Weather: overcast
Air: 62°F
Water: 46°F, 80 cfs, turbid
pH: 7.7

115-32-076
Goat Creek
7-18-79
Berg, Thayer

Lower Braided Section on Alluvial Fan

This section is extensively braided and flows through dense vegetation composed of horsetail equisetum, willow, dense grasses, alder, cottonwood, and sedges. Substrate consists of 50% gravel and 50% sand/fines. The exposed gravel areas are mixed with large depositions of silt. There is approximately 40% ASA with some excellent stretches of spawning habitat (riffles 4 - 6" deep and moderately clean substrate). The water is gray/silty, flowing swiftly, and negligible rearing habitat is present (0/100 pool/riffle). The vegetation grows to wetted areas and fireweed is sparse on the exposed gravel bars. The area appears to be excellent moose and bear habitat, and moose tracks were observed in profusion along the entire braided section. Closed canopy - well shaded. The braided stretch flows at an average of 20° bearing and 2% gradient.

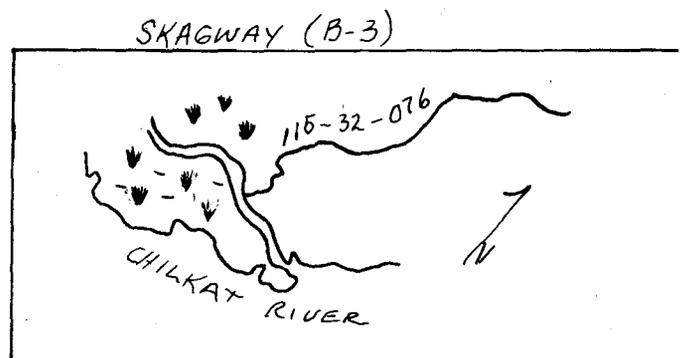
Outlet into Chilkat River consists of two mouths running into a small side slough. The outlet is narrow, deep, silty, and fast flowing. The banks are stable and covered with tall grass. Observed several moose trails through the grass.

Stream Above the Mapped Section

The stream above the mapped section continues with a sharp increase in gradient and swiftness of flow. There are negligible rearing and spawning areas as the area is predominately cascades and swift braided water. The flow in the braided channels is intermittent and it's obvious that the flow switches from channel to channel periodically because of the numerous dry channels present. The dry channels are characterized by large cobble and are not extensively carved out. A sparse spruce/hemlock forest grows at the fringes of the 100' wide channel. Moderately open canopy. Beyond this area the gradient increases again and the channel width decreases to 60' with an average stream width of 30'. The stream continues up through a box canyon and up steep mountain slopes to Goat Hollow. Flow = 60° bearing, 7% gradient.

The stream has changed course near box canyon and flows in different direction than what is shown on the topographic map for that area.

-77-



Name: Goat Creek
Latitude: 59 27 50 N
Longitude: 135 59 00 W
Geodetic Map No: Skagway (B-3)
Location: Approx. 4.25 miles up the Chilkat River from wells on the east bank.

Catalog No: 115-32-076
Former Stream No: River Basin Study USFWS No. 101 "Sheep Creek"
Work Area: Haines
Watershed Length: 5.75 miles
Drainage Area: 7.66 square miles
Water Supply Type: Ground runoff - hanging glacier.

Trails & Survey Routes: Very difficult hiking lower reaches because of extensive braiding and dense vegetation growing to banks. Hiking becomes easier once out of braided area, but gradient increases and it becomes difficult to cross the stream.
Aerial Survey Notes: Difficult downstream, and becomes easier upstream because of moderately open canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Spawning area: 54,36m² ASA

Schooling Areas: _____

Spawning Areas: Restricted to lower portion of stream where there are moderate gradient and swiftness of flow.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

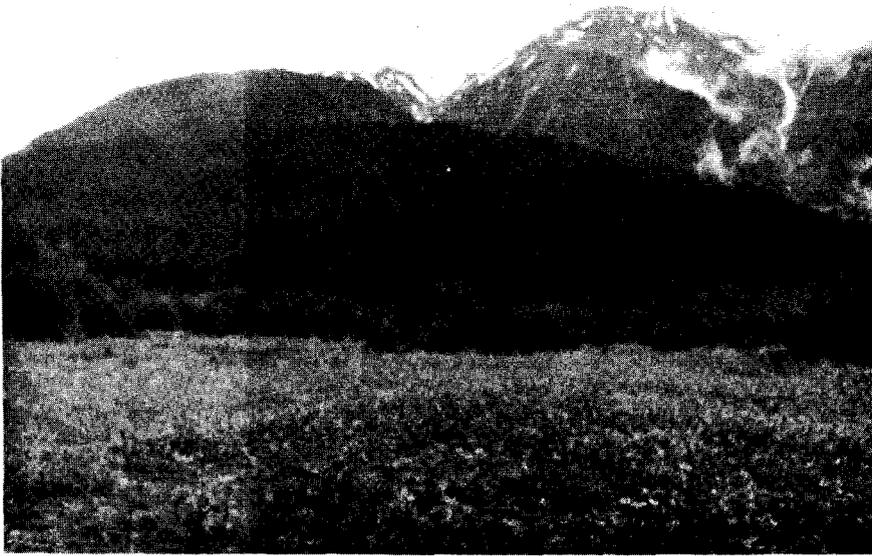
LAND USE (history, present, proposed): Presently in a natural state.

REHABILITATION POTENTIAL: None necessary - any rehabilitation here would be very costly.

SOILS: Very rocky near stream and subject to flood and mass wasting. A lot of shifting in the channel is occurring.

GAME RESOURCES (species, use, habitat): Moose tracks in lower braided area. Excellent bear habitat also. Eagles observed.

115-32-070
Alluvial flats



115-32-070
Aerial view -
coho rearing area



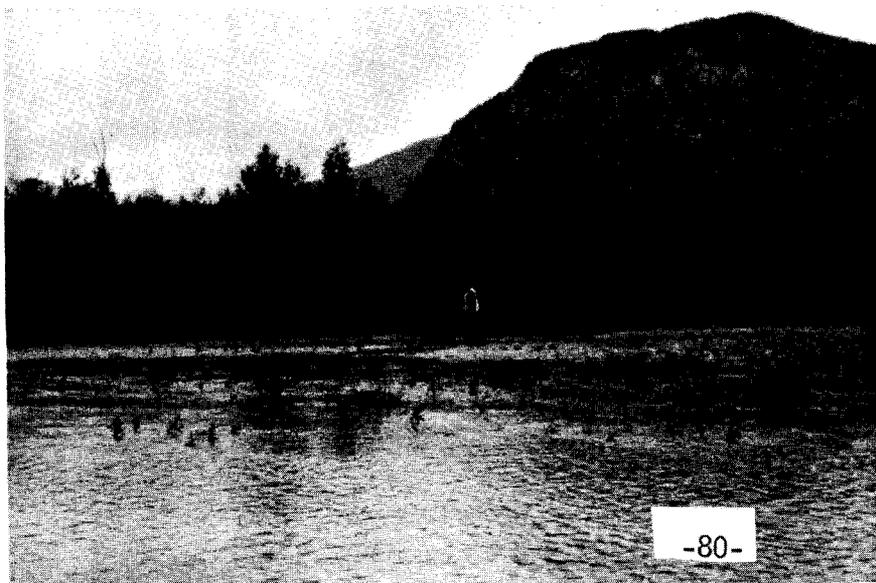
Above flats before
115-32-070
Contained in canyon





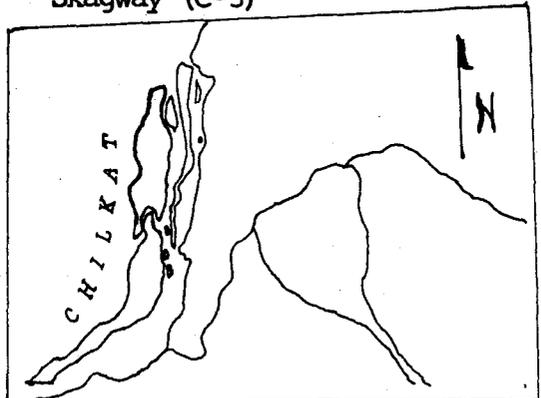
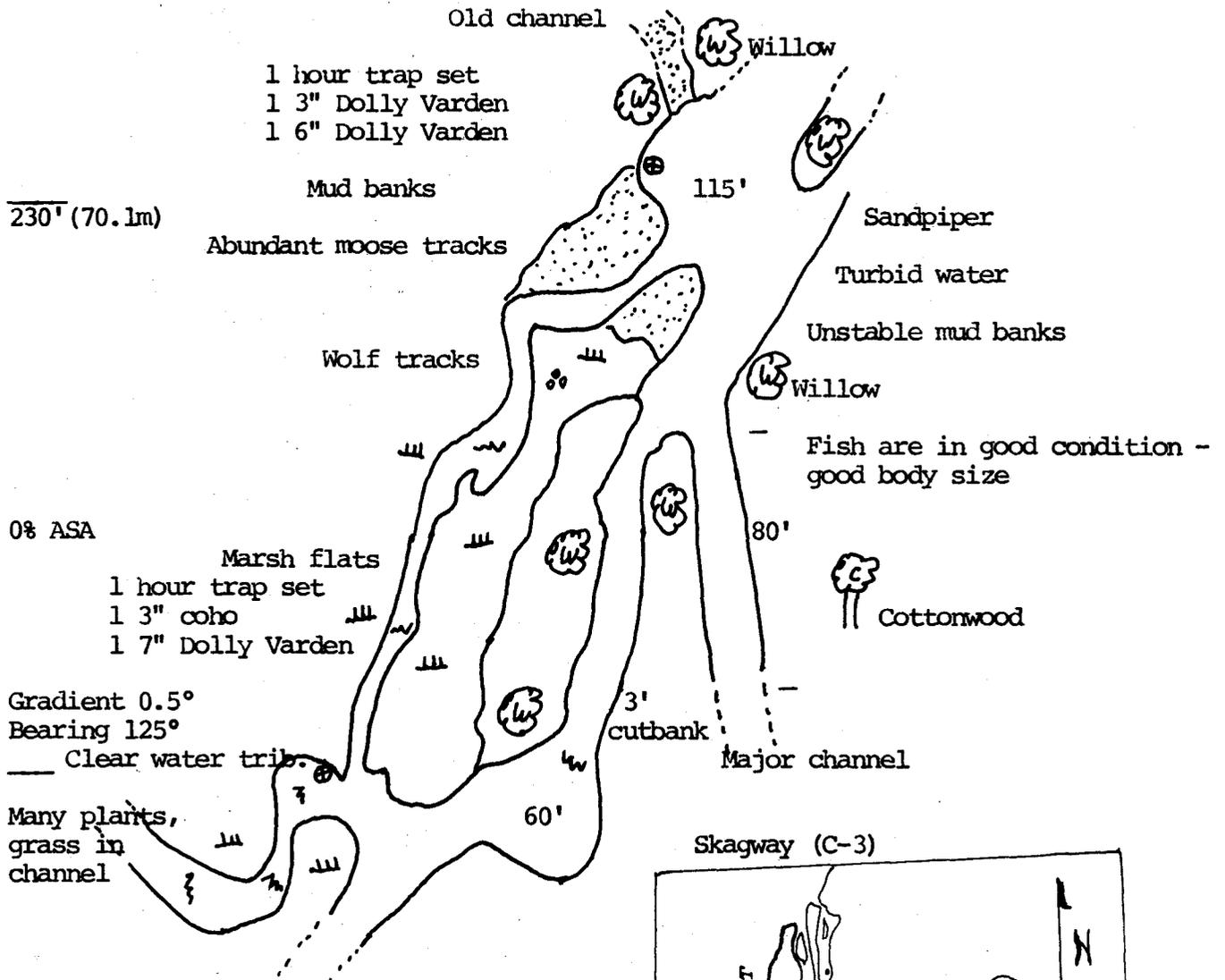
115-32-070
Assination Creek-Upstream

115-32-070
Area where coho and Dolly Varden
were trapped.



115-32-070
 Assigination Creek
 7/18/79 12:00
 Walker/Edgington
 Weather: overcast
 Air: 57°F
 Water: 45°F, turbid
 pH 8.0
 flow 300 cfs

Stream meanders and braids over flat alluvial fan. Evidence that stream constantly overrides banks and floods area. Growth of willow and some alder and grasses on mudbanks overlying gravel substrate - very unstable area. Depth of water in main channel is more than 3'. Abundant moose tracks throughout, willow heavily browsed. Tree line begins at first contour line of hills bordering Assigination Creek, section approximately 0.5 miles from tree line.



Name: Assignment Creek
Latitude: 59 34 00 N
Longitude: 135 58 52 W
Geodetic Map No: Skagway C-3
Location: East side of Chilkat River
11 miles south of British Columbia
border.

Catalog No: 115-32-070
Former Stream No: River Basin Study
USEWS #105
Work Area: Haines - Skagway
Watershed Length: 17.75 miles
Drainage Area: 25.80 square miles
Water Supply Type: Surface runoff and
hanging glacier.

Trails & Survey Routes: Section surveyed easily walked on mud flats.

Aerial Survey Notes: Open canopy, but major channel very turbid.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho fingerlings rearing in extensive portion of stream flowing over alluvial
flat. Records show coho and sockeye present but is questionable.

Schooling Areas: Unknown

Spawning Areas: Unknown

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Dolly Varden present, but access very limited.

LAND USE (history, present, proposed): Appears in natural state.

REHABILITATION POTENTIAL: None needed

SOILS: Mud overlying gravel - unstable area appears to be constantly changing.

GAME RESOURCES (species, use, habitat): Moose sign abundant, 1 set wolf tracks
and 1 sandpiper.

PEAK ESCAPEMENT RECORD

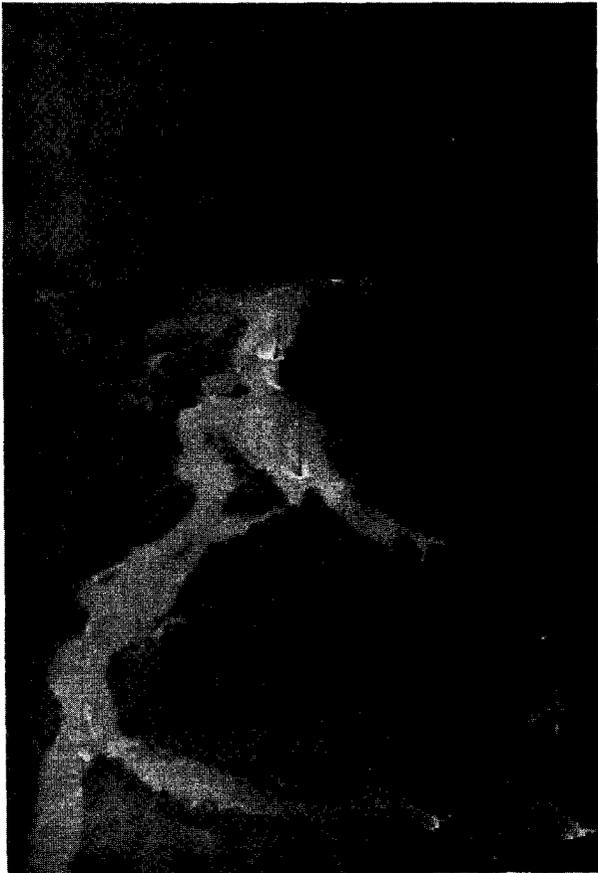
115-32-070

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
10/12/60			8 Sockeye 40 Dolly Varden	
10/2/78			41 Coho	



115-32-066

Lower area before
confluence with Chilkat

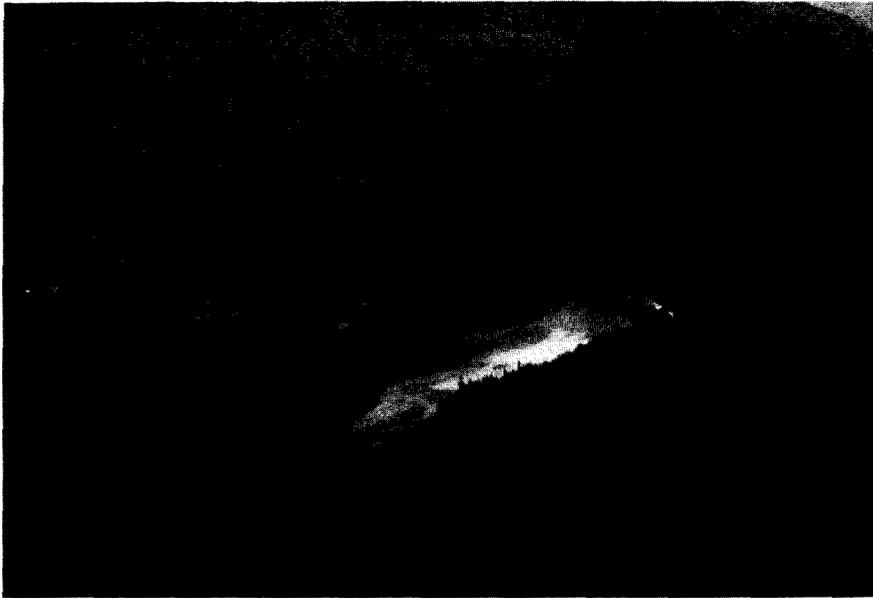


115-32-066



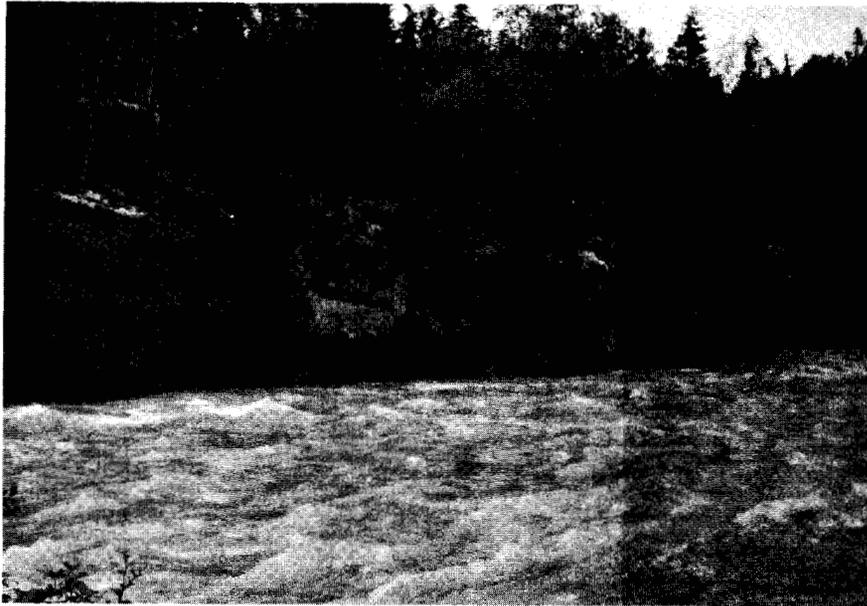
115-32-066

Mid-area

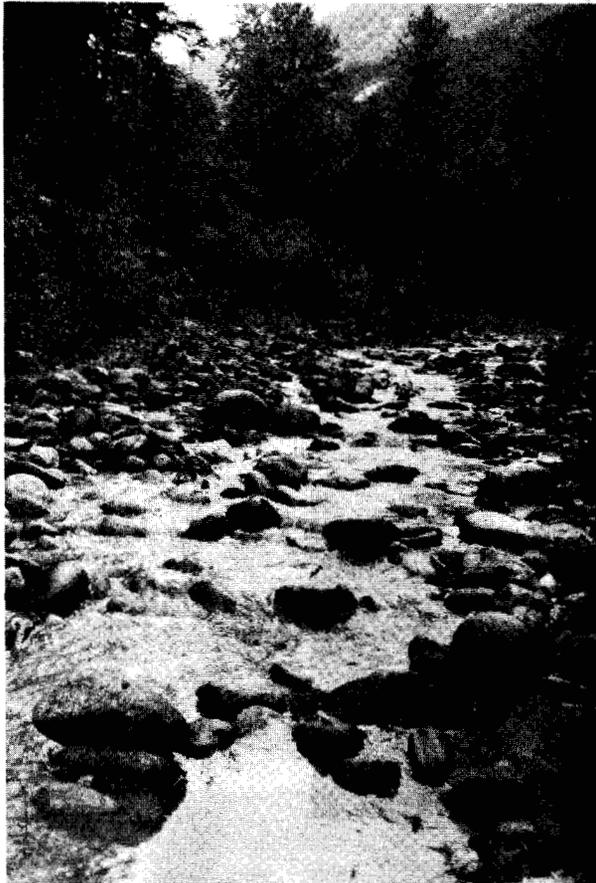


115-32-066

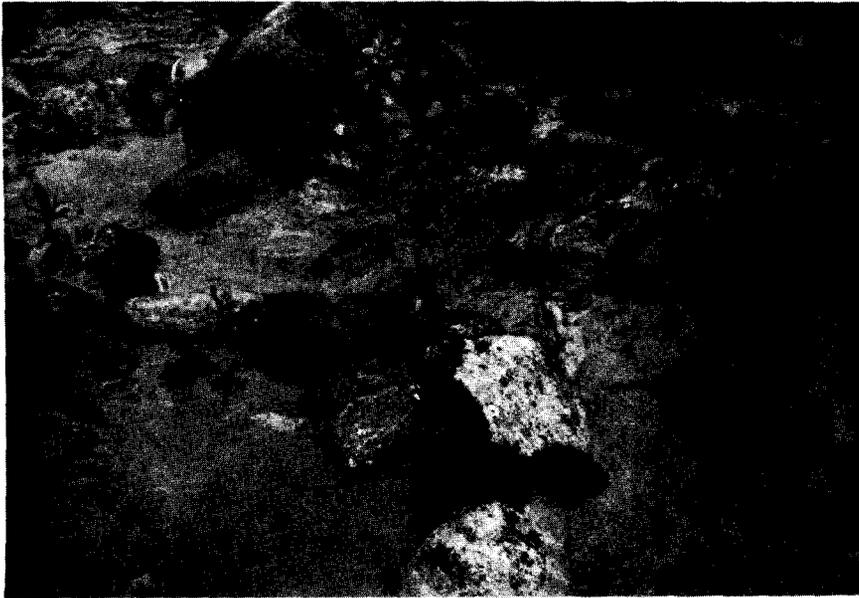
Slow slough



115-32-066

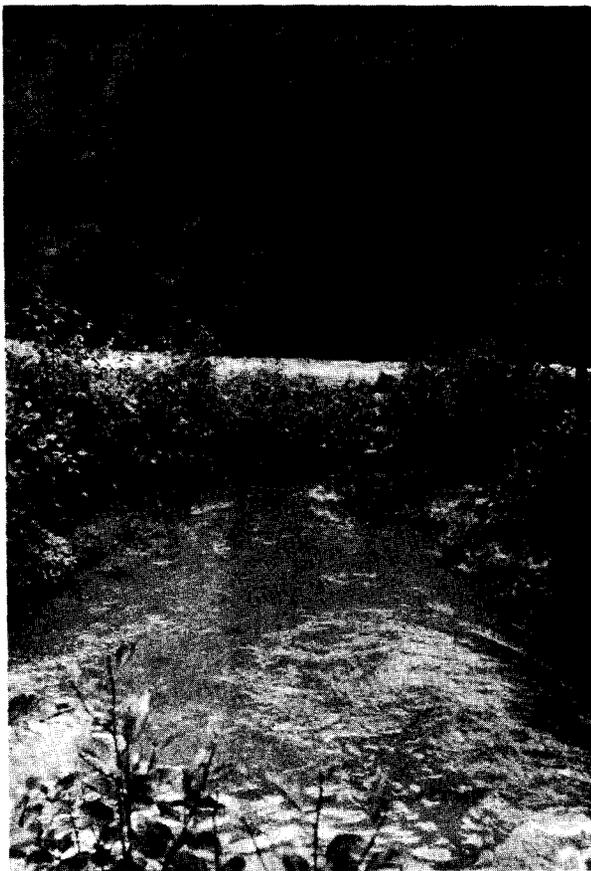


115-32-066 Tahini River
upper area
Boulder substrate



115-32-066

Close-up of
substrate



115-32-066

Pool - No rearing
fish were trapped



115-32-066

Tahini River

Not a barrier due to
alternate routes around
falls.



115-32-066

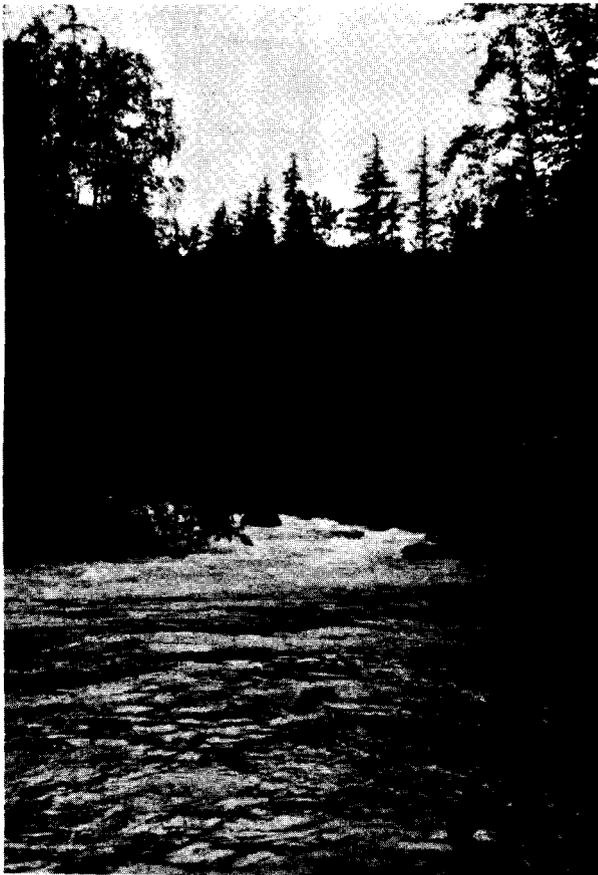
115-32-066

Tahini River
Upper area



115-32-066

Tahini River



Weather: overcast, rain
 Air: 60°F
 Water: 46°F, turbid, gray/green, 350 cfs flood stage

Tahini River
 115-32-066
 7/18/79 11:15 AM
 Thayer/Berg

Pool/riffle 5/95

330' long

Very swift rapids

Open canopy
 Precipitous waterfall

Trib. upstream from 40% boulder mapped area.
 Substrate: 40% cobble
 20% sand
 Sand, silt and large boulders. Spruce and cottonwood

This section surveyed by air

Abundant moose sign
 25° grade

68' channel
 23' stream
 Alder, willow, cottonwood
 Boulders and sand
 0° slope

1090' (330 m)
 (440')

Willow, spruce, fallen birch on bar. Water flowing over bar at time of survey.

60' wide channel

Alder, willow, cottonwood

0° slope

Minnow trap no catch

650' (197 m)
 (450')

No gravel, swift water

0% ASA for stream

Stream braids through a grassy flood plain in wide valley of willows and hardwoods. Sloughs (possible spawning and rearing habitat).

Helicopter landed here

Moose tracks

355°

silt bottom

This section surveyed by air

Islands have primary successional species with some hardwoods.

Near mouth not investigated, flow is slow.

65' channel

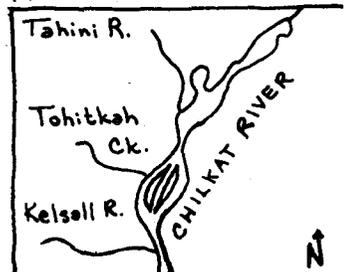
Bedrock banks

200' (61 m)

Barrier falls
 30° grade
 43' wide, 55' long

Possible rearing habitat in backwashes and small areas of slack water, although no fry were observed.

MAP: SKAGWAY (C-3)



Name: Tahini
Latitude: 59 36 45 N
Longitude: 135 59 10 W
Geodetic Map No: Skagway C-3
Location: Upper Chilkat River
west bank.

Catalog No: 115-32-066
Former Stream No: River Basin Study
USFWS #104
Work Area: Haines -Skagway
Watershed Length: 2.5 miles in Alaska
Drainage Area: Into Canada
Water Supply Type: Mountain runoff

Trails & Survey Routes: Boulder bars easy to walk.

Aerial Survey Notes: Open canopy and wide channel makes aerial survey a feasible alternative although turbid water obscures spawning beds during high flows. Best time is October for aerial.

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Alaska Fisheries Atlas lists this stream as spawning habitat for coho, sockeye, and king salmon.
Records show a peak coho count on 10/25/77 of 672.

Schooling Areas: Mouth

Spawning Areas: 0% ASA for area surveyed

SHELLFISH POTENTIAL: _____

SPORT FISHERIES: None noted

LAND USE (history, present, proposed): Natural state

REHABILITATION POTENTIAL: No debris blocks observed. Barrier falls can be by-passed via alternative channels.

SOILS: Moderately stable

GAME RESOURCES (species, use, habitat): Moose sign on river bars. Game trail on bank near falls.

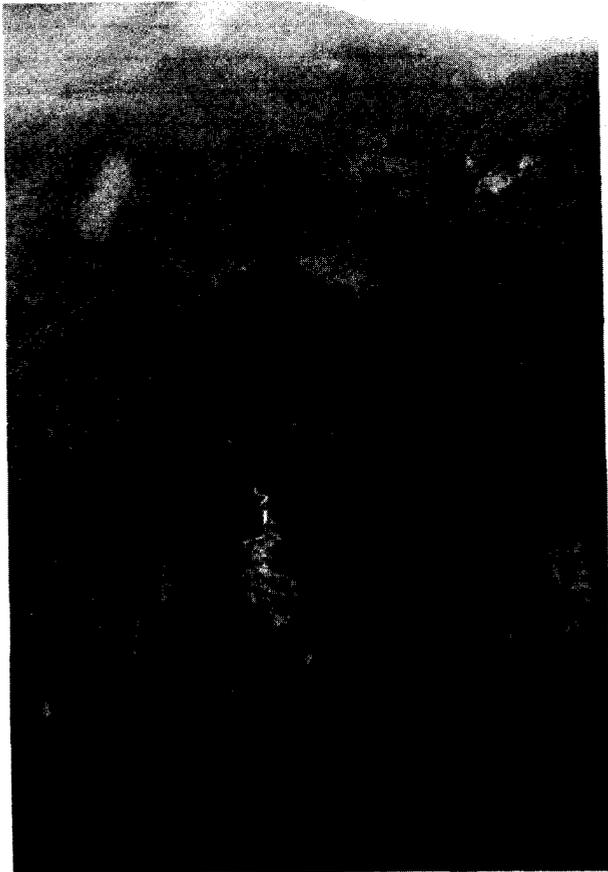
PEAK ESCAPEMENT RECORD

115-32-066

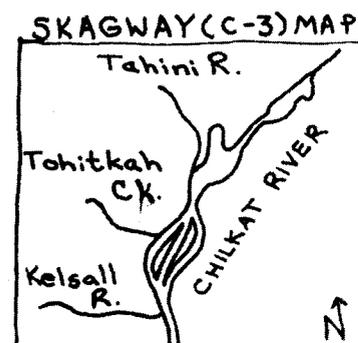
DATE	PINK	CHUM	OTHER SPECIES	REMARKS
10/29/61			222 Coho	
10/21/75			249 Coho	
10/11/76			489 Coho	
10/25/77			672 Coho	All spawning
10/3/78			148 Coho	Some in riffles
10/24/79			124 Coho	

Tohitkah Creek
Thayer/Berg
7-18-79 AM
overcast

Tohitkah Creek did not receive a foot survey because a safe helicopter landing spot was not available. The creek has a steep gradient, rising over 2400' in two miles. The stream is narrow (approx. 6') with a boulder channel (approx. 25' wide). Tohitkah Creek appears to be relatively easy to walk, but is difficult to survey by air because of its size and gradient. The conifer canopy is mostly closed.



Tohitkah Creek
No ground survey



Name: Tohitkah Creek
Latitude: 59 34 18 N
Longitude: 136 01 30 W
Geodetic Map No: Skagway C-3
Location: Approximately 12 miles
south of B.C. border on west side
of Chilkat River

Catalog No: _____
Former Stream No: River Basin Study
USFWS #136
Work Area: Haines - Skagway
Watershed Length: 2.0 miles
Drainage Area: 1.85 square miles
Water Supply Type: Surface snow

Trails & Survey Routes: Unable to ground survey

Aerial Survey Notes: Aerial photo shows dense canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Survey by foot 10/12/60 USFWS for 1.5 miles no fish noted.

Schooling Areas: Unknown

Spawning Areas: Unknown

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Unknown

LAND USE (history, present, proposed): _____

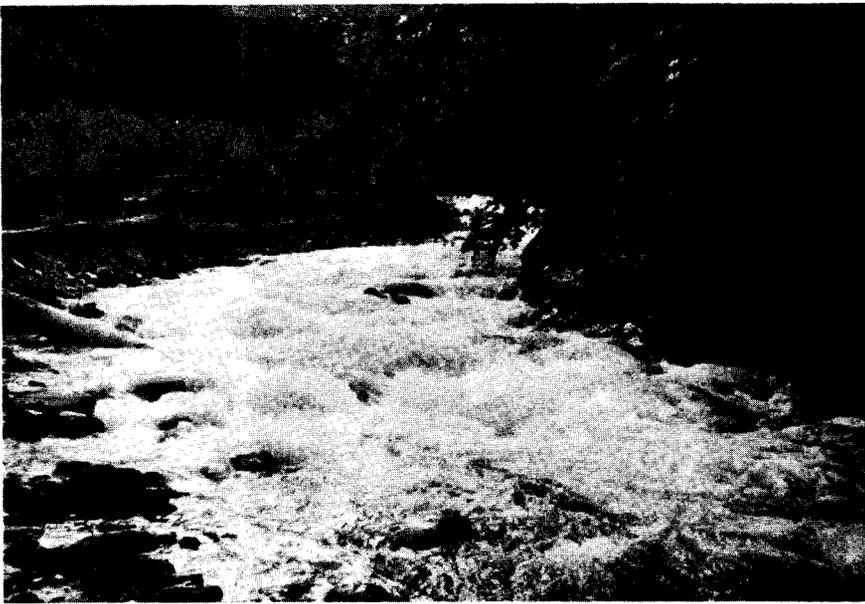
REHABILITATION POTENTIAL: _____

SOILS: _____

GAME RESOURCES (species, use, habitat): _____

115-32-063

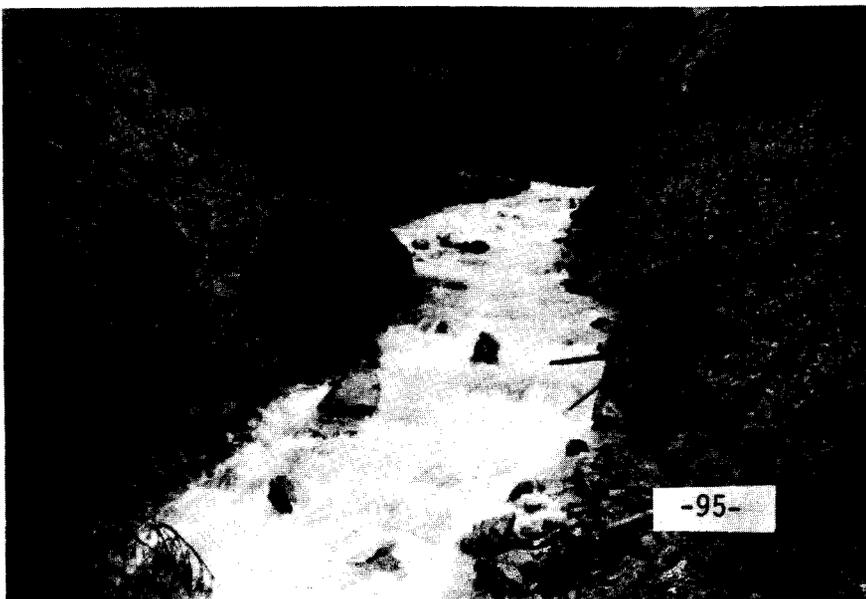
Tributary of
Kelsall River



Old logging
bridge



Upper area above
clear-cut



-95-



115-32-063

Showing surveyed tributary at mouth
where it flows into the main Kelsall

Tributary to
 115-32-063
 7/18/79 10:30
 Walker/Edgington
 Weather: overcast
 Air: 54°
 Water: 41°, light
 milky color, pH 7.5
 Flow-est 80 cfs

Appears to become progressively steeper,
 increasing percentage of boulder, bedrock
 walls. Does not appear to hold many fish -
 poor rearing area

490' (149.4m)
 150' (45.7m)
 Width 30' (9.1m)

ASA 0%
 Gradient 4°
 Bearing 50°
 40% boulder
 30% cobble
 30% gravel
 Rapids throughout
 Old clear-cut

340' (103.7m)
 140' (42.7m)
 Width 25' (7.6m)

ASA 10%
 Gradient 4°
 Bearing 35°
 20% boulder
 30% cobble
 30% gravel
 20% sand
 Old logging road
 Recent camping activity
 on road.

200' (61m)
 200' (61m)
 Width 25' (7.6m)

20% boulder
 30% cobble
 30% gravel
 20% sand

Rapids throughout

Gradient 4°
 Bearing 95°

Willow
 Spruce, hemlock forest beyond
 clear-cut; very little spruce
 regrowth.
 Wash-out of road

2 traps; 30 minute set
 time. \emptyset fish.
 No suitable area for
 trapping. Rearing area
 lacking.

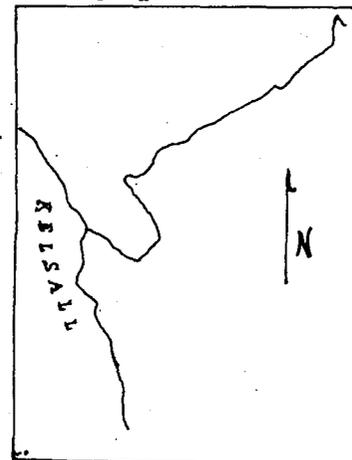
Spawning Area
 200'x25'x15% = 750ft² (69.4m²)
 140'x25'x10% = 350ft² (32.4m²)

2' bank
 5' vertical
 moraine bank
 3' cutbank
 2' cascade

Small feeder creek
 Exposed bedrock
 Rapid cascades throughout
 100'
 70°
 Unstable moraine

Logs suspended
 over stream

Skagway (C-3) (C-4)



Main stream of Kelsall River glacial milk -
 impossible to survey using present methods.

Name: _____
Latitude: 59 34 30 N
Longitude: 136 08 10 W
Geodetic Map No: Skagway C-3 C-4
Location: 5.25 miles south of B.C.
on the east side of Kelsall River
3rd right-hand tributary

Catalog No: Tributary to 115-32-063
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 4.75 miles
Drainage Area: 6.80 square miles
Water Supply Type: Ground runoff - hanging
glacier.

Trails & Survey Routes: Easily walked moraine bank.

Aerial Survey Notes: Open canopy though overhanging bush obscures stream in
sections; preferable to use helicopter.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Tributary to Kelsall and is thought to be a king and chum spawning stream.

ASA = 1100 ft² (101.9m²) 115-32-063 Escapement 1979 6 coho

Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Area previously clearcut - deteriorating
logging road remains.

REHABILITATION POTENTIAL: If washout of old logging road continues, old
bridge may collapse into stream.

SOILS: Unstable moraine banks and areas of protruding bedrock.

GAME RESOURCES (species, use, habitat): Moose, wolf and bear tracks.

115-32-060

Torrential - Unstable



Eastwood/Edgington

1600 hours

7/2-/79

Air: 71°F

Water: 52°F, slightly milky,
pH 8.0, flow 35 cfs

115-32-060

70% boulder
25% cobble
5% gravel ASA 5%

120' (36.58m)

80' (24.39m)

10% boulder
40% cobble
50% gravel

ASA 60%

40' (12.19m)

40' (12.19m)

10% boulder
40% cobble
50% gravel
ASA 60%

Approx. 400' (121.95m)

Not to scale

Alder

15' (4.57m)

15' (4.57m)

15' (4.57m)

Old logging area

Dense alder and willow canopy

Water very swift

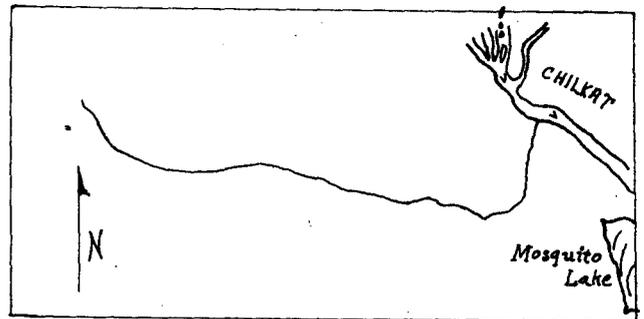
Total ASA very low water torrential,
probably not a salmon stream

Some gravel noted but hard to see as
water is milky

30" deep (.76m)

6' (1.82m)

Deeply cut through
old river channel

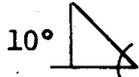


Chilkat River

640' (195.12m)
100' (30.48m)

115-32-060

20% boulder
55% cobble
25% gravel
ASA 0%
Torrential water



540' (164.63m)
20' (6.09m)
520' (158.53m)
170' (51.82m)

4' (1.21m) Culverts

Filamentous algae

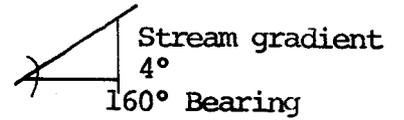
32' (9.75m)

Boulder-cobble-hillocks

15% boulder
60% cobble
25% gravel

8' (2.43m)

ASA 0%



Stumps old logging

13' (3.96m)

350' (106.70m)
150' (45.73m)

40% boulder
20% cobble
40% gravel

ASA 0%

Alder

Moose scat

200' (60.97m)
80' (24.39m)

80' (24.39m)

12' (3.65m)

Name: _____
Latitude: 59 28 30 N
Longitude: 136 02 01 W
Geodetic Map No: Skagway B-3
Location: Approximately 3.6 miles up
mosquito Lake Road from the Haines
Highway going past Mosquito Lake
cutoff.
Trails & Survey Routes: Foot survey.

Catalog No: 115-32-060
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 3.1 miles
Drainage Area: 2.86 square miles
Water Supply Type: Glacier melt and ground
runoff.

Aerial Survey Notes: Part could be done by air but not necessary as road
access is available.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
No past information.

Schooling Areas: N/A p/r 0/100

Spawning Areas: Little or no spawning area 1134 sq ft. or 105.3 sq. meters.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: No fish seen.

LAND USE (history, present, proposed): Logging has taken place in past years.

REHABILITATION POTENTIAL: N/A

SOILS: Near Chilkat silty type or fine sand particles in old Chilkat River
channel.

GAME RESOURCES (species, use, habitat): Moose sign observed.



115-32-058

Mosquito Lake Inlet



115-32-058
 Mosquito Lake Inlet
 (Mosquito Creek)
 7/27/79 1530 hours
 Eastwood, Edgington
 Air: 71°F
 Water: 51°F, pH 7.5,
 flow less than 3 cfs

155' (47.25m)
 40' (12.19m)

100% sand
 ASA 0%

10' (3.04m)

Dense canopy

May provide good rearing but little spawning potential

115' (35.06m)
 20' (6.09m)

90% boulder
 10% sand
 ASA 0%

6' (1.82m)

95' (28.96m)
 30' (9.14m)

5% shale boulder
 30% cobble
 65% gravel
 ASA 50%

Alder

Willow

Moss on shale

8' (2.43m)

65' (19.81m)
 15' (4.57m)

Mosquito Lake Road

50' (15.24m)
 50' (15.24m)

15% cobble
 80% gravel
 5% sand
 ASA 50%

Ferns

2' (.60m)

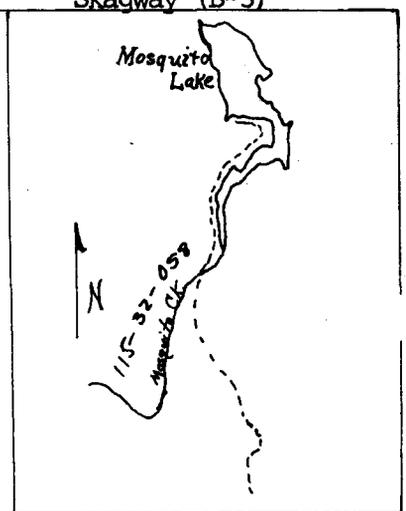
Alder, willow, spruce, very dense canopy and surrounding vegetation.

25' (7.62m)



0'

Skagway (B-3)



Name: Mosquito Inlet
Latitude: 59 36 51 N
Longitude: 136 01 18 W
Geodetic Map No: Skagway -3
Location: 1.75 miles from Haines
Highway on Mosquito lake road.

Catalog No: 115-32-058
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.4 miles
Drainage Area: 1.18 square miles
Water Supply Type: Ground runoff

Trails & Survey Routes: Survey by foot - very dense canopy

Aerial Survey Notes: Could be done on a portion of the stream but most of it could not be seen clearly from the air.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Schooling Areas: No fish in this area p/r 19/85

Spawning Areas: Very little ASA perhaps a good rearing stream only. 170 ft²(15.67m²) out of length surveyed most of this gravel was from building culvert pad on Mosquito Lake Road.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None seen

LAND USE (history, present, proposed): There has been logging in the area some time in the past.

REHABILITATION POTENTIAL: Not necessary too small to warrant.

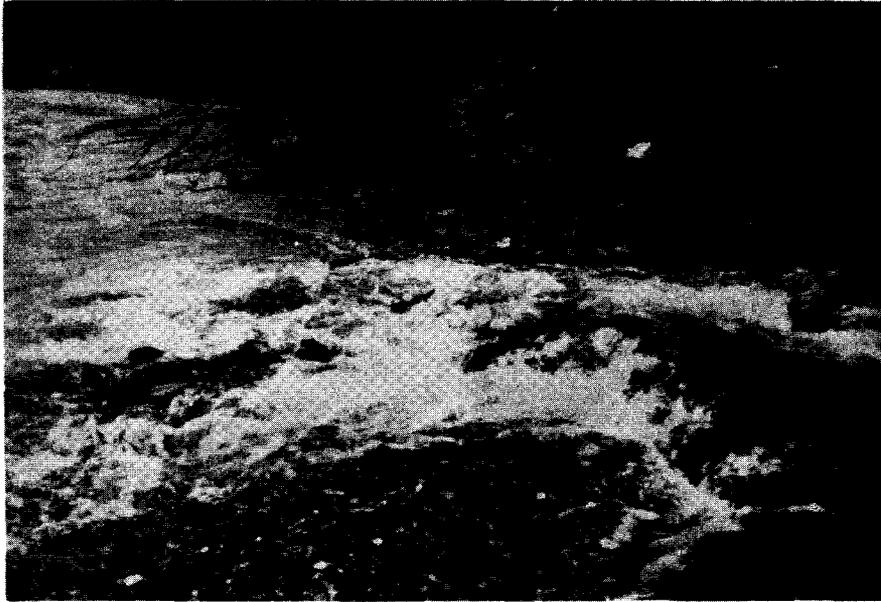
SOILS: Stable forest around stream quite a bit of sand in soil.

GAME RESOURCES (species, use, habitat): Moose in area, however none seen.

PEAK ESCAPEMENT RECORD

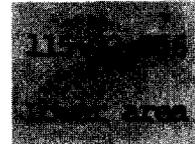
115-32-058 Mosquito Lake Inlet

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/6/77			140 Sockeye	
10/24/79			2 Coho	



115-32-056

At mouth entering into Klehini River





115-32-056

Haines Highway bridge





115-32-056

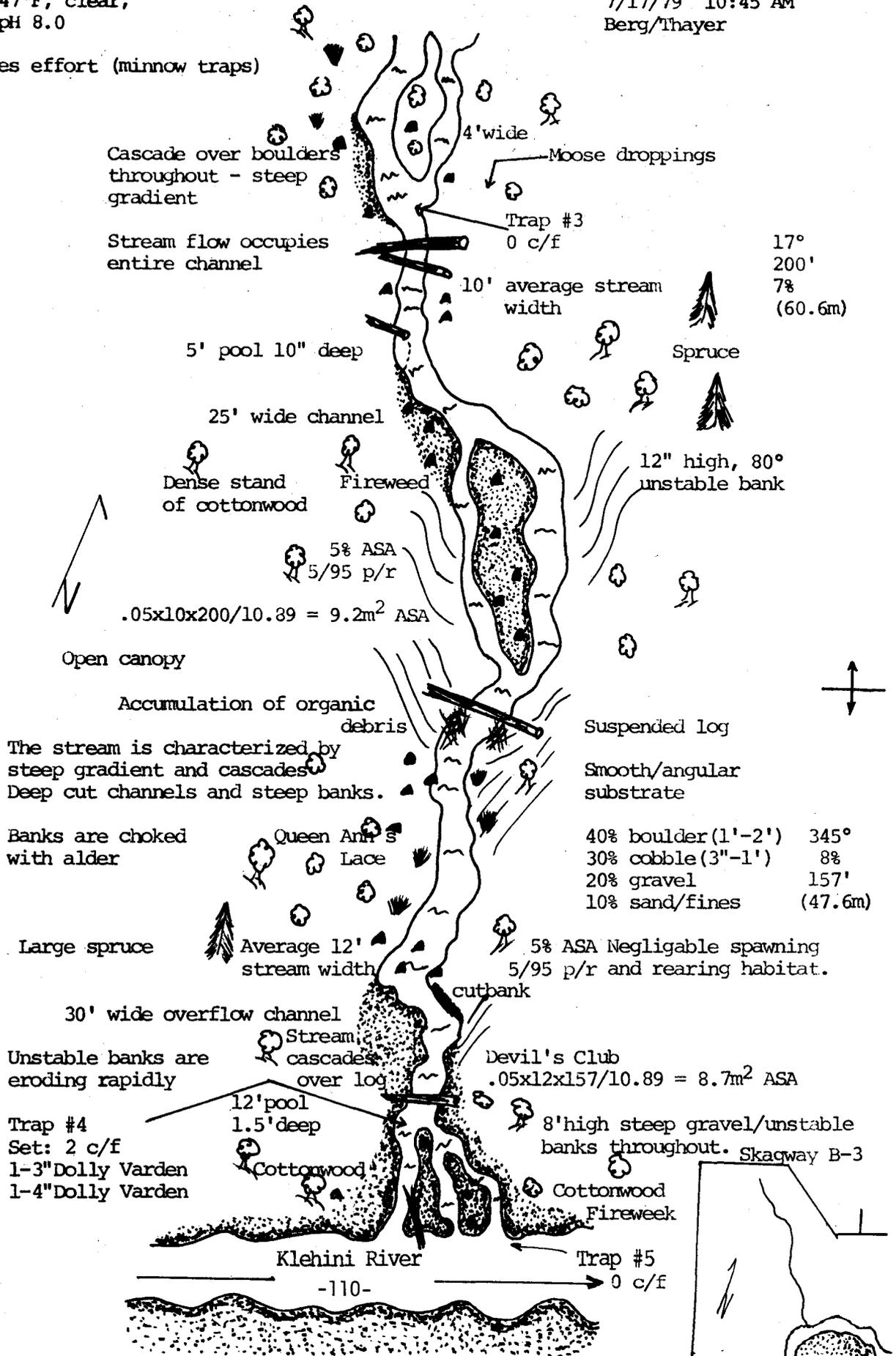
Muncaster Creek

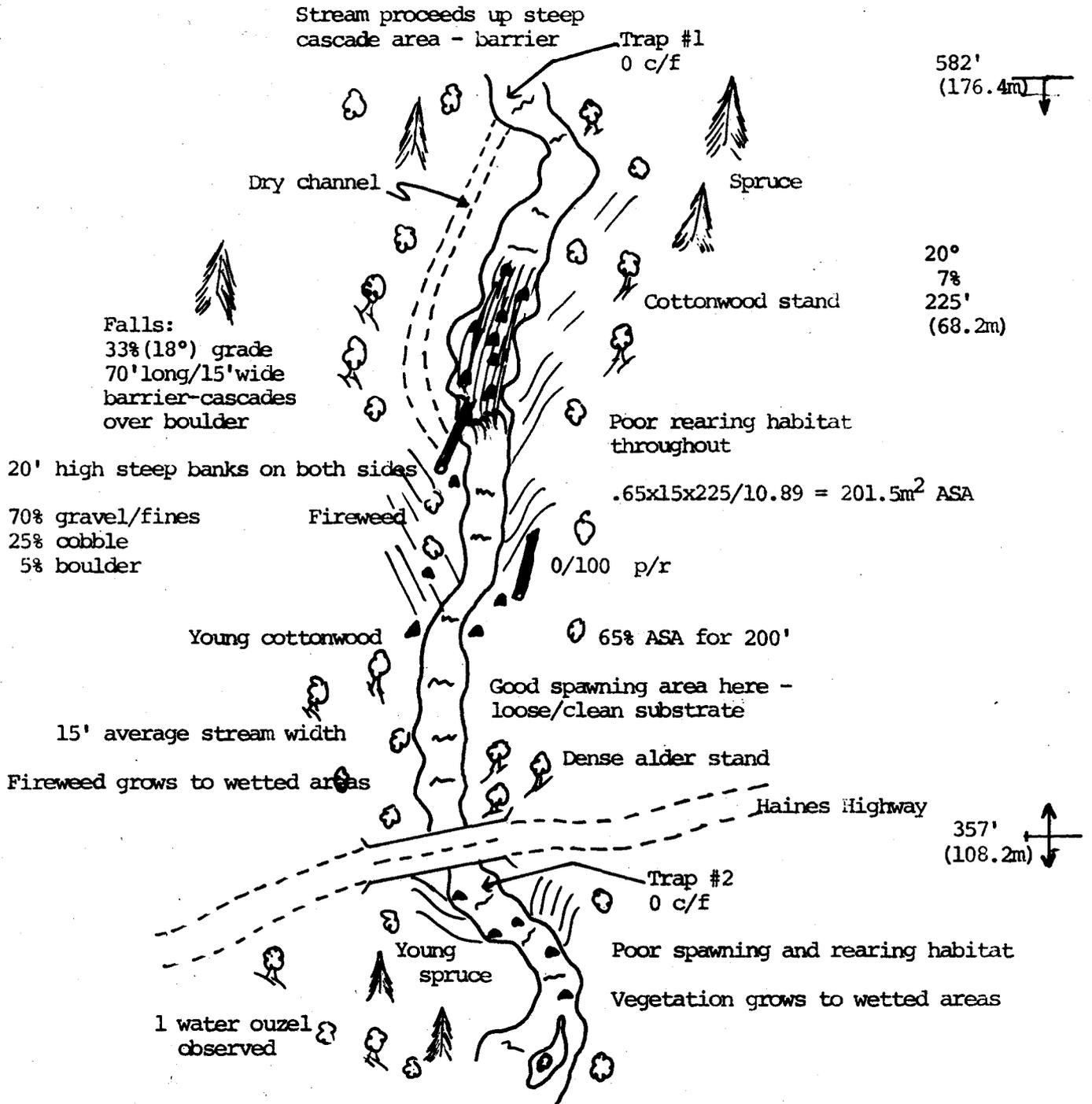
Probable block to
upstream migration

Weather: overcast, rain
 Air: 53°F
 Water: 47°F, clear,
 14 cfs, pH 8.0

115-32-056
 Muncaster Creek
 7/17/79 10:45 AM
 Berg/Thayer

45 minutes effort (minnow traps)





Name: Muncaster Creek
Latitude: 59 25 20 N
Longitude: 136 03 20 W
Geodetic Map No: Skagway B-3
Location: Approx. 5 miles north of
Wells on Haines Highway

Catalog No: 115-32-056
Former Stream No: River Basin Study
USFWS #112
Work Area: Haines - Skagway (Chilkat River)
Watershed Length: 2.5 miles
Drainage Area: 2.55 square miles
Water Supply Type: Ground runoff

Trails & Survey Routes: Easily walked through survey along gravel banks.
Becomes more difficult to hike above barrier falls - dense brush to banks.

Aerial Survey Notes: Area surveyed could be easily surveyed by air due to
open canopy, but difficult above falls as canopy closes up considerably.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Spawning area-219.4m²

Schooling Areas: No schooling pools in transects surveyed, but possible
schooling area off mouth of stream on Klehini River.

Spawning Areas: Limiting factor - good 200' stretch of spawning habitat
(riffles/gravel) immediately above the bridge.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: 2 Dolly Varden char (3" and 4") caught in minnow trap
near mouth of stream.

LAND USE (history, present, proposed): History unknown, presently Haines Hwy.
crosses channel above outlet into Klehini River. Small dirt road parallels
the stream above the bridge approximately 50' from creek.

REHABILITATION POTENTIAL: None needed

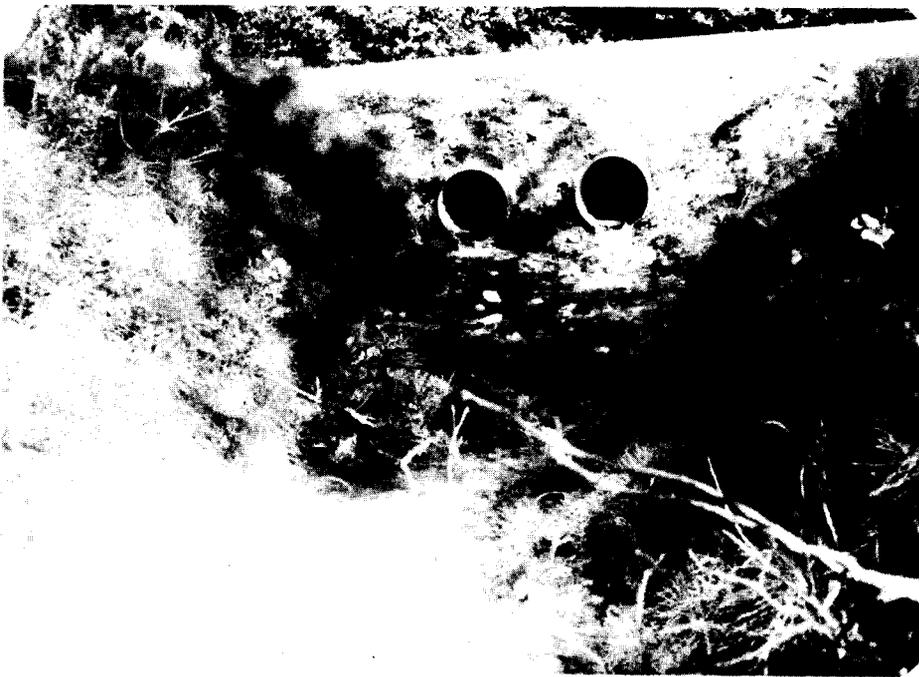
SOILS: Unstable gravel banks predominate in lower reaches, but increase
in stability above the bridge.

GAME RESOURCES (species, use, habitat): Moose droppings observed, 1 water
ouzel, known to be brown and black bear in the area.

PEAK ESCAPEMENT RECORD

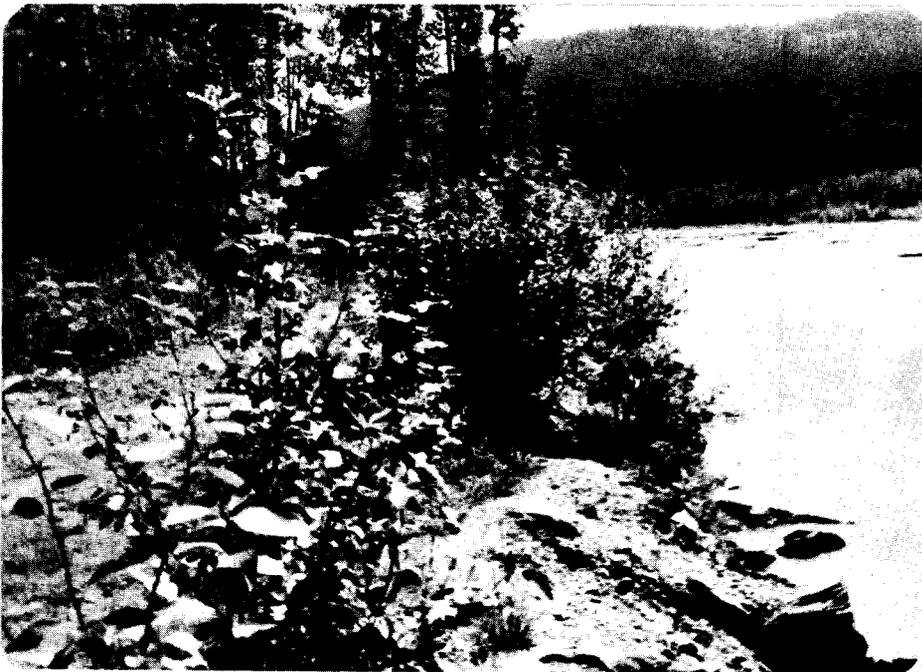
115-32-056 Mancaster Creek

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
10/18/60		745		



115-32-099

Source "D"

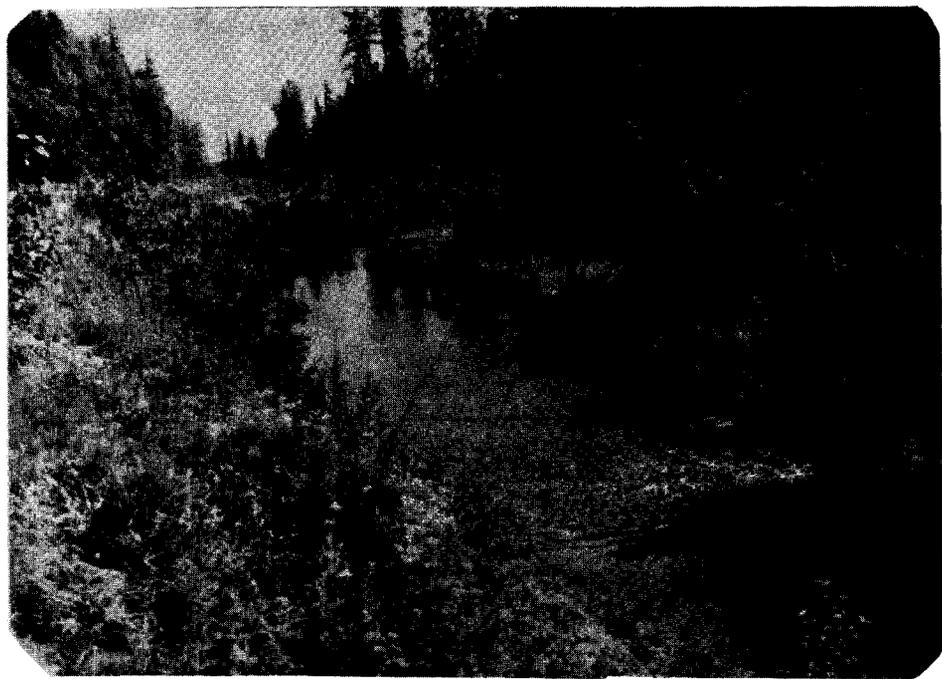


Road into Klehini
that acts as filter
to flow into
115-32-099



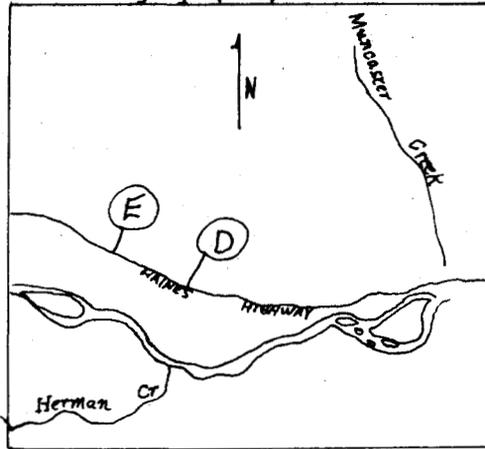
115-32-099

Below road clear -
excellent spawning area

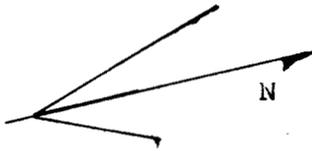


7/27/79 1200 hours
 Eastwood/Edgington
 Weather: Scattered clouds
 Air: 71°F
 Water: 44°F, pH 8.0, 6.7 cfs, clear

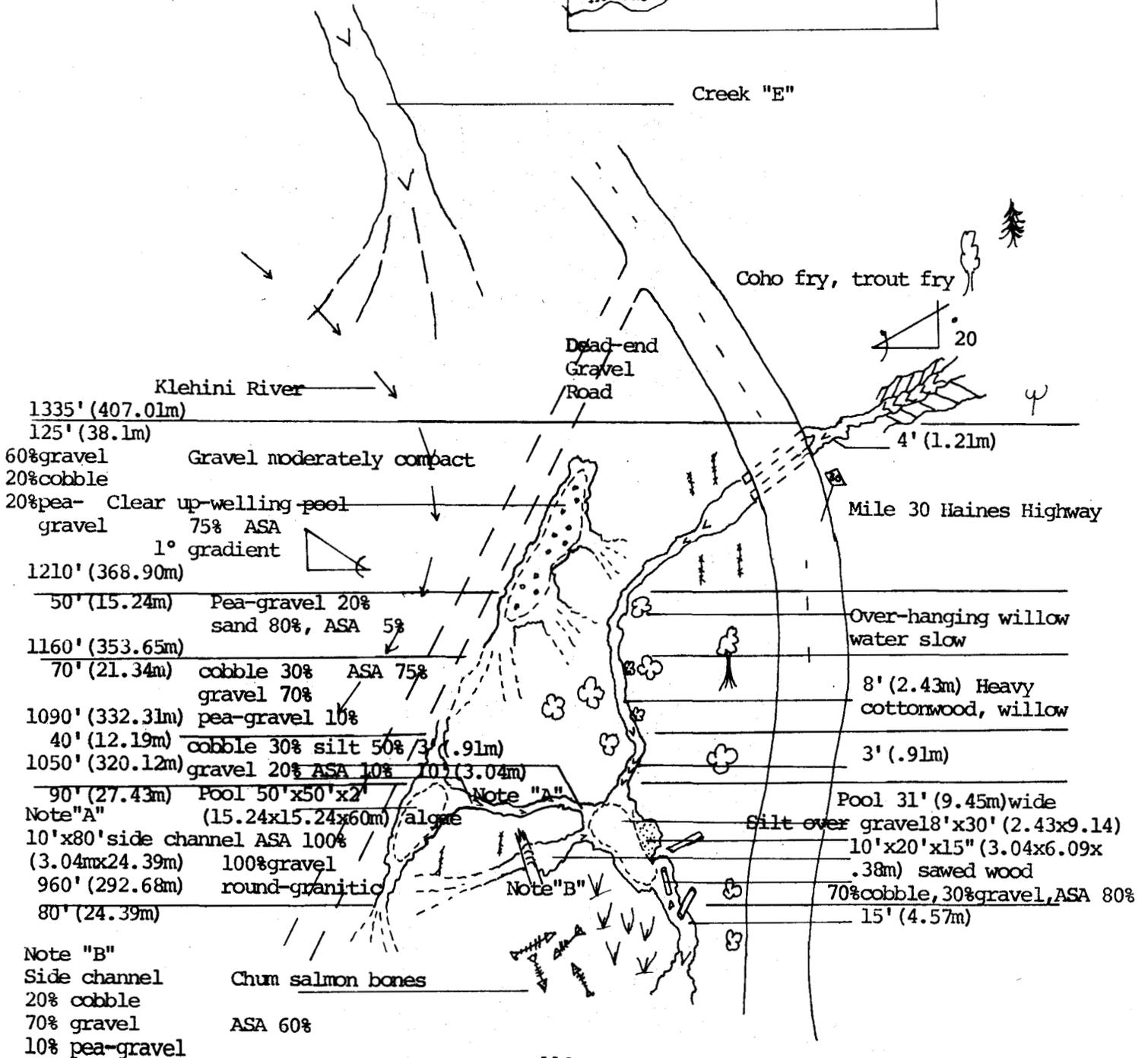
Skaqway (B-3)

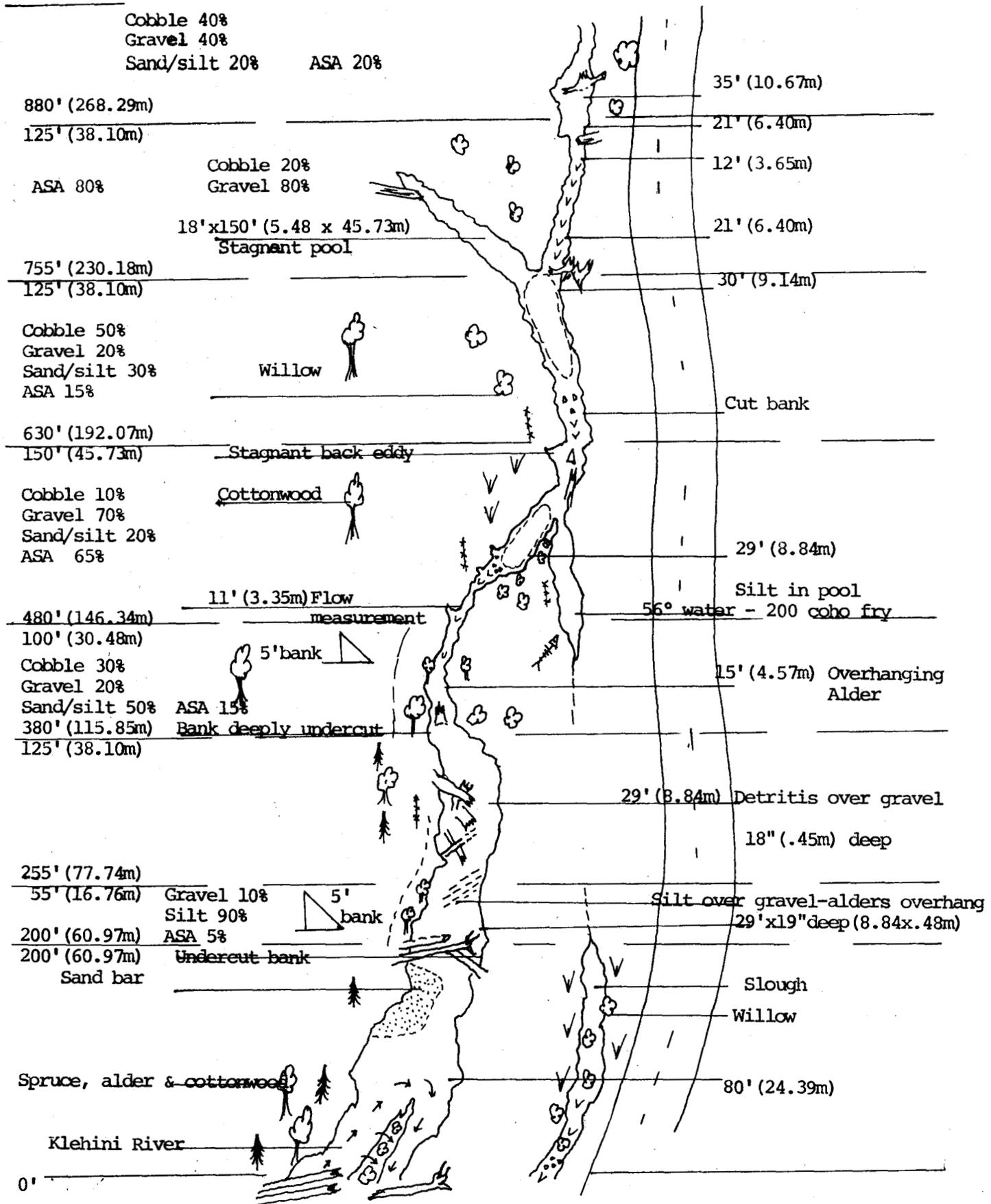


115-32-099
 31 Mile Slough



Creek "E"





Name: 31 Mile Slough
Latitude: 59 25 20 N
Longitude: 136 05 46 W
Geodetic Map No: Skagway (B-3)
Location: Mile 30 - 31 Haines Hwy.

Catalog No: 115-32-099
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 5295'
Drainage Area: 0.71 square miles
Water Supply Type: Surface runoff

Trails & Survey Routes: Foot survey

Aerial Survey Notes: upper creek above road heavy canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Chum salmon - abundant bones on banks indicate area heavily used for spawning.

Schooling Areas: No spawners observed.

Spawning Areas: 8,782.75 ft² or 814.67 m²

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Coho and trout fry were observed in large numbers.

LAND USE (history, present, proposed): Hand-cleared in 1972 by ADF&G.

REHABILITATION POTENTIAL: None needed

SOILS: Stable for the most part.

GAME RESOURCES (species, use, habitat): None seen

PEAK ESCAPEMENT RECORD

115-32-099 Klehini - 31 Mile Slough

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/9/76	1			Below dike
10/11/76		787		
11/3/76			24 Coho	
10/6/77		2,000		
10/8/78		40		
10/8/78		,	1 Coho	



115-32-099

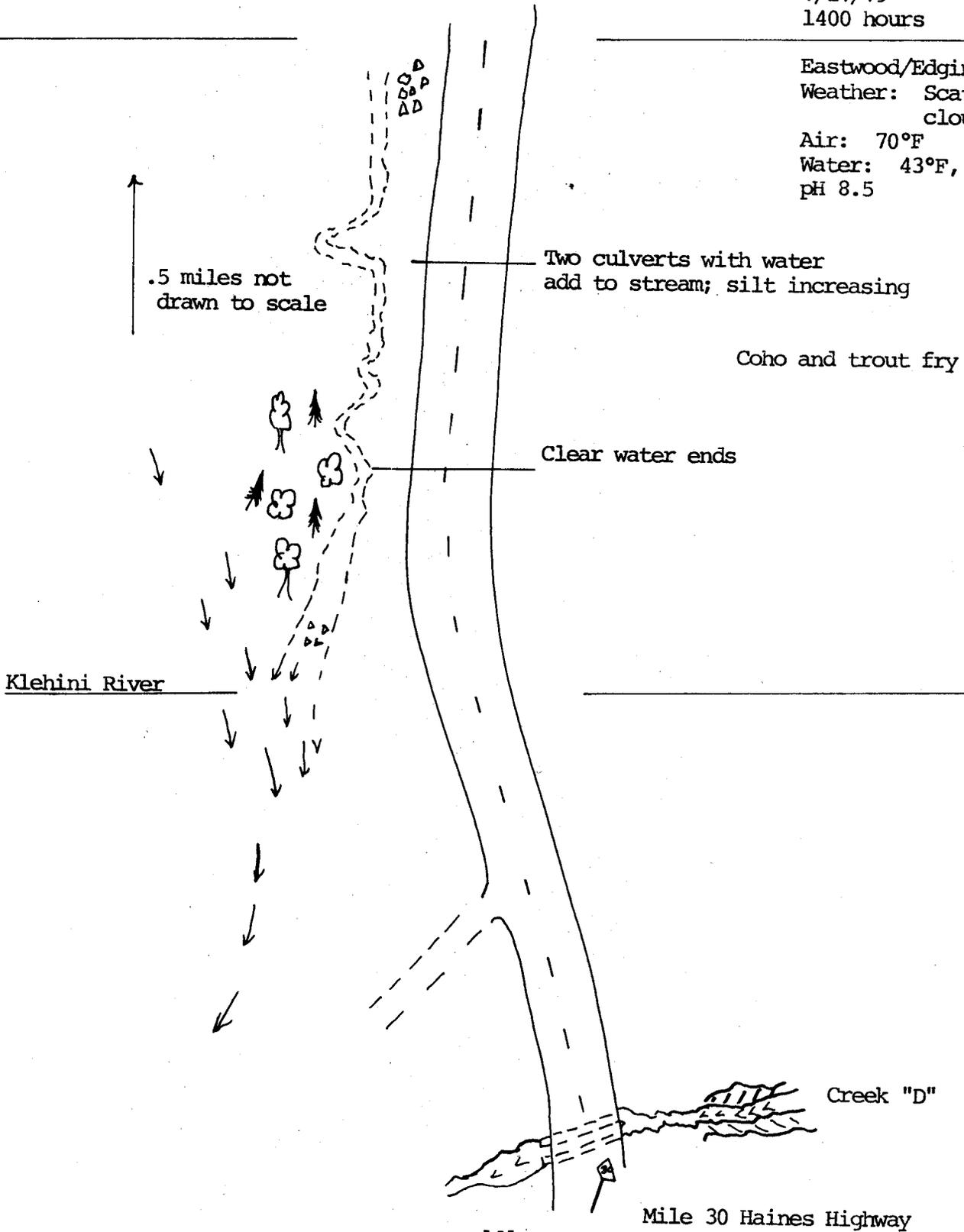
Branch "E"

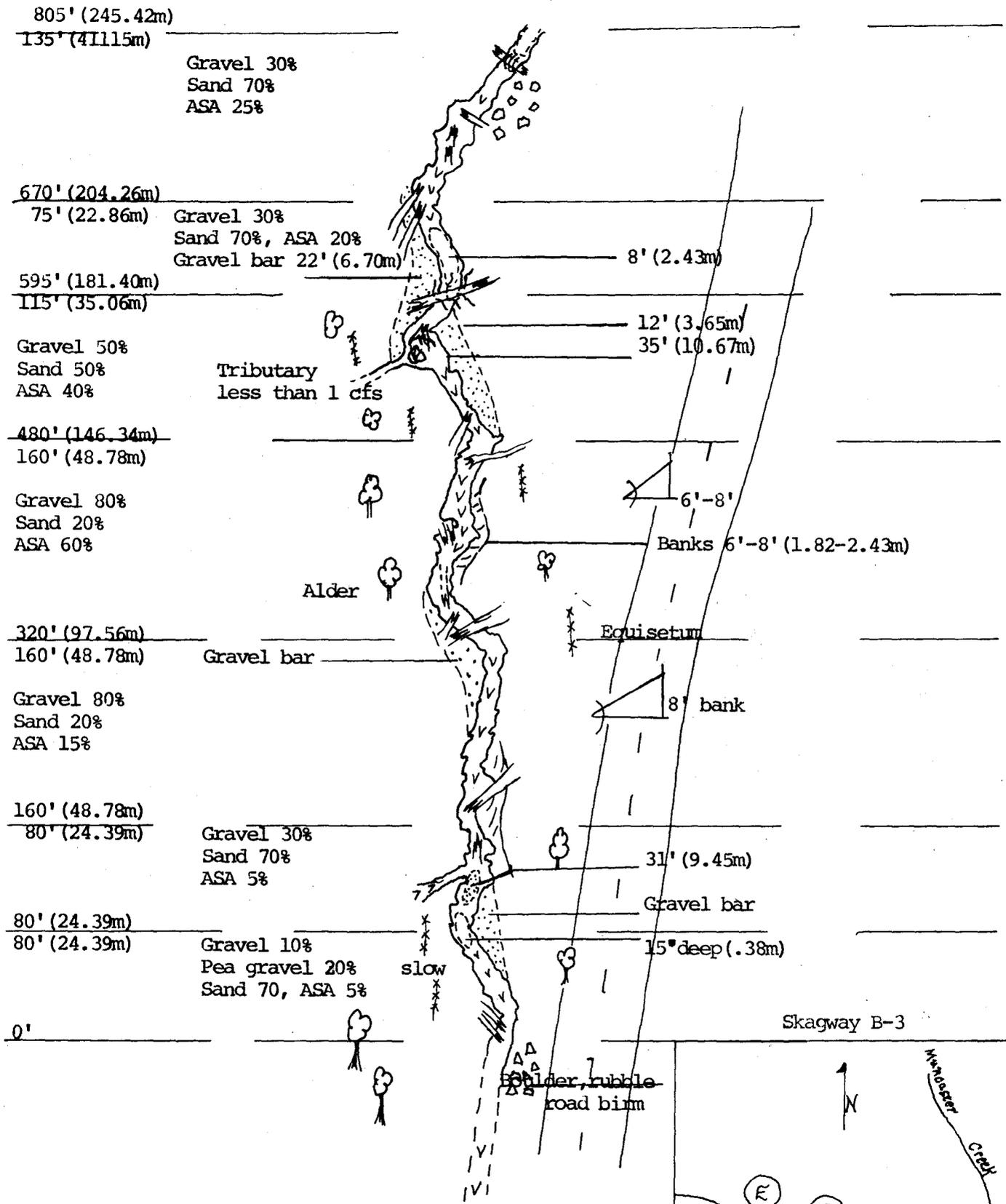
115-32-099
Predominate sand substrate



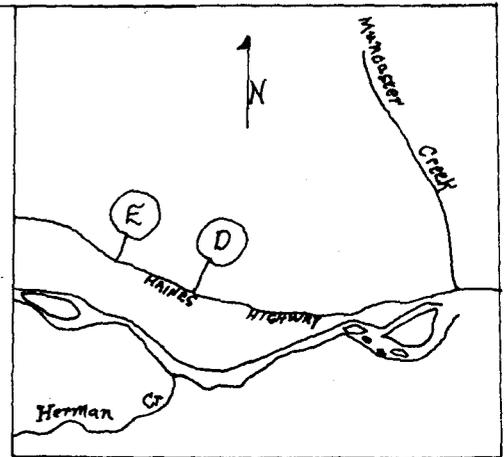
115-32-099
7/27/79
1400 hours

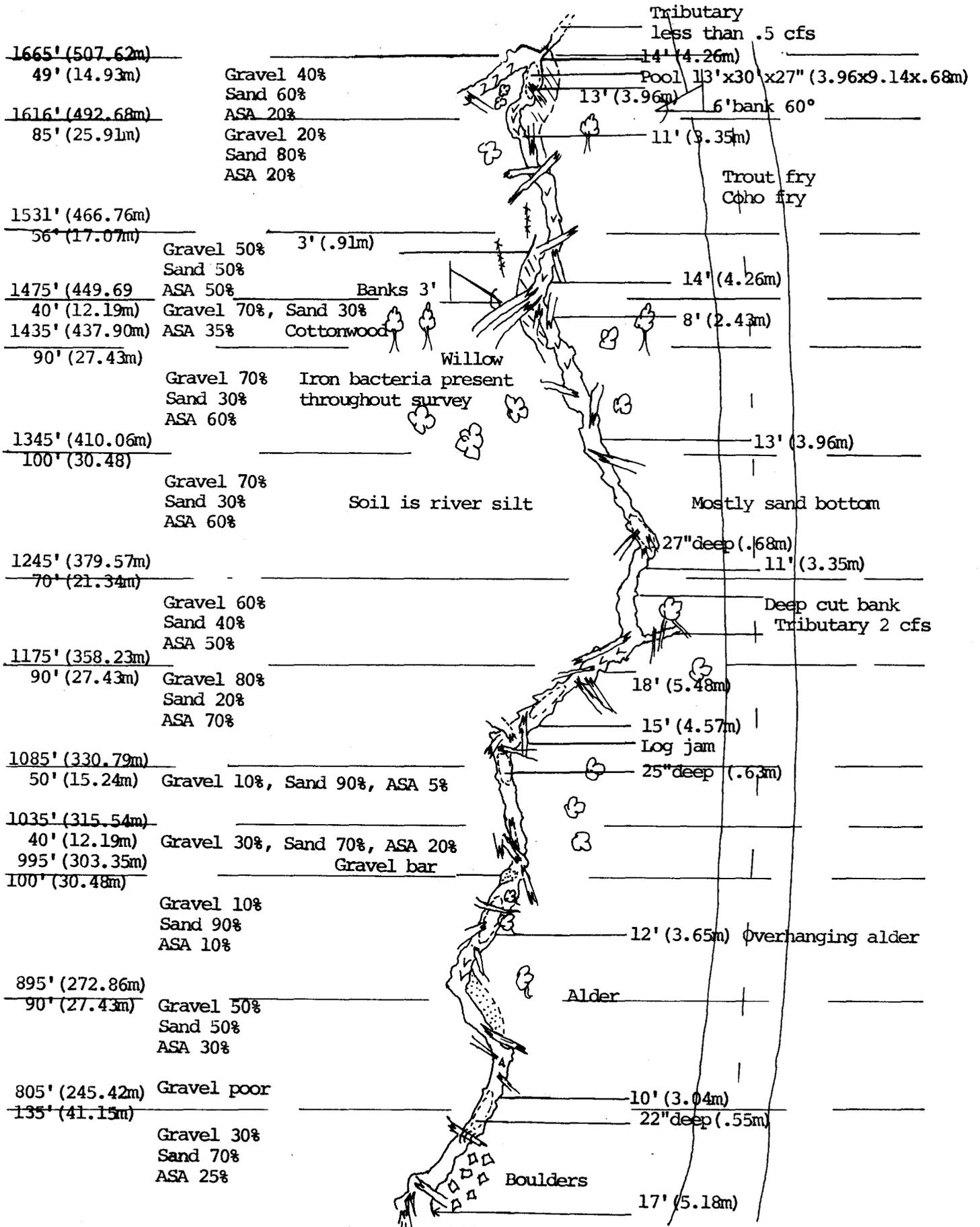
Eastwood/Edgington
Weather: Scattered
clouds
Air: 70°F
Water: 43°F, 8 cfs,
pH 8.5





Skagway B-3





Name: Creek "E"
Latitude: 59 25 30 N
Longitude: 136 06 21 W
Geodetic Map No: Skagway (B-3)
Location: Mile 35 Haines Highway

Catalog No: 115-32-099
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 9585' or 2922.24 meters
Drainage Area: 0.45 square miles
Water Supply Type: Ground runoff

Trails & Survey Routes: Travels along south of Haines Highway for most of it's length.

Aerial Survey Notes: Not necessary but could be done except portion north of roadway.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Spawning is limited no past data on this segment of 115-32-099 designated Creek "E".

Schooling Areas: Perhaps at mouth where it dumps into Klehini River and many small pools.

Spawning Areas: 8,365.15 ft² or 776.4m² for portion surveyed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Coho and trout fry observed.

LAND USE (history, present, proposed): Proposed widening of roadway will not effect much of this stream since most of it's length is well away from road.

REHABILITATION POTENTIAL: None needed.

SOILS: Stream cuts through old Klehini River channel mostly sandy soil over gravel.

GAME RESOURCES (species, use, habitat): None seen.



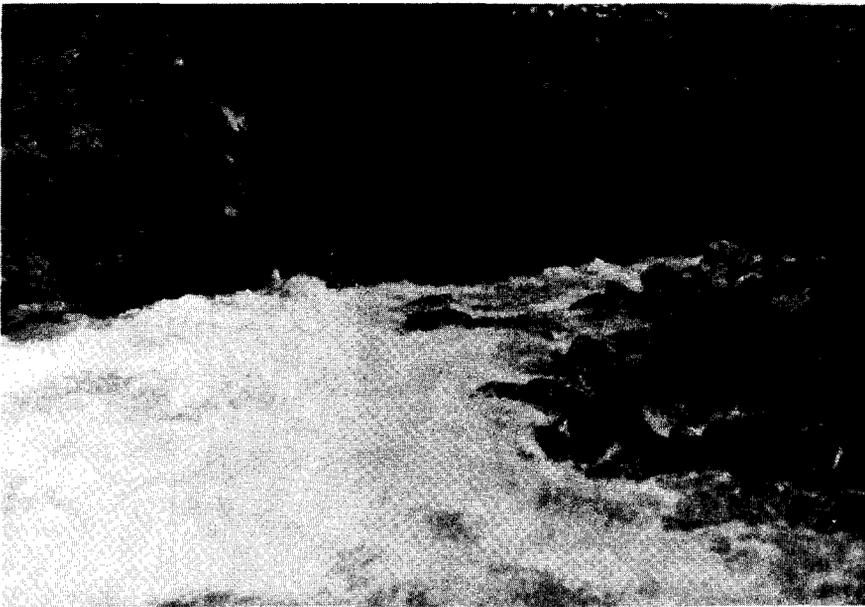
115-32-055

Little Boulder Creek
Lower area

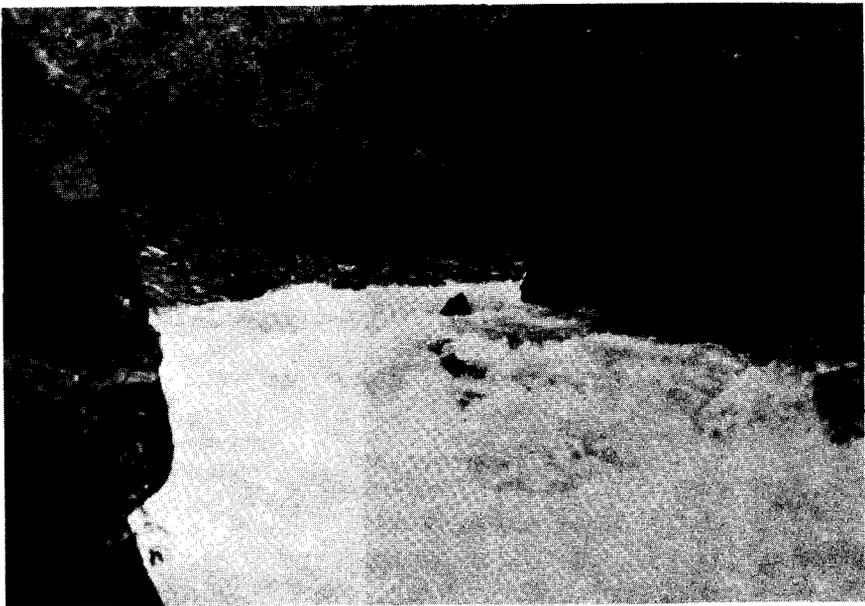


115-32-055

Mouth emptying into
Klehini River



115-32-055
Little Boulder Creek
Downstream view at
gorge



115-32-055
Upstream view at
gorge

115-32-055
 Little Boulder Creek
 7/17/79 9:00
 Walker/Edgington
 Weather: Rain
 Air: 51°F
 Water: 44°F, glacial
 milk tending toward
 clear, pH 7.5, flow
 80 cfs, high

1015' (309.5m)
 260' (79.3m)
 Width 40' (12.2m)

15% boulder
 40% cobble
 40% gravel 4' vertical bank
 5% sand
 Fast water throughout
 Scattered fireweed

ASA 10%, poor
 Gradient 3°
 Bearing 345°

755' (230.2m)
 300' (91.5m)
 Width 40' (12.2m)

20% boulder
 40% cobble
 40% gravel

Fast water throughout
 ASA 10%, poor 3' cut bank

Gradient 3° Banks fairly
 Bearing 310° unstable whole
 455' (138.7m) range

150' (45.7m)
 Width 30' (9.1m)

20% boulder Very firm gravel
 20% cobble in channel
 10% gravel Possible pools at
 50% sand lower water levels
 Fast riffles throughout

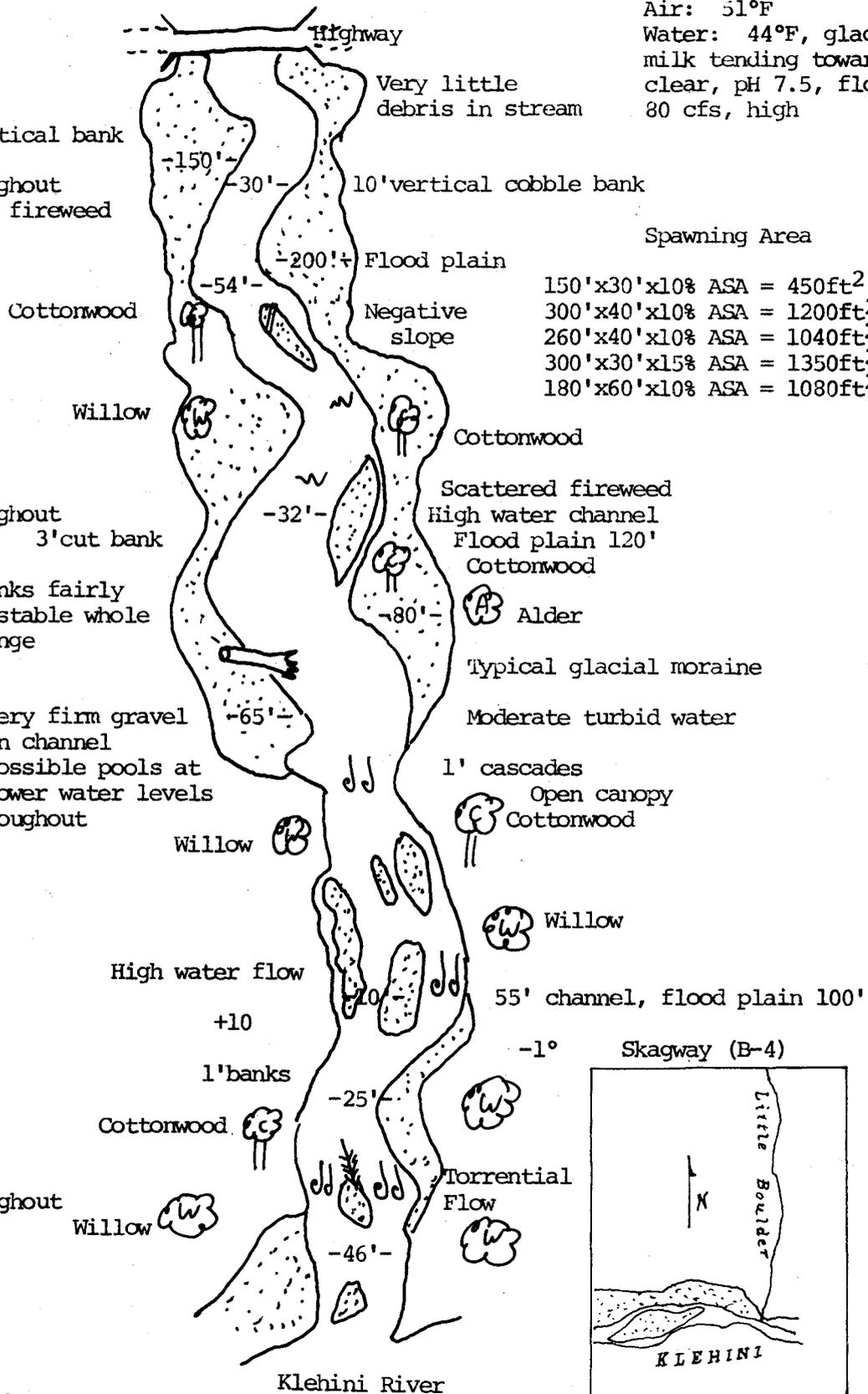
ASA 10%, poor

Gradient 3°
 Bearing 335°

305' (93m)
 305' (93m)
 Width 35' (10.7m)

20% boulder
 30% cobble
 30% gravel
 20% sand
 Torrential throughout
 ASA 0%

Gradient 3°
 Bearing 355°



Spawning Area
 150'x30'x10% ASA = 450ft² (41.7m²)
 300'x40'x10% ASA = 1200ft² (111.1m²)
 260'x40'x10% ASA = 1040ft² (96.3m²)
 300'x30'x15% ASA = 1350ft² (125m²)
 180'x60'x10% ASA = 1080ft² (100m²)

1605' (489.3m)
 110' (33.5m)
 Width 40' (12.2m)

30% cobble
 40% boulder
 20% gravel
 10% sand
 Torrential flow
 ASA 0%

Gradient 4°, Bearing 305°

1495' (455.8m)
 180' (54.9m)

Width 60' (18.3m)
 30% boulder ASA 10%
 30% cobble
 30% gravel
 10% sand

Gradient 3°, Bearing 65°

1315' (400.9m)
 300' (91.5m)

Width 30' (9.1m)
 20% boulder
 40% cobble
 40% gravel

ASA 15%, poor
 Gradient 3°
 Bearing 345°

Pictures up and downstream

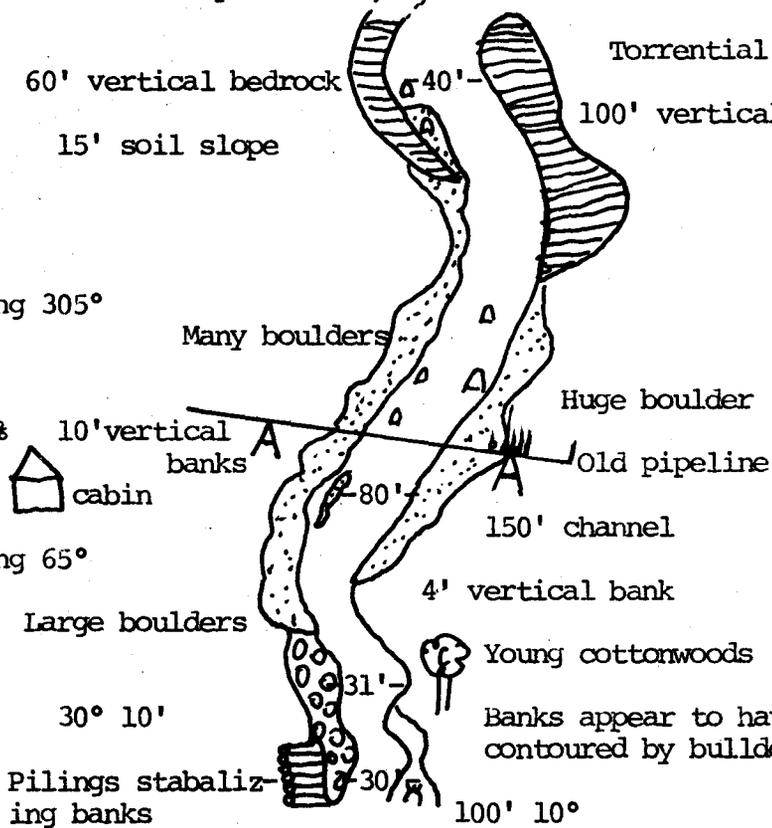
Boulders increasing upstream

60' vertical bedrock

15' soil slope

Torrential flow throughout

100' vertical bedrock gorge



Large boulders

30° 10'

Pilings stabilizing banks

Huge boulder

Old pipeline

150' channel

4' vertical bank

Young cottonwoods

Banks appear to have been contoured by bulldozer

100' 10°

Name: Little Boulder Creek
Latitude: 59 25 30 N
Longitude: 136 07 55 W
Geodetic Map No: Skagway -4
Location: Approximately 33 miles
Haines Highway

Catalog No: 115-32-055
Former Stream No: River Basin Study
USFWS #114
Work Area: Haines - Skagway
Watershed Length: 7.25 miles
Drainage Area: 11.68 miles
Water Supply Type: Runoff and hanging
glacier.

Trails & Survey Routes: Easy walking along moraine banks in section below
bridge; 100' above old pipeline stream enters gorge with impossible
walking conditions.

Aerial Survey Notes: Primarily open canopy with some bushy overhang in
area surveyed.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
King salmon spawning stream, August spawning.

ASA = 5120 ft² (474.1 m²) for area surveyed.

Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Pilings stabilize banks just upstream
from highway bridge; old pipeline remains suspended above stream; occupied
cabin borders stream.

REHABILITATION POTENTIAL: None needed

SOILS: Moraine banks generally unstable.

GAME RESOURCES (species, use, habitat): _____

PEAK ESCAPEMENT RECORD

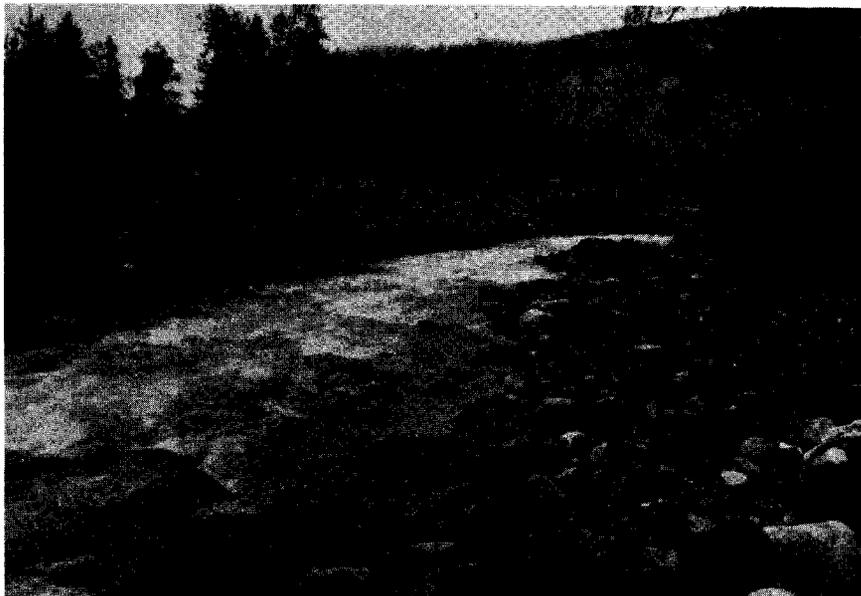
115-32-055

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/18/60			19 Chinook	
8/28/64			5 Chinook	



115-32-054
Below highway

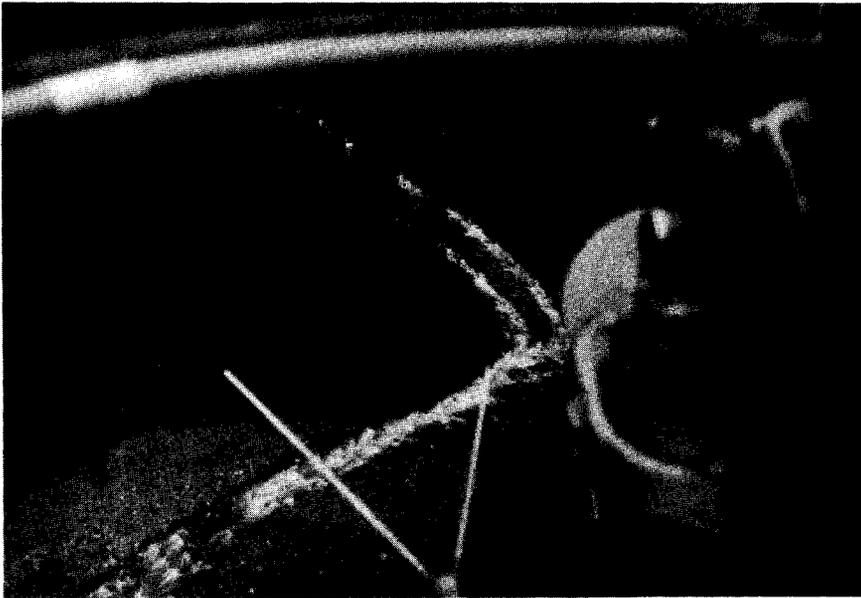
115-32-054
Above highway





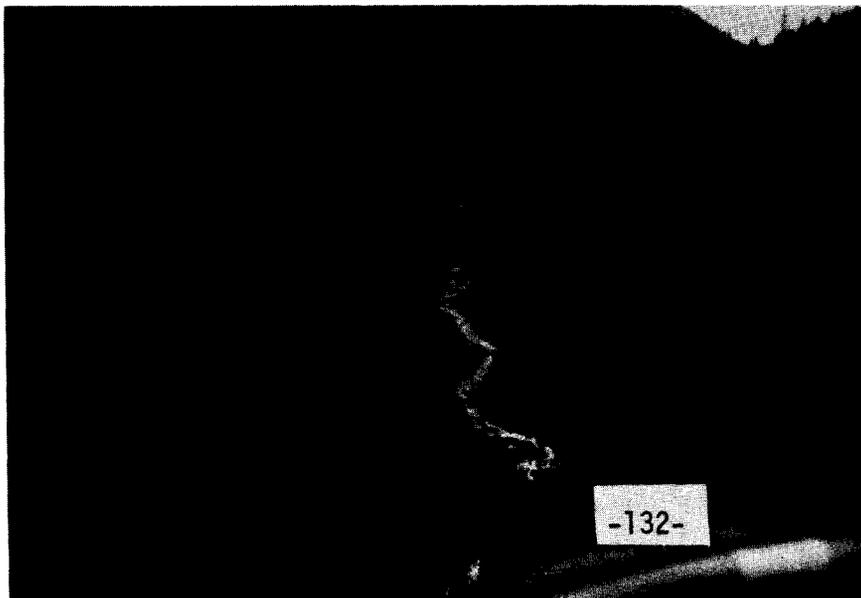
115-32-054

Big Boulder Creek
Lower area



115-32-054

Mid-stream area



115-32-054

-132-



115-32-054

Small surface tributary



115-32-054

Boulder dominated
incised stream



I15-32-054

Side slough - where rearing
chinook were trapped in the
warmer water.



115-32-054

Headwaters



115-32-054

Tributary at
headwaters



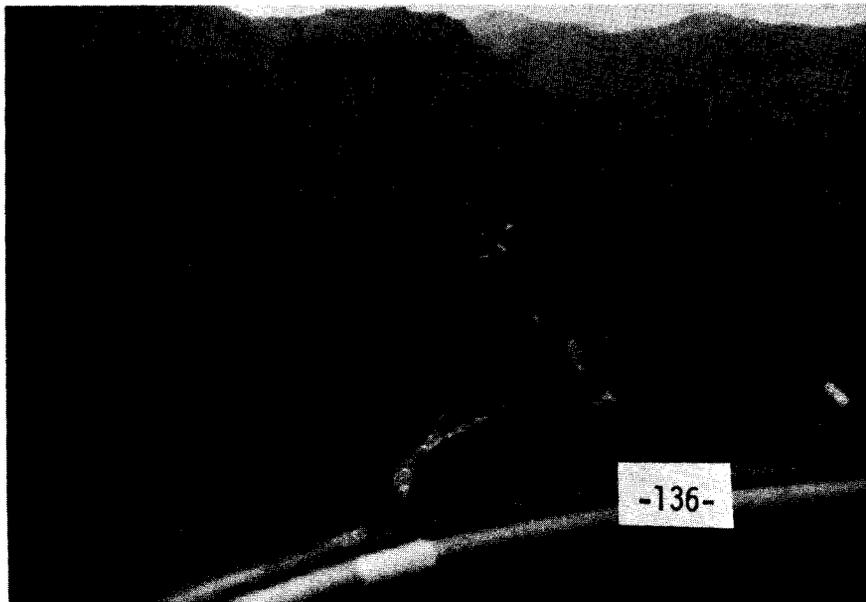
115-32-054

Big Boulder Creek



115-32-054

Below alpine



115-32-054

Alpine area

115-32-054
 Big Boulder Creek
 7/17/79
 Walker/Edgington

ASA estimated at high
 water flows est 320 cfs

870' (265.2m)
 200' (61m)
 Width 34' (10.4m)
 20% boulder
 40% cobble
 30% gravel
 10% sand
 ASA 5%
 Gradient 3°
 Bearing 315°
 670' (204.3m)
 240' (73.1m)
 Width 80' (24.4m)

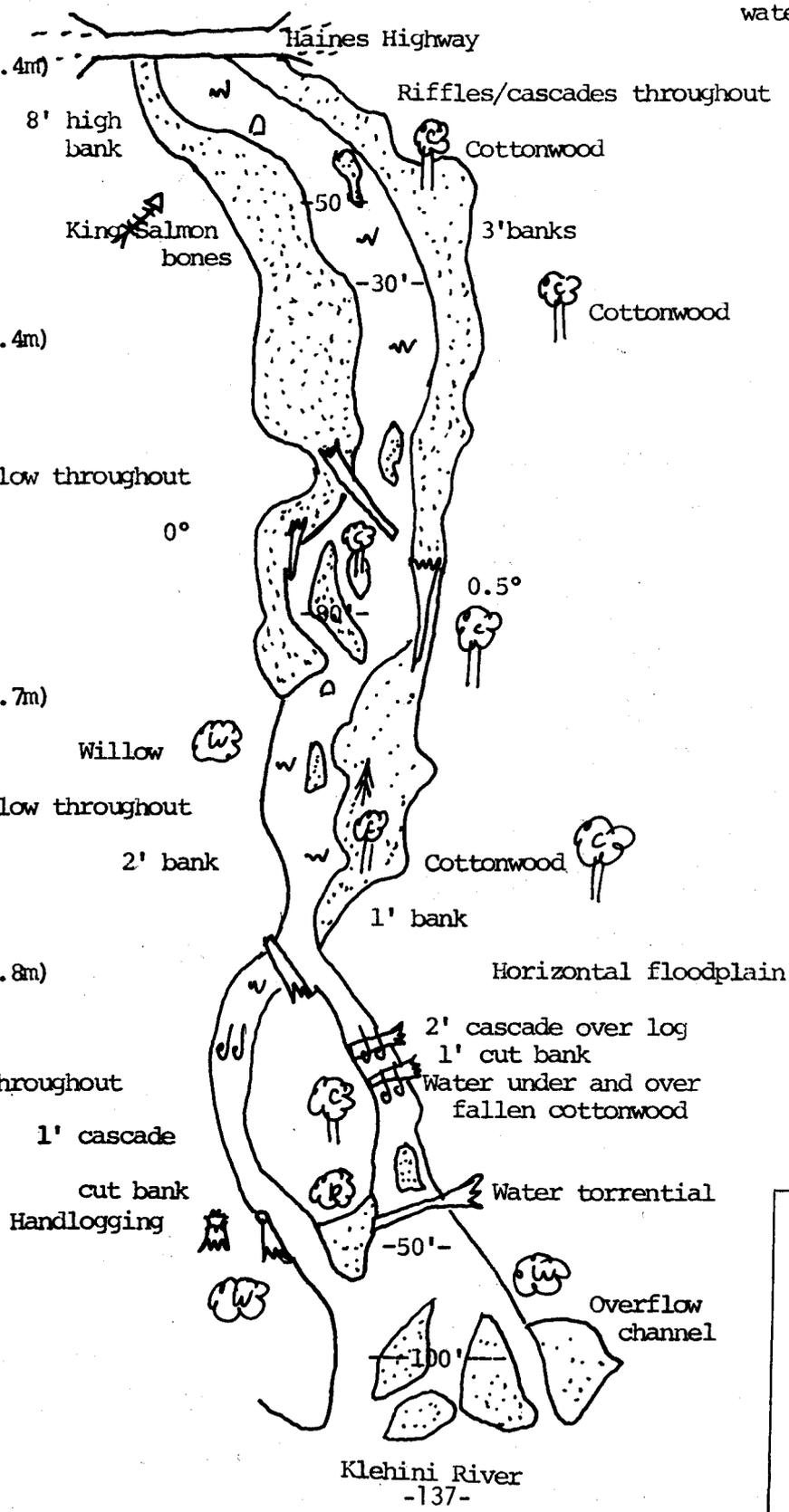
20% boulder
 50% cobble
 30% gravel
 Torrential Flow throughout
 ASA 10%
 Bearing 347°
 Gradient 3°

430' (131.1m)
 200' (61m)
 Width 35' (10.7m)

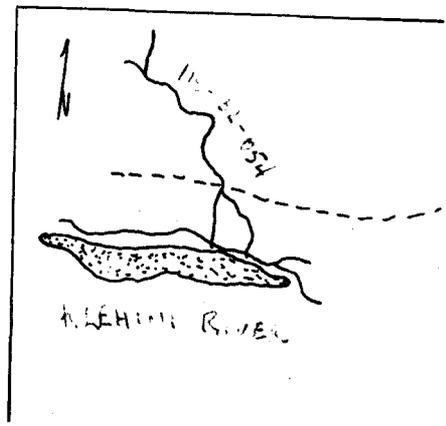
40% boulder
 60% cobble
 Torrential flow throughout
 ASA 5%
 Gradient 3°
 Bearing 345°
 230' (70.1m)
 230' (70.1m)
 Width 65' (19.8m)

90% boulder
 10% cobble
 Torrential throughout
 ASA 5%

Gradient 3°
 Bearing 0°



Skagway (B-4)



1215' (370.4m)

120' (36.6m) Torrential flow

Width 25' (7.6m)

30% boulder ASA 0%

40% cobble 3' gravel banks

20% gravel Open canopy

10% sand

Gradient 4°, Bearing 325°

1095' (333.8m)

225' (68.6m)

Width 30' (9.1m)

20% boulder

35% cobble

40% gravel

5% sand

Torrential cascades

ASA 0%

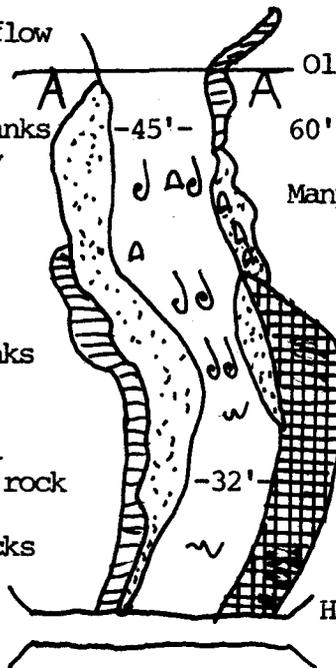
Gradient 4°

Bearing 300°

Unstable banks

30' vertical bed rock

Moose tracks



Old water pipeline

60' vertical bed rock

Many spruce, cottonwood on surrounding hills

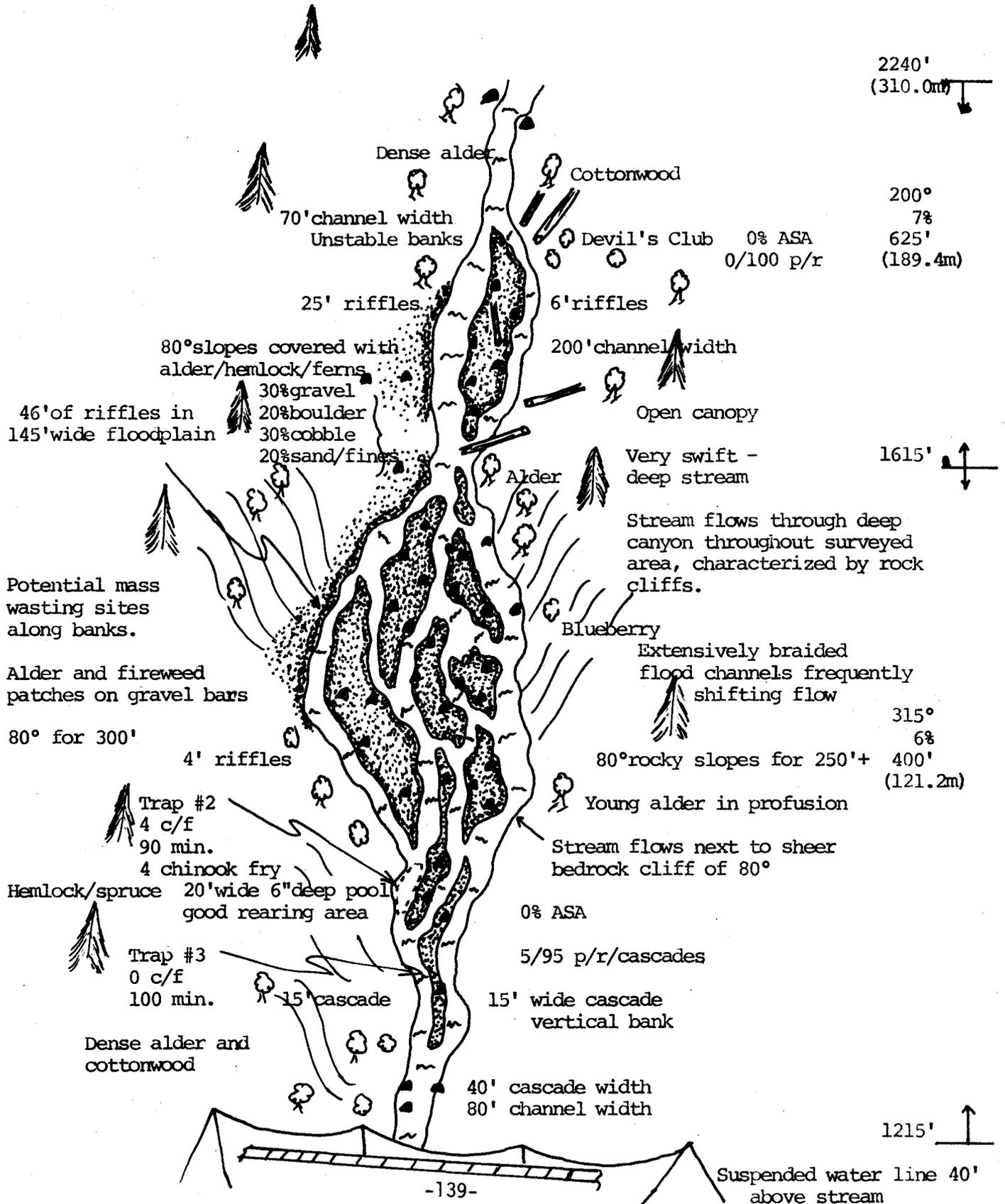
30' 20°

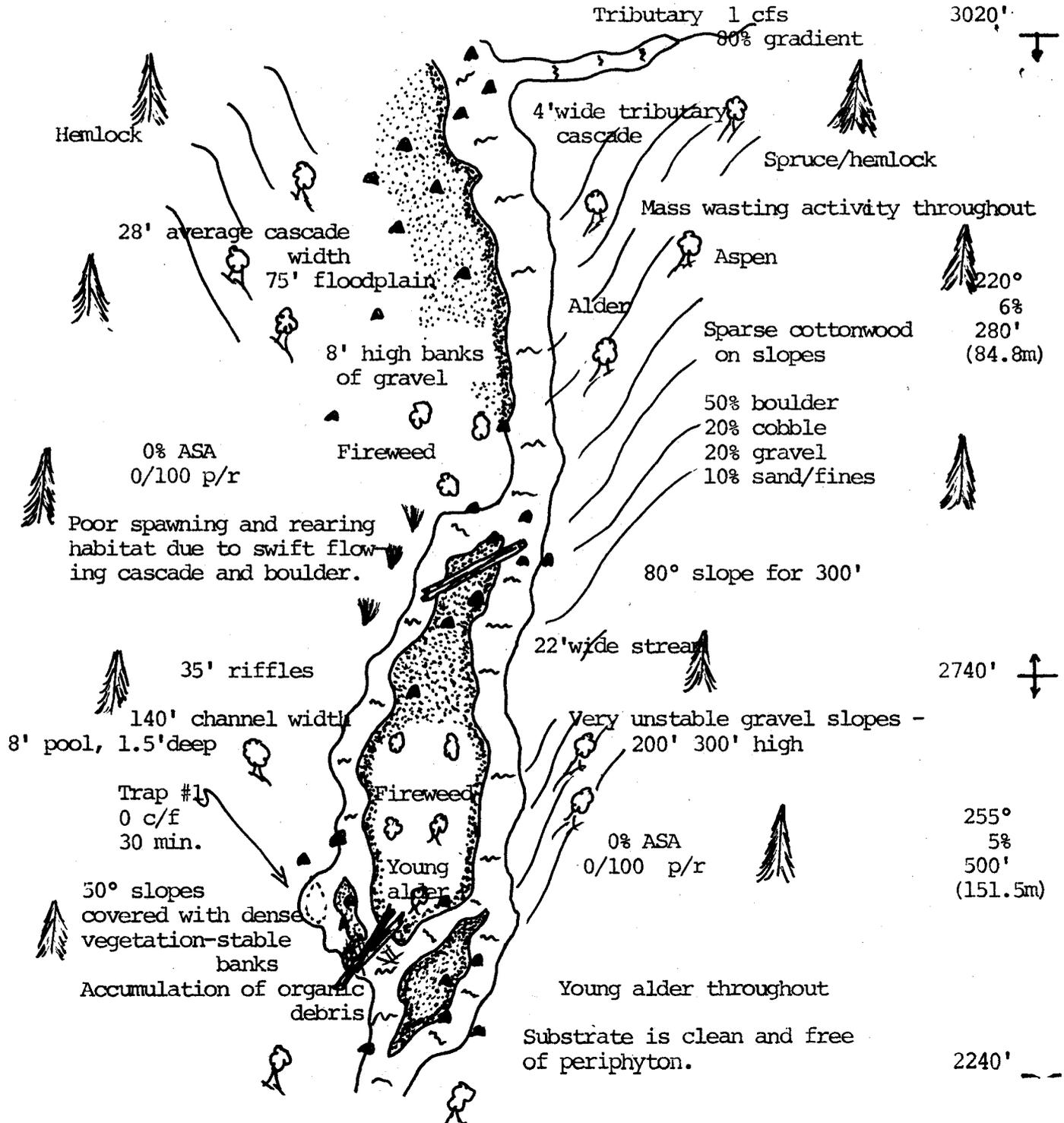
Retaining mesh - cobble beneath

Haines Highway

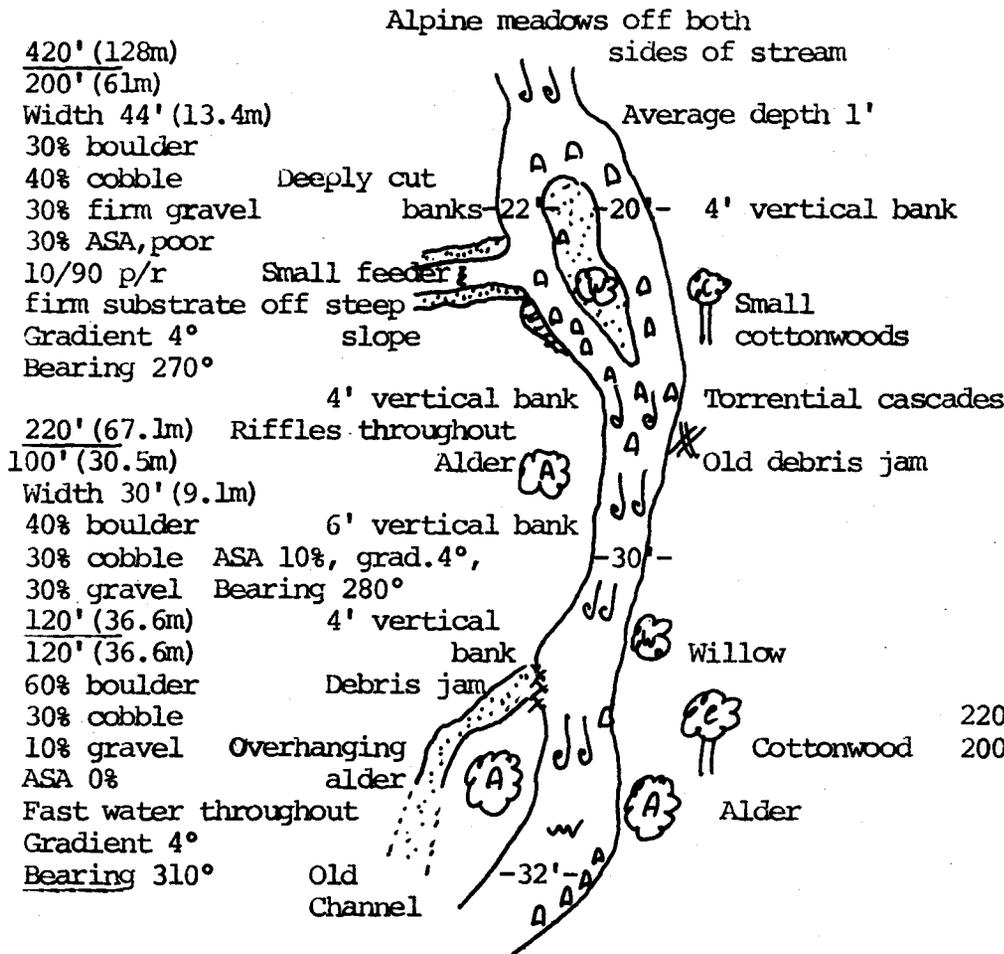
Weather: Overcast/rain
 Air: 59°F
 Water: 49°F, silty/turbid, 320 cfs
 PH: 7.7

115-32-054
 Big Boulder Creek
 7/17/79





115-32-054
 Big Boulder Creek
 Upper watershed
 7/18/79 14:30
 Walker/Edgington
 Weather: overcast
 Air: 55°F
 Water: 46°F
 pH: 7.5
 Flow: 100 cfs, high water



ALT 2150' above sea-level, very few trees remaining in area, alpine setting
 2 traps, set 45 min.
 0 fish caught
 1 trap set 50 min.
 2-5" Dolly Varden

Spawning Area
 220'x30'x10% ASA = 660ft² (61.1m²)
 200'x44'x15% ASA = 2640ft² (244.4m²)

Section of stream appears to be well above king salmon spawning areas

Name: Big Boulder Creek
Latitude: 59 25 40 N
Longitude: 136 11 30 W
Geodetic Map No: Skagway B-4
Location: Approximately 10 miles north of Wells on Haines Highway

Catalog No: 115-32-054
Former Stream No: River Basin Study
USFWS # 116
Work Area: Haines - Skagway
Watershed Length: 8 miles (in Alaska)
Drainage Area: 10 square miles (in Alaska)
Water Supply Type: Runoff and glacial

Trails & Survey Routes: Easy access along moraine banks.

Aerial Survey Notes: Open canopy throughout; upper stream passes through narrow walled canyon - helicopter advisable.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Good King salmon producer, chinook fry caught in traps.

Spawning area: 616.4
Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Dolly Varden caught in traps.

LAND USE (history, present, proposed): Old pipeline crosses stream; highway bridge passes over stream; easy access to areas below bridge by adjoining roads over moraine.

REHABILITATION POTENTIAL: Increased rearing areas would increase King salmon production.

SOILS: Moraine banks generally unstable.

GAME RESOURCES (species, use, habitat): Moose sign noted.

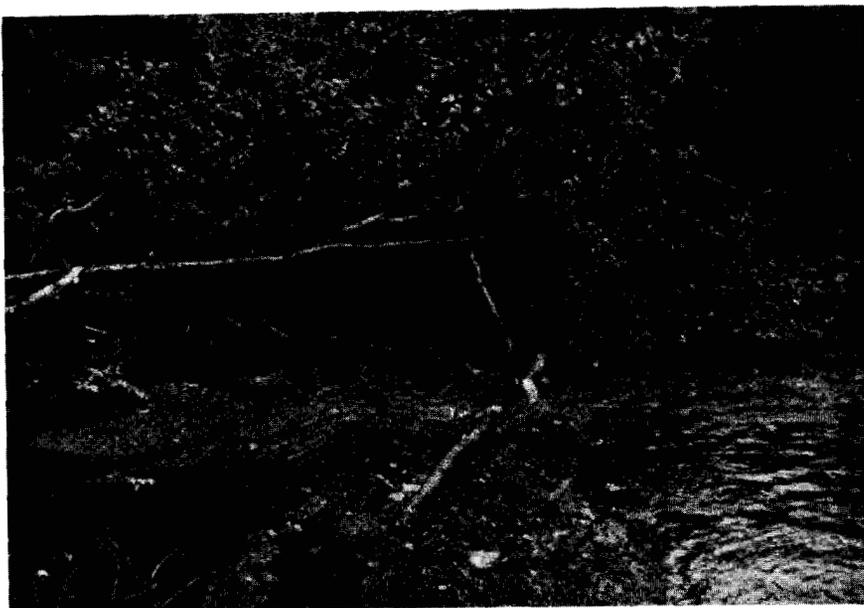
PEAK ESCAPEMENT RECORD

115-32-054 Big Boulder Creek

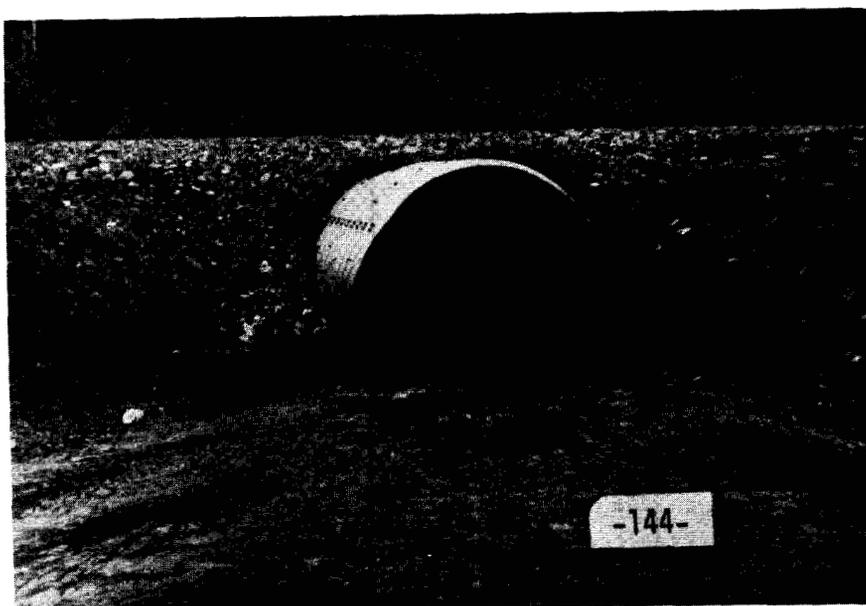
DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/11/60			316 Chinook	
8/9/67			150 Chinook	
8/5/68			259 Chinook	
8/16/70			176 Chinook	
8/13/71			56 Chinook	
8/25/72			20 Chinook	
8/7/75			7 Chinook	
7/28/77			25 Chinook	



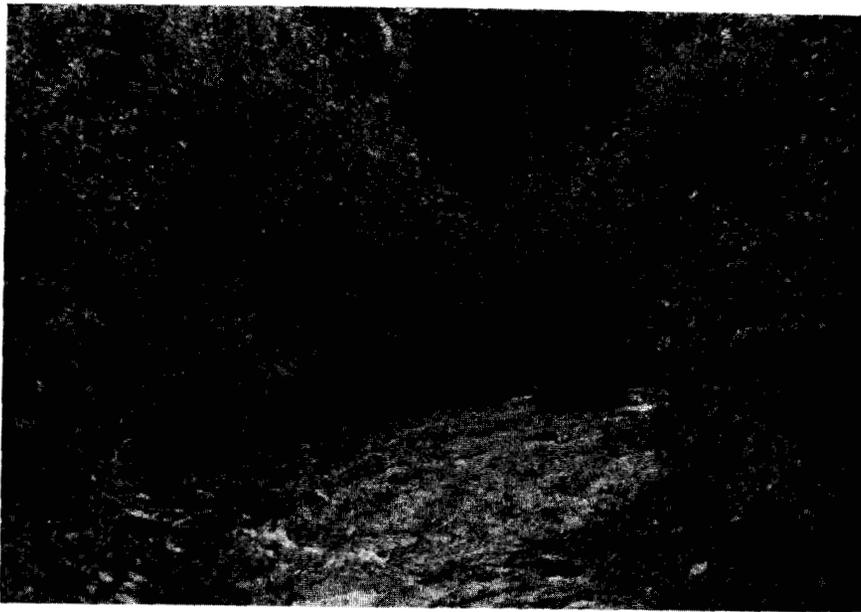
115-32-053
Cleared area



115-32-053
Below road where
stream enters dense
willow and alder

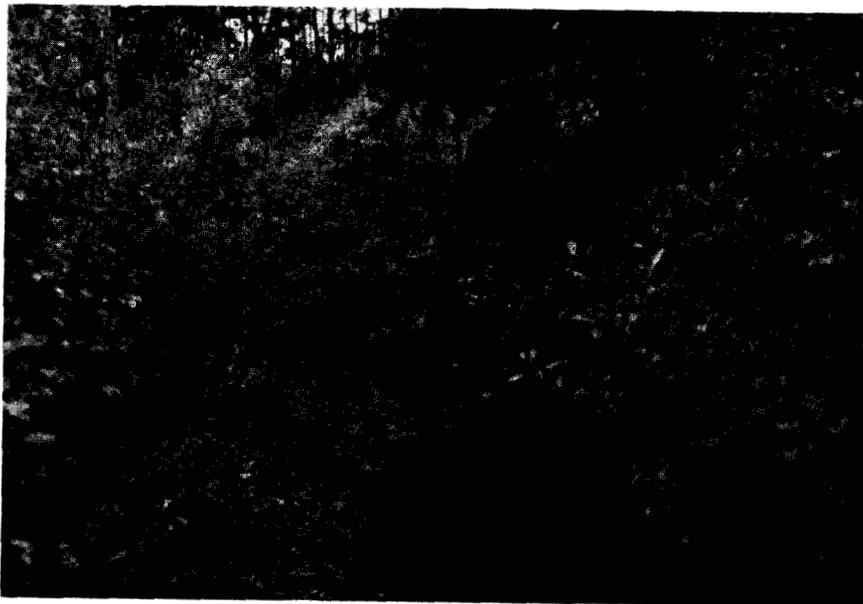


115-32-053
Culvert at
highway



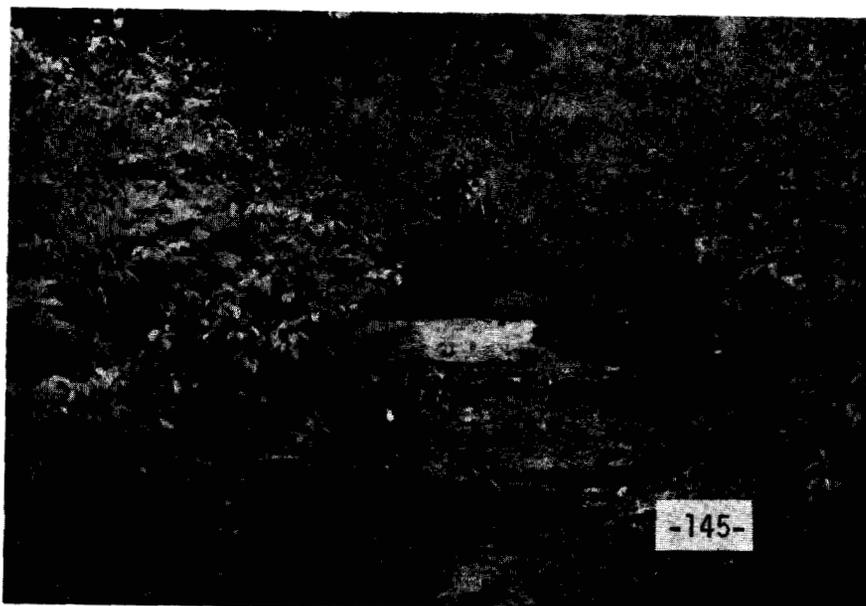
115-32-053

Hand-cleared area
of stream in old
clearcut.



115-32-053

Cleared area



115-32-053

Cleared area

Spawning Area

- 80'x14'x80% ASA = 896ft² (83m²)
- 75'x 8'x60% ASA = 360ft² (33.3m²)
- 65'x12'x50% ASA = 390ft² (26.1m²)
- 100'x12'x20% ASA = 240ft² (22.2m²)
- 130'x 4'x30% ASA = 216ft² (20m²)
- 120'x 6'x10% ASA = 72ft² (6.7m²)
- 100'x 6'x40% ASA = 240ft² (22.2m²)
- 100'x 7'x30% ASA = 210ft² (19.4m²)

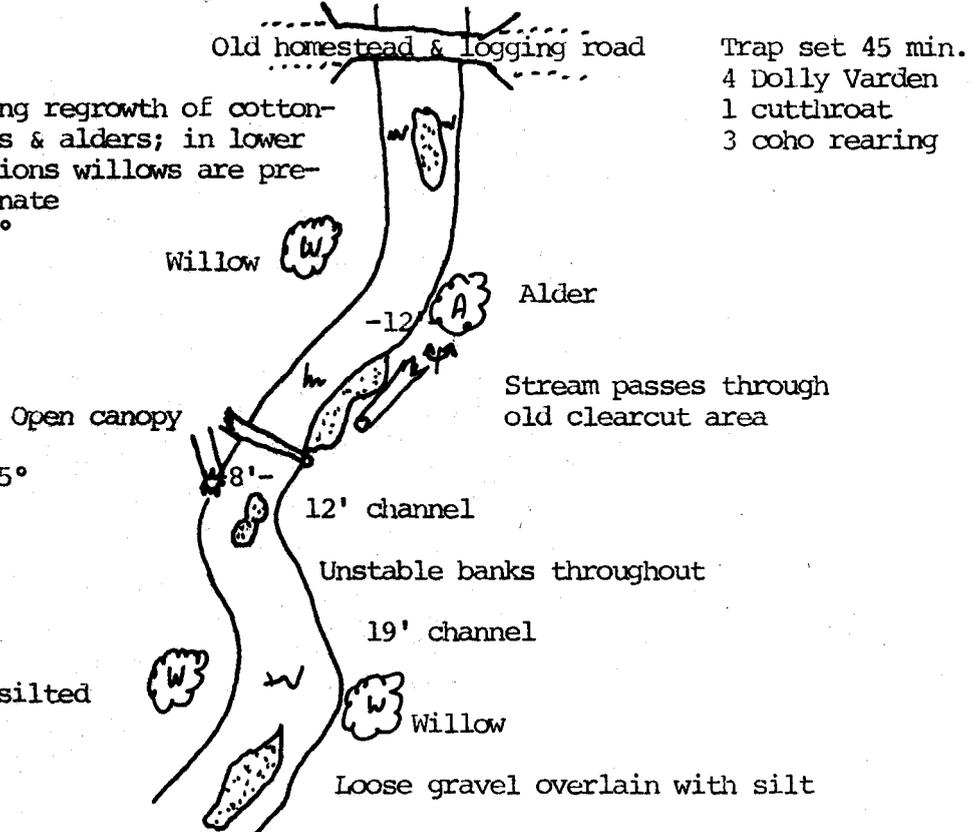
115-32-053
 7/17/79 12:55
 Walker/Edgington
 Weather: Rain
 Air: 59°F
 Water: 49°F
 pH: 7.5, clear water
 Flow-est: 9 cfs, high

For 150' upstream old logging debris creates blocks in channel; much metal debris and silt obscuring bottom; small patches of exposed but insilted gravel.

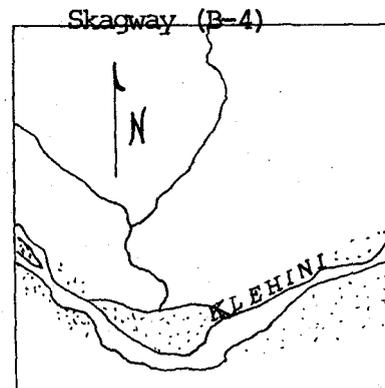
220' (67.1m)
 65' (19.8m)
 Width 12' (3.6m)
 40% cobble
 60% gravel
 100% riffles
 ASA 50%, poor
 Gradient 1°, Bearing 0°

155' (47.3m)
 75' (22.9m)
 Width 8' (2.4m)
 40% cobble
 60% gravel
 Riffles throughout
 ASA 60%, poor
 Gradient 1°, Bearing 35°

80' (24.4m)
 80' (24.4m)
 Width 14' (4.3m)
 20% cobble
 80% gravel
 Pool/riffle 10/90
 ASA 80% poor, loos, insilted
 Gradient .5°
 Bearing 300°



Stream clearing in 1972 has allowed the major portion of silt to clear from stream although gravel is still imbedded. Gradient is not enough to completely clean spawning gravel.



680' (512.2m)

80' (24.4m)

Width 6' (1.8m)

20% boulder, 40% cobble, 40% gravel

ASA 0%

Gradient 4°

Bearing 0°

690' (182.9m)

100' (30.5m)

Width 7' (2.1m)

10% boulder, 40% cobble, 50% gravel

P/R 5/95

ASA 20%, poor

Gradient 3°

Bearing 55°

500' (152.4m)

100' (80.5m)

Width 6' (1.8m)

10% boulder, 40% cobble, 50% gravel

Riffles and cascades throughout

ASA 40%, poor, firm gravel

Gradient 4°, bearing 70°

400' (122m)

120' (36.6m)

Width 6' (1.8m)

10% boulder, 20% cobble,

50% gravel, 20% sand

P/R 10/90

ASA 10%, poor

Gradient 5°

Bearing 90°

280' (85.4m)

180' (54.9m)

Width 4' (1.2m)

60% cobble

40% gravel

Riffles throughout

ASA 30%

Gradient 3°

Bearing 135°

100' (30.5m)

100' (30.5m)

Width 12' (3.7m)

10% cobble

20% gravel

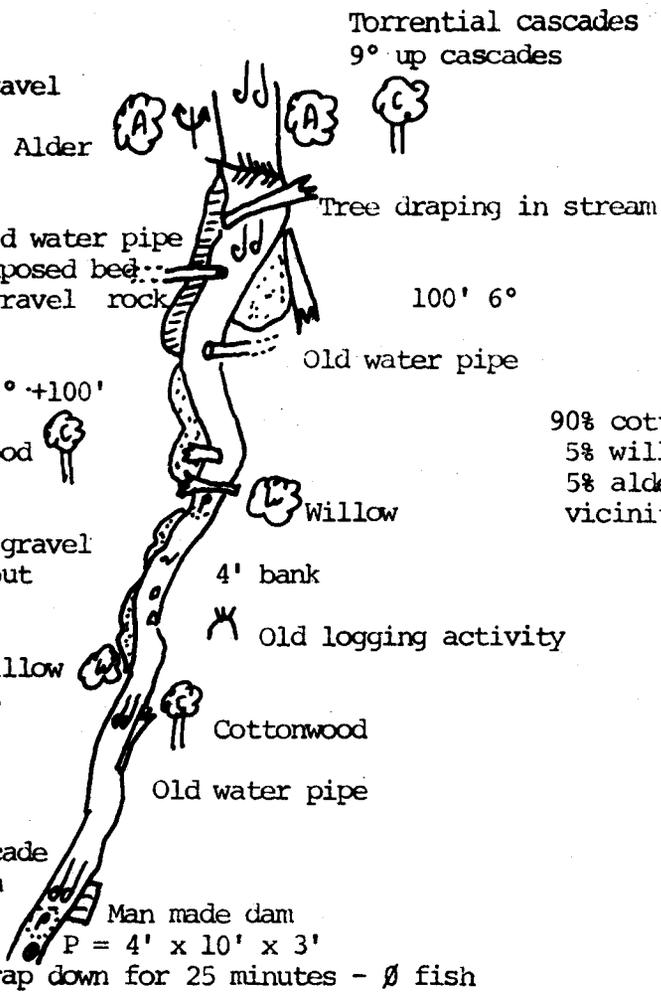
70% sand

P/R 20/80

ASA 20% poor, much siltation

Gradient 2°

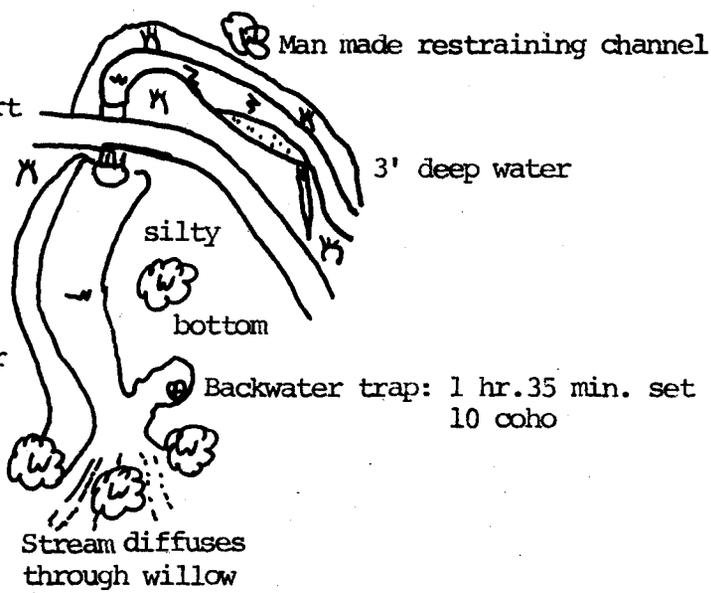
Bearing 65°



Trap down for 25 minutes - 0 fish

180'

Bearing 135°



Name: _____
Latitude: 59 25 50 N
Longitude: 136 18 40 W
Geodetic Map No: Skagway B-4
Location: Approximately 38 miles
Haines Highway
Catalog No: 115-32-053
Former Stream No: River Basin Study
USFWS #117A
Work Area: Haines - Skagway
Watershed Length: 2.5 miles
Drainage Area: 1.40 square miles
Water Supply Type: Runoff

Trails & Survey Routes: Stream is easily walked.

Aerial Survey Notes: Overhanging willow and alder obscures stream in many places.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho and chum - October and September.

ASA = 2624 ft² (243m²) for area surveyed.

Schooling Areas: _____

Spawning Areas: _____

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Dolly Varden and cutthroat trout present in lower stream and access provided by old logging - homestead road.

LAND USE (history, present, proposed): Abandoned homestead borders lower stream and stream passes through clearcut. Old water intake pipes in upper stream; man made dam 200' upstream from road culvert; main stream channel has apparently been directed into willow thicket by bulldozer in past years to prevent road washout.

REHABILITATION POTENTIAL: Removal of man made dam would provide easier access to upstream areas; lower sections still silted from old logging activity; logging debris needs to be cleared.

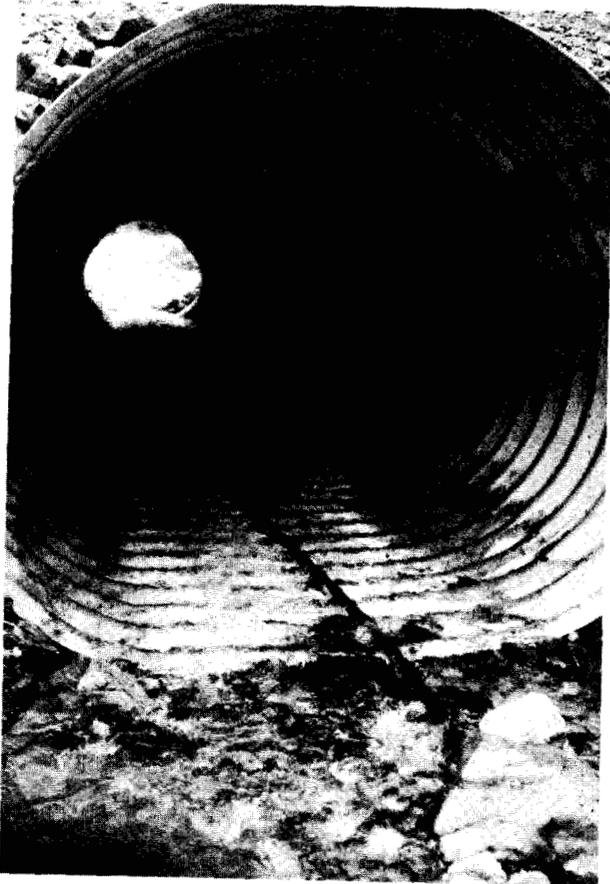
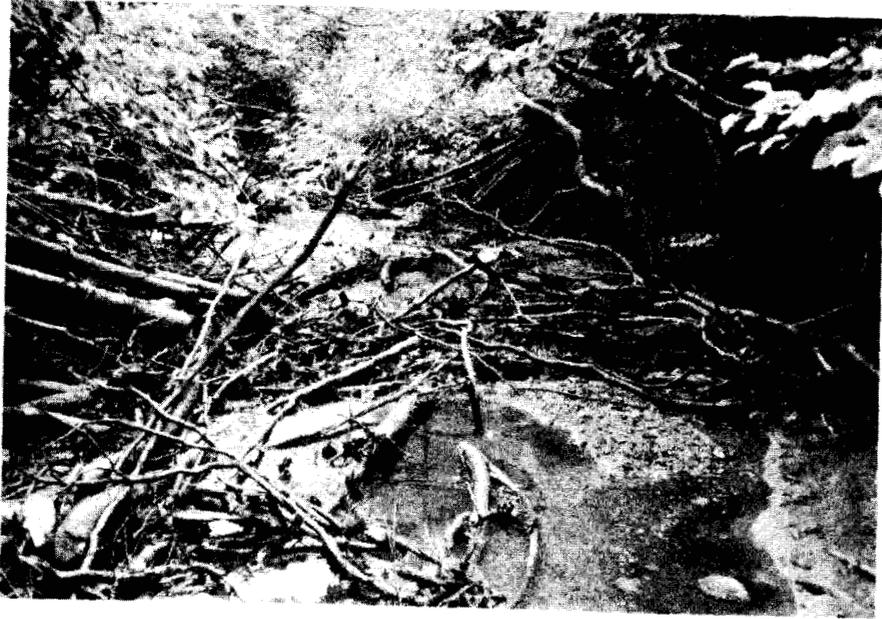
SOILS: Banks unstable in lower sections.

GAME RESOURCES (species, use, habitat): Moose signs noted.

PEAK ESCAPEMENT RECORD

115-32-053

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
10/6/60		32		
10/19/60			46 Coho	
11/16/76			27 Coho	Includes 7 above road

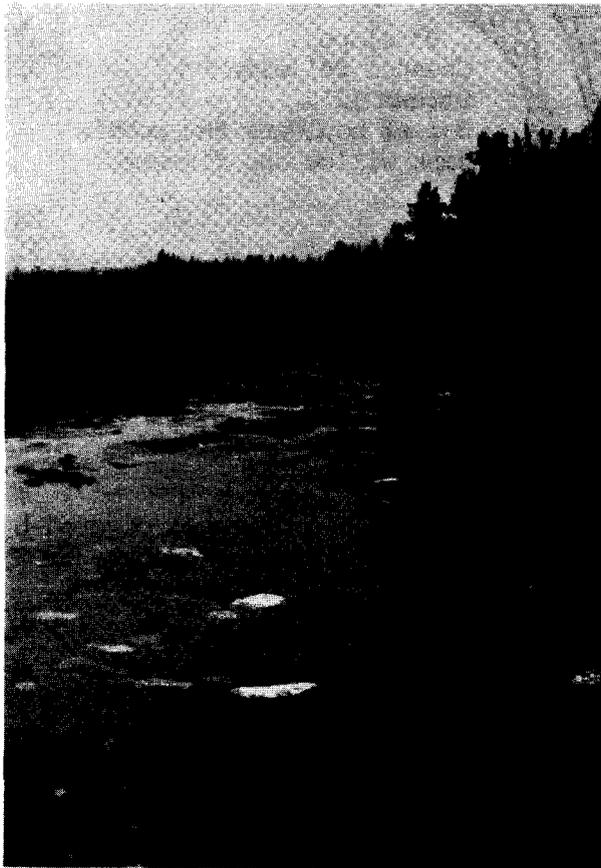


115-32-097

Highway culvert



115-32-097



115-32-097

Weather: Overcast and rain
 Air: 56°F
 Water: 49°F, clear, pH 8.75
 Flow 2-3 cfs

Mile 39.5 Haines Highway
 115-32-097
 7/17/79 1:00 PM
 Thayer, Berg

Open canopy near mouth, closed upstream, open again by highway

Left bank is alluvial fir first 1000', gravel and silt supporting willow and fireweed, right bank is gravel stabilized by fireweed, willow and alder.

Pool/riffle 15/85

Good rearing available, but no fry were observed or trapped.

10% cobble
 20% boulders
 70% Silt mixed with pea-gravel

20% Gravel
 40% Cobble
 20% Sand
 20% Boulder
 7% ASA

Channel and stream width 40' 770' (233m)

Bar of sand and boulders

Water flows through cobble and boulders.
 Bar of sand and boulders.

27' stream
 36' channel
 1° gradient
 0° slope

10% boulders
 90% silt mixed with pea-gravel

alder

0° slope
 Alder and willow 60' then spruce and hardwood.

Channel and stream 19' wide, 1' bank, willow, alder, fireweed, horsetail

Sandpiper
 0° slope
 Alder for 100' then hardwood - slow riffles

10% boulders
 10% gravel
 10% sand
 70% cobble
 Moderately firm substrate
 5% ASA

70% gravel
 20% cobble
 10% boulder

0° slope
 Channel 24' wide
 Stream 12'
 Bar of boulders and cobble
 bank willow and fireweed

285°

470' (142m)
 320°

100% sand with brown algae

2° Gradient

Channel width 34'
 Stream width 8' left side
 18' right side

Cobble island

305' (92m)
 310°

Stream width 41'

Pool has 0° gradient
 100% cobble
 5% ASA (lowflow)

55° slope
 White boulders

Islands cobble and gravel covered by fireweed also fireweed on bars - riffle has 2° gradient

0° Gradient

Silt substrate with less than 5% scattered gravel
 brown algae on bottom
 ASA 0°
 4' bank

90' (27m)

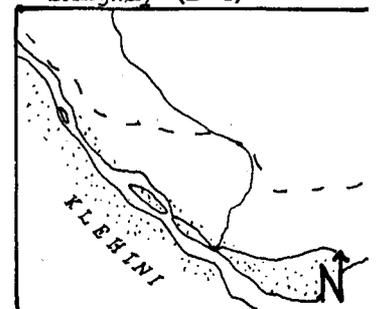
Stream 20' wide
 Minnow trap in mouth collected wood debris - Gravel
 no fish River Channel

Large rock in mouth mixing of glacial and clear water where river flows in (arrows)

Skagway (B-4)

Klehini River

Rapids on river



1° gradient

Channel 35'
Stream 16'

90% gravel
5% sand
5% boulders

20% boulders
75% cobble
5% gravel

Stream 8' wide
Channel 26'
45% ASA

1° gradient

Channel and stream 23'
Boulder 10' tall

80% gravel
10% sand
5% boulders

Minnow trap set for 5 min.
No catch

60% ASA

0° slope, willow and grass

35' channel width
16' stream
X = partial dam
Man-made of wire, screen and boulders

Plank foot bridge

X=homemade refrigerator

New home on bank overlooking channel

Willow - alder

Alder

Pool 20' wide, 31' long, 2" deep with gravel and organic bottom (no boulders because they were used to construct the dam)

260°

Man-made dam of boulders and visqueen

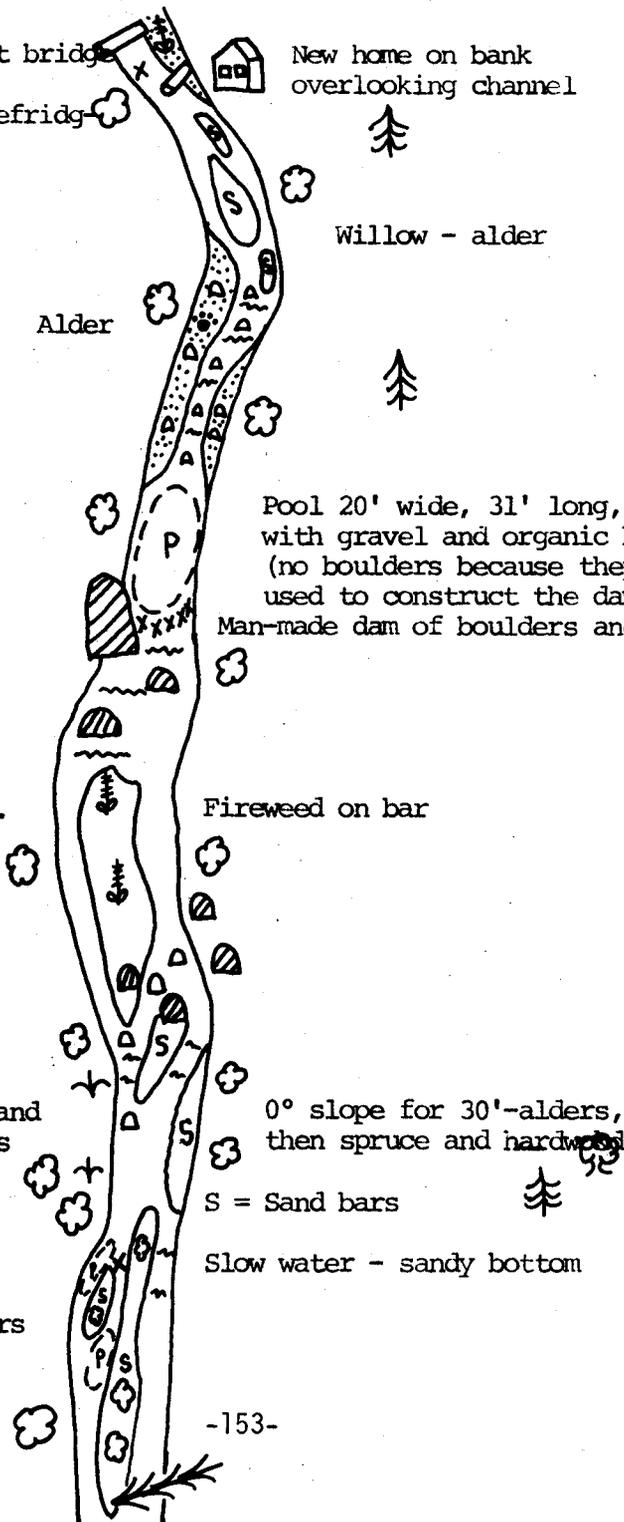
970' (294m)
277°

Fireweed on bar

0° slope for 30'-alders, then spruce and hardwood

S = Sand bars

Slow water - sandy bottom



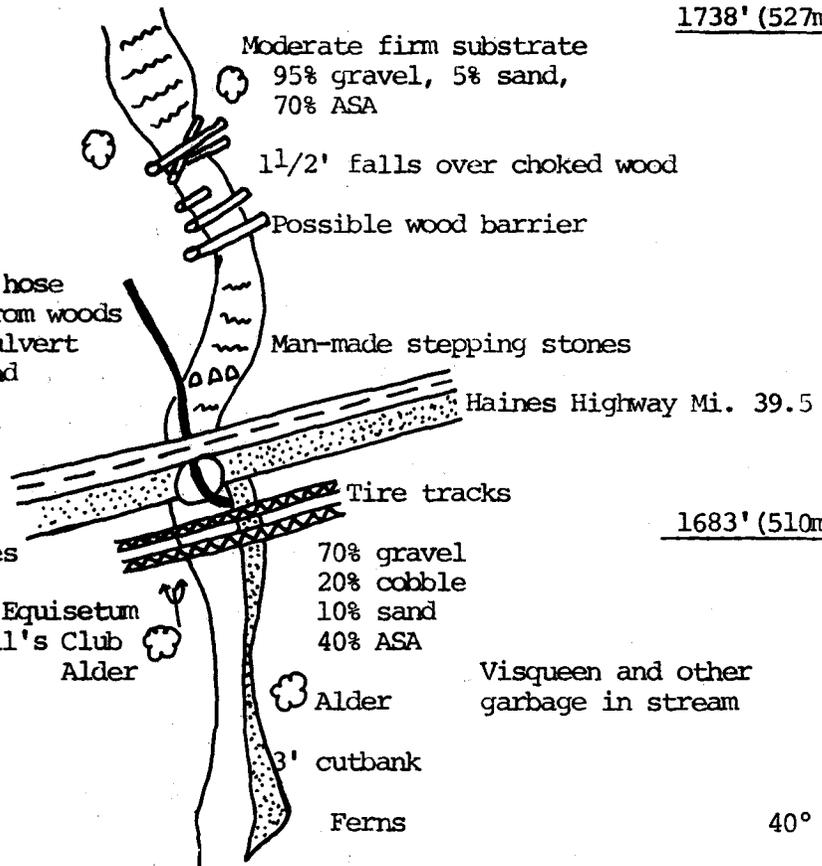
ASA:

115-32-097

0.05 x 215 x 33 = 33
 0.05 x 165 x 12 = 9
 0.07 x 300 x 29 = 56
 0.60 x 200 x 20 = 220
 0.45 x 330 x 12 = 164
 0.50 x 298 x 10 = 137
 0.40 x 85 x 10 = 31
 0.70 x 55 x 10 = 35

 685 m²

1738' (527m)



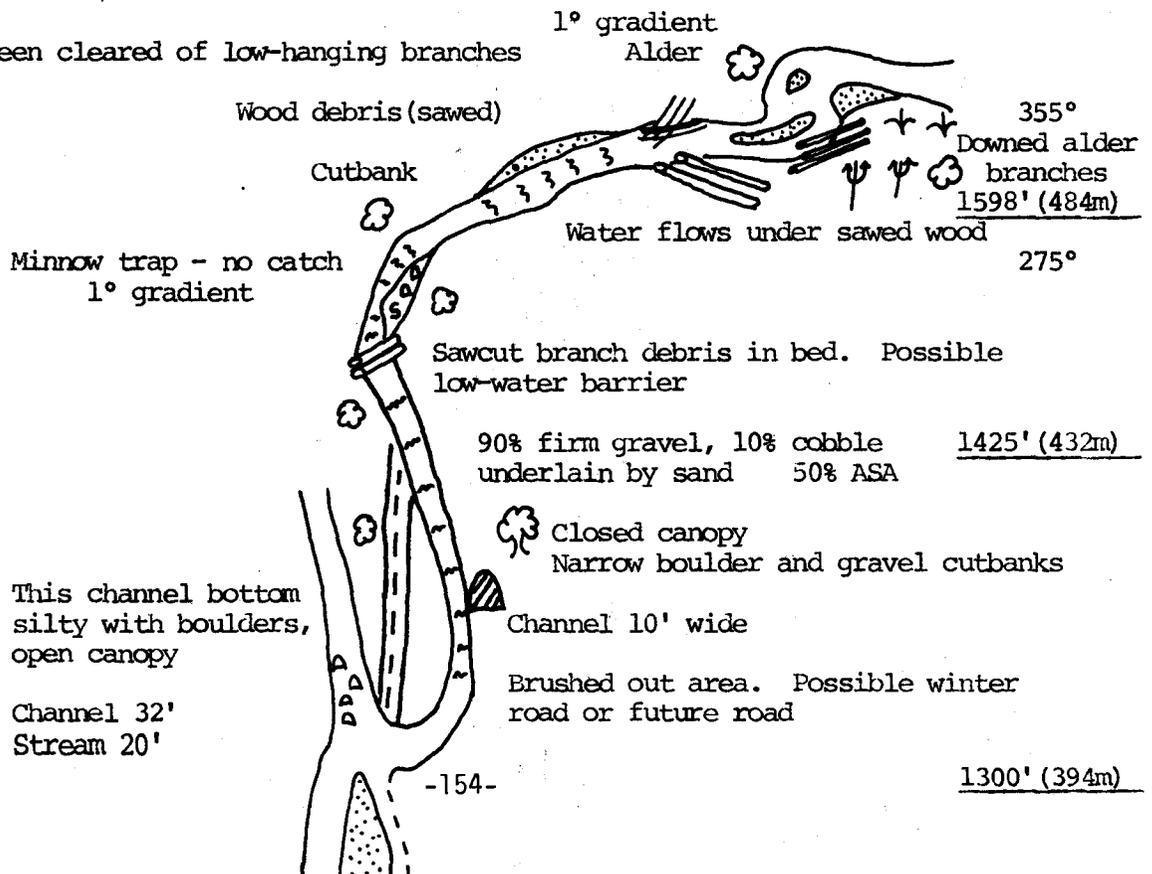
Culvert gradient 10°, ribs of culvert cause large fast riffles which in themselves could be a block during low water

1683' (510m)

1.5° gradient

Brown algae on substrate

Stream has been cleared of low-hanging branches
 1° gradient
 Alder



1300' (394m)

Name: _____
Latitude: 59 26 45 N
Longitude: 136 20 50 W
Geodetic Map No: Skagway (B-4)
Location: Mile 39.5 Haines Highway -
north of stream #115-32-053

Catalog No: 115-32-097
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.25 miles
Drainage Area: 1.40 square miles
Water Supply Type: Mountain runoff

Trails & Survey Routes: Stream easy to walk. In areas where the canopy is
closed and overhanging brushes dense and trail (possible future road) has
been cleared along the banks.

Aerial Survey Notes: Lower portion surveyable by air - wide channel, open
canopy. Upper portion has closed canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

ASA = 685m²

Schooling Areas: Stream has pools, but at time of survey water was too low
for schooling in any of them.

Spawning Areas: Some gravel riffles with no aquatic vegetation looks like
good spawning habitat.

SHELLFISH POTENTIAL: N/A

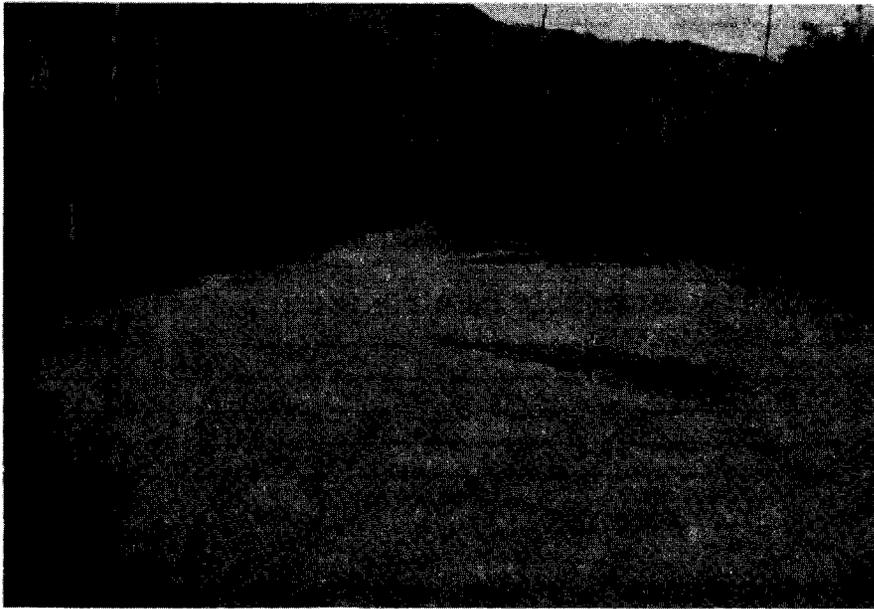
SPORT FISHERIES: No sport fish species were seen.

LAND USE (history, present, proposed): The stream has houses along its banks. It
has also been altered by: man-made dams, used as a reffridgerator, foot bridges,
someone driving through it, a possible road along its banks which ends abruptly
at the stream (people may then drive through the stream) a water pipe running
through it, and brush clearing along it's banks. Brush is then dumped in stream.
There is also miscellaneous garbage in stream.

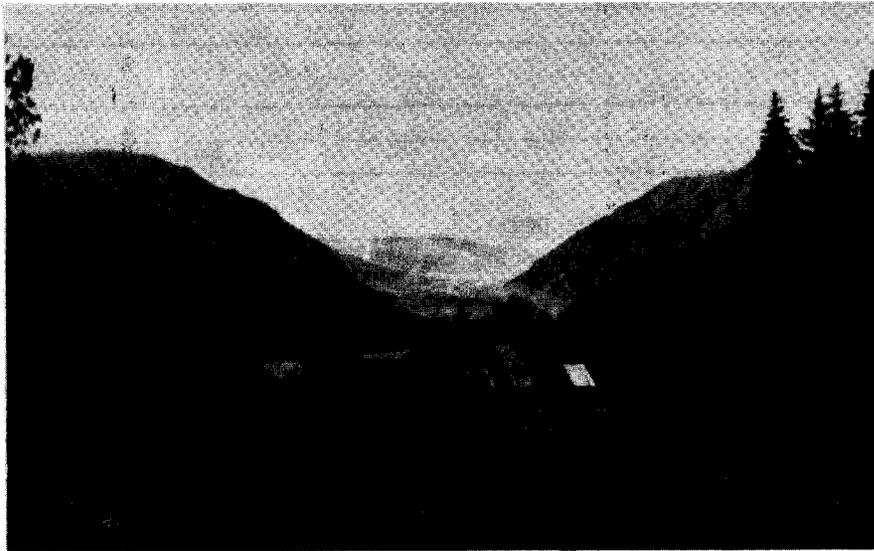
REHABILITATION POTENTIAL: Clear out cut brush from stream bed. Investigate
extent and timing of use of vehicles in stream bed. Remove dams. Reduce
gradient of soil.

SOILS: Stable gravel near the mouth, cutbanks upstream.

GAME RESOURCES (species, use, habitat): One sandpiper, hear sign.



Little Jarvis Creek
Surveyed area



Jarvis Glacier in
background

Little Jarvis Creek
 7/18/79 18:10
 Walker/Edgington
 Weather: overcast
 Air: 58°F
 Water: 40°F
 pH 7.5, very milky
 Flow-est 60 cfs

Stream travels through area once intensively logged. Water very milky and stream bottom covered with silt. Stream apparently overrides channel on occasion. Little apparent spawning area. Rearing in clearwater sloughs restricted by gaseous releases of decaying organics.

205' (62.5m)
 130' (39.6m)
 Width 30' (9.1m)

Silt bottom with small patches of hard-pack gravel.

20% ASA, poor

Gradient 1° 2°
 Bearing 230°

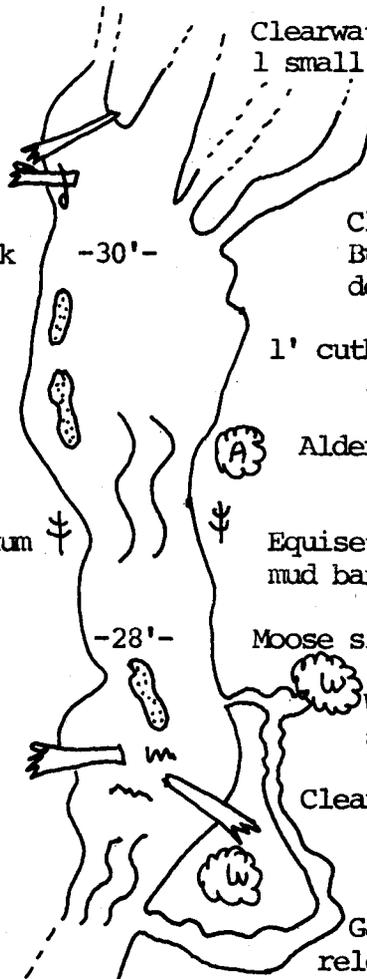
Open canopy
 75' (22.9m)
 75' (22.9m)
 Width 30' (9.1m)

Silt bottom

0% ASA

Gradient 1°
 Bearing 200°

Sand and organic debris on bottom of slough



Clearwater -
 1 small Dolly Varden

2 traps:
 1 hr. set
 ∅ fish

Clearwater slough -
 Bubbles from organic decay - H₂S gas

1' cutbank
 1°

Scattered small spruce and cottonwoods, area once intensively logged

Alder

Equisetum on mud banks

Spawning Area
 130'x30'x20%=780ft² (71.2m²)
 in area surveyed only.

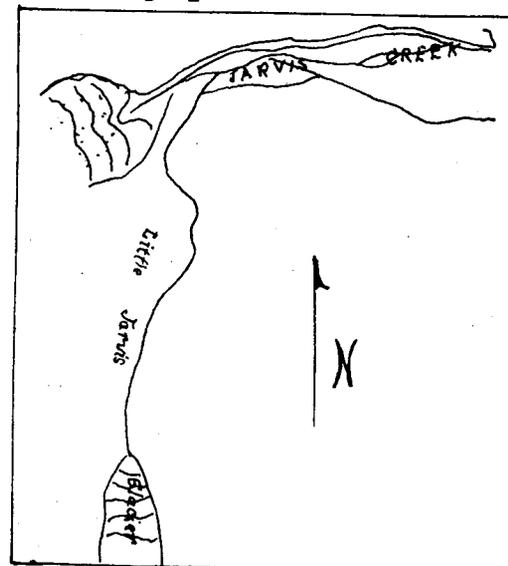
Moose sign

Willow obscures slough

Clearwater slough

Gaseous releases
 3-4 cfs, 38°F
 water, no rearing fish noted.

Skagway (B-4)



Name: Little Jarvis Creek
Latitude: 59 26 40 N
Longitude: 136 23 44 W
Geodetic Map No: Skagway B-4
Location: 1.5 miles west of Alaska -
B.C. border, at Haines Highway

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 2.2 miles
Drainage Area: 3.41 square miles
Water Supply Type: Glacier and ground
runoff

Trails & Survey Routes: Moderately easy walking along banks.

Aerial Survey Notes: Stream is very turbid.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Needs survey in late fall to access chum spawning.

Schooling Areas: None noted

Spawning Areas: Limited area 780 ft² or 72.2 m²

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: One small Dolly Varden; sport fish potential appear limited
by high silt load in stream.

LAND USE (history, present, proposed): Area once intensively logged

REHABILITATION POTENTIAL: Too silty - glacial runoff

SOILS: Area appears moderately stable with points of undercut banks.

GAME RESOURCES (species, use, habitat): Moose sign noted.



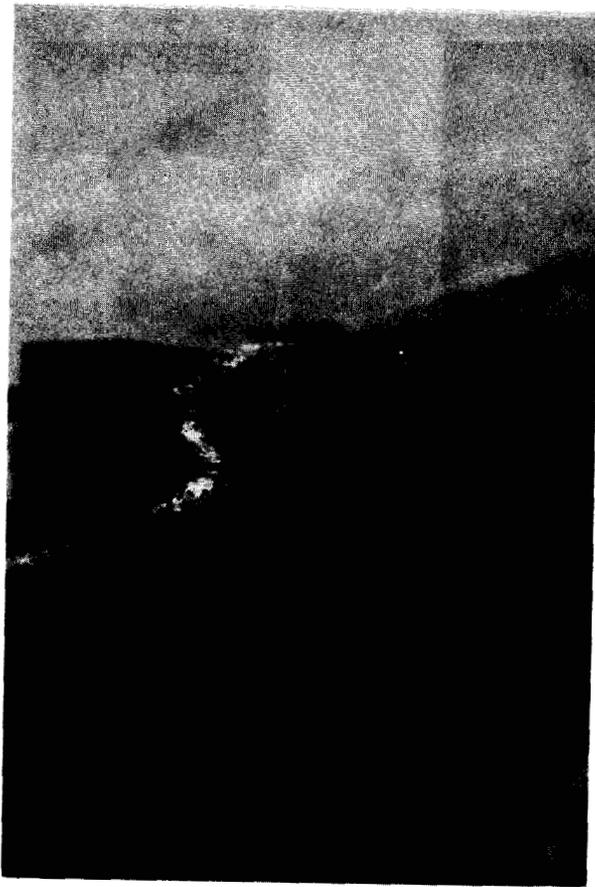


115-32-098

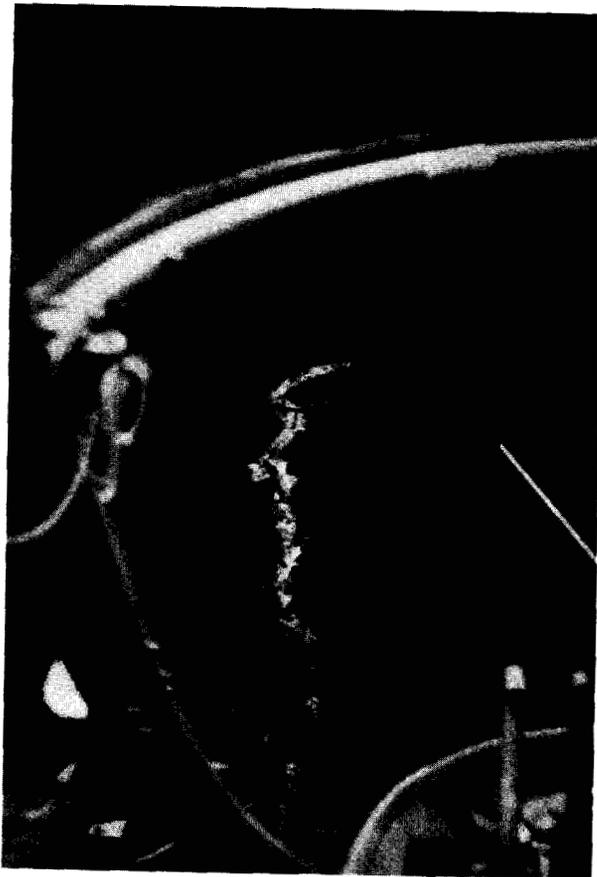
Side rearing area



115-32-098



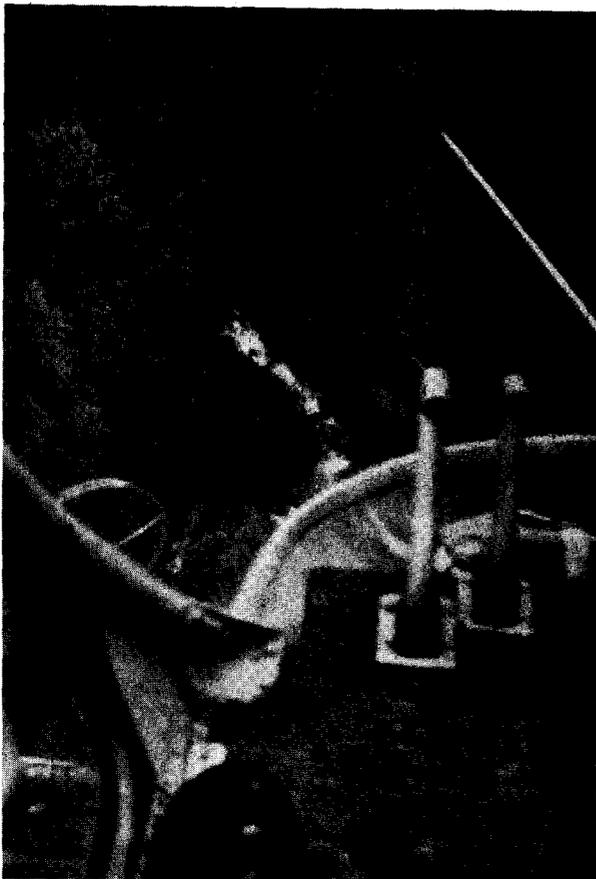
115-32-098
Mid-section



115-32-098
Mid-section



115-32-098
Upstream area



115-32-098
Downstream area

Substrate moderately loose, flows into Klehini River.
 Open canopy easy to survey aerially and on foot, while
 in flats no aquatic vegetation. Braided channel stable
 banks midstream; brown bear and moose signs; closed
 canopy with swift water; lots of fallen logs; very
 steep rapids upstream above the treeline.

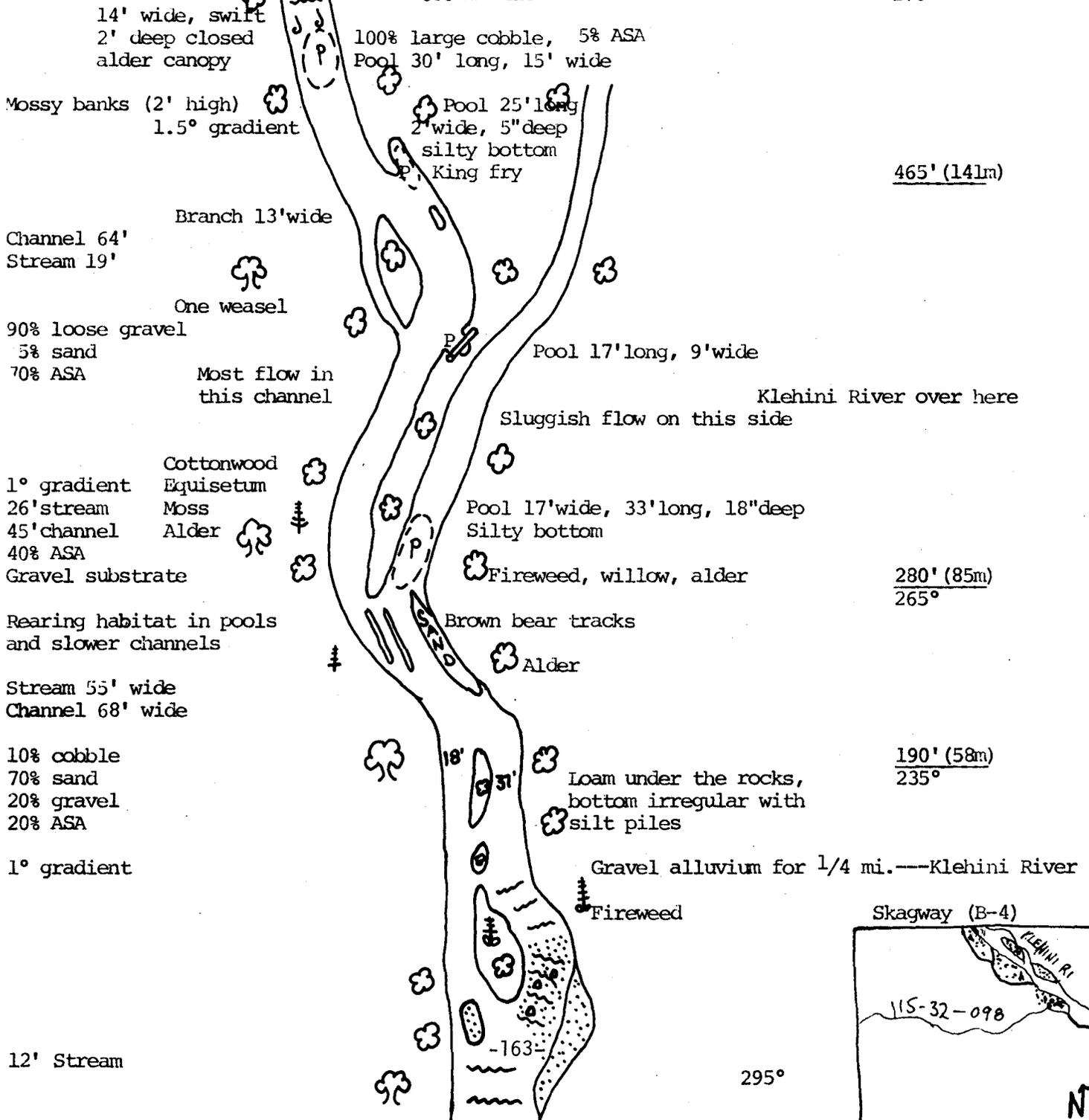
115-32-098
 N. of Glacier Creek
 7/18/79 6:20 pm
 Thayer/Berg
 Weather: Overcast, rain
 Air: 59°F
 Water: 43°F, murky
 pH 8.0, high flow 56 cfs

ASA for area surveyed (stream steepens and the percentage
 of boulders increase in upstream portion).

0.2 x 190 x 55 = 192
 0.4 x 90 x 45 = 149
 0.7 x 185 x 19 = 226
 0.5 x 60 x 14 = 39

 606 m² ASA

525' (159m)
 270°

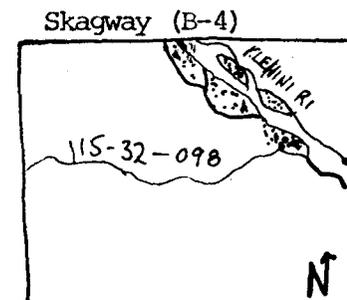


465' (141m)

280' (85m)
 265°

190' (58m)
 235°

295°



Name: Sarah Creek
Latitude: 59 25 40 N
Longitude: 136 19 25 W
Geodetic Map No: Skagway B-4
Location: North and halfway between
Glacier Creek and Jarvis Creek.
Flows into Klehini River

Catalog No: 115-32-098
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 3.25 miles
Drainage Area: 2.8 square miles
Water Supply Type: Mountain runoff and
hanging glacier.

Trails & Survey Routes: Channel along Klehini River bed is easy to walk
until stream enters brushy area, it emerges from the brush into forest
where walking again is relatively easy.

Aerial Survey Notes: Very difficult due to narrow channel and closed canopy
(in forest area).

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Chinook fry observed in rearing areas, may be chinook salmon spawning stream.

Schooling Areas: A few pools along survey route.

Spawning Areas: Area surveyed had good gravel and fair riffles
ASA = 606m² for area surveyed.

SHELLFISH POTENTIAL: N/A

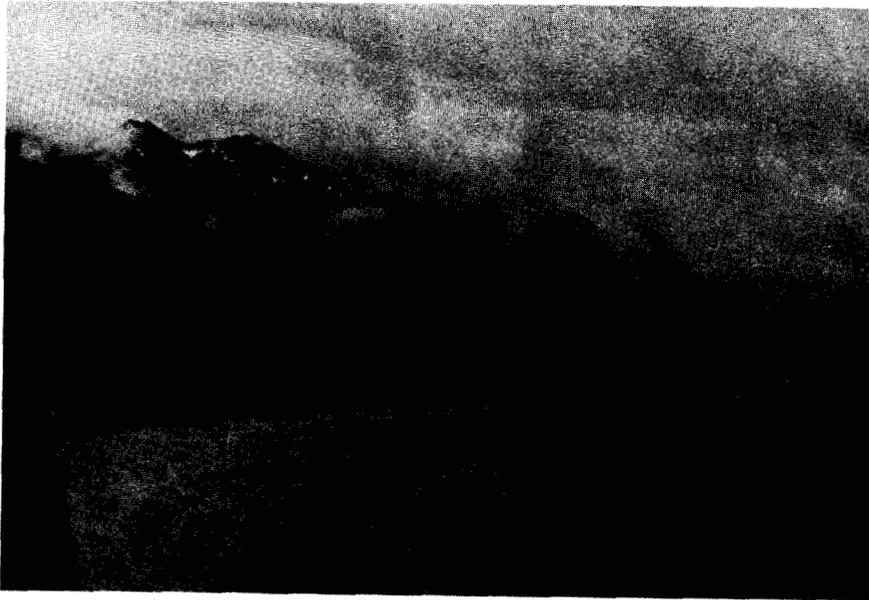
SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Mining and state forest timber sale.

REHABILITATION POTENTIAL: Upper stream has windfalls but appears to be too
steep and rocky for good spawning habitat.

SOILS: Stable

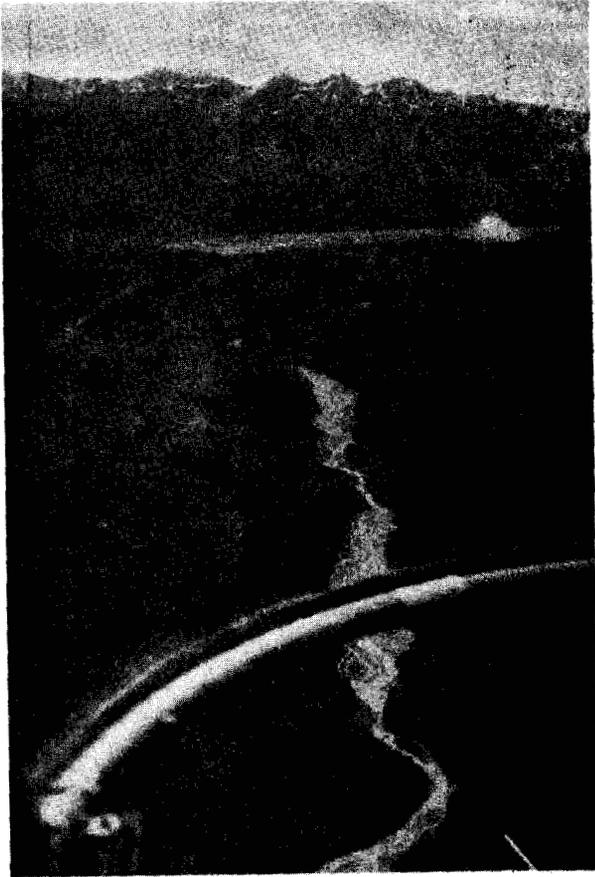
GAME RESOURCES (species, use, habitat): Brown bear tracks along bank, one
weasel spotted, moose tracks.



Klehini River



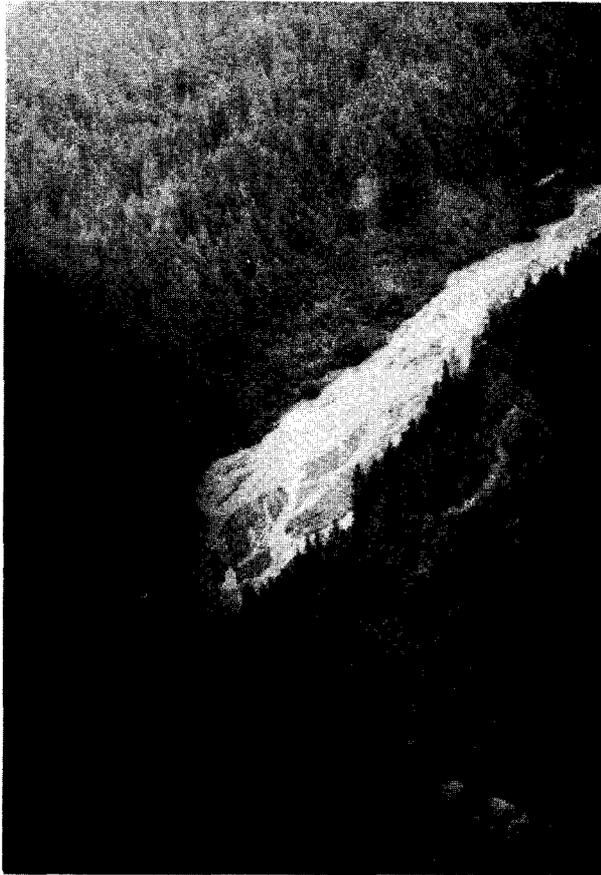
Mouth of
Glacier Creek



Glacier Creek
Downstream



Glacier Creek



Glacier Creek

Downstream



Glacier Creek

Upstream

Upper Glacier Creek

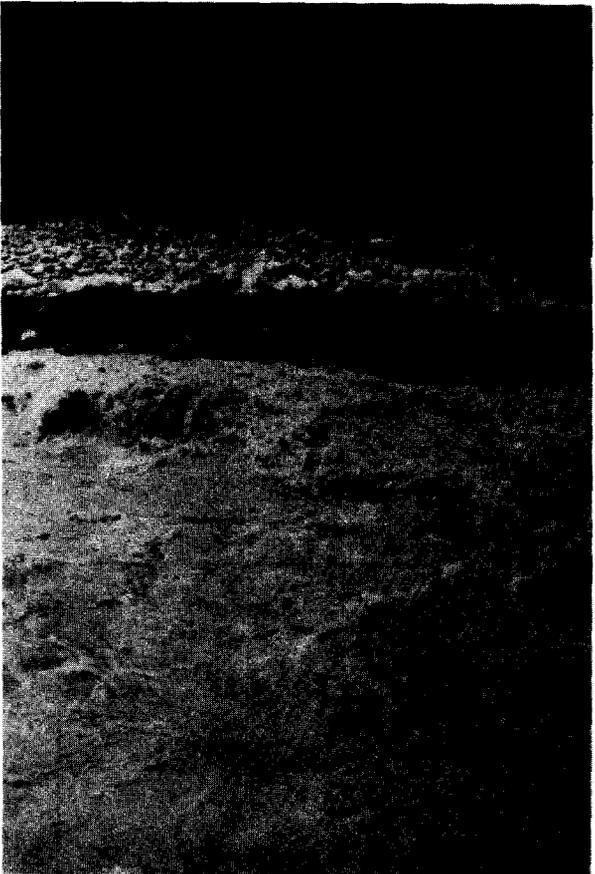


Upper Glacier Creek





Salseda Glacier
Headwaters of
Glacier Creek



Glacier Creek
Torrential flow
and moraine

Weather: overcast, fog above water
Air: 62°F (17°C)
Water: 37°F (3°C)
Flow 200 cfs, high water
glacial origin, muddy/turbid
The water had so many suspended solids
that pH indicator had no effect.
0% ASA on portion of stream surveyed
6° gradient
190° bearing

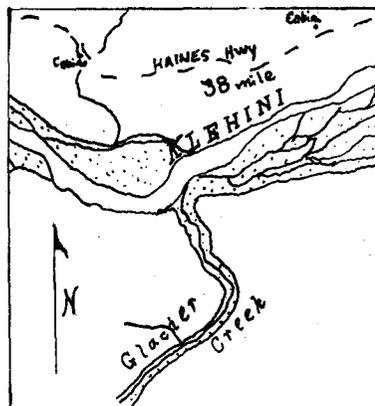
Glacier Creek
flows into Klehini River
7/18/79
Thayer/Berg
Skagway (B-4)

Glacier Creek is fed by glacial runoff and by intermittent flow from steep mountainside freshwater tributaries. The area surveyed (see inset map and photos) is homogeneous, with cutbanks, river bars, and substrate consisting of 30% boulder, 30% cobble, 20% small gravel, and 20% coarse sand and silt. The stream was flowing with such velocity at the time of the survey that the banks were actively cutting and the noise from the boulders rolling down the stream was impressive.

The stream braids (approx. stream width 20', bank-to-bank width 100') with an average of four channels to any one cross section. Near the mouth, Glacier Creek assumes a single channel. The survey area was 100% rapids, with no rearing habitat. No minnow trapping was done due to lack of pools, and to streambed activity.

The canopy is open and the banks are lined with willows and alders, succeeded by a spruce forest (except in the headwaters, where the stream is above tree-line). Moose tracks were seen along the banks, and the shrubs should provide good passerine and ungulate habitat. There is no primary succession on the gravel areas along the stream banks and in the streambed, indicating recent and continuous bed changing.

A tractor trail runs along the hillside to the right of the stream, while a road exists along the left bank. A fuel truck was parked at the end of the road, near the terminus of the Saksaiia Glacier. A tent camp and fuel storage area, (containing a wooden platform possibly used as a helicopter pad) are situated on the left bank approximately halfway up the creek. Mineral exploration (rumored to be for barite) by helicopter is currently taking place in this watershed.



Name: Glacier Creek
Latitude: 59 25 45 N
Longitude: 136 02 30 W
Geodetic Map No: Skagway B-4
Location: 2.75 miles south of B.C.
border on the S.W. side of Klehini
River.

Catalog No: _____
Former Stream No: River Basin Study
USFWS #120
Work Area: Haines - Skagway
Watershed Length: 9 miles
Drainage Area: 15 square miles
Water Supply Type: Glacier and ground
runoff.

Trails & Survey Routes: Trail access.

Aerial Survey Notes: Aerial survey by helicopter.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
None noted.

Schooling Areas: None

Spawning Areas: None

SHELLFISH POTENTIAL: N/A

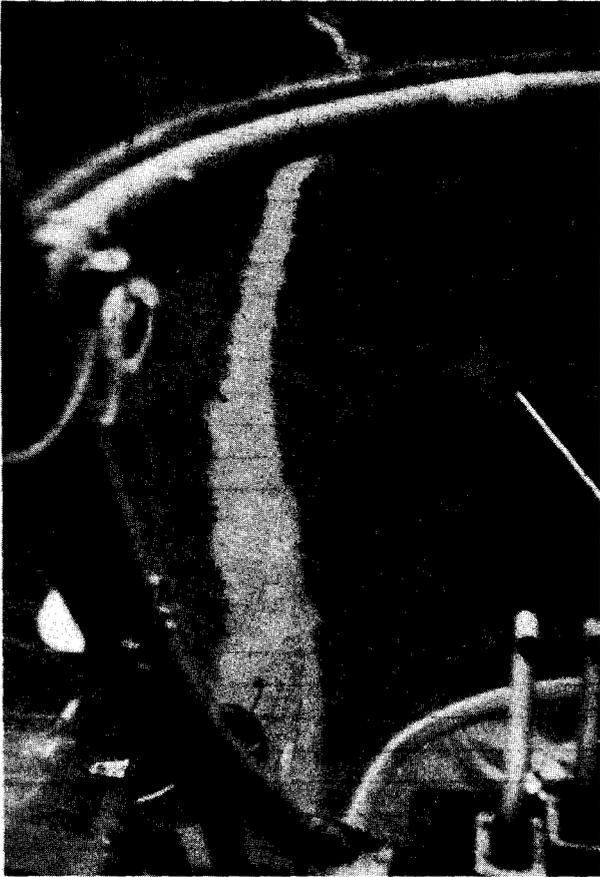
SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Mineral exploration now under way
possibly for barite.

REHABILITATION POTENTIAL: N/A

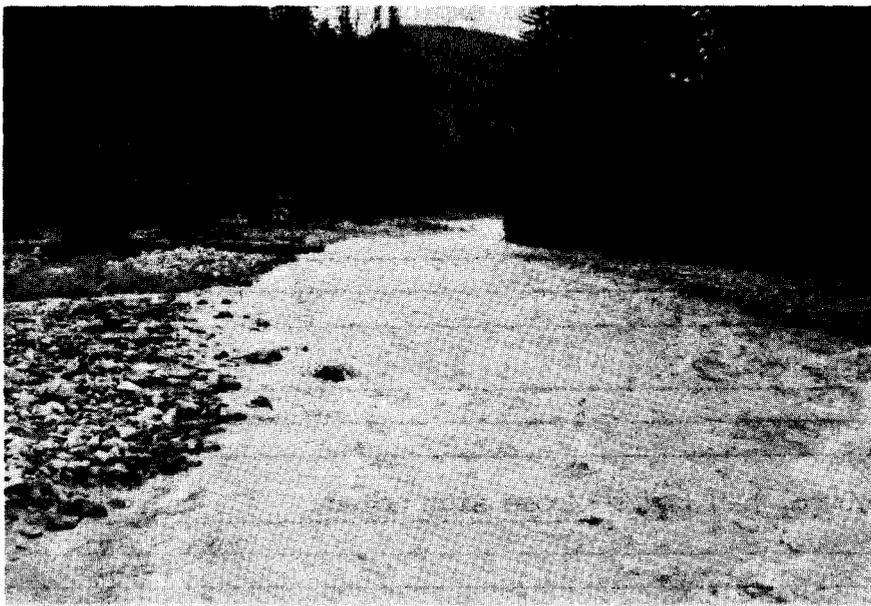
SOILS: Unstable wasting banks

GAME RESOURCES (species, use, habitat): Moose sign noted.

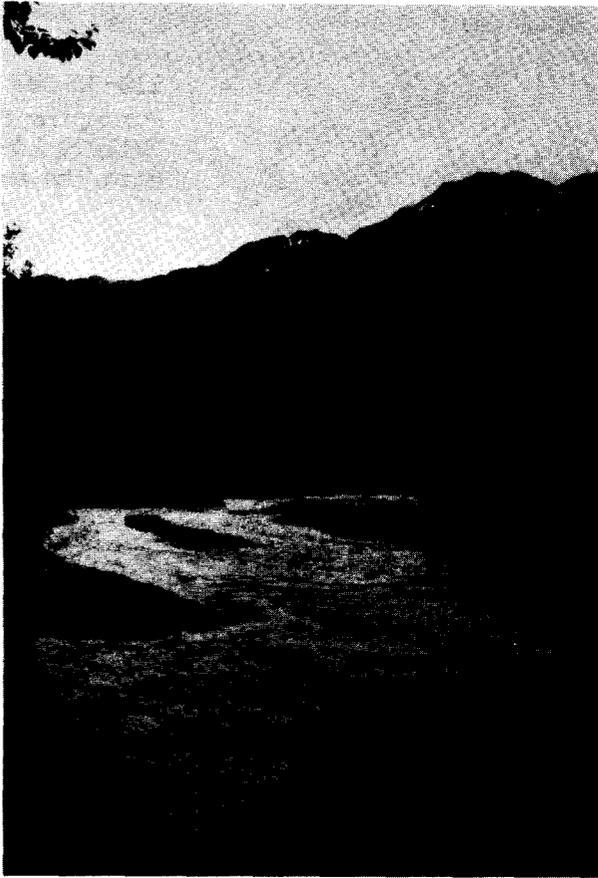


115-32-048

Upper sample area



115-32-048



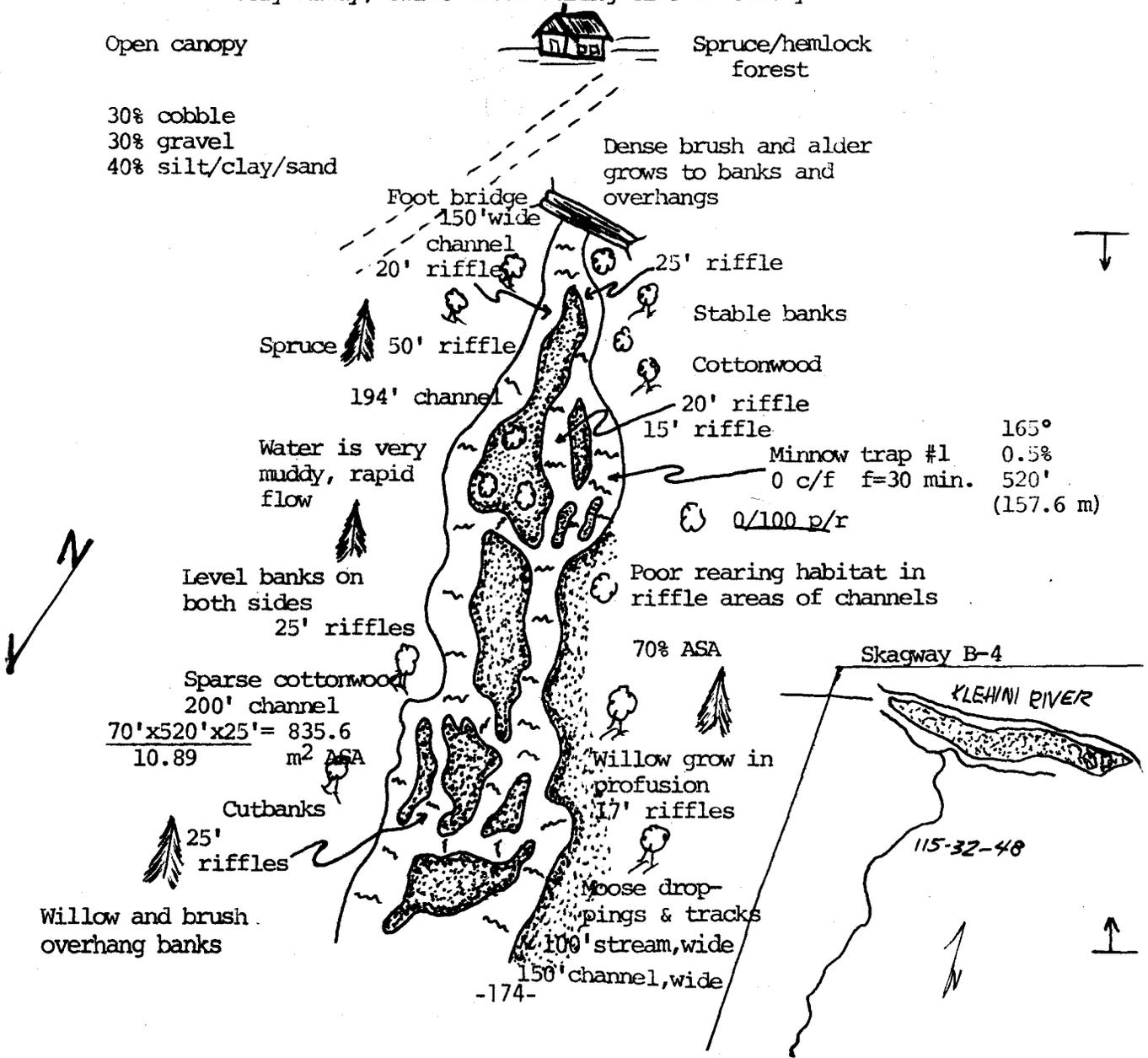
115-32-048

Porcupine Creek
Braided channel

Weather: High overcast
 Air: 56°F
 Water: 40°F, muddy, 120 cfs
 pH: 8.0

115-32-048
 Porcupine Creek
 7/18/79 3:30 pm
 Berg/Thayer

Stream continues for approximately 1 mile upstream, with same habitat as surveyed section, before entering a steep-walled box canyon and occupying a single channel of swift flowing water. The stream occupies the entire channel which is lined with densely vegetated banks. There appears to be poor spawning & rearing habitat because of very muddy, swift water during time of survey.



Name: Porcupine Creek
Latitude: 59 25 35 N
Longitude: 136 13 10 W
Geodetic Map No: Skagway B-4
Location: 10 1/2 miles up Klehini
River from it's junction with
the Chilkat.

Catalog No: 115-32-048
Former Stream No: River Basin Study
USFWS #122
Work Area: Haines - Skagway
Watershed Length: 15 miles
Drainage Area: 16.45 square miles
Water Supply Type: Glacial melt and runoff.

Trails & Survey Routes: Easily hiked on gravel banks, old dirt road along
the stream. Small log footbridge for crossing swift flowing stream. Upstream
box canyon difficult to hike because of dense brush lining banks.

Aerial Survey Notes: Easily observed aerially, but glacial water prohibits
observation. Open canopy throughout.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

No recent escapement data, it is doubtful that salmon use upper stream.
Mouth may be spawning area.

Spawning Area: 835.6 m² ASA
Schooling Areas:

Spawning Areas: Excellent spawning habitat in riffles of slower side channels.
Water is too muddy to observe substrate in channels. Compostion taken from
exposed gravel bars.

SHELLFISH POTENTIAL: N/A

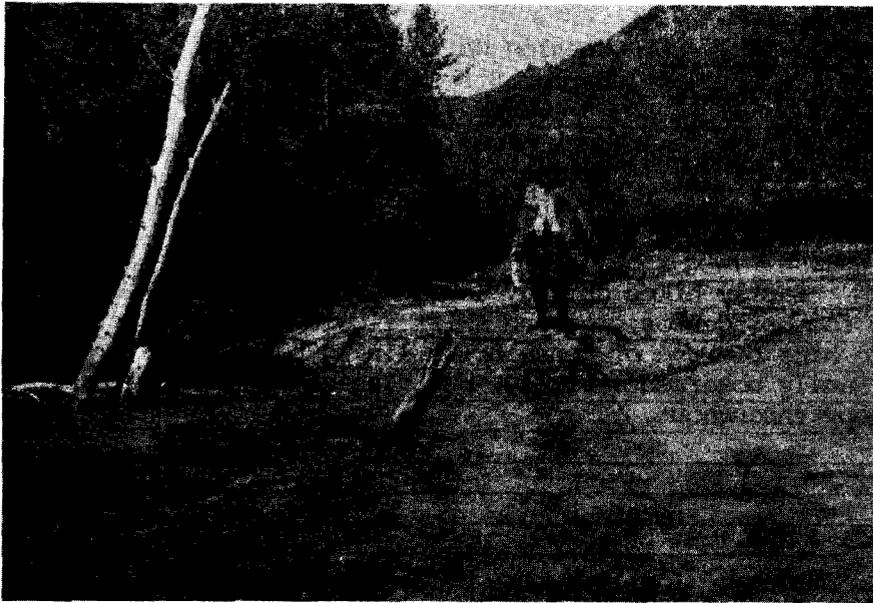
SPORT FISHERIES: Cutthroat, Dolly Varden.

LAND USE (history, present, proposed): Cabins, and road along creek. Upper
reaches appear to be in a natural state. Active mine exploration.

REHABILITATION POTENTIAL: None necessary.

SOILS: Generally stable, gravelly soil with relatively thick layer of duff in
forest.

GAME RESOURCES (species, use, habitat): Moose droppings and tracks in profusion
along banks. Excellent bear habitat, but no sign observed. Small game and
eagles may be found in area, also.



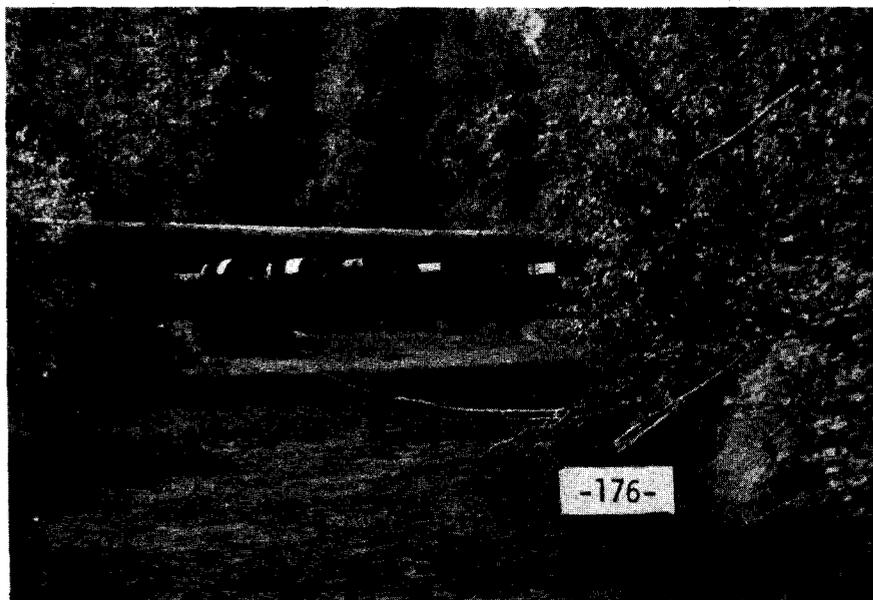
115-32-047

Mouth where Herman
Creek empties into
Klehini River



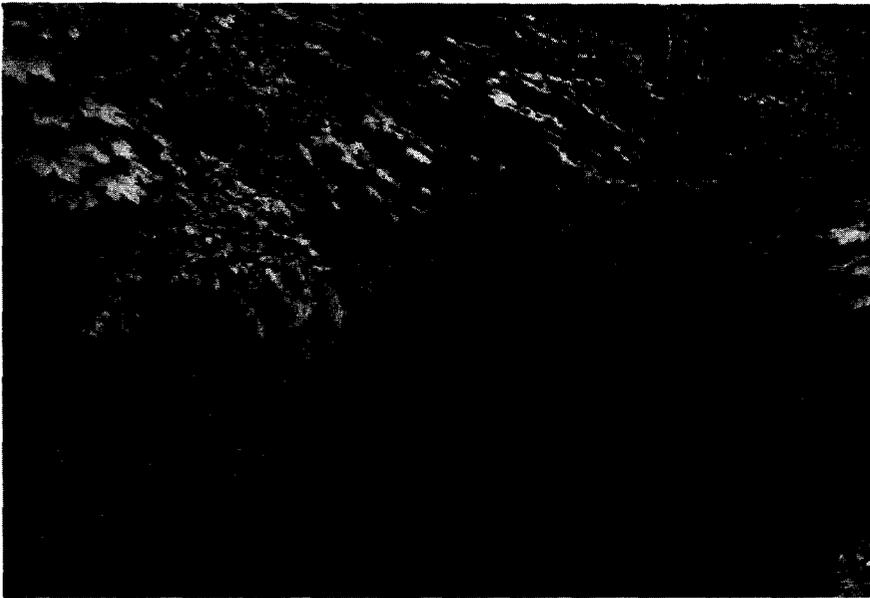
115-32-047

Stream above mouth



115-32-047

Bridge, good
spawning gravel



115-32-047

Silt in clearcut
area



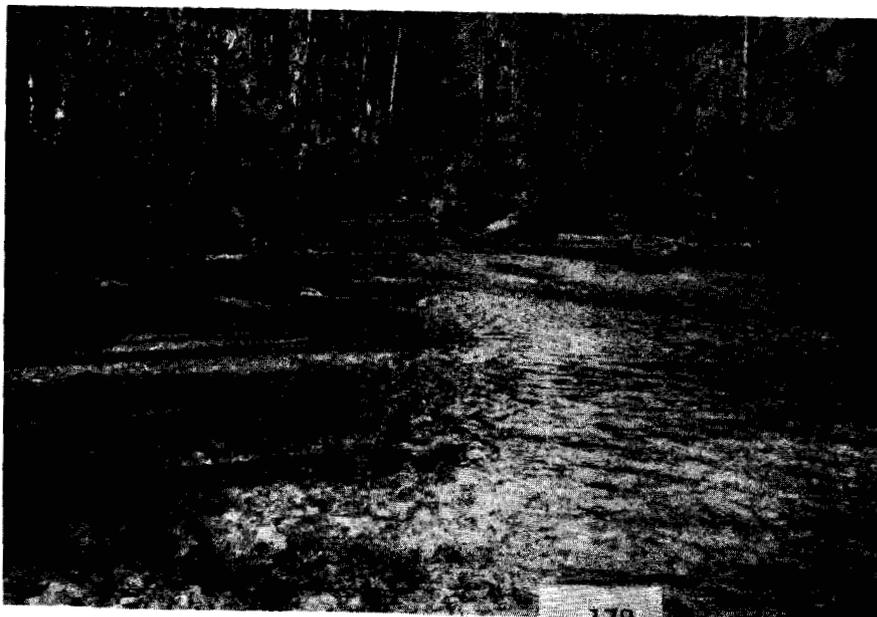
115-32-047

Side stream area
where rearing fish
were found



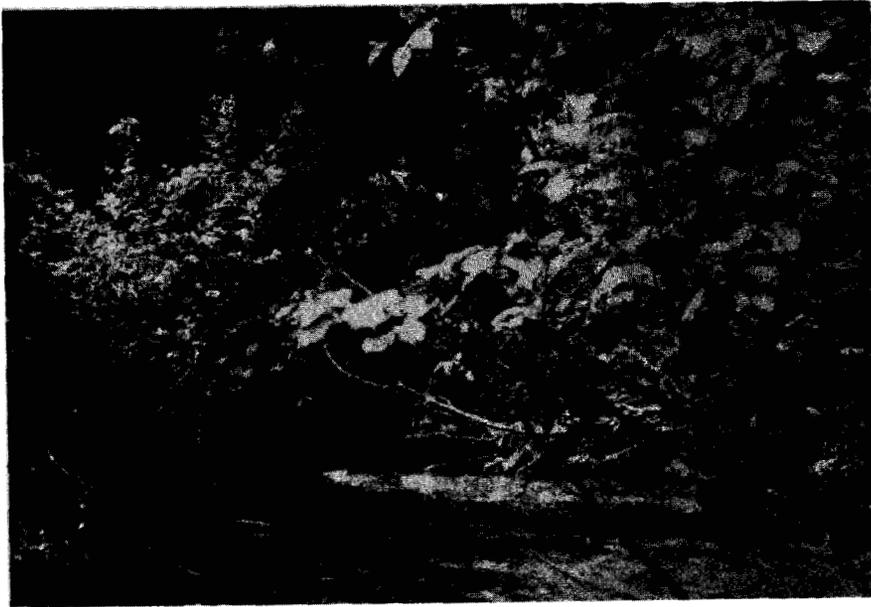
115-32-047

Hunting stand
along Herman Creek

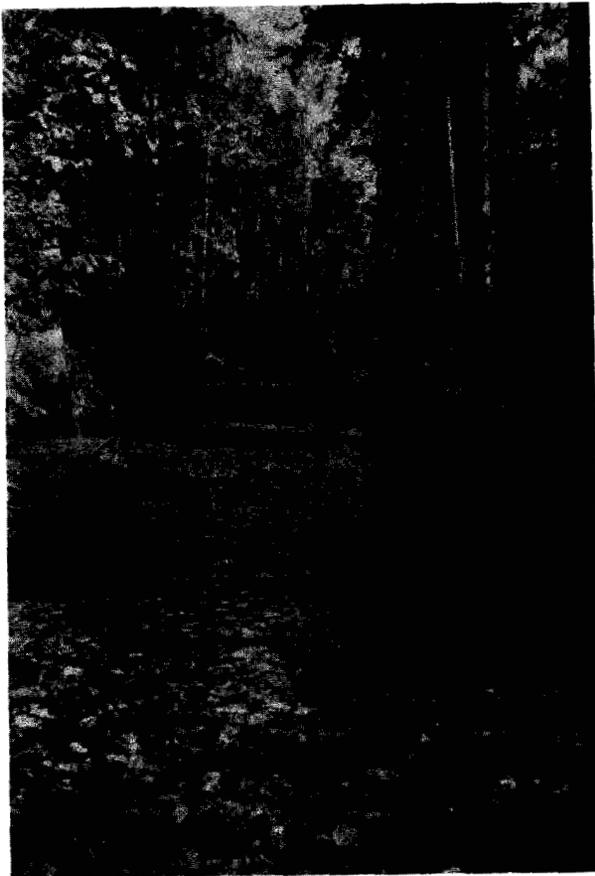


115-32-047

122 meters above
bridge, good
spawning area



115-32-047
Downstream area
below clearcut

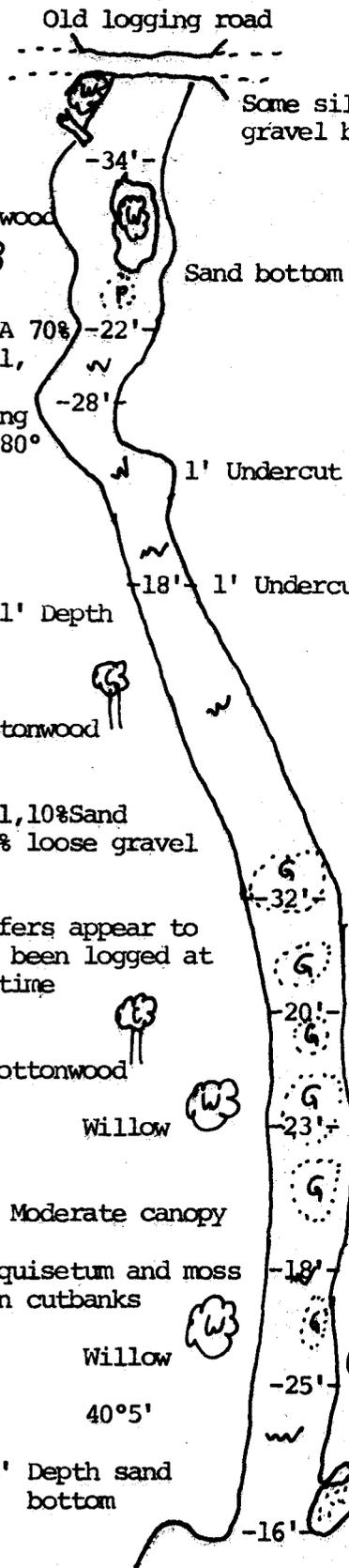


115-32-048

115-32-049

115-32-047
 Herman Creek
 7/19/79 12:00
 Walker/Edgington
 Weather: Sunny
 Air: 66°F
 Water: 41°F
 pH: 8.0, clear water
 Flow: 40 cfs, normal

660' (201.2m)
 80' (24.4m)
 Width 30' (9.1m)
 15% Cobble
 80% Gravel
 5% Sand
 p/r 5/95
 ASA 80%
 Gradient 1° Cottonwood
 Bearing 210°
 580' (176.8m)
 150' (45.7m)
 Width 28' (8.5m) ASA 70%
 20% Cobble, 70% gravel,
 10% Sand, p/r 5/95
 Gradient 1°, Bearing
 430' (131.1m) 180°
 140' (42.7m)
 Width 20' (6.1m)
 40% Cobble
 50% Gravel
 10% Sand
 100% Riffles
 ASA 80%
 Gradient 1°
 Bearing 195°
 290' (88.4m)
 110' (33.5m)
 Width 25' (7.6m)
 40% Cobble, 50% Gravel, 10% Sand
 p/r 20/80 ASA 70% loose gravel
 Gradient 1°
 Bearing 205°
 180' (54.9m)
 180' (54.9m)
 Width 22' (6.7m)
 30% Cobble
 30% Gravel
 40% Sand
 p/r 20/80
 ASA 60%, good
 Moderate canopy
 Equisetum and moss
 on cutbanks
 Willow
 40°5'
 2.5' Depth sand
 bottom
 Gradient 1°
 Bearing 235°



5 Traps - 2 hr. set time each
 ∅ fish

Cold stream water appears to
 limit fish production

Spawning Area

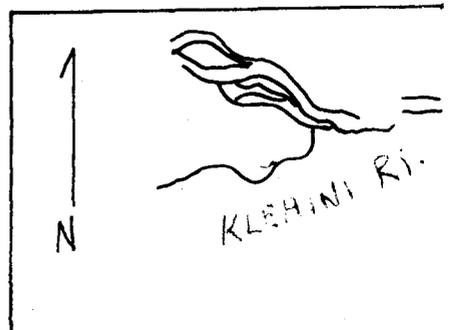
- 180'x 22'x 60% ASA = 2376 ft² (220m²)
- 110'x 25'x 70% ASA = 1925 ft² (178.2m²)
- 140'x 20'x 80% ASA = 2240 ft² (207.4m²)
- 150'x 28'x 70% ASA = 2940 ft² (272.2m²)
- 80'x 30'x 80% ASA = 1920 ft² (177.8m²)

Stream bottom constant upstream
 gravel throughout, sand bottom
 along banks

Elevated patches of gravel
 surrounded by sand-silt in
 low-lying areas. Water level
 6" on gravel.

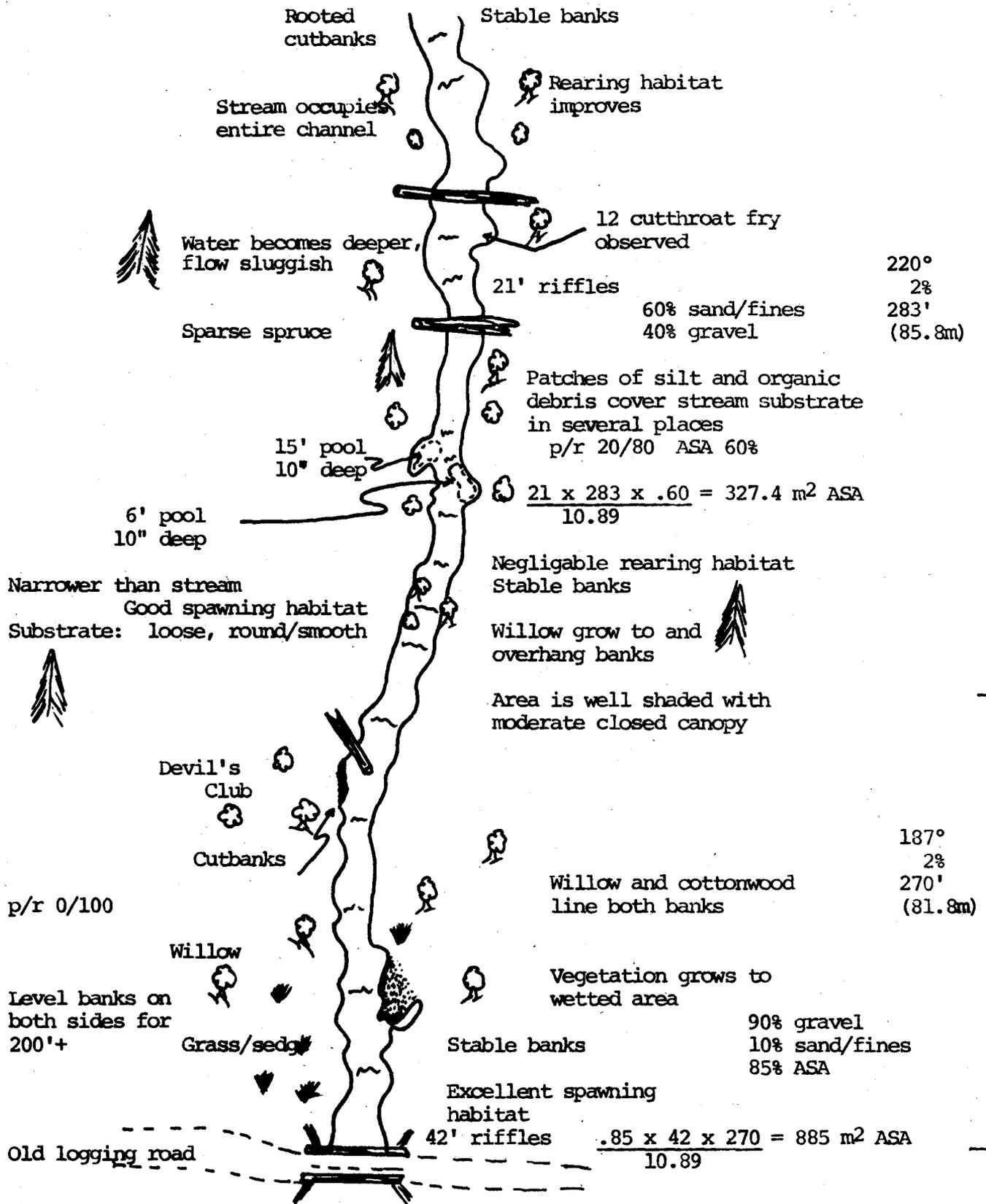
Predominantly
 cottonwood & willow

Skagway B-3



Weather: Fair, warm
 Air: 62°F, shade
 Water: 41°F, clear
 pH: 8.0

115-32-047
 Herman Creek
 7/19/79
 Berg, Thayer



903'
(273.7m)



Open canopy here

0% for 200'
50% beyond

Sparse alder

Devil's Club

Cutbank

55' riffles
5" deep

Sparse brown algae on
substrate, poorly shaded
area

Cottonwood lines
the banks

Stable cutbanks throughout

Cutbanks stable, covered
with grass, sedges, willow

Slow moving water near
banks provides good rearing

Cottonwood

Patches of silt
in stream

Young spruce

8 cutthroat
fry observed

231°

60% gravel
40% sand/silt

$23.7 \times 350 \times .7 = 533.2 \text{ m}^2 \text{ ASA}$
10.89

.5%

850'
(106.1m)

p/r 10/90
70% ASA

25' riffles

80' long pool
7" deep - good rearing

Mud/grass banks

Level grassy banks

Devil's club

Young willow overhang banks

11' riffle

Excellent spawning habitat

1.5' high cascade
over log and into
good rearing pool

Gravel composition increases

60' wide braid

20' long vertical
bank

553'
(167.6m)



Cutbank

Hunting bench
in tree

Stream becomes very
silty with sandy bed

Banks on both sides
of stream are level

60' long bedrock outcrop
20' high

Overgrown with Devil's
club and brush

Dense sedges and Devil's club

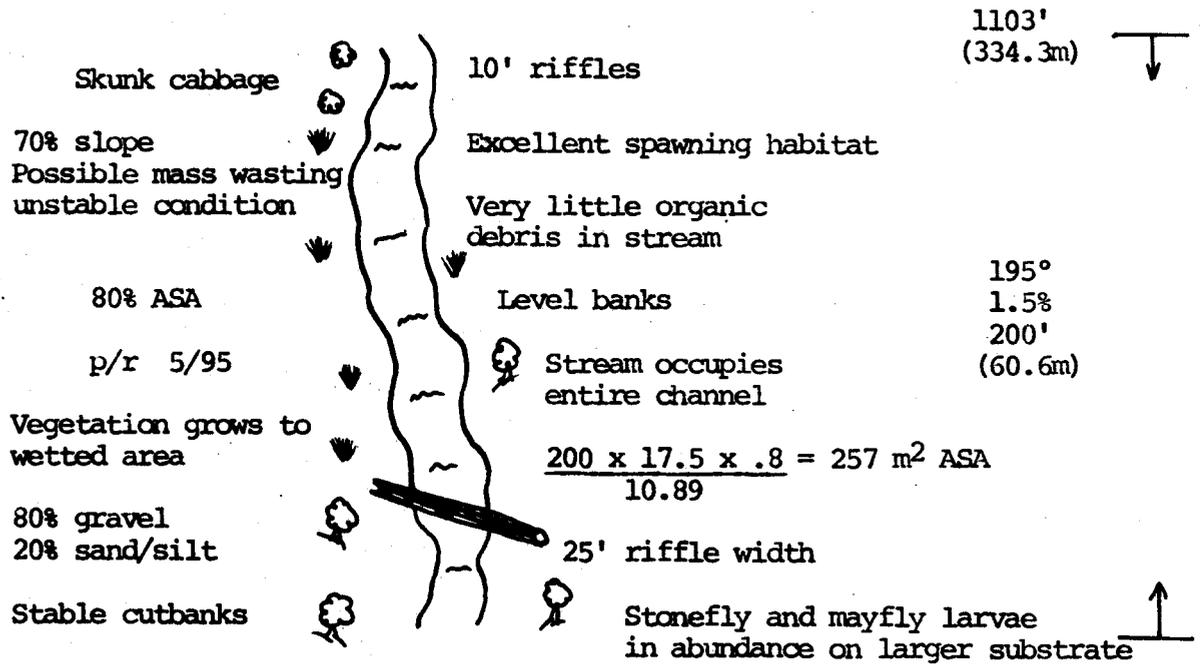
6 rearing coho fry observed

Cutbanks

In upper watershed approaching clearcut, stream heavily silted, with small sections recovering when increased flow exposes gravel substrate. Survey ended when stream began to become choked with willows. Strip of untouched cottonwoods bordered stream. A quarter mile below clearcut where flow increases substrate primarily cobble and gravel. Algae growth on cobble. Dolly Varden and rearing coho found in side sloughs where water temperature is greater (6° - 8°) than main channel. Stream is remarkable in that with generally good spawning and rearing conditions more fish are not present. Cold water temperatures appear to be limiting factor.

Stream continues in much the same manner as previous section, but narrows considerably and becomes deeper.

Up to this point there were what appeared to be several spawning redds throughout the riffle areas.



Name: Herman Creek
Latitude: 59 25 00 N
Longitude: 136 06 00 W
Geodetic Map No: Skagway B-3
Location: Five miles up the Klehini
River from junction with Chilkat
River.

Catalog No: 115-32-047
Former Stream No: River Basin Study
USFWS #123
Work Area: Haines (Chilkat System)
Watershed Length: 3.75 miles
Drainage Area: 3.04 square miles
Water Supply Type: Lake

Trails & Survey Routes: Easily walked as stream is shallow with relatively
slow flow throughout. Difficult walking along banks, especially the left bank
as vegetation is dense and there are steep gradients in several places.

Aerial Survey Notes: Difficult through most of area surveyed due to moderate
canopy cover. Upstream areas open up because of previous logging practices.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho and chum predominate, pink possibly August through October.

Spawning Area = 3058.2 m² ASA

Schooling Areas: N/A

Spawning Areas: Excellent riffle areas, with good substrate throughout lower
area surveyed. Upper stream heavily silted below logged area.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Numerous cutthroat fry observed in rearing areas. Dolly Varden
char also found in area.

LAND USE (history, present, proposed): Most of lower stream area has been untouched
except for logging road crossing on log stringer bridge. Upstream portion runs
through a clear cut about 1.5 - 2 miles from bridge.

REHABILITATION POTENTIAL: Creation of side rearing areas would boost coho
production.

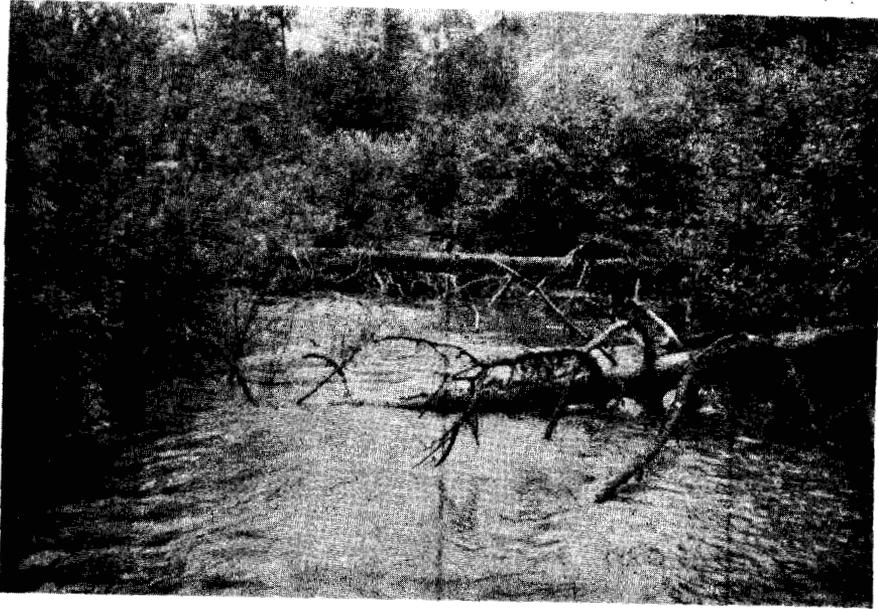
SOILS: Generally stable throughout. Banks are densely covered with vegetation
and composed of high percentage of organic material. Soils in upper watershed
are more unstable and prone to erosion at flood stages due to past logging.

GAME RESOURCES (species, use, habitat): Brown bear sign, tracks, trampled grass,
and droppings. Heard an unidentified bird of prey, possibly a hawk.

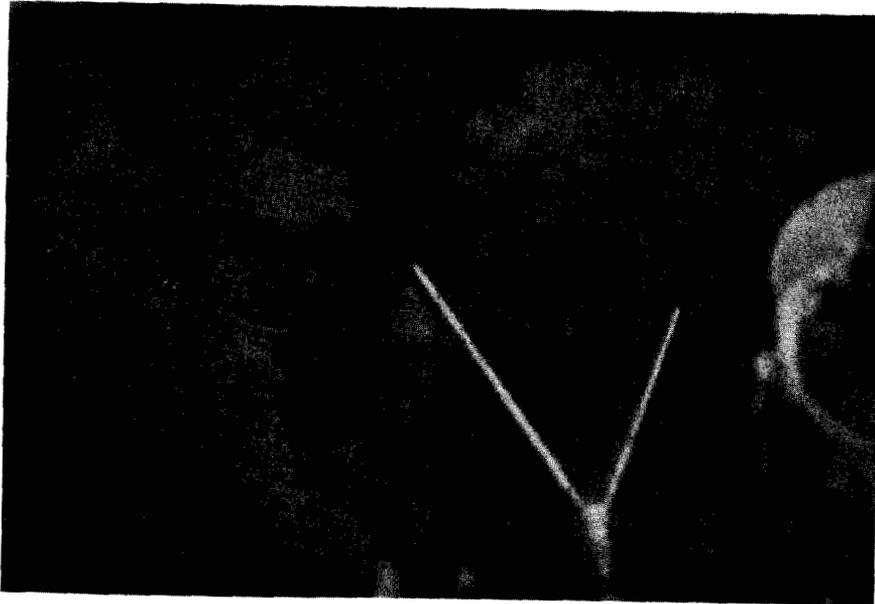
PEAK ESCAPEMENT RECORD

115-32-047 Herman Creek

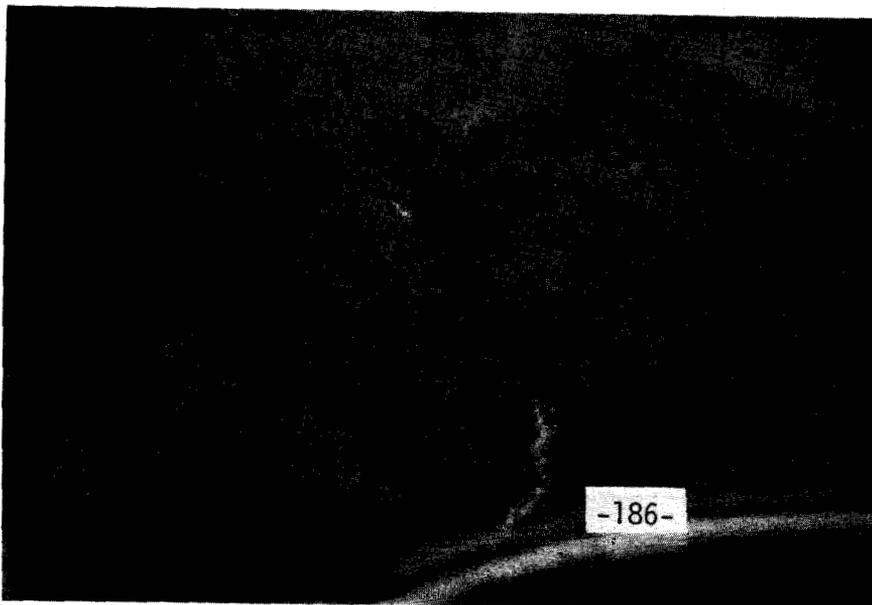
DATE	PINK	CHUM	OTHER SPECIES	REMARKS
10/15/60		47		
10/27/61		559		
11/16/76		500		
9/10/77	1			
10/11/77			Coho 3	
9/28/77		1,623		
10/18/79			Coho 7	
10/18/79		1,933		



115-32-045
Clearcut area



115-32-045
Upper area
unlogged



115-32-045
Approaching
headwaters

115-32-045

Little Salmon Creek

7/18/79 1700

Weather: overcast

Air: 62°F

Water: 42°F

pH: 8.0, light glacial milk

Flow-est: 80 cfs

Edgington/Walker

100' (30.5m)
100' (30.5m)
Width 30' (9.1m)

Single spruce,
cottonwood remain
in area

100% silt bottom, some organic
debris

3' depth across stream

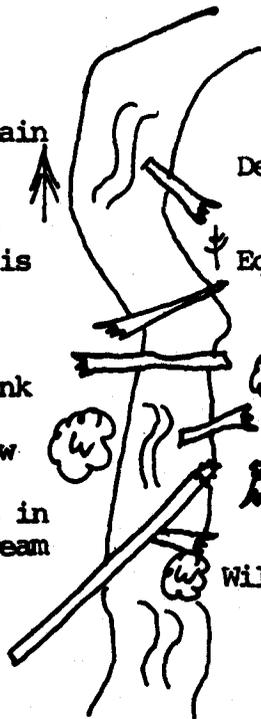
0% ASA, silt bottom 3' cutbank

Willow

Much logging debris in
stream

Some rearing potential under
overhanging banks

Gradient 1°
Bearing 260°



2 traps - 45 min. set
Ø fish

6 rearing coho in clear
side slough 100' upstream

Deep silt-mud bottom

Equisetum

Surrounding area
once intensively
logged

Willow

3' cutbank

Tree hand logged into stream

Thick regrowth of willow and alder

Willow

Skagway B-3



Name: Little Salmon Creek
Latitude: 59 23 05 N
Longitude: 139 59 20 W
Geodetic Map No: Skagway B-3
Location: Approximately 3.25 miles west of Klukwan where it joins the Tsirku River.

Catalog No: 115 - 32 - 045
Former Stream No: River Basin Study
USEWS #124
Work Area: Haines - Skagway
Watershed Length: 18.5 miles
Drainage Area: 16.47 square miles
Water Supply Type: Surface runoff, lakes hanging glacier.

Trails & Survey Routes: Stream difficult to walk with 3' water depth, silt bottom, surrounded area extremely difficult to walk with dense low regrowth and much logging debris.

Aerial Survey Notes: Can be surveyed from the air.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Six coho fingerlings observed in a clear portion of slough area.

Schooling Areas: None observed.

Spawning Areas: For area surveyed 0% ASA

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Dolly Varden observed on foot survey of 1960.

LAND USE (history, present, proposed): Surrounding area once intensively logged - much debris remains.

REHABILITATION POTENTIAL: Removal of debris in stream may speed flow and flush overlaying layer of silt out of stream.

SOILS: Undercut banks throughout.

GAME RESOURCES (species, use, habitat): Moose and bear.

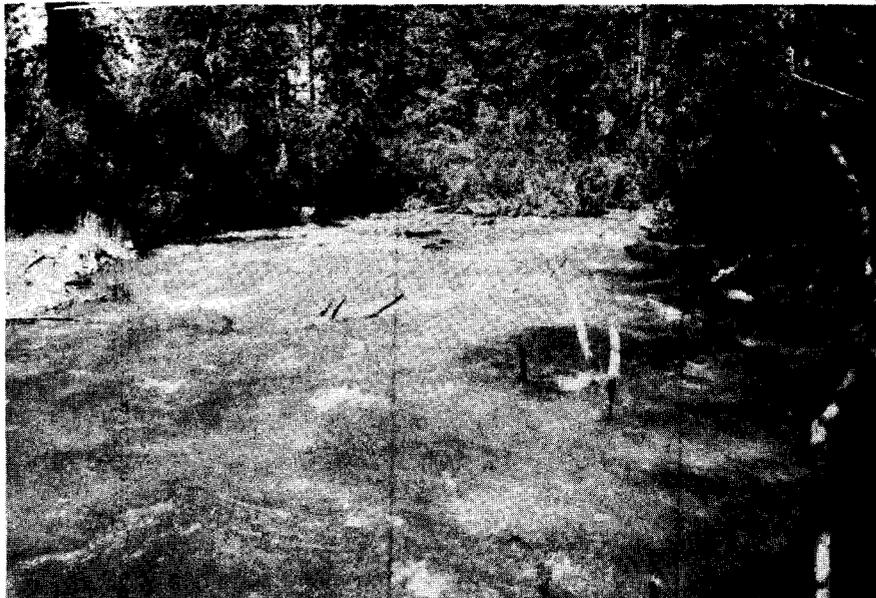
PEAK ESCAPEMENT RECORD

115-32-045 Little Salmon Creek

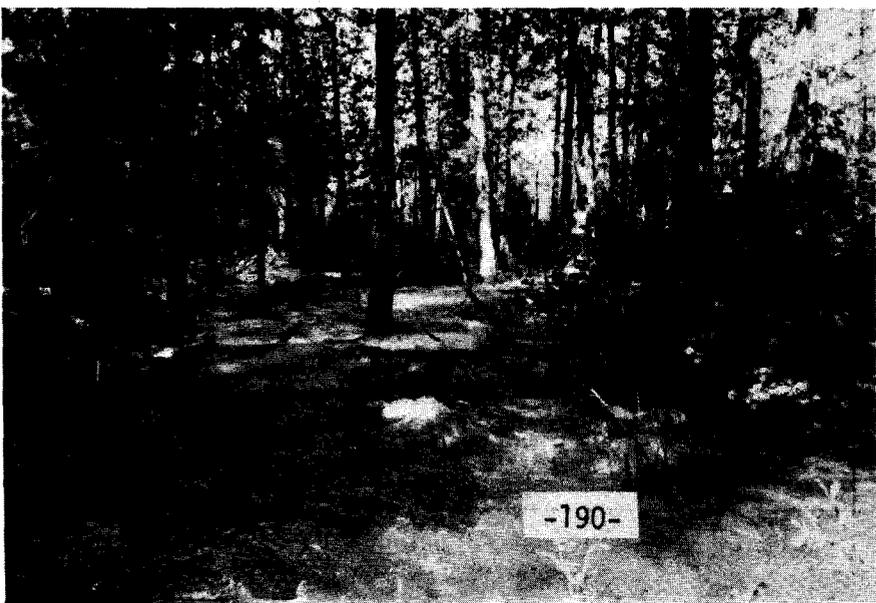
DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/15/60		52		FWS
10/10/60		15		ADF&G
10/10/60			160 Coho	
9/7/70			1 Sockeye	
10/12/71			200 Coho	
10/22/75			10 Coho	



115-32-039



115-32-039



115-32-039



115-32-039

Upper area
of survey



115-32-039



115-32-039

Empties onto
willow flats

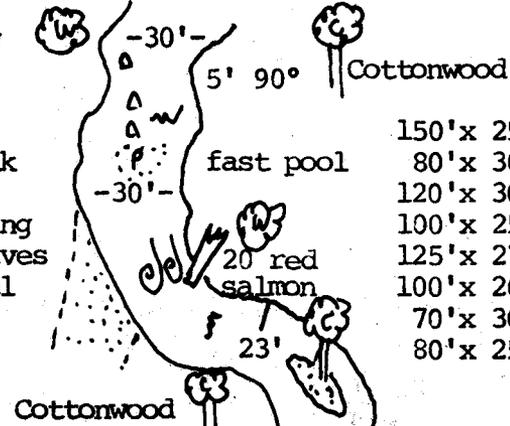
-191-

115-32-039
 7/24/79 1320
 Walker/Berg/Edgington
 Weather: clear
 Air: 64°
 Water: 46°
 pH: 8.5, clear
 Flow-est: 150 cfs

575' (175.3m)
 125' (38.1m)
 Width 27' (8.2m)
 10% boulder
 40% cobble
 50% gravel
 40% ASA
 Gradient 3°
 Bearing 170°
 450' (137.2m)
 100' (30.5m)
 Width 25' (7.6m)

10% boulder
 40% cobble
 50% gravel
 ASA 50%
 350' (106.7m)
 20' (36.6m)
 Width 30' (9.1m)
 10% boulder, 40% cobble,
 50% gravel, ASA 80%
 Gradient 3°
 Bearing 142°
 230' (70.1m)
 80' (24.4m)
 Width 30' (9.1m)
 10% boulder, 30% cobble,
 60% gravel, ASA 20%
 p/r 20/80
 Gradient 3°
 Bearing 171°
 150' (45.7m)
 150' (45.7m)
 Width 25' (7.6m)
 30% cobble, 70% gravel
 p/r 10/90
 ASA 30%
 Gradient 3°
 Bearing 118°

Willow
 100'+
 90° 3'
 3' cutbank
 3 red salmon
 spawning
 2' high waves
 Old channel



Spawning Area

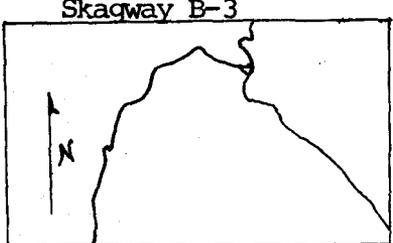
150'x 25'x 30%ASA	= 1125 ft ² (104.1m ²)
80'x 30'x 20%ASA	= 480 ft ² (44.4m ²)
120'x 30'x 80%ASA	= 2880 ft ² (266.7m ²)
100'x 25'x 50%ASA	= 1250 ft ² (115.7m ²)
125'x 27'x 40%ASA	= 1350 ft ² (125m ²)
100'x 26'x 20%ASA	= 520 ft ² (48m ²)
70'x 30'x 20%ASA	= 420 ft ² (38.9m ²)
80'x 25'x 40%ASA	= 800 ft ² (74.1m ²)

45° 6'
 Cottonwood
 Loose gravel
 4 red salmon
 3' 90°
 2 red salmon
 3' cutbank
 Willow
 Many spawners in
 dug out pools
 Appears that stream
 periodically fluctu-
 ates
 1' vertical gravel
 bank
 Moderate canopy
 Moose sign
 12 red salmon

55' channel
 Cottonwood
 Cascade over and
 through willow roots

Excellent gravel channels
 8 bald eagles overhead
 1 magpie

Stream braids through willow
 Several deep channels, all
 seem to form single flow that
 flows out to marshy flats that
 ultimately drain into Chilkat
 Lake



Mountain runoff through alluvial fan. Periodic fluctuations of water depth and direction, probably accounts for fluctuating salmon returns to the area.

Same habitat for additional 500'

825' (251.5m)
80' (24.4m)
Width 25' (7.6m)

Cascading water throughout

P/R 5/95
ASA 40%
Gradient 4°
Bearing 181°

Pool = 10'x 8'x 3.5'
Debris jam

40°
1 red salmon

Cottonwood



Primarily spruce forest

745' (227.1m)
70' (21.3m)

Width 30' (9.1m)

Pool = 15'x15'x 3'
Good gravel

Debris jam

Vertical bedrock

ASA 20%
Gradient 3°
Bearing 226°

80°
Water ouzel

Moderately loose gravel, some silt

50' channel
Fast rapids

675' (205.8m)
100' (30.5m)

Width 26' (7.9m)

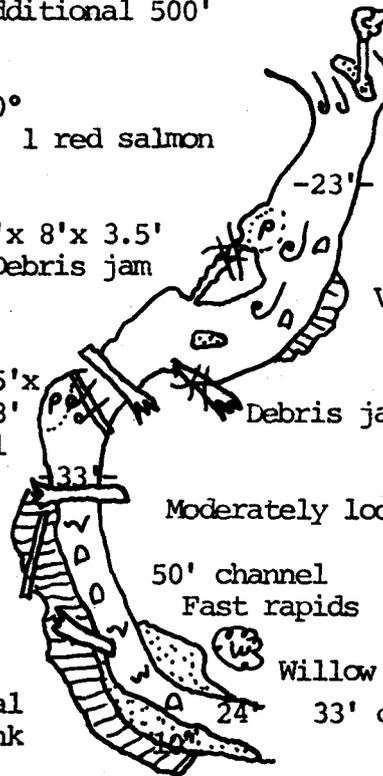
60' vertical bank

Willow

33' channel

20% boulder
40% cobble
40% gravel
ASA 20%
Bearing 225°

4' moraine bank



Name: Snooky Creek (USFWS)
Latitude: 59 21 02 N
Longitude: 135 55 20 W
Geodetic Map No: Skagway B-3
Location: N.W. end of Chilkat Lake

Catalog No: 115-32-039
Former Stream No: River Basin Study
USFWS #145
Work Area: Haines - Skagway
Watershed Length: 10.5 miles
Drainage Area: 10.78 square miles
Water Supply Type: Hanging glacier and ground runoff.

Trails & Survey Routes: Easily walked channel and banks. Stream was reached by anchoring in lake and walking one mile overland along 200' contour line of hillside bordering stream.

Aerial Survey Notes: Moderate to open canopy in upper sections, stream obscured in willow and finally draining into marshy flats.

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
USFWS 10/28/60 0.5 mile foot survey 78 sockeyes.

ASA = 8825 ft² (817m²) in area surveyed.

Schooling Areas: _____

Spawning Areas: Approximately 60 red salmon spawning in midstream of area surveyed.

SHELLFISH POTENTIAL: _____

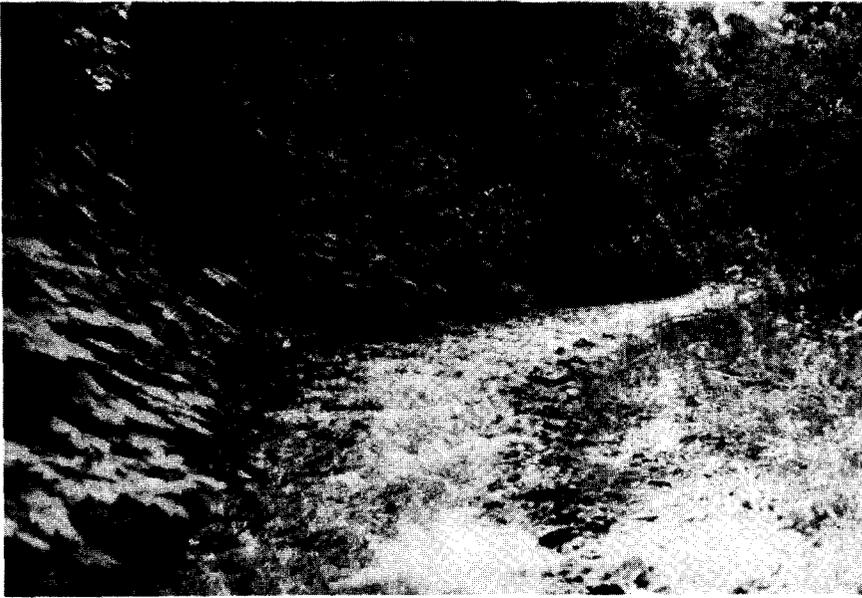
SPORT FISHERIES: None noted

LAND USE (history, present, proposed): Appears in natural state.

REHABILITATION POTENTIAL: _____

SOILS: Stream located on unstable alluvium subject to periodic fluctuation of channel direction.

GAME RESOURCES (species, use, habitat): Eighth bald eagles circling over stream, moose sign, several bear killed salmon in area (area not noted for bear).



115-32-038

115-32-038
 Anman Creek
 7/24/79 1715
 Walker/Berg/Edgington
 Air: 67°F
 Water: 52°F
 pH: 8.0
 Flow-est: 10 cfs

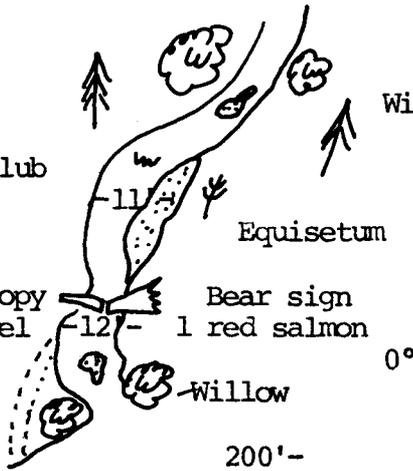
Remains similar upstream. Probably most of the fish that utilize waters of this stream spawn off mouth.

100' (30.5m)
 100' (30.5m)
 Width 11' (3.4m)

20% cobble
 80% gravel

Moderate
 Riffles throughout canopy
 ASA 85%, poor, tight gravel

Gradient 2°
 Bearing 265°
 Highwater channel



Willow

Spawning Area

100'x11'x 85% ASA = 935 ft² (86.6m²)

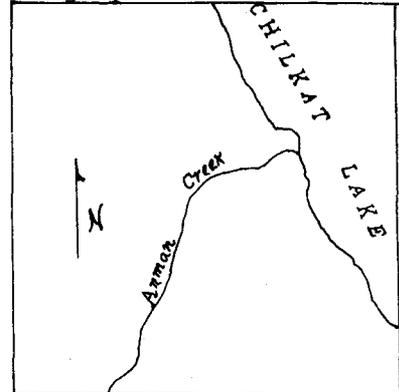
200'-

2 red salmon using small side slough

Chilkat
 Lake

5 - 6 jumps off mouth

Skagway B-3



Name: Arman Creek
Latitude: 59 19 35 N
Longitude: 135 55 04 W
Geologic Map No: Skagway B-3
Location: West side of Chilkat Lake

Catalog No: 115-32-038
Former Stream No: River Basin Study
USFWS #127
Work Area: Haines - Skagway
Watershed Length: 2 miles
Drainage Area: 2 square miles
Water Supply Type: Hanging glacier and surface runoff.

Trails & Survey Routes: _____

Aerial Survey Notes: _____

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Few jumpers off mouth as well as sockeye observed in stream.

USFWS survey 7/16/60 0.25 miles by foot 40 sockeye - 50 off mouth
Schooling Areas: _____

Spawning Areas: Probably most of fish that use stream waters spawn off mouth.

SHELLFISH POTENTIAL: N/A

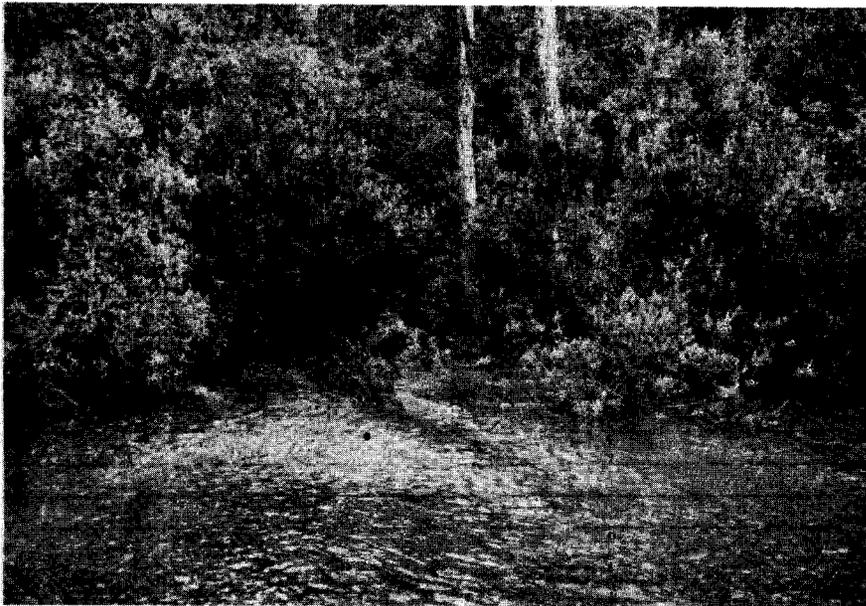
SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Appears in natural state.

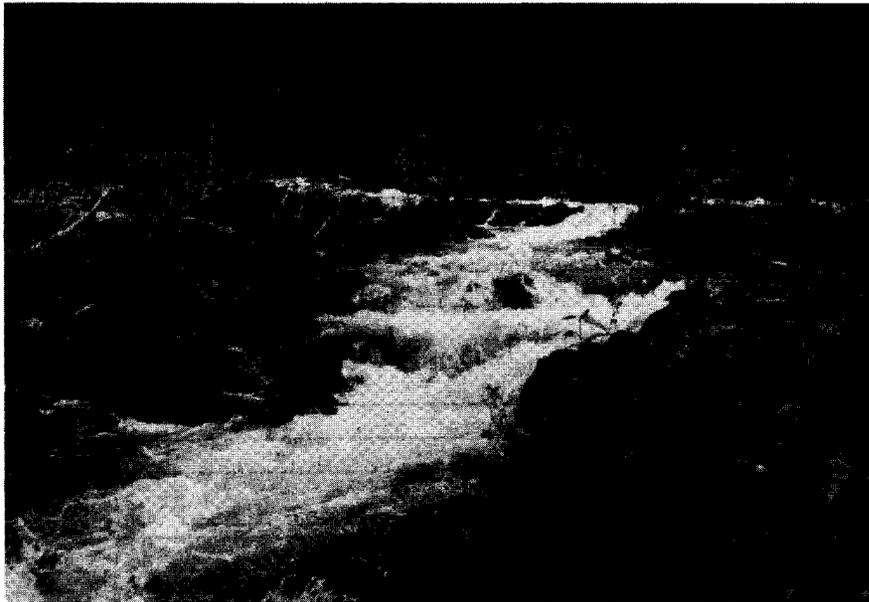
REHABILITATION POTENTIAL: _____

SOILS: Firmly impacted gravel in stream.

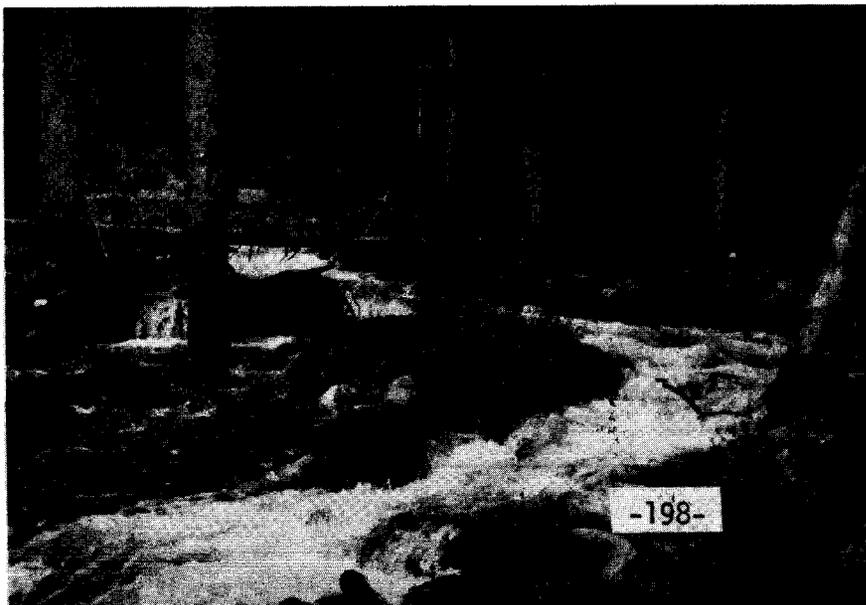
GAME RESOURCES (species, use, habitat): Bear sign noted.



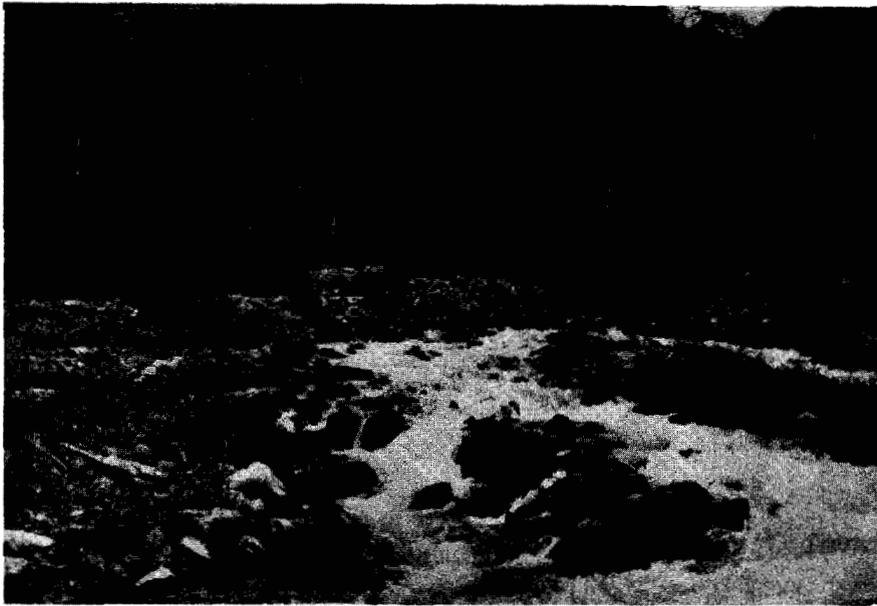
115-32-037
Alluvial shelf in
Chilkat Lake where
sockeye spawn



115-32-037
Left fork



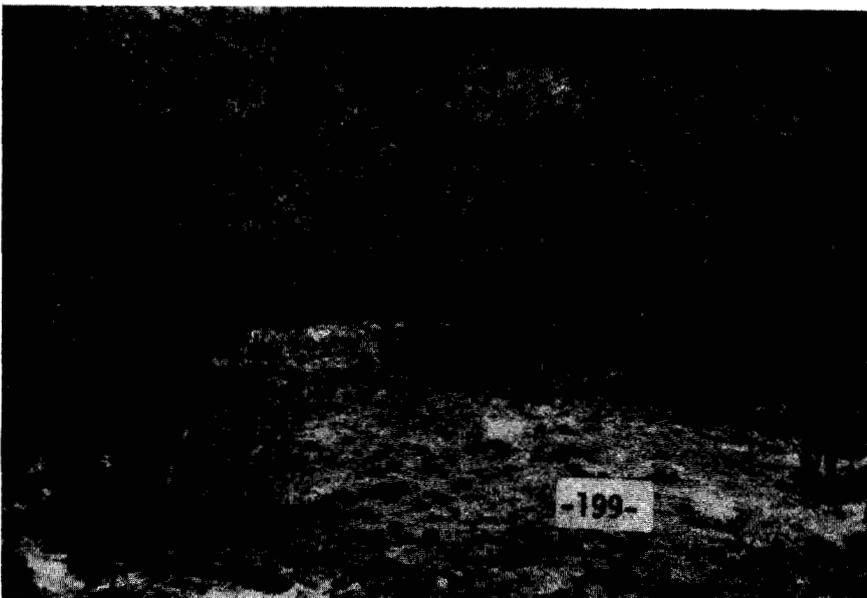
115-32-037
Left fork



115-32-037
Upper unstable
stream bed



115-32-037



115-32-037

115-32-037
 Right fork
 7/23/79 4:00 pm
 Walker/Edgington
 Overcast
 Air: 51°F
 Water: 43°F
 pH 8.0
 Flow-est 80 cfs

375' (114.3m)
 125' (38.1m)
 Width 20' (6.1m)

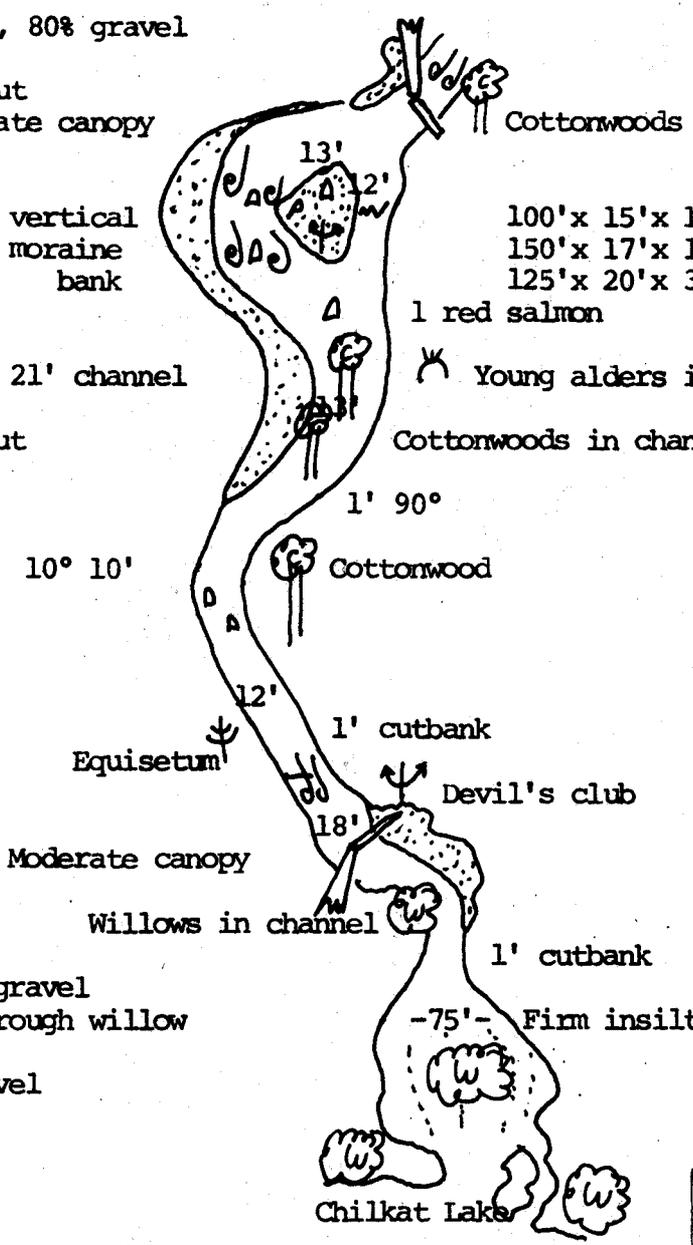
20% small cobble, 80% gravel

Riffles throughout
 Moderate canopy

ASA 30%
 Bearing 157°
 250' (76.2m) 3' vertical moraine bank
 150' (45.7m)
 Width 17' (5.2m)

10% boulder
 50% cobble
 40% gravel
 Riffles throughout
 ASA 15%
 Gradient 3°
 Bearing 146°
 200' (61m)
 100' (30.5m)
 Width 15' (4.6m)
 10% boulder
 40% cobble
 50% gravel
 P/R 20/80
 ASA 10%
 Gradient 3°
 Bearing 170°
 100' (30.5m)
 100' (30.5m)
 Width 75' (22.9m)
 40% cobble, 60% gravel
 Stream braids through willow roots throughout
 ASA 0%, firm gravel

Bearing 143°



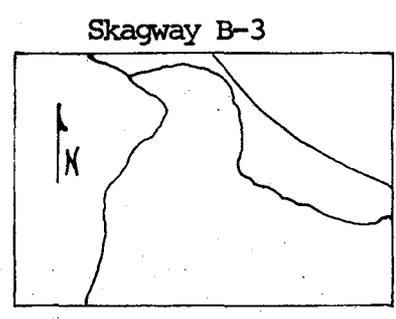
Spawning Area
 100'x 15'x 10% ASA = 150 ft² (13.9m²)
 150'x 17'x 15% ASA = 382.5 ft² (35.4m²)
 125'x 20'x 30% ASA = 750 ft² (69.4m²)

1 red salmon
 Young alders in channel
 Cottonwoods in channel

10° 10'

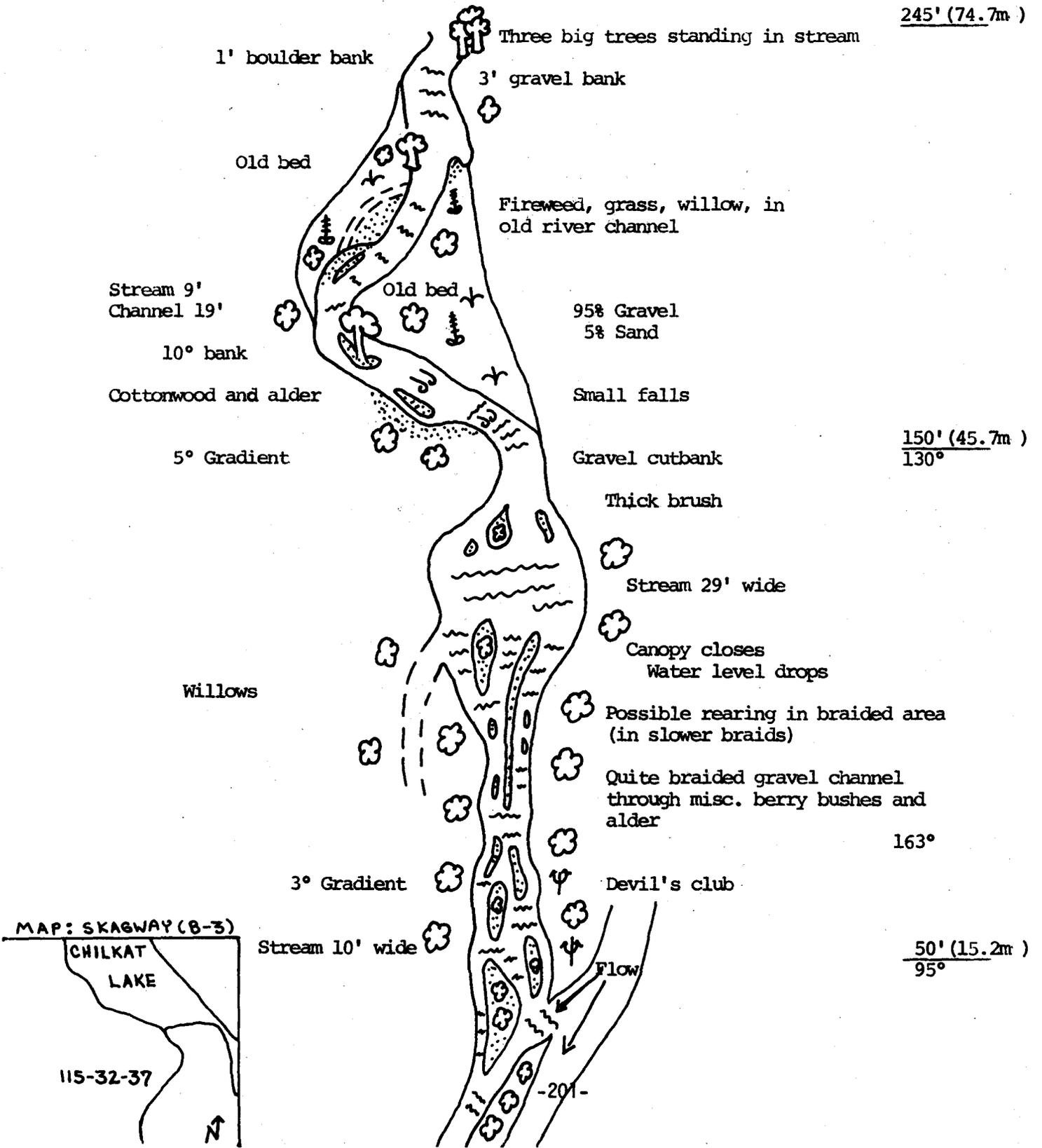
Chilkat Lake

30 red salmon spawning on shelf off mouth.



Overcast
 Open canopy until braided area
 Smooth, rounded substrate
 25 cfs
 p/r = 5/95
 ASA = .40 x 515 x 12 = 227 m²
 Spawning habitat limited by swift
 water and channel movement.

115-32-037
 7/23/79 4:15 pm
 Thayer/Berg
 Left fork



115-32-037
 7/23/79 4:00 pm
 Walker/Edgington

Unstable channel through alluvial fan - rapids, cascades upstream, avalanches could explain fluctuations in salmon runs in area. Gradient upstream 6°.

845' (257.6m)
 210' (94.5m)
 Width 30' (9.1m)

20% boulder
 30% cobble
 50% gravel

Rushing water throughout

ASA 0%

Gradient 6°
 Bearing 171°
 535' (163.1m)
 160' (48.8m)
 Width 25' (7.6m)

10% boulder
 50% cobble
 40% gravel

Rapids and cascades throughout 5°

0% ASA

Gradient 10°
 Bearing 154°

Many dry high high flow channels

Many exposed boulders

Cottonwood major tree species
 Scattered spruce

Moderate canopy

Unstable banks

5°

Undercutting

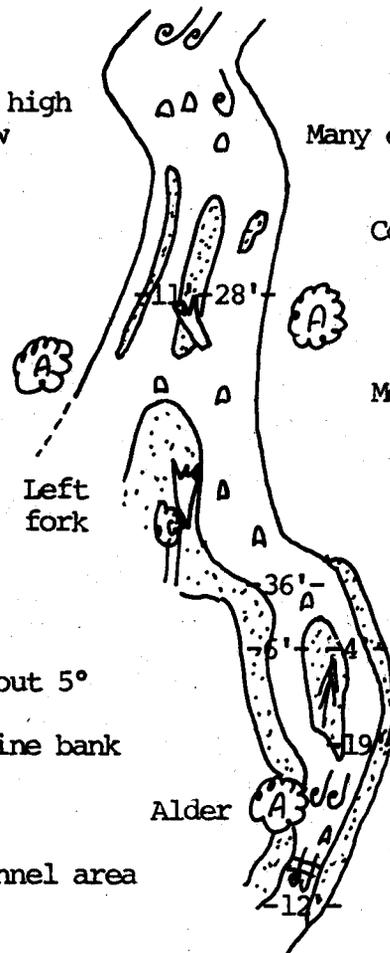
2' cascades

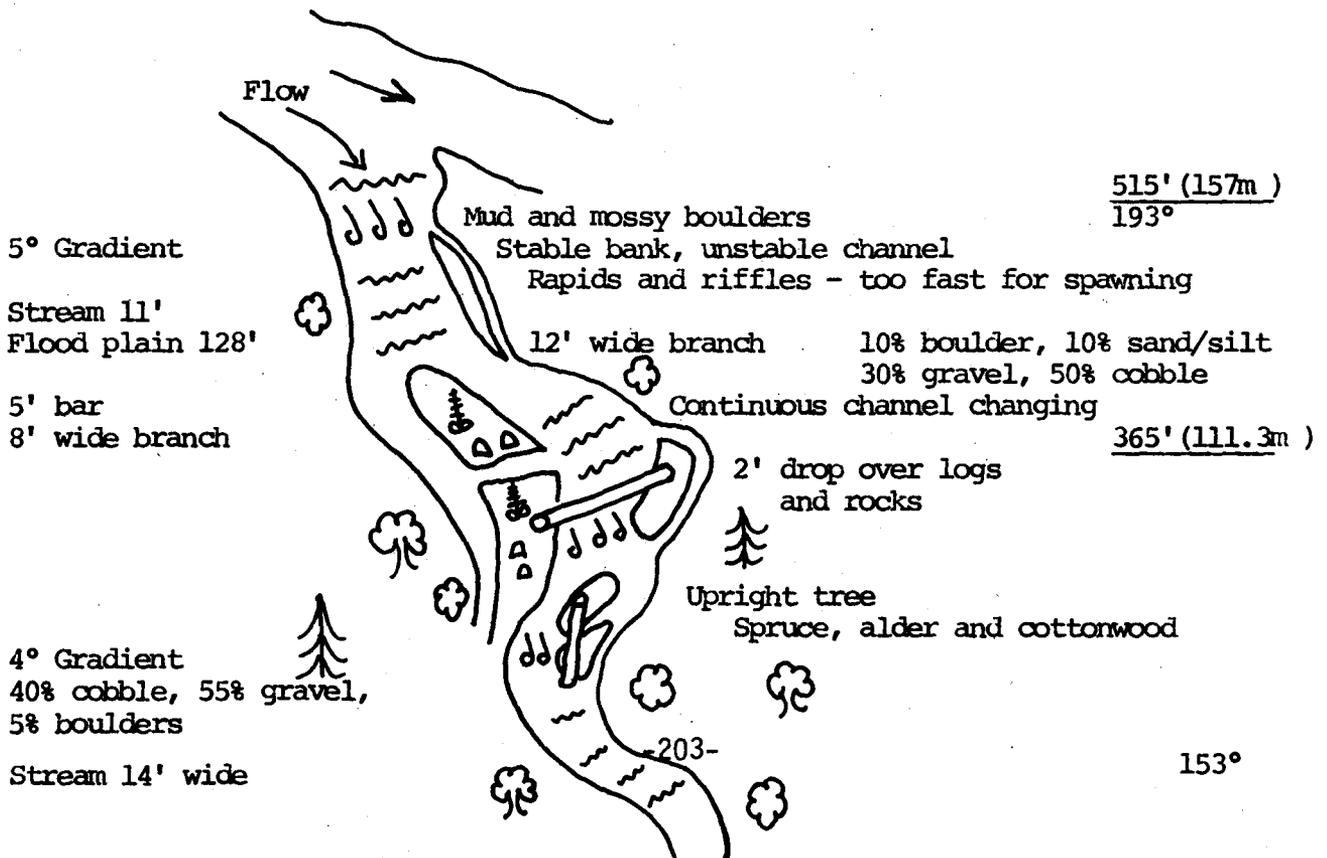
Alder

Left fork

Alder

5' moraine bank
 Old channel area





Name: Eagle Creek
Latitude: 59 18 25 N
Longitude: 135 52 08 W
Geodetic Map No: Skagway B-3
Location: South west end of
Chilkat Lake

Catalog No: 115-32-037
Former Stream No: River Basin Study
USEWS # 128
Work Area: Haines - Skagway
Watershed Length: 4.75 miles
Drainage Area: 4.53 square miles
Water Supply Type: Hanging glacier, snow
and surface runoff.

Trails & Survey Routes: Easy walking along bank

Aerial Survey Notes: Moderage canopy obscures stream - most spawning activity
takes place on shelf off mouth.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
ADF&G survey 8/13/60 200 - 250 red salmon off mouth aerial survey

Schooling Areas: 30 red salmon off mouth

Spawning Areas: Red salmon primarily utilize alluvial shelf off mouth - only
2 red salmon noted in stream. 346 m²

SHELLFISH POTENTIAL: _____

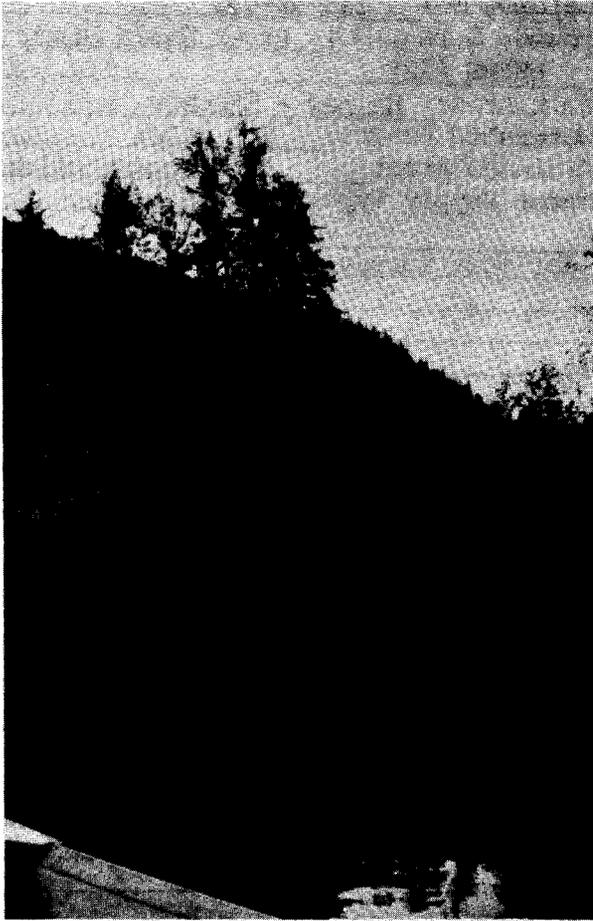
SPORT FISHERIES: Sport fish potential limited by steep gradient and
unstable area.

LAND USE (history, present, proposed): Appears in natural state

REHABILITATION POTENTIAL: None needed

SOILS: Stream located on alluvial fan - unstable moraine banks with areas
of undercutting. Upstream area probably experiences frequent avalanches.

GAME RESOURCES (species, use, habitat): Two bald eagle over stream.



115-32-035

Mouth at Childs Lake

115-32-035

Valley origin of stream



-205-

Name: _____
Latitude: 59 17 40 N
Longitude: 135 49 35 W
Geodetic Map No: Skagway B-3
Location: Southern end of Chilkat Lake

Catalog No: 115-32-035
Former Stream No: River Basin Study
USFWS #129
Work Area: Haines - Skagway
Watershed Length: 2.0 miles
Drainage Area: 3.60 square miles
Water Supply Type: Surface, snow.

Trails & Survey Routes: Very difficult for foot survey due to dense brush.

Aerial Survey Notes: _____

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
ADF&G aerial survey 8/30/60 50 sockeyes

Rearing coho observed.

Schooling Areas: Mouth

Spawning Areas: Not surveyed.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None observed.

LAND USE (history, present, proposed): Natural state.

REHABILITATION POTENTIAL: _____

SOILS: No observation.

GAME RESOURCES (species, use, habitat): Bear, moose.

115-32-035
Thayer/Berg
7/23/79
Chilkat Lake

Weather: overcast
Water: light gray (slightly turbid)
25 cfs
pH 7.7
45°F

Air: 59°F
Moderate canopy, shaded by willow banks
stream at least one foot above flood stage.

Stream #115-32-035 flows out of a valley between two mountains (1735' and 5490' elevation) and seems to be fed by some glacial melt (hence the light gray color), but mostly by precipitation and snowmelt. The stream bottom can be seen and is silty and littered with organic debris—twigs, bark, leaves, 0% ASA in area surveyed.

The gradient is less than 0.5° and the flow is slow, creating one long pool. There were no riffles in the areas observed. The channel is 4-5' deep and deeper at the mouth which emerges from a marsh at the east end of Chilkat Lake. This stream supports rearing coho salmon. No other rearing fish or fish bones were observed, but observations of this nature were hampered by high water.

This stream is in a flood plain, with a vegetative cover of primary plant succession. The predominant shrubs are willow and alder, with a sedge undergrowth. About 100' from the north bank (at about 400' elevation) the vegetation changes to spruce and cottonwood with a dense undergrowth of shrubbery and devil's club. There is a marginal (for survey purposes) game trail north of the stream and moose and bear sign abound. Bear sign was also seen in the flood plain and a bear crossed the stream about 60' from the survey team. No other wildlife was seen. The bearing at which most of these observations were taken was 50°NE . From the south bank for 1-2 miles the same willow successional species continue, followed by an increasing density of spruce.

Stream #115-32-035 did not receive a more complete survey as it was in flood stage. The stream channel was too deep to walk. The banks were covered by several feet of water flowing through dense brush. The spruce forest off the north bank was dry, but equally brushy, making progress slow. It was also out of sight of the stream and separated from it by flood water over 30" deep. This stream would be a wonderful candidate for survey by canoe, as it is a bit too narrow and twisting for navigation by riverboat.



115-32-034
Cabin Creek
Upper area coho
habitat



115-32-034
Lower sockeye
spawning area



115-32-034
Sockeye spawning bed



115-32-034

Spawning area
above mouth



115-32-034

Mouth at
Chilkat Lake

115-32-034
 Walker/Edgington
 Overcast
 Air: 64°F
 Water: 50°F
 pH: 8.0
 Flow-est: 10 cfs

Stream channel characterized by 2" layer of sand/silt throughout redds marked by clearing of sand to underlying gravel. Alder overgrowth blocks red salmon use of stream, though may be utilized by cohos.

Does not appear to be enough flow (0.5 cfs) on this tributary to be any further sockeye spawning, many trout and coho fry.

245' (74.7m)
 75' (22.9m)
 Width 4' (1.2m)
 80% gravel
 20% sand
 Slow moving pools
 ASA 80%

Gradient 0.5°
 Bearing 105°
 170' (51.8m)
 170' (51.8m)
 Width 10' (3m)

80% gravel
 20% sand

Slow pools throughout

ASA 80%

130 red salmon in stream from mouth to "I" tributary.

Many coho fry in marsh.

Open canopy 80' to lake.

Equisetum marsh

Gradient 0.5°
 Bearing 95°

Chilkat Lake

Devil's club
 Alder
 Heavily sanded channel
 Closed canopy
 100' 15°
 Moose tracks
 Bear kill
 Moderate canopy

Moderately firm gravel some fines.

Spawning Area	
170'x10'x80%	ASA = 1360 ft ² (129.5m ²)
75'x 4'x80%	ASA = 240 ft ² (22.2m ²)
100'x 6'x50%	ASA = 300 ft ² (27.8m ²)
90'x 5'x90%	ASA = 405 ft ² (37.5m ²)
85'x11'x40%	ASA = 374 ft ² (34.6m ²)
85'x10'x60%	ASA = 510 ft ² (47.2m ²)
80'x10'x50%	ASA = 400 ft ² (37.0m ²)

Trib. I

Alder

Willow

18°

Bear activity throughout

Excellent redd development redds averaging 5' x 5'.

1 dead female red salmon in stream, no apparent reason for death.

46 red

R = Redd location

Skagway B-3



Tributary "I"

360' (109.8m)

85' (25.9m)

Width 10' (3m)

30% cobble

40% gravel

30% sand

p/r 30/70

ASA 60%

Bearing 53°

275' (83.8m)

85' (25.9m)

Width 11' (3.4m)

60% small cobble

40% gravel

p/r 40/60

ASA 40%

Gradient 2°

Bearing 51°

190' (57.9m)

90' (27.4m)

Width 5' (1.5m)

50% cobble

50% gravel

p/r 10/90

ASA 90%

Gradient 2.5°

Bearing 25°

100' (30.5m)

100' (30.5m)

Width 6' (1.8m)

20% cobble

80% gravel

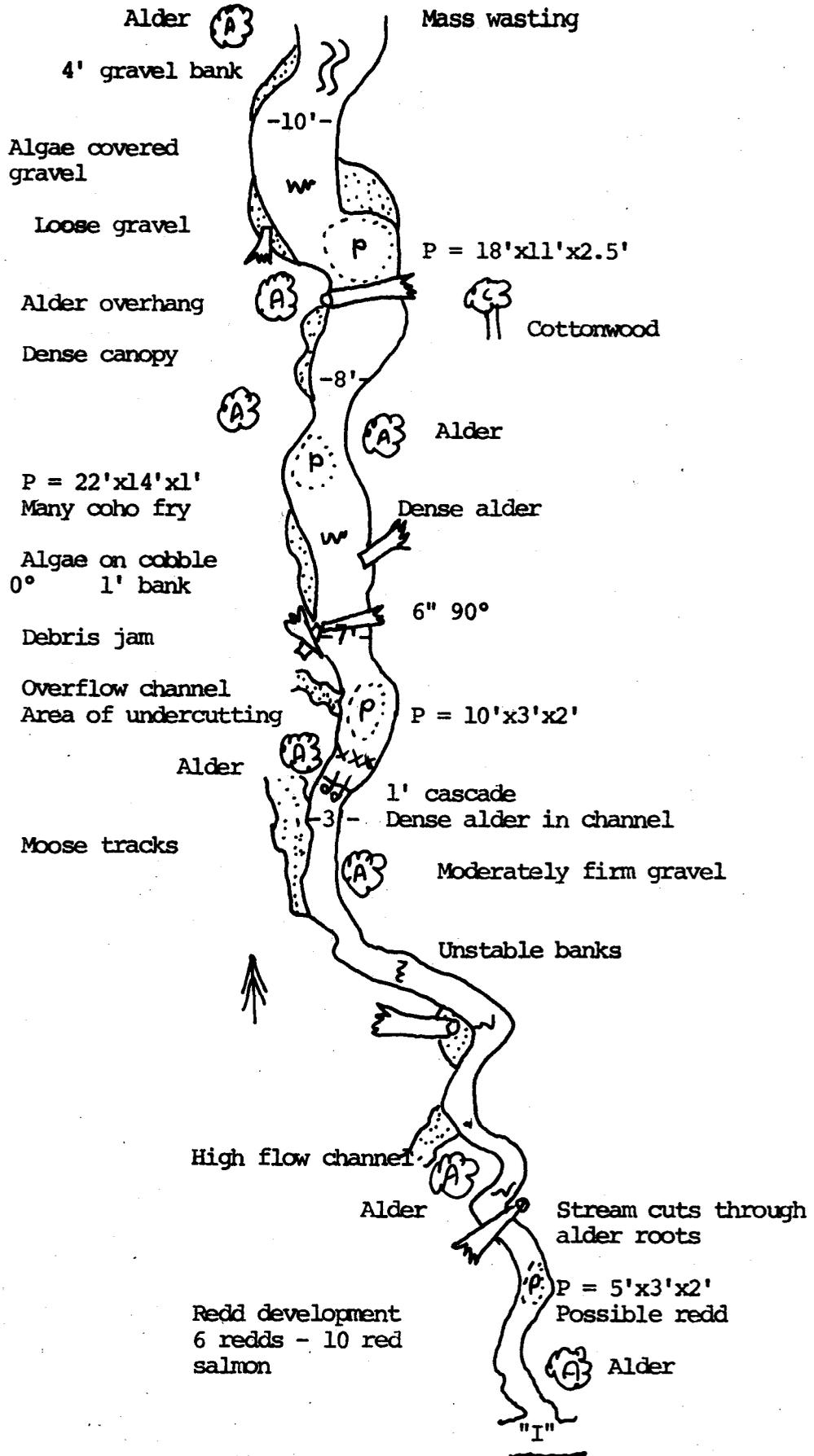
p/r 30/70

ASA 50%

Poor rearing

Gradient 1.5°

Bearing 15°



Continues same upstream with several overflow channels. Good coho habitat with several fry noted, stream based on variable alluvium with very shallow banks. Gradient upstream 2°.

440' (134.1m)
80' (24.3m)
Width 10' (3m)

40% cobble
60% gravel

p/r 40/60

ASA 50%

Gradient 2°
Bearing 89°

No red salmon noted

Algae on gravel

Area of windthrow

Alder

1' cobble bank

2°

Wasting

8'

6'

13'

8'

5'

5°

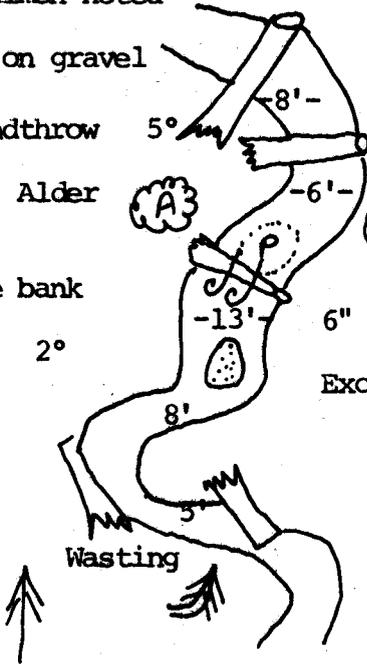
Alder

6" flow over log

Excellent coho spawning habitat

1°

5' 190°



Name: Cabin Creek
Latitude: 59 20 25 N
Longitude: 155 52 28 W
Geodetic Map No: Skaqway B-3
Location: East side of Chilkat Lake

Catalog No: 115-32-034
Former Stream No: River Basin Study
USFWS #130
Work Area: Haines - Skaqway
Watershed Length: 2.5 miles
Drainage Area: 3.32 square miles
Water Supply Type: Ground runoff.

Trails & Survey Routes: Easy walking in channel throughout.

Aerial Survey Notes: Dense canopy covers stream for all but lower 80' to mouth.

Anchorage: _____

Tide Stage when Surveyed: _____

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
USFWS survey 7/16/60, 125 yards by foot, 63 red salmon.

ASA = 3589 ft² (332.3m²)

Schooling Areas: _____

Spawning Areas: Lower 150' heavily utilized by red salmon; upper reaches of first tributary on left appears to be excellent coho spawning habitat.

SHELLFISH POTENTIAL: _____

SPORT FISHERIES: Trout observed.

LAND USE (history, present, proposed): Many lake side cabins located nearby; stream itself appears in natural state.

REHABILITATION POTENTIAL: None needed.

SOILS: Generally stable with points of undercutting and wasting.

GAME RESOURCES (species, use, habitat): Many bear killed salmon; moose sign.



115-32-033

Debris jam at
stream mouth



115-32-033

Rearing pool
at mouth



115-32-033

Upstream habitat

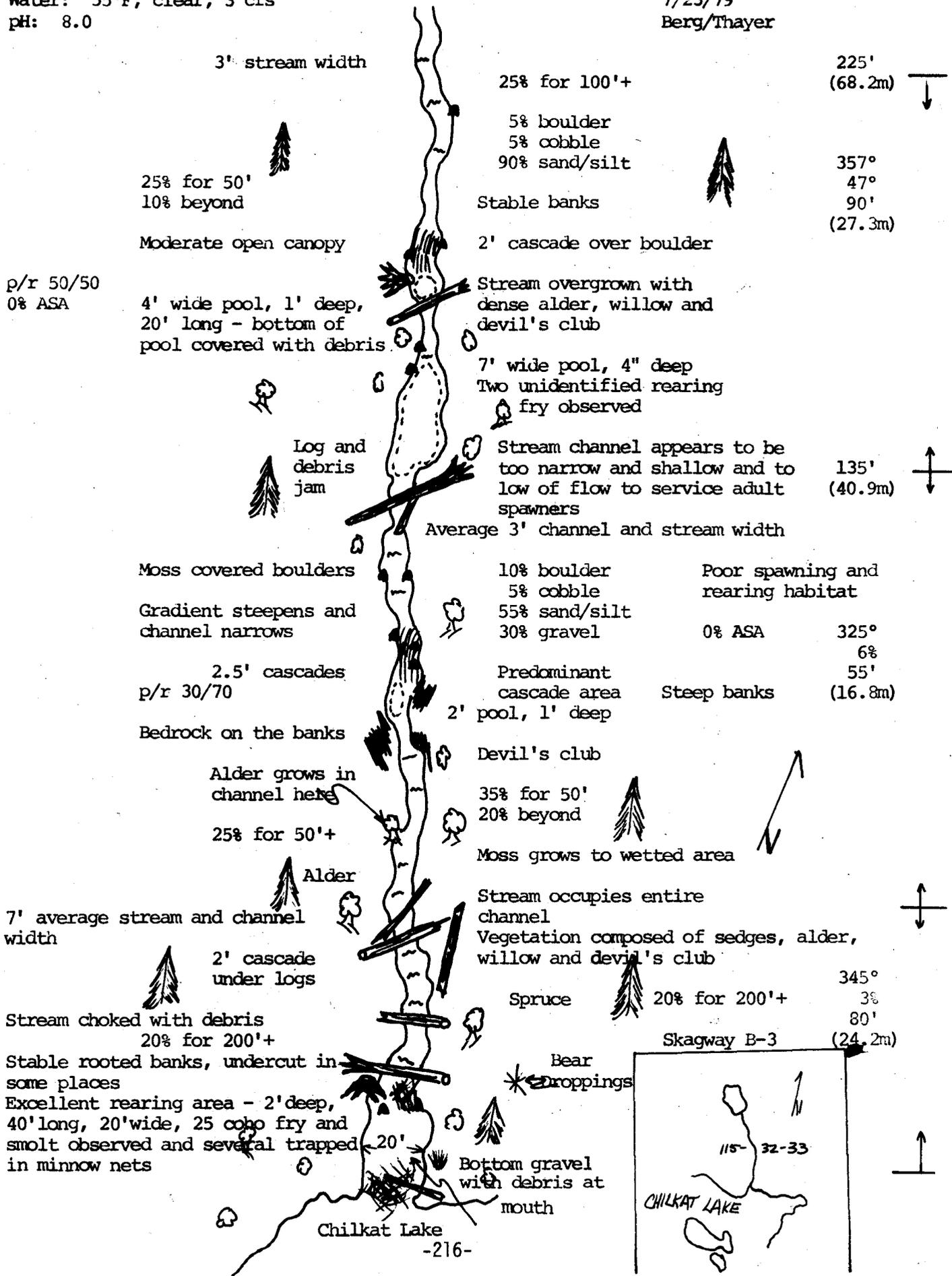


115-32-033

Pool below
cascade

Weather: High overcast
 Air: 61°F
 Water: 55°F, clear, 3 cfs
 pH: 8.0

115-32-033
 Chilkat Lake
 7/23/79
 Berg/Thayer



3' stream width

25% for 100'+

225'
(68.2m)

5% boulder
 5% cobble
 90% sand/silt

25% for 50'
 10% beyond

Stable banks

357°
 47°
 90'
 (27.3m)

Moderate open canopy

2' cascade over boulder

p/r 50/50
 0% ASA

4' wide pool, 1' deep,
 20' long - bottom of
 pool covered with debris

Stream overgrown with
 dense alder, willow and
 devil's club

7' wide pool, 4" deep
 Two unidentified rearing
 fry observed

Log and
 debris
 jam

Stream channel appears to be
 too narrow and shallow and to
 low of flow to service adult
 spawners

135'
(40.9m)

Average 3' channel and stream width

Moss covered boulders

10% boulder
 5% cobble
 55% sand/silt
 30% gravel

Poor spawning and
 rearing habitat

Gradient steepens and
 channel narrows

0% ASA
 325°
 6%

2.5' cascades
 p/r 30/70

Predominant
 cascade area
 2' pool, 1' deep

Steep banks
 (16.8m)

Bedrock on the banks

Devil's club

Alder grows in
 channel here

35% for 50'
 20% beyond

25% for 50'+

Moss grows to wetted area

Alder

Stream occupies entire
 channel

Vegetation composed of sedges, alder,
 willow and devil's club

7' average stream and channel
 width

2' cascade
 under logs

Spruce 20% for 200'+

345°
 3%

Stream choked with debris
 20% for 200'+

Skagway B-3
 (24.2m)

Stable rooted banks, undercut in
 some places

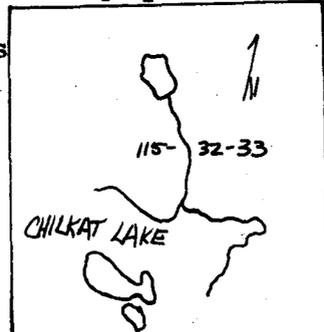
Bear
 droppings

Excellent rearing area - 2' deep,
 40' long, 20' wide, 25 coho fry and
 smolt observed and several trapped
 in minnow nets

Bottom gravel
 with debris at
 mouth

Chilkat Lake

-216-



Name: _____
Latitude: 59 20 47 N
Longitude: 135 52 40 W
Geodetic Map No: Skagway B-3
Location: East side of Chilkat Lake

Catalog No: 115-32-033
Former Stream No: River Basin Study
USEWS #131
Work Area: Haines - Skagway
Watershed Length: 0.6 miles
Drainage Area: 0.5 square miles
Water Supply Type: Lake and surface runoff.

Trails & Survey Routes: Fairly difficult to hike; stream grown over with dense brush in several areas; log barriers and steep banks also make it difficult.

Aerial Survey Notes: Moderately open canopy, stream is shaded in most areas by overhanging brush making aerial survey difficult to impossible.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Spawning Area = 0 ASA
Schooling Areas: Off outlet into Chilkat Lake only.

Spawning Areas: Negligible - stream is too shallow and narrow for adult salmon to use.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Limited due to small size of stream. No trout or char observed or trapped - history unknown.

LAND USE (history, present, proposed): Presently appears to be in a natural state. History or proposals unknown.

REHABILITATION POTENTIAL: None necessary.

SOILS: Generally stable throughout with dense vegetation, moss, duff layer and root systems, stream outlet is full of organic debris and silt.

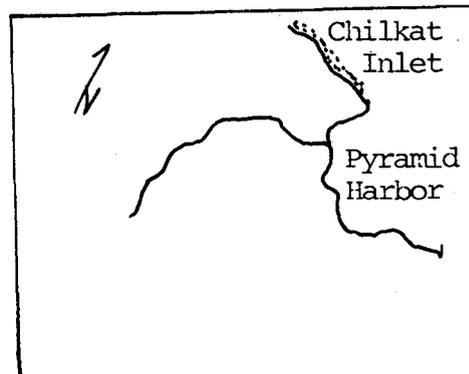
GAME RESOURCES (species, use, habitat): Bear sign observed.

Weather: Partly cloudy
Air: 59°F
Tide: Low

7-25-79
Berg/Thayer/
Edgington

This stream is completely dried up, and there is no trace of any channel bed on the beach where shown on the map, but there is some seepage from under the sand. It appears to be an intermittent runoff stream, because there is a deeply cut channel running up the side of the mountain, but it is dry at present.

Skagway A-2



Name: _____
Latitude: 59 11 0 N
Longitude: 135 29 22 W
Geodetic Map No: Skagway (A-2)
Location: North end of Pyramid Harbor
in Chilkat Inlet

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.25 miles
Drainage Area: 0.71 square miles
Water Supply Type: Ground runoff

Trails & Survey Routes: Foot survey access by boat.

Aerial Survey Notes: Not necessary

Anchorage: In Pyramid Harbor

Tide Stage when Surveyed: Low flooding

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
No value

Intermittent runoff stream

Schooling Areas: None

Spawning Areas: None

SHELLFISH POTENTIAL: None

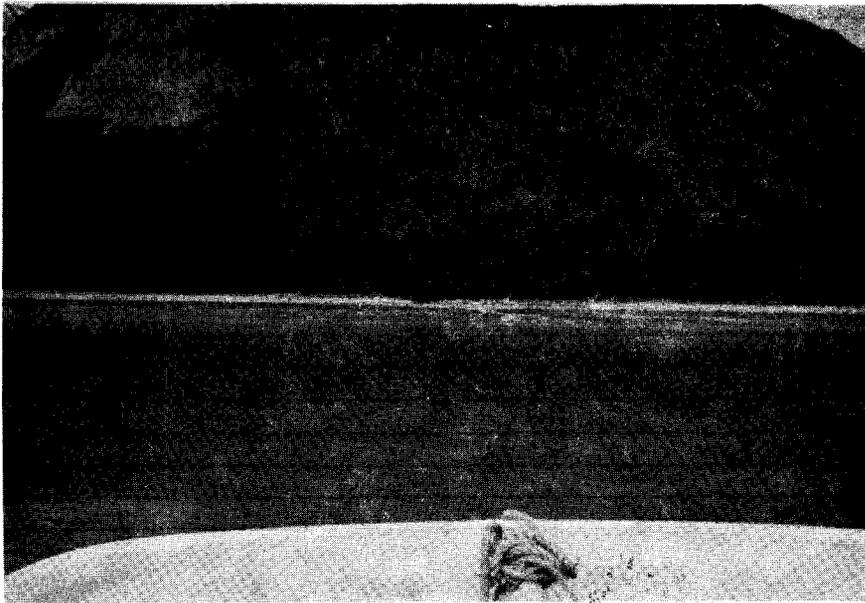
SPORT FISHERIES: None

LAND USE (history, present, proposed): _____

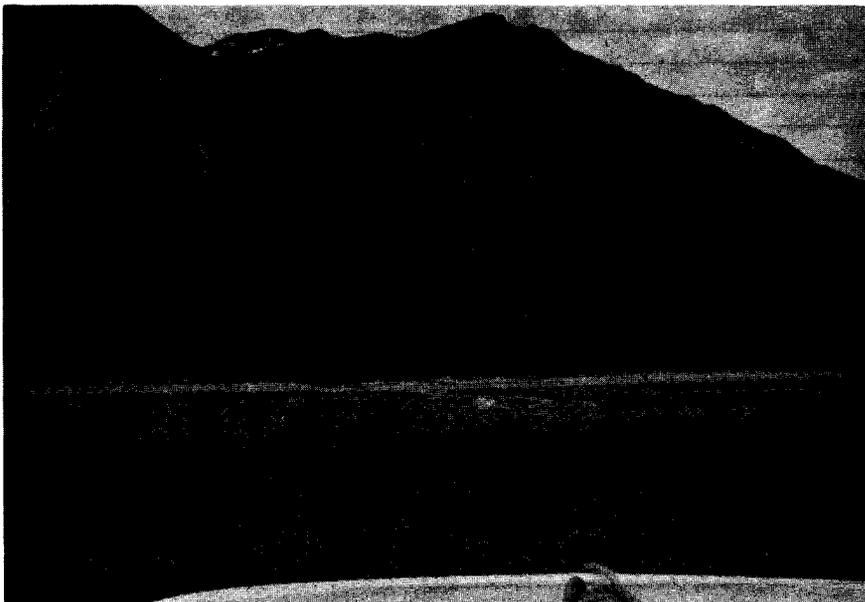
REHABILITATION POTENTIAL: N/A

SOILS: Stable

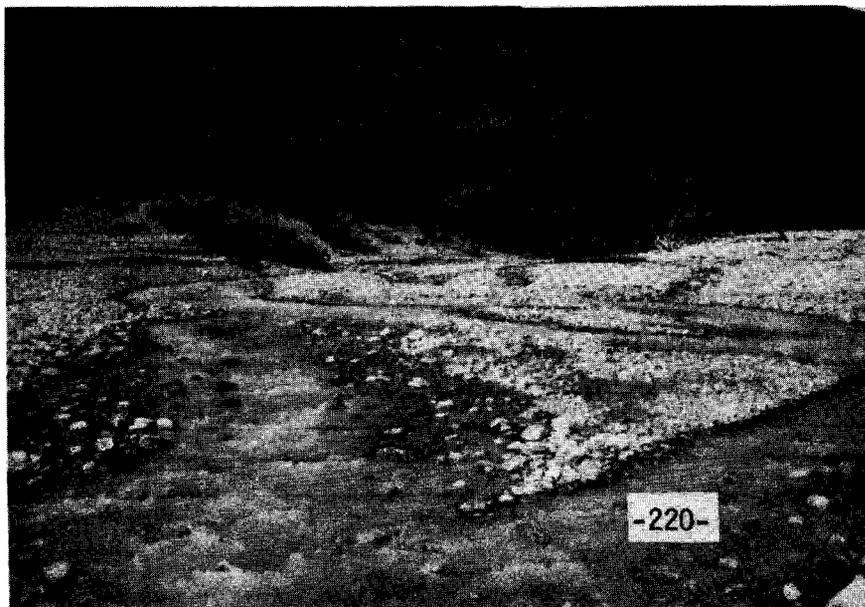
GAME RESOURCES (species, use, habitat): None noted.



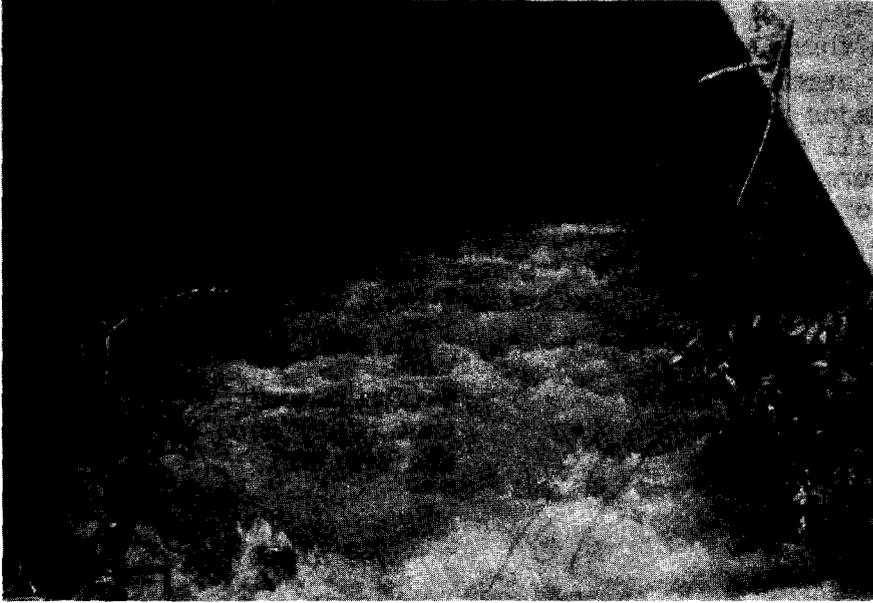
115-32-020



115-32-020



115-32-020



115-32-020
Upper area



115-32-020
Middle fork
at mouth

Farthest south of the three mouths of 115-32-020 system. Intermittantly flashy stream that breaks up into several channels upstream. Major flow travels through alder patches where substrate is still primarily sand and silt. Dense cover throughout obscures stream. Old logging activity occurs on both sides of stream, though no obstructing debris found in channel. No spawning or rearing fish noted. Two traps set one hour each produced 0 fish. Stream primarily rushing with very few pooling areas. Occasional bear and moose sign.

115-32-020
7/26/79
Walker/Eastwood
Weather: overcast
Air: 67°F
Water: 44°F, 85 cfs,
incoming tide
pH: 7.5

Stream presently has three branches that empty into Chilkat Inlet - all are similar.

545' (165.7m)
195' (59.3m)
Width 23' (7m)

40% boulder
40% cobble
20% gravel

Riffles/cascades throughout

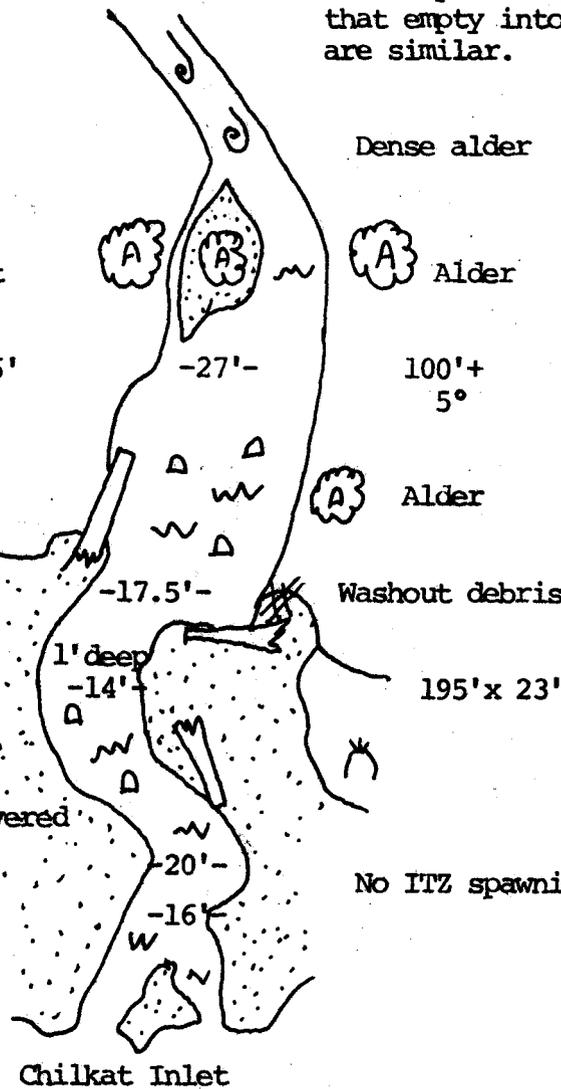
ASA 20%, poor
100'+
90° 6'
Gradient 2°
Bearing 220°

350' (106.4m)
200' (60.8m)
Width 15' (4.6m)
40% boulder, 40% cobble,
20% gravel, 0% ASA

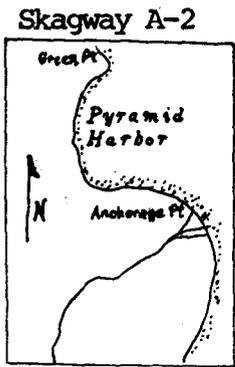
Gradient 2°
Bearing 239°
3' vertical
cobble bank

150' (45.6m)
ITZ 150' (45.6m)
Width 20' (6.1m)
Fucus covered
cobble

ASA 0%
Fucus covered gravel
Gradient 2°
Bearing 240°



Spawning Area
195' x 23' x 20% = 897 ft² (83.1m²)



Name: _____
Latitude: 59 10 28 N
Longitude: 135 28 10 W
Geodetic Map No: Skagway A-2
Location: South end of Pyramid
Harbor

Catalog No: 115-32-020
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 5.5 miles
Drainage Area: 1.64 square miles
Water Supply Type: Glacier and ground runoff

Trails & Survey Routes: Banks easily walked

Aerial Survey Notes: Stream generally obscured by alder

Anchorage: In Pyramid Harbor

Tide Stage when Surveyed: Low flooding

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
No salmon observed or caught in fry trap, no escapement data.

Schooling Areas: None noted

Spawning Areas: 83.1 m² generally poor spawning potential.

SHELLFISH POTENTIAL: None noted

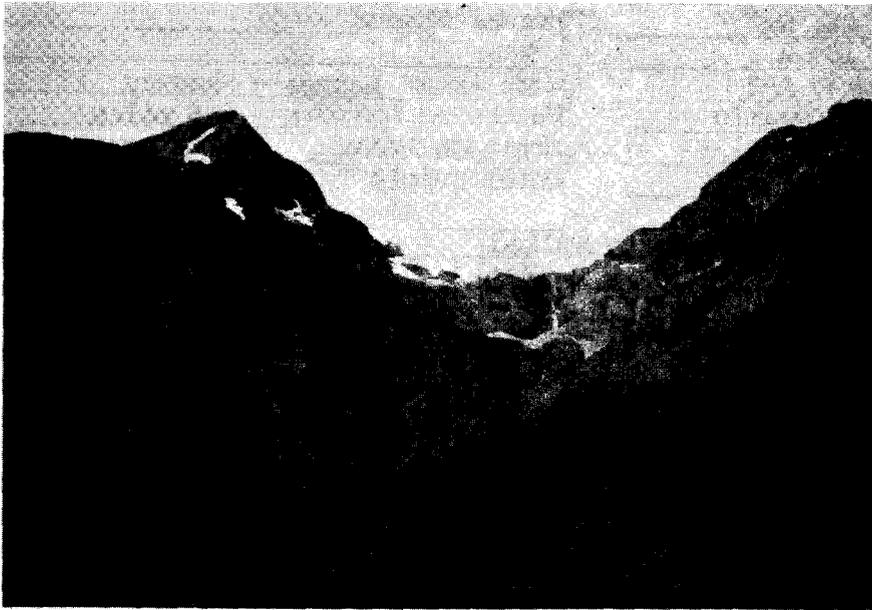
SPORT FISHERIES: No fish caught in trap or observed on survey.

LAND USE (history, present, proposed): Old logging on both banks of stream, old dory located approximately 100 yards into the trees.

REHABILITATION POTENTIAL: None noted

SOILS: Stream on unstable alluvial fan.

GAME RESOURCES (species, use, habitat): Moose and bear sign.



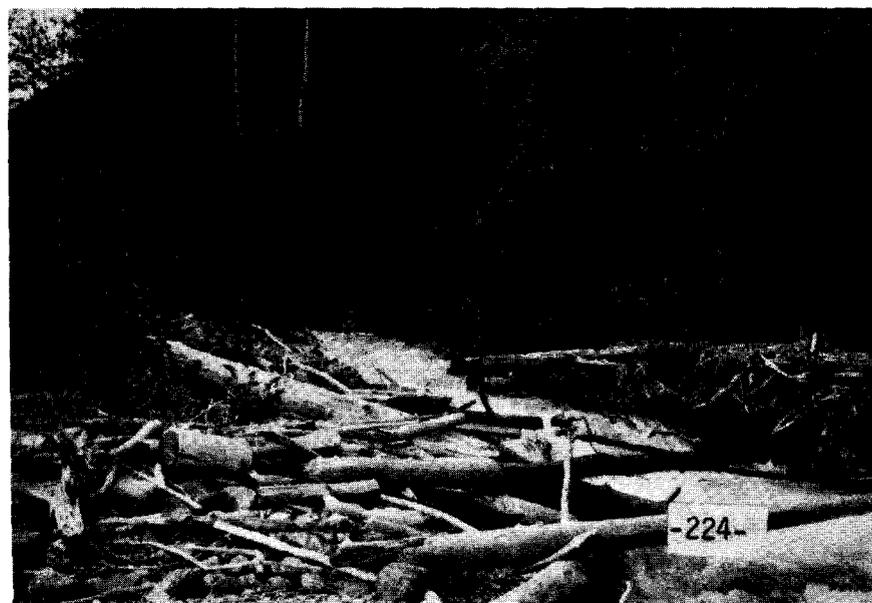
115-32-015

Glacial origin



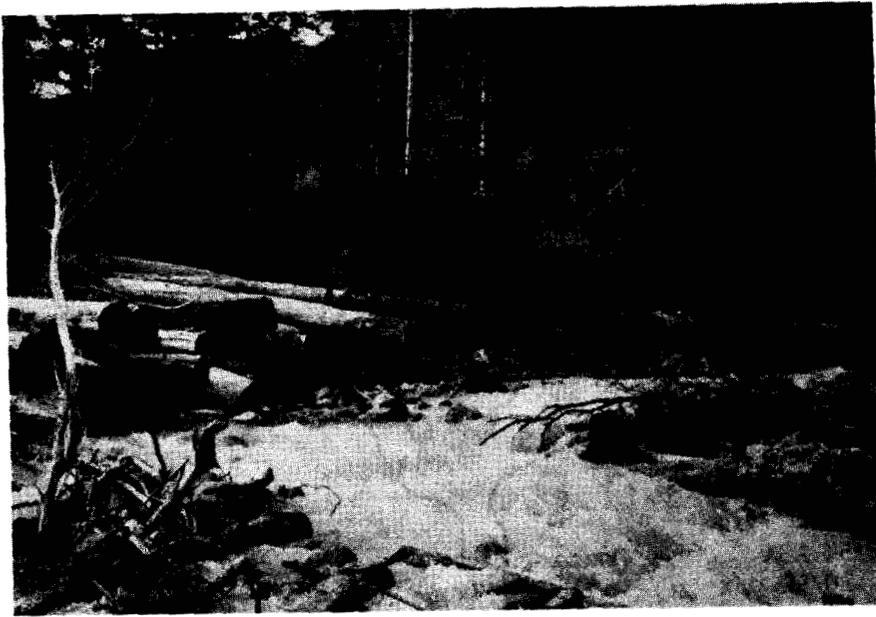
115-32-015

Left branch
at mouth



115-32-015

Right branch
at mouth



115-32-015
Ludaseska Creek
Old logging area



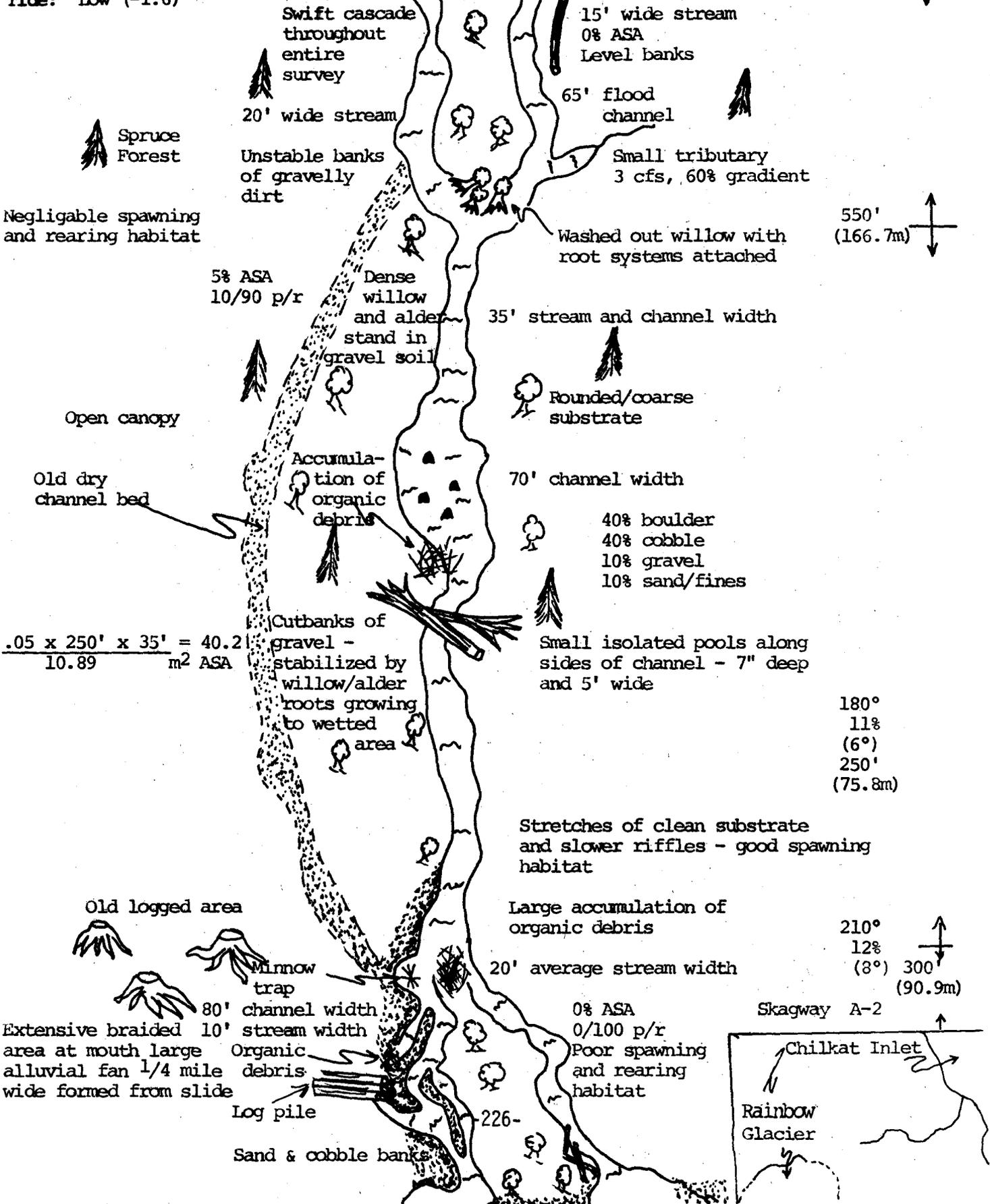
115-32-015
Upper area

Weather: Partly cloudy
 Air: 58°F
 Water: 41°F, milky, 40 cfs
 pH: 7.7
 Tide: Low (-1.6)

Alluvial fan from
 rockslide off mountain

115-32-015
 Ludaseska Creek
 7/26/79 11:30 am
 Berg/Thayer

800'
 (242.5m)

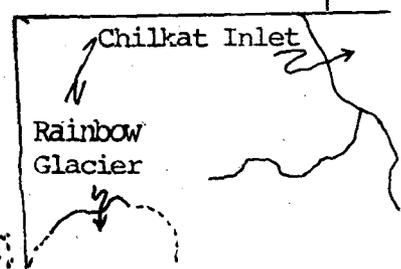


$$\frac{.05 \times 250' \times 35' = 40.2}{10.89} \text{ m}^2 \text{ ASA}$$

550'
 (166.7m)

180°
 11%
 (6°)
 250'
 (75.8m)

210°
 12%
 (8°) 300'
 (90.9m)



Name: Ludaseska Creek
Latitude: 59 07 48 N
Longitude: 135 26 40 W
Geodetic Map No: Skagway A-2
Location: West side of Chilkat Inlet and about 3 miles N.W. of Glacier Point.

Catalog No: 115-32-015
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1 mile
Drainage Area: 1.97 square miles
Water Supply Type: Glacial melt from Rainbow Glacier.

Trails & Survey Routes: Easily hiked along sides of channel. Stream to deep and swift to walk in.

Aerial Survey Notes: Open canopy, easy aerial surveys, but water is very silty and swift.

Anchorage: Off mouth in Chilkat Inlet.

Tide Stage when Surveyed: Low (-1.6)

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Spawning Habitat (m^2 ASA): 40.2 (.05 x 250' x 35' / 10.89)
Schooling Areas: Off mouth in Chilkat Inlet - none intertidally.

Spawning Areas: Poor throughout because of swift flow and constantly changing habitat.

SHELLFISH POTENTIAL: Negligible - no samples observed.

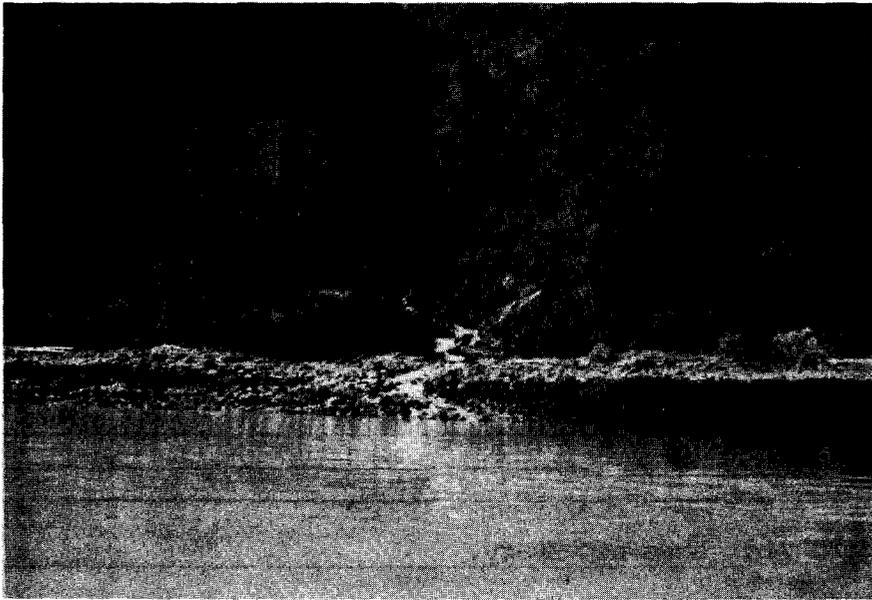
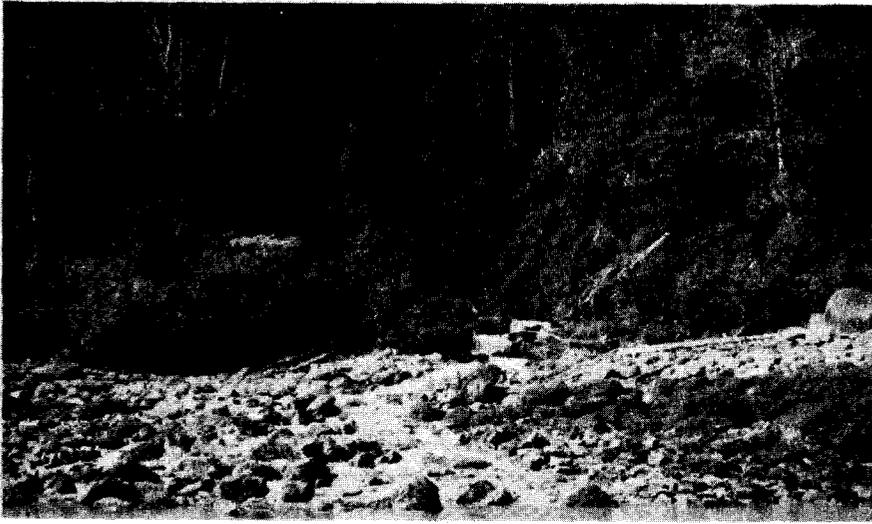
SPORT FISHERIES: Stream very swift - may limit production - no samples observed or caught in minnow trap.

LAND USE (history, present, proposed): Old logging site. Pile of old spruce logs left near stream apparantly by loggers when they left the area.

REHABILITATION POTENTIAL: None necessary.

SOILS: Gravelly and rocky, shifting constantly, but rooted stable by willow and alder in a few areas.

GAME RESOURCES (species, use, habitat): Moose droppings and bear tracks observed. Eagles, small game, and waterfowl off mouth. One seal observed off mouth in Chilkat Inlet.



Weather: Partly cloudy

Tide: Low

Air: 59°F

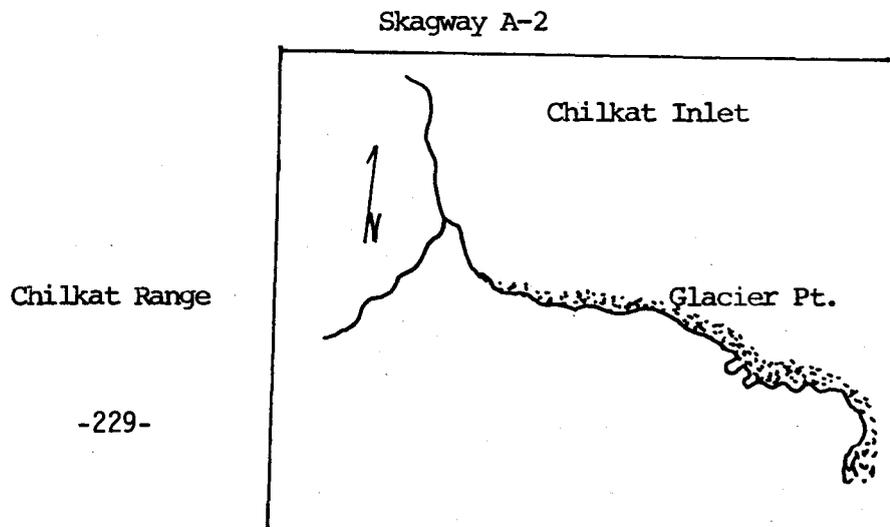
Water: 35 cfs, clear, negligible silt content

178° Bearing

7/26/79 11:05 AM

Berg/Thayer/Edgington

This stream flows off the mountain through a V-notch at an 85° gradient. Gradient decreases near the beach to 25° and flows over boulder beach to Chilkat Inlet. No intertidal spawning or rearing habitats are present. The banks are unstable and composed of dirt through V-notch and there is evidence of mass wasting in the area. The stream is surrounded by a spruce/hemlock forest, but the canopy around the stream is open. Intertidal substrate is covered with fucus and beach vegetation is composed of willow, alder, devil's club and surf grass.



Name: _____
Latitude: 59 07 00 N
Longitude: 135 26 20 W
Geodetic Map No: Skagway A-2
Location: West side of Chilkat
Inlet approximately 2 miles N.W.
of Glacier Pt. (terminus of
Davidson Glacier).
Trails & Survey Routes: Foot survey access by boat

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.25 miles
Drainage Area: 1.66 square miles
Water Supply Type: Glacier melt, surface
runoff and lake.

Aerial Survey Notes: Not needed.

Anchorage: In Pyramid Harbor or in Letnitof Cove.

Tide Stage when Surveyed: Low

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Torrential stream - no spawning area available.

Schooling Areas: N/A

Spawning Areas: N/A

SHELLFISH POTENTIAL: None noted.

SPORT FISHERIES: N/A

LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: N/A

SOILS: Unstable, evidence of mass wasting in the area.

GAME RESOURCES (species, use, habitat): None noted.



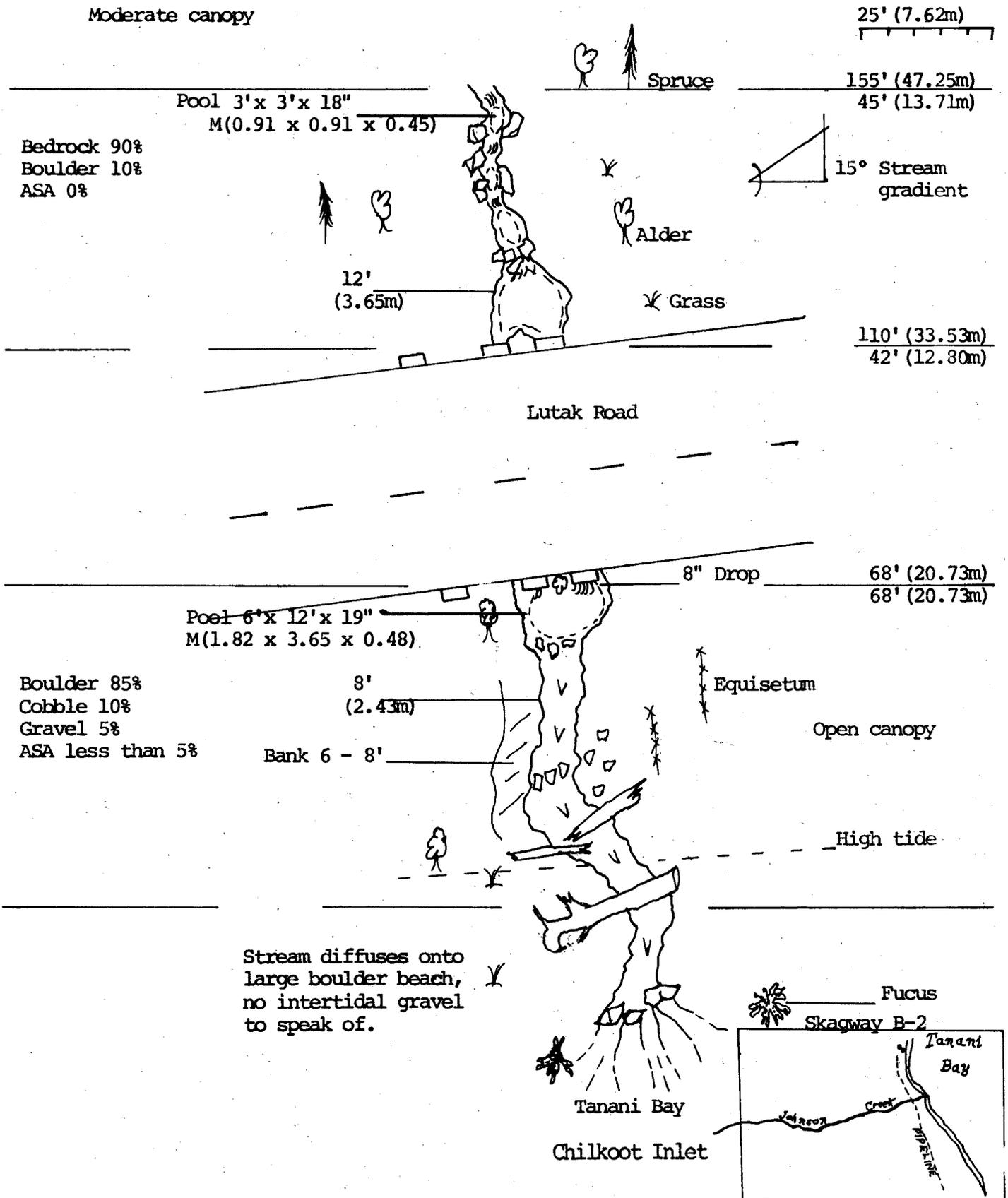
Johanna



Weather: partial clouds
 Air: 60°F
 Water: 55°F, clear, 2 cfs
 pH: 8.0

Johnson Creek
 1030 hours
 Eastwood/Edgington
 7/28/79

Moderate canopy



Name: Johnson Creek
Latitude: 59 15 38 N
Longitude: 135 26 11 W
Geodetic Map No: Skagway B-2
Location: Runs into Tanani Bay
in Chilkoot Inlet.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.75 miles
Drainage Area: 0.85 square miles
Water Supply Type: Surface runoff.

Trails & Survey Routes: Along Lutak Highway upstream too steep to walk.

Aerial Survey Notes: Air survey possible only near mouth but not necessary due to size of stream.

Anchorage: Tanani Bay but no protection from S.E. winds, open to full gale.

Tide Stage when Surveyed: Near low tide - outgoing low at 11:17 +0.3.

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Probably not a salmon stream.

Schooling Areas: No fish noted. Pools 17%. p/r 15/85

Spawning Areas: Stream mostly large boulder and cobble.
27.2 ft.² or 2.51 m².

SHELLFISH POTENTIAL: None noted.

SPORT FISHERIES: None seen.

LAND USE (history, present, proposed): Nearby oil storage from WW II.

REHABILITATION POTENTIAL: None needed due to size of stream flow.

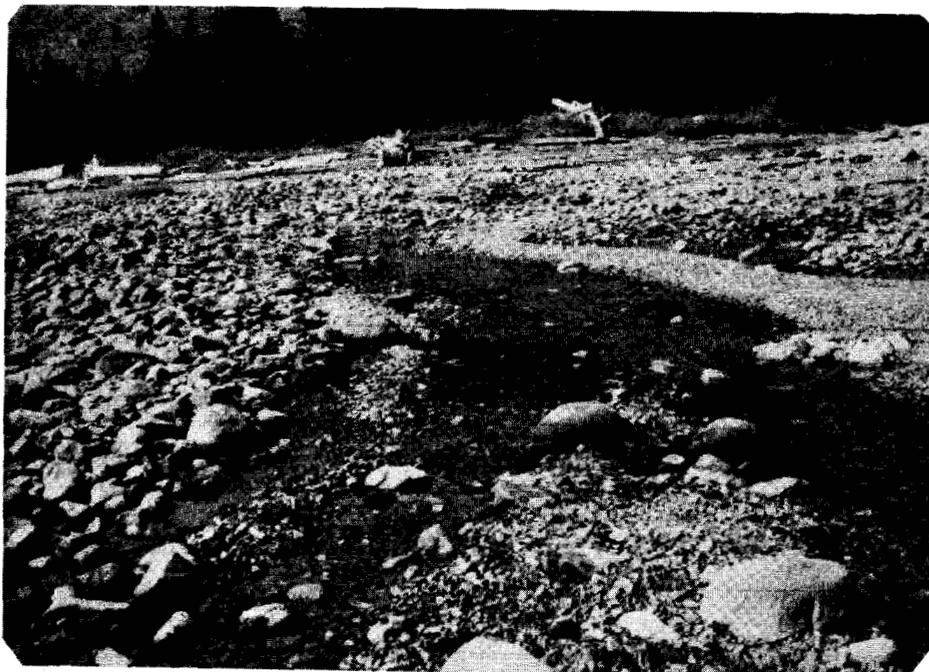
SOILS: Stable rock and vegetation roots.

GAME RESOURCES (species, use, habitat): None seen.



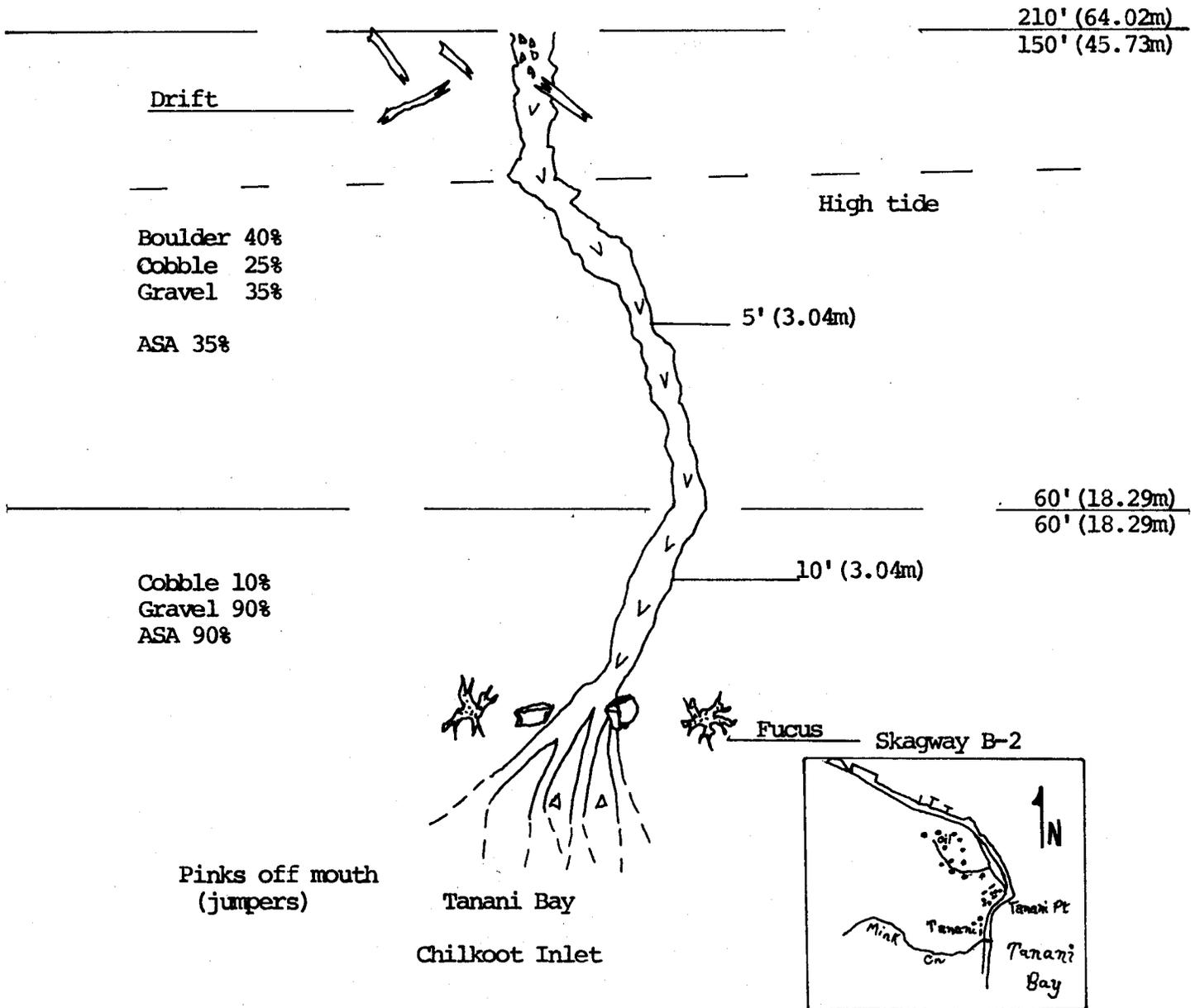
Mink Creek
Rearing area

Mink Creek
Beach area

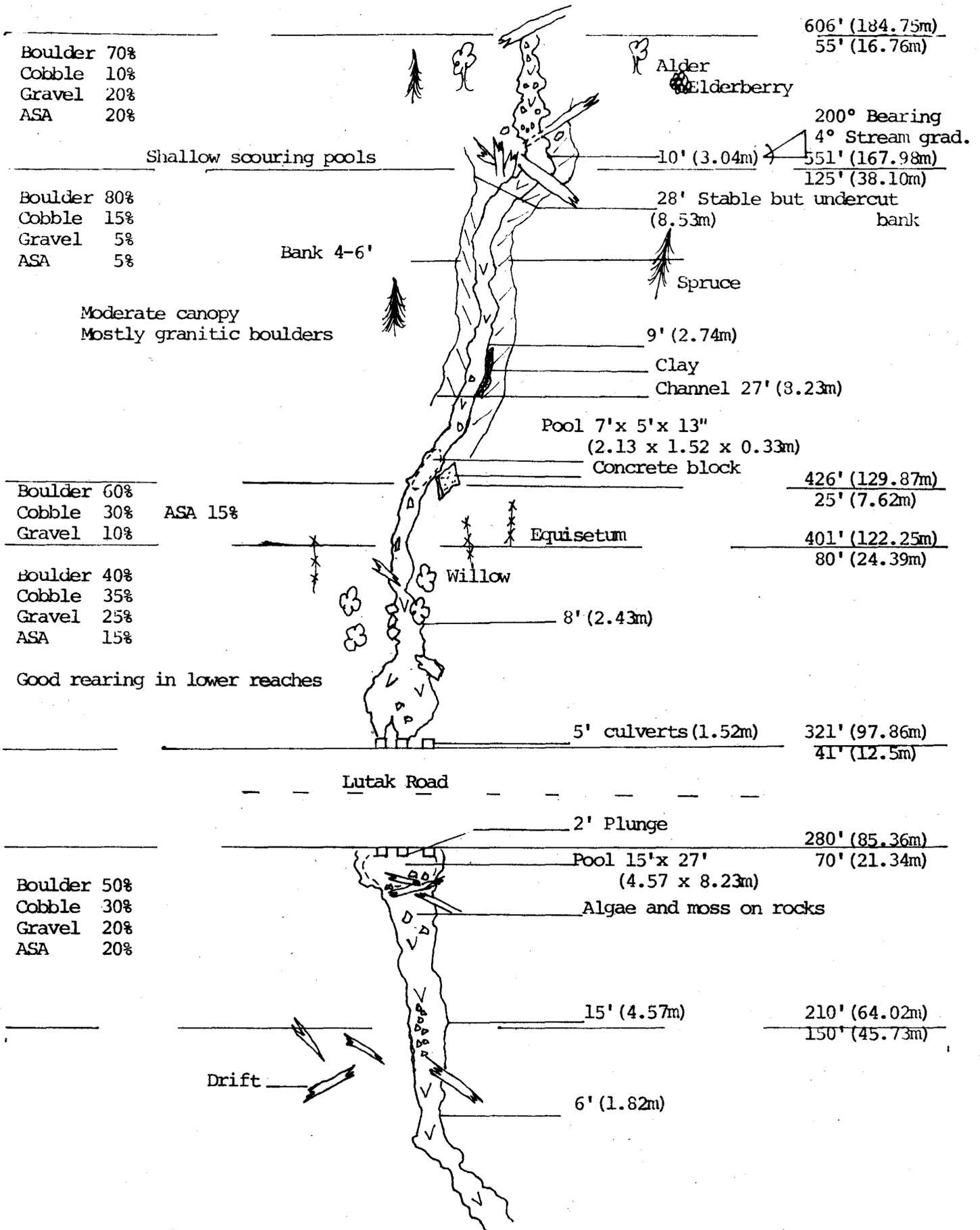


Mink Creek
 Eastwood/Edgington
 1100 hours
 7/28/79
 Partial clouds
 Air 62°
 Water 53°, clear
 pH 7.5
 Flow 3 cfs

Gophers
 Bollys
 Cutthroat



Mink Creek



Name: Mink Creek
Latitude: 59 16 03 N
Longitude: 135 26 21 W
Geodetic Map No: Skagway B-2
Location: Chilkoot Inlet - Mink Creek
runs into Tanani Bay.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1 mile
Drainage Area: 0.75 square miles
Water Supply Type: Surface runoff.

Trails & Survey Routes: Foot survey.

Aerial Survey Notes: None needed as foot survey was used. Canopy covers most of stream with intertidal and small area above open or free of cover.

Anchorage: Perhaps in Tanani Bay, but is open to full force of S.E. winds no protection.

Tide Stage when Surveyed: At 1100 hours tide almost low - low tide at 11:14 +0.3

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Coho rearing in lower section.

Schooling Areas: No fish noted except a few jumpers (pinks) off mouth.

Spawning Areas: Mostly intertidal. Total of area surveyed ASA = 1307.25 ft² or 121.11 m².

SHELLFISH POTENTIAL: Lutak Inlet has tanner, king and Dungeness crab populations.

SPORT FISHERIES: Cutthroat, Dolly and coho in stream.

LAND USE (history, present, proposed): Some old concrete structure had collapsed or been near by as chunks of concrete in stream.

REHABILITATION POTENTIAL: None needed as stream is small.

SOILS: Banks stable roots and boulders one small area undercut but stable.

GAME RESOURCES (species, use, habitat): None noted.



115-33-002
Ripinski Creek

Partly cloudy, warm
Clear water
30 cfs

Ripinski Creek
115-33-002
11:15 AM
7/28/79

Highly unstable streambed subject to sliding.

Gradient 10°

Clay on banks and under gravel.

Recent cat work - no sport fish or salmon value.

Bearing 170°

Brown algae on rocks.

5' culvert, 5' drop.

Survey stakes.

No fish seen.

Name: Ripinski Creek
Latitude: 59 17 05 N
Longitude: 135 28 01 W
Geodetic Map No: Skaqway B-2
Location: Lutak Inlet - Lutak road
crosses the stream.

Catalog No: 115-33-002
Former Stream No: _____
Work Area: Haines - Skaqway
Watershed Length: 1.5 miles
Drainage Area: 0.92 square miles
Water Supply Type: Surface runoff

Trails & Survey Routes: Lutak Road provides access.

Aerial Survey Notes: None needed.

Anchorage: Lutak Inlet, but no protection from S.E. winds.

Tide Stage when Surveyed: Almost low tide - surveyed at 11:15, low tide was
at 11:17 at +0.3 ft.

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
None

Schooling Areas: None seen.

Spawning Areas: None available.

SHELLFISH POTENTIAL: None noted.

SPORT FISHERIES: None

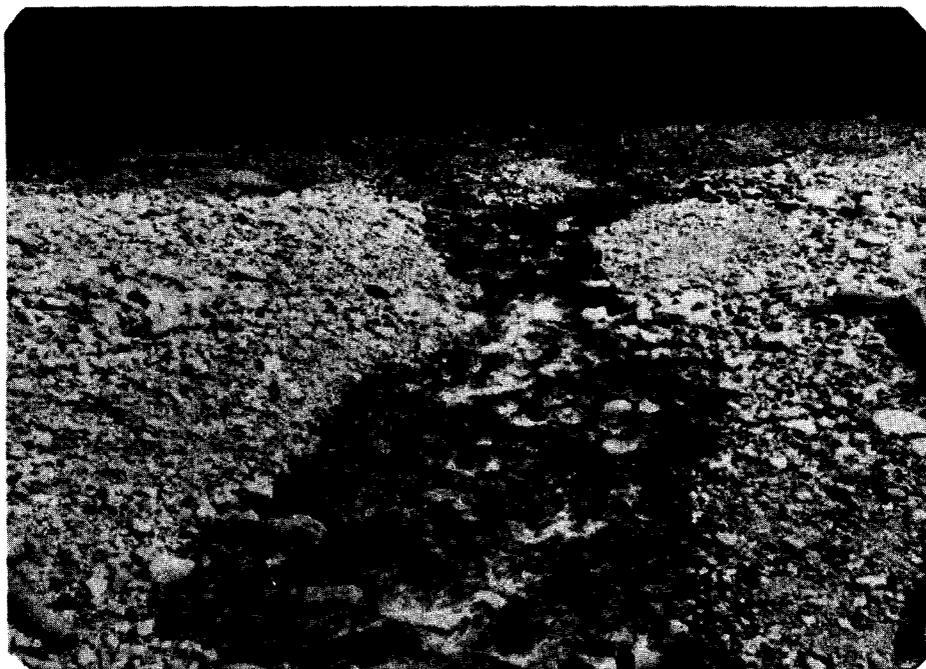
LAND USE (history, present, proposed): Recent cat work in streambed which is
highly unstable and subject to sliding.

REHABILITATION POTENTIAL: N/A

SOILS: Subject to sliding - 10° gradient.

GAME RESOURCES (species, use, habitat): None seen.

115-33-009



115-33-009

7/28/79

1140 hours

Eastwood/Edgington

Partial Clouds

Air: 65°

Water: 47°, clear

pH: 7.5

Approximately 25 cfs

Survey stakes in stream "cat-dozed".

Torrential

Wasting banks

7' (2.13m) Culvert

Lutak Road

150' (45.73m)

150' (45.73m)

18" (.45m) drop

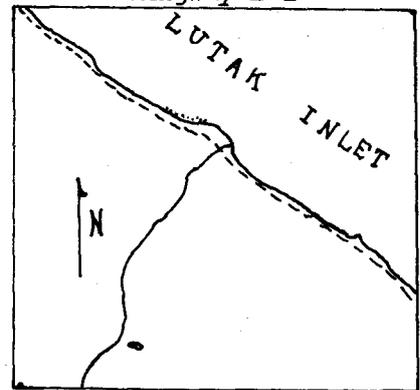
Pool 15' x 3' (4.57 x .91m)

Minimal potential only
intertidal area. No
fish observed.



Stream 4° gradient
166° Bearing

Skagway B-2



25' (7.62m)

9' (2.74m)

Low tide of +0.3' at 11:17 hrs.

16' (4.87m)



Fucus

0'

Approximately
300' (91.46m) to
bay.

Name: _____
Latitude: 59° 17' 56"
Longitude: 135° 30' 31"
Geodetic Map No: Skagway B-2
Location: Lutak Road crosses stream
which feeds into Lutak Inlet.

Catalog No: 115-33-009
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1.5 miles
Drainage Area: 1.47 square miles
Water Supply Type: Ground runoff.

Trails & Survey Routes: Road access along Lutak Highway.

Aerial Survey Notes: Upper drainage perhaps but canopy is dense.

Anchorage: Lutak Inlet but no protection from S.E.

Tide Stage when Surveyed: Low incoming.

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Schooling Areas: None seen. P/R 0/100

Spawning Areas: Just intertidal - no fish observed - torrential water flow.

SHELLFISH POTENTIAL: _____

SPORT FISHERIES: None observed.

LAND USE (history, present, proposed): Survey stakes in stream had
recently been cat-dozed.

REHABILITATION POTENTIAL: None, too much gradient.

SOILS: Wasting banks.

GAME RESOURCES (species, use, habitat): None seen.

115-33-017 New
Shakuseyi Creek



Shakuseyi Creek
 115-33-017
 7/28/79
 1200 hours
 Weather: Partly Cloudy
 Air: 65°
 Water: 51°
 Eastwood/Edgington



Survey stakes

152' (46.34m)

7' Culvert (2.13m)

27' (8.23m)

Lutak Road

pH 7.5
 20 cfs

125' (38.10m)

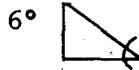
Tide low incoming

125' (38.10m)

4' Drop (1.21m)
 6' Deep (1.82m)
 20' (6.09m)

Boulder 50%
 Cobble 35%
 Gravel 15%
 ASA 35%

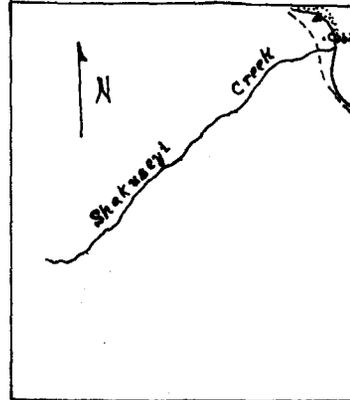
No fish observed



Stream Gradient 6°
 215° Bearing

Torrential water flow.

Skagway B-2



14' (4.26m)

25' (7.62m)

21' (6.40m)

0'

Approximately
 125' (38.10m) to
 Bay.



Fucus

Name: Shakuseyi Creek
Latitude: 59° 18' 46" N
Longitude: 135° 32' 10" W
Geodetic Map No: Skagway (B-2)
Location: Stream feeds into Lutak Inlet and Lutak Road crosses it.

Catalog No: 115-33-017 (New)
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 2 miles
Drainage Area: 3.62 square miles
Water Supply Type: Ground runoff.

Trails & Survey Routes: Lutak Road gives access to stream.

Aerial Survey Notes: Open from highway to mouth.

Anchorage: Lutak Inlet but no protection from S.E. winds.

Tide Stage when Surveyed: Low incoming.

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Schooling Areas: None seen. P/R 0/100

Spawning Areas: Perhaps intertidal but little value as stream has torrential water flow.

SHELLFISH POTENTIAL: None seen.

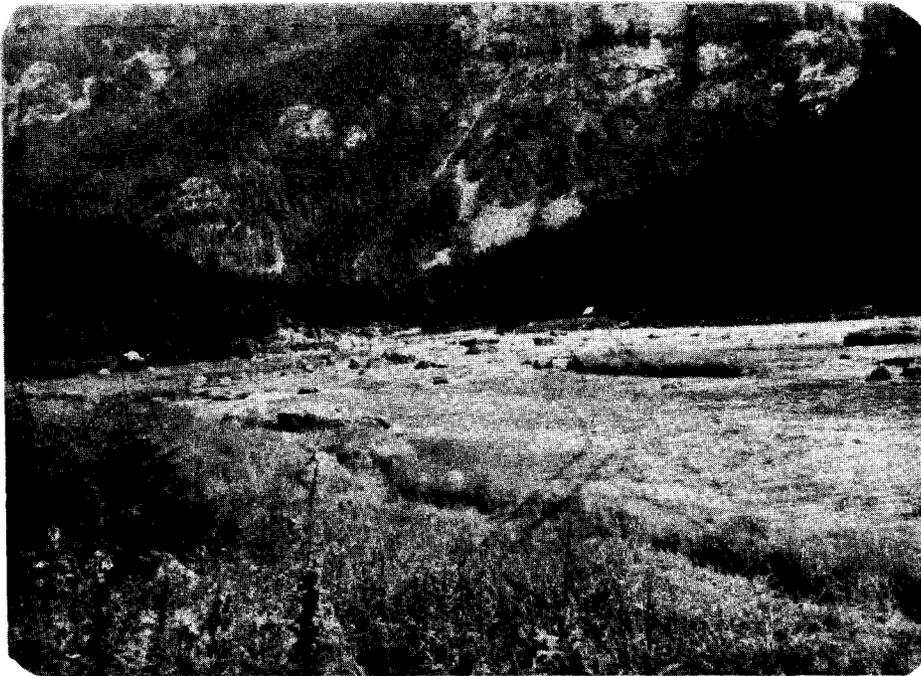
SPORT FISHERIES: None seen.

LAND USE (history, present, proposed): Survey stakes in stream.

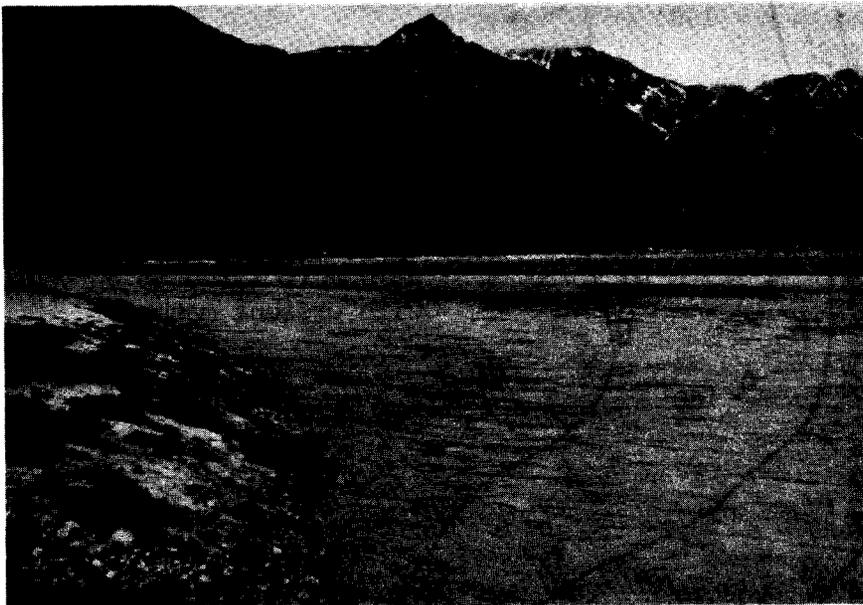
REHABILITATION POTENTIAL: None recommended too steep of gradient.

SOILS: Banks wasting above road.

GAME RESOURCES (species, use, habitat): None noted.



115-33-020
Chilkoot River
below lake.



115-33-020
at ITZ



115-33-020
at ITZ

Lutak River
7/25/79 10:50
Walker/Edgington

Clear skies - Low tide

700' (213.4m)
300' (91.5m)
Width 165' (50.3m)

Banks=15% Boulder, 15%
Cobble, 40% Gravel, 30%
Sand

 Spruce well
off river.

5° 30'

Gradient 1°

Bearing 279°

400' (122m)
ITZ
400' (122m)
Width 165' (50.3m)
Open ITZ

Chilkoot Road

Bridge

170'

20' 20°

Stream too large to survey
with present methods.

160'

Possible ITZ spawning
round granitic cobble
and gravel.

Fucus covered
gravel.

Skaqway (B-2)

Cottids in pools.

Bearing 224°

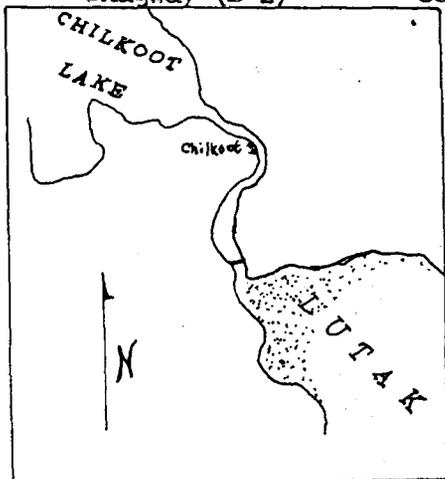
100'+
5°

10'
45°

170'

Lutak Inlet

Several jumpers
off mouth.



Name: Chilkoot Lake Outlet
Latitude: 59 20 15 N
Longitude: 135 33 30 W
Geodetic Map No: Skagway B-2
Location: Head of Lutak Inlet

Catalog No: 115-33-020
Former Stream No: _____

Work Area: Haines - Skagway
Watershed Length: 1.5 miles
Drainage Area: All of Chilkoot system
Water Supply Type: Glacier and ground runoff, Chilkoot Lake.

Trails & Survey Routes: Easily walked banks, although river is too large to survey using existing methods.

Aerial Survey Notes: Aerial survey would be difficult due to turbidity of water.

Anchorage: In Lutak Inlet.

Tide Stage when Surveyed: Low tide.

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Pink, chum and sockeye enter the Chilkoot, sockeye are the most abundant; peak count 9-12-77 - 97,215 sockeye by weir.

Schooling Areas: Several jumpers noted off mouth.

Spawning Areas: None noted.

SHELLFISH POTENTIAL: Lutak Inlet has tanner, king and Dungeness crab populations.

SPORT FISHERIES: Excellent sport fishing; Dolly Varden, pink, sockeye, and coho.

LAND USE (history, present, proposed): Several cabins are located on the shore of Lutak Inlet, a bridge and weir are located on the river.

REHABILITATION POTENTIAL: None recommended.

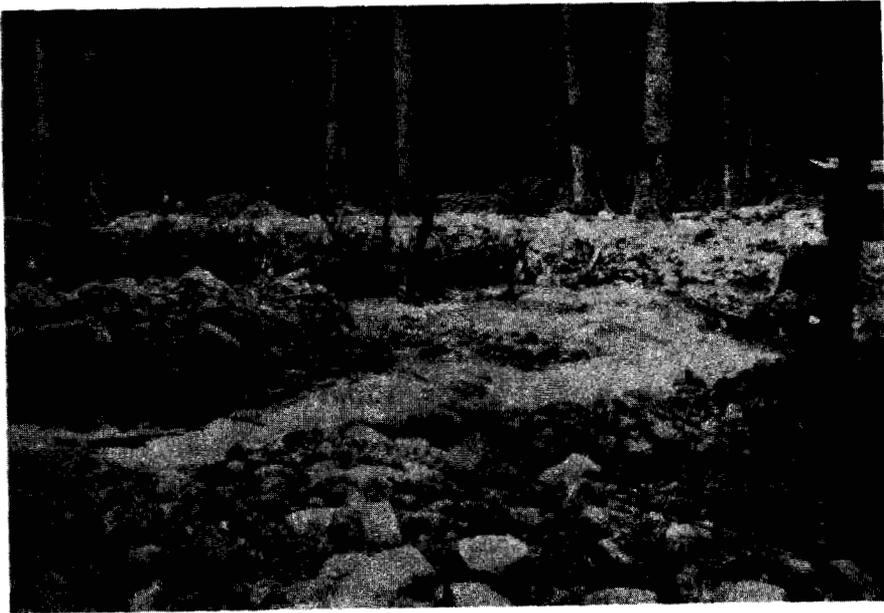
SOILS: Stable

GAME RESOURCES (species, use, habitat): None noted.

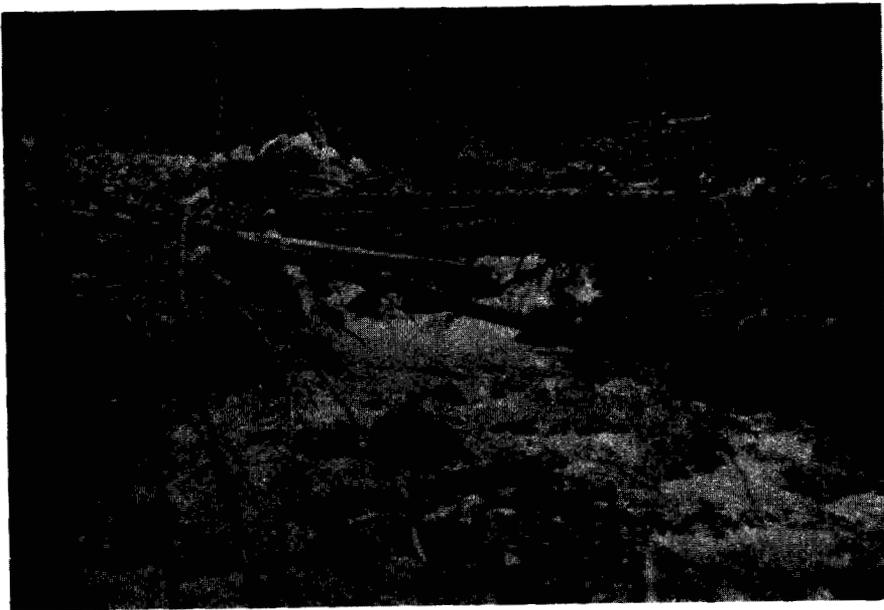
PEAK ESCAPEMENT RECORD

Chilkoot Lake Outlet
115-33-020

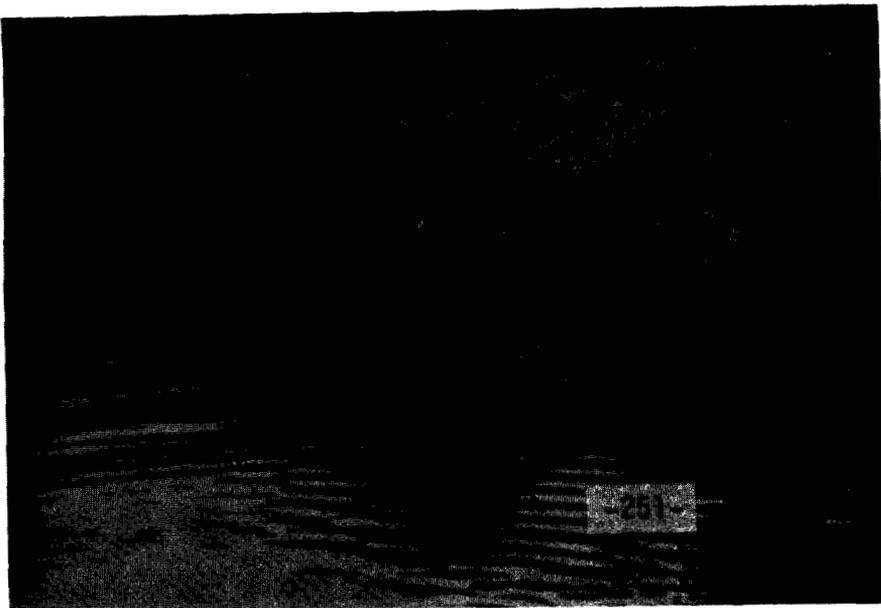
DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1970	27,000		2,000 Sockeye	Bear Creek
1971			665 Sockeye	Bear Creek
1972			1,800 Sockeye	Bear Creek
1973			8,000 Sockeye	50% Shore Spawners
1975	20,000			Sockeye in lake
1976	40,000			Estimated count
1976		242		
1976			71,294 Sockeye	
1976			942 Coho	
1977	5,368			Minimum
1977		141		
1977			97,215 Sockeye	
1978			85,452 Sockeye	Open June 6, 1978
1978			1,178 Coho	All trapped



32-33



34-35



36-37

"A" on Chilkoot Road

7/25/79

1850 hours

Walker/Edgington/Eastwood

Air: 62°F

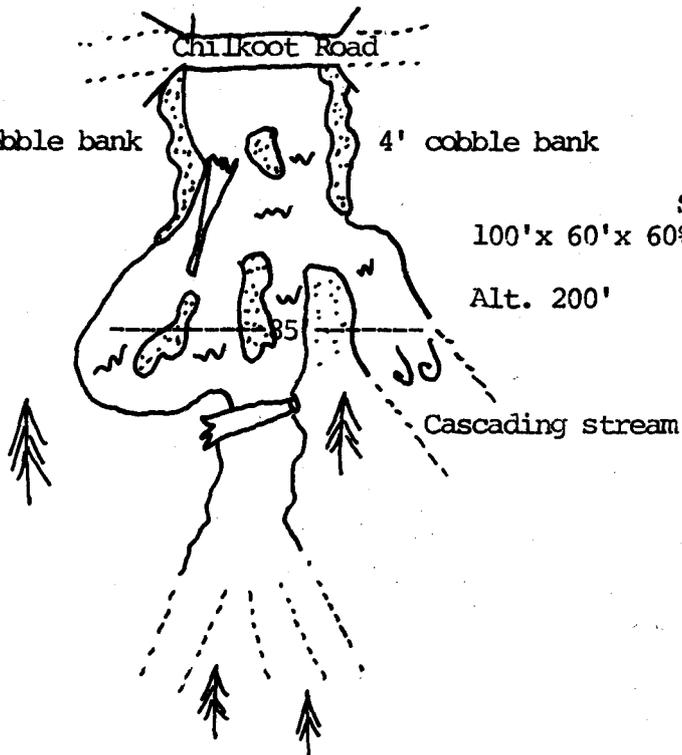
Water: 46°F

Flow: 50 cfs

100' (30.5m)
Width 50' (18.3m)
10% boulder
65% cobble
25% gravel

Riffles throughout

ASA 60%, poor,
hard packed gravel
4° gradient
Bearing 222°



Spawning area
100'x 60'x 60% ASA = 3600 ft² (333.3m²)

Alt. 200'

Cascading stream

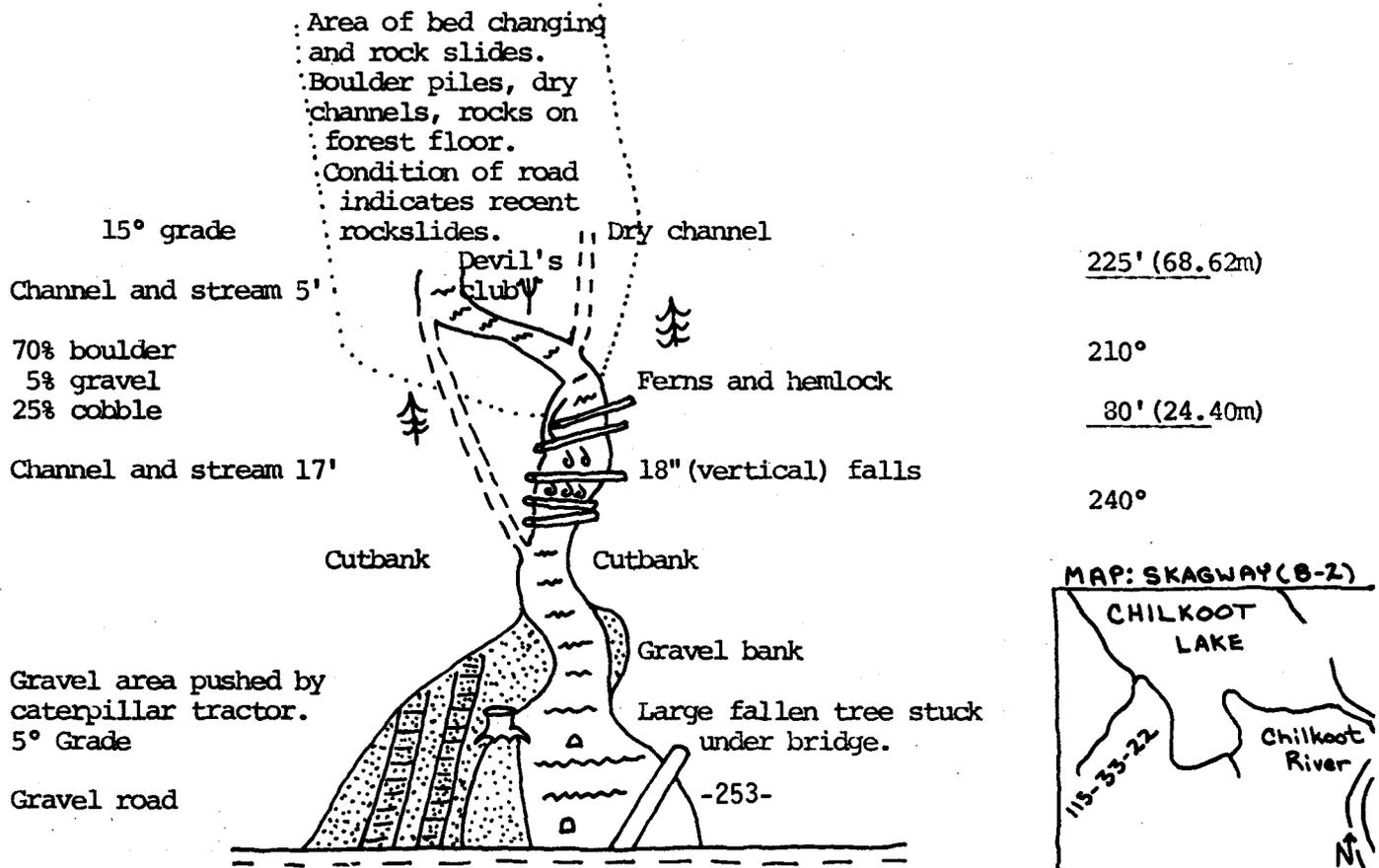
Stream braids through spruce forest floor, exposing hard packed rounded granitic cobble and gravel. Area appears very flashy with much deposited silt on banks. This continues 300' to mouth on Chilkoot Lake, no fry noted. At the mouth a 30' wide alluvial shelf utilized by 35 red salmon. Spawning area can easily be seen by aerial survey. Bear trail near mouth and bald eagle circling overhead.

Weather: overcast
 Air: 65°F
 Water: 46°F, clear, pH 7.5

115-33-022
 Road along Chilkooot Lake
 7/25/79
 1900 hours
 Thayer/Berg

Closed canopy

Water too fast for spawning,
 no pools.



Name: _____
Latitude: 59 20 20 N
Longitude: 135 35 20 W
Geodetic Map No: Skagway B-2
Location: West side of Chilkoot Lake
approximately 1.75 miles north
of the lakes outlet.
Trails & Survey Routes: Road access.

Catalog No: 115-33-022
Former Stream No: _____
Work Area: Haines - Skaqway
Watershed Length: 2.4 miles
Drainage Area: 2.45 square miles
Water Supply Type: Surface runoff and
snow pack (hanging glacier).

Aerial Survey Notes: Area near lake shore can be surveyed from the air.
However, most of the stream runs under dense canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
About 30 to 35 sockeyes spawning at the mouth of the stream where it
enters to lake.

Schooling Areas: At mouth

Spawning Areas: At mouth 3600 ft² or 333.3 m²

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Natural.

REHABILITATION POTENTIAL: None recommended.

SOILS: Channel varies at times.

GAME RESOURCES (species, use, habitat): Heavy concentration of bears in the
area.

115-33-023 New

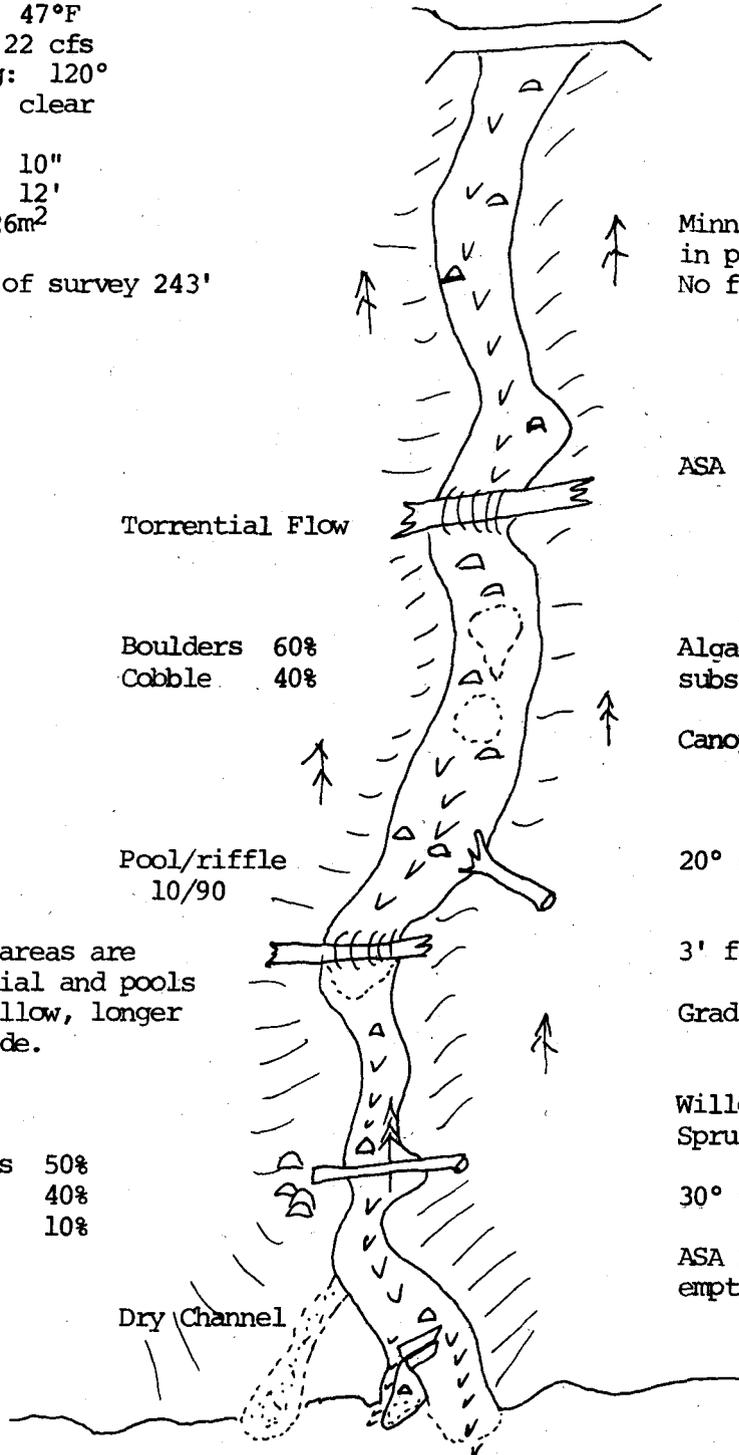


Weather: overcast
Air: 64°F
Water: 47°F
Flow: 22 cfs
Bearing: 120°
Water: clear
pH: 7
Depth: 10"
Width: 12'
ASA: 26m²

Length of survey 243'

Primitive road
Log stringer bridge

Edgington, Eastwood
7-25-79
6:00 PM



Minnow traps would not hold
in pools.
No fish seen.

ASA 0%

Torrential Flow

Boulders 60%
Cobble 40%

Algae covers 50% of stream
substrate.

Canopy open.

Pool/riffle
10/90

20° slope on banks.

Riffle areas are
torrential and pools
are shallow, longer
than wide.

3' falls, probably a block.

Gradient 5°

Boulders 50%
Cobble 40%
Gravel 10%

Willow alder line banks.
Spruce, hemlock.

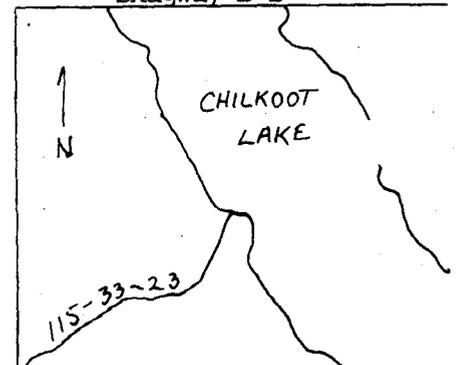
30° slope on bank.

Dry Channel

ASA 20% in lower section that
empties into Chilkoot Lake.

Possible spawning gravel at
edge of lake for sockeye.

Skagway B-2



Name: _____
Latitude: 59° 21' 00"
Longitude: 135° 36' 05"
Geodetic Map No: Skagway B-2
Location: _____

Catalog No: Not in catalog (new) 115-33-023
Former Stream No: 115-33-023

Work Area: Juneau
Watershed Length: 1.75 miles
Drainage Area: 2.25 square miles
Water Supply Type: Snow and surface runoff.

Trails & Survey Routes: Walked in stream down to lake shore.

Aerial Survey Notes: N/A

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Possible use by sockeye at edge of lake or stream mouth for spawning.

Schooling Areas: Off mouth.

Spawning Areas: Mouth and upstream for 123 feet - 26m² ASA

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Fishing from bank in lake is only value.

LAND USE (history, present, proposed): Old logging road crosses stream,
watershed still wilderness.

REHABILITATION POTENTIAL: No potential noted, taking out block would not
open up habitat upstream. Very low fisheries value.

SOILS: Steep gradient erodes banks at high flow.

GAME RESOURCES (species, use, habitat):



Falls of Right Fork
Above the Road.



Left Fork Above
the Road.

Outlet into Chilkoot Lake.



Upstream between Chilkoot Lake and road.



Weather: High overcast
 Air: 67°F
 Water: 53°F, Clear
 Flow: 10 cfs
 pH: 7.5

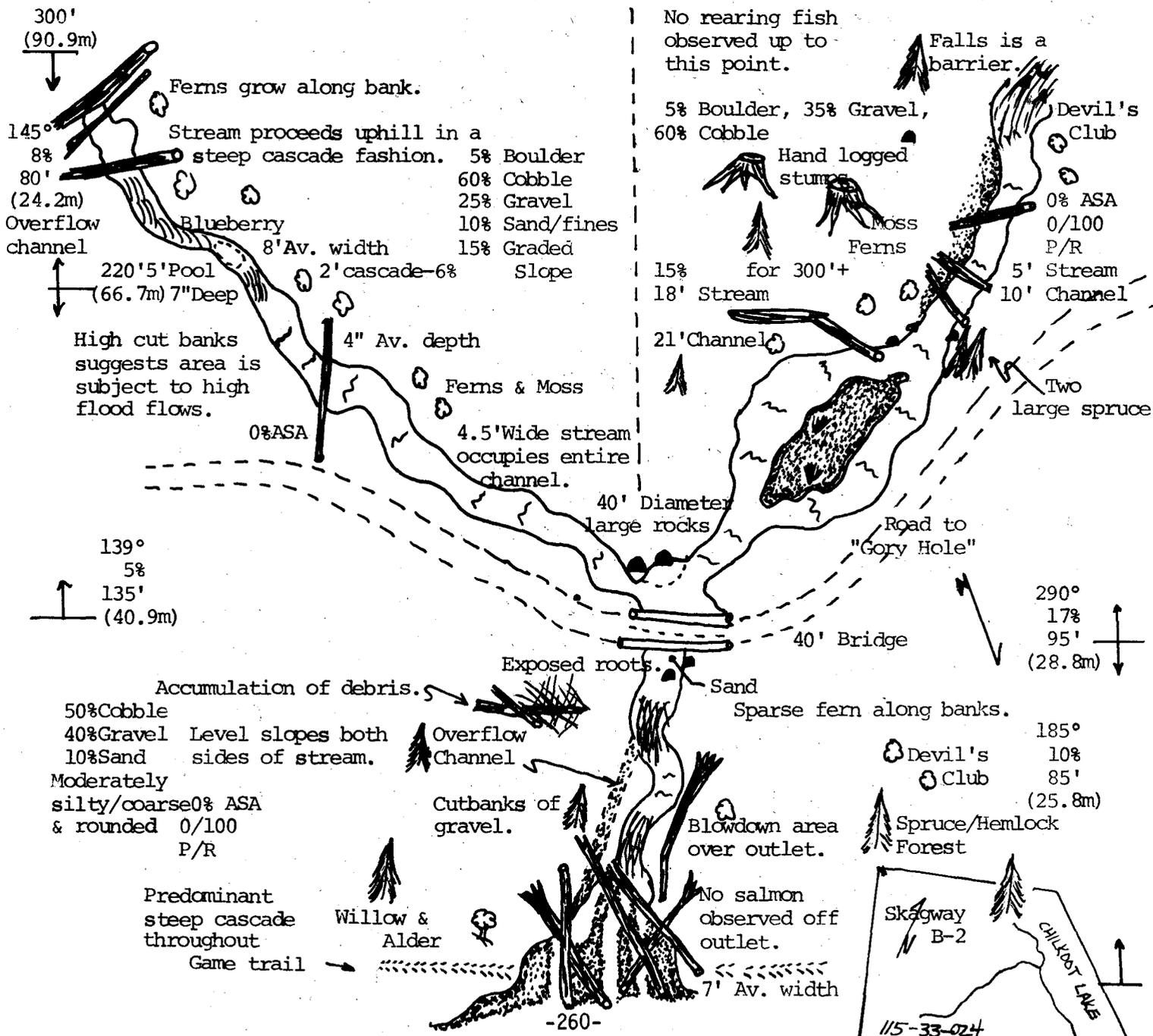
Chilkoot Lake
 7-25-79

Moderately closed canopy,
 sparse vegetation along banks.

180'
 (54.6m)

Stream is narrow, shallow - probably
 not a salmonid producing stream.

Stream proceeds from falls
 and steep hill area.



Name: _____
Latitude: 59 21 36 N
Longitude: 135 36 50 W
Geodetic Map No: Skagway (B-2)
Location: Approximately 3 1/2 miles N. of Chilkoot on west side of Chilkoot Lake.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: Approximately 1.2 miles
Drainage Area: 2.1 square miles
Water Supply Type: Surface runoff and hanging glacier.

Trails & Survey Routes: Easily hiked throughout. Upper forks run alongside an old logging road, open understory.

Aerial Survey Notes: Difficult due to moderately closed canopy.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

Spawning area: 0m² ASA
Schooling Areas: Off outlet to Chilkoot Lake.

Spawning Areas: Poor spawning habitat due to small size of stream and swift flow - also, steep gradient.

SHELLFISH POTENTIAL: N/A

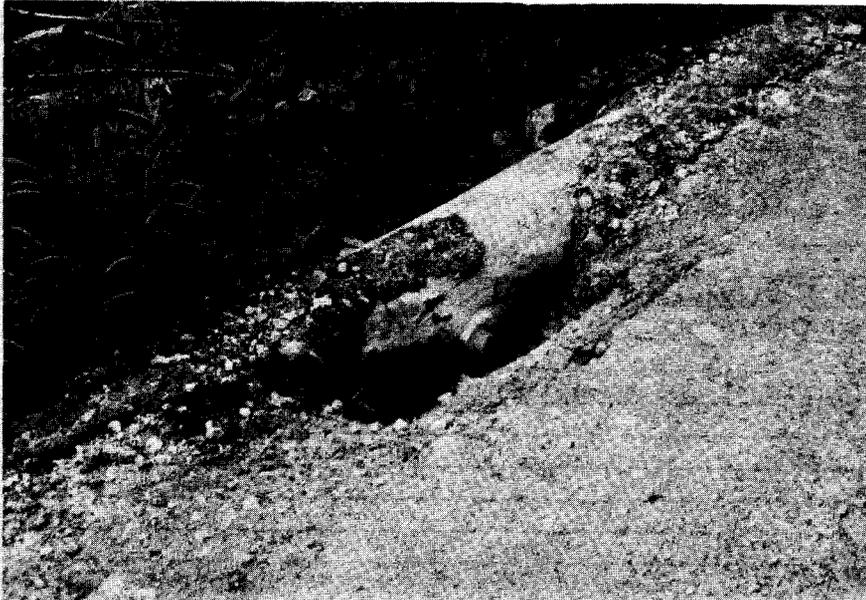
SPORT FISHERIES: Limited by the size of stream.

LAND USE (history, present, proposed): Presently in a natural state except area where old road crosses near Chilkoot Lake.

REHABILITATION POTENTIAL: None necessary.

SOILS: Generally stable gravelly soils. Lower reaches between road and lake are subject to high flows and erosion.

GAME RESOURCES (species, use, habitat): None observed, but heard some squirrels and possibly bear, moose, and small game in the general area.



115-33-025 New
Deteriorating road
over tributary.



115-33-025 New
Schooling area
at mouth.



115-33-025 New
Typical stream
flow.

115-33-025 New

Spawning sockeye in "Glory Hole".



115-33-025 New

Clear water causes sockeye to appear suspended.



115-33-025 New
 "Glory Hole"
 7-25-79 12:00
 Walker/Edgington/Eastwood

Weather: Overcast
 Air: 63°F
 Water: 42°F
 Flow: 3.86 cfs
 pH: 7.5

Spawning Area
 150x12'x10' ASA=180ft² (16.7m²)
 60x6'x30' ASA=108ft² (10m²)
 100x12'x30' ASA=360ft² (33.3m²)
 Glory Hole=10,200ft² (944.4m²)

395' (120.4m) _____
 150' (45.7m)
 Width 12' (3.7m)

5% Gravel, 95% Sand Pool.
 Slow moving
 Slow pools throughout.

10%ASA
 Good rearing.

1' Cutbank

Red salmon
 Redd=5'x3'x2'

Devil's
 Club

3' Cutbank
 Deerberry

Old cabin site.

245' (74.7m) _____
 90' (27.4m)
 Width 30' (9.1m)

100%Sand/fines

Willow
 49'Channel
 Moderately dense
 spruce canopy.

Skunk
 Cabbage

0%ASA
 Good rearing. Much log debris in
 stream.

100%Sand&fines, some
 grass in channel.

310°
 155' (47.3m) _____
 85' (25.9m)
 Width 38' (11.6m)

0%ASA
 Good rearing. P=40'x31'x2'
 10°

Willow in
 channel.

Signs of camping activity.

Choked with floating 100'+
 vegetation. 4' 90°

6" Cutthroat

258°
 70' (21.3m) _____
 70' (21.3m)

Sand
 Bottom

Slough-like towards river, good
 coho rearing habitat.

Width 36' (11m)

Sand bottom

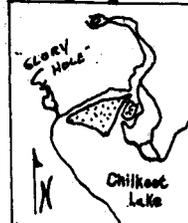
0%ASA
 Gradient.5%
 Bearing 283°

27"Deep water.
 Chilkoot Road-Bridge beginning to erode.

Chilkoot
 River Trap

3 juveniles, 1 adult
 female river otter.
 3 hour set
 6 Dolly Varden.

Skagway B-2



Name: "Glory Hole"
Latitude: 59 22 31 N
Longitude: 135 37 15 W
Geodetic Map No: Skagway B-2
Location: N. West end of Chilkoot Lake

Catalog No: 115-33-025
Former Stream No: _____

Work Area: Haines - Skagway
Watershed Length: Approximately 0.75 miles
Drainage Area: 0.78 square miles
Water Supply Type: Runoff and upwelling ground water.

Trails & Survey Routes: Easily walked stream, many bear trails in area. Stream mouth on Chilkoot Road.

Aerial Survey Notes: Small stream obscured by overhanging canopy. "Glory Hole" can easily be observed from air.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):

A sockeye spawning stream.

ASA = 10,848 ft² (1004.4m²)

Schooling Areas: Two red salmon off of bridge.

Spawning Areas: 75-100 red salmon spawning in "Glory Hole".

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Several cutthroat fry and 6" cutthroat noted in stream. Stream primarily used for rearing, 5 small Dolly Varden caught in trap near mouth.

LAND USE (history, present, proposed): Old cabin site adjacent to stream. Unique area, no land development should be allowed.

REHABILITATION POTENTIAL: Removing sand layer off "Glory Hole" pool would expose additional gravel and may enhance salmon production; bridge beginning to erode.

SOILS: Stable.

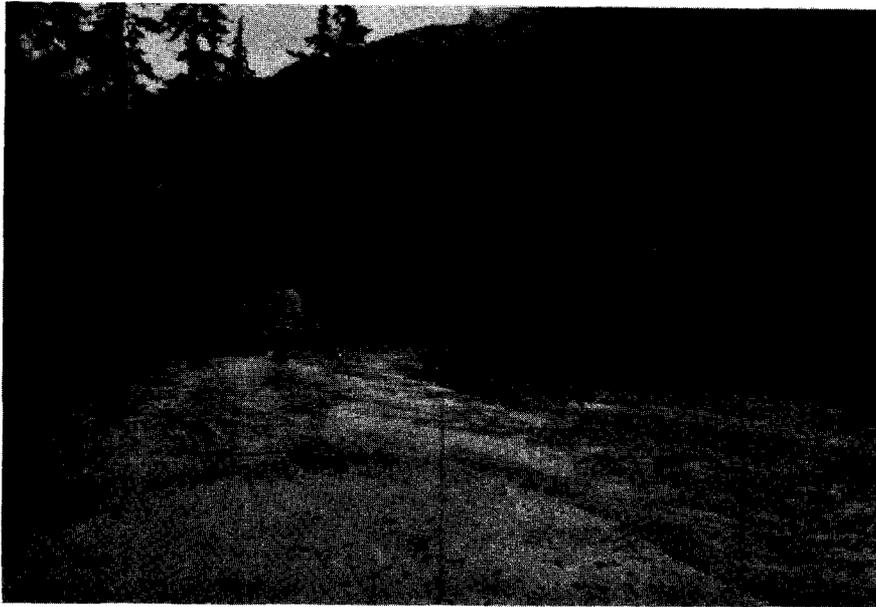
GAME RESOURCES (species, use, habitat): Many bear trails and bear killed salmon along the stream. Three juveniles and adult female river otter near bridge.

PEAK ESCAPEMENT RECORD

Glory Hole Spring

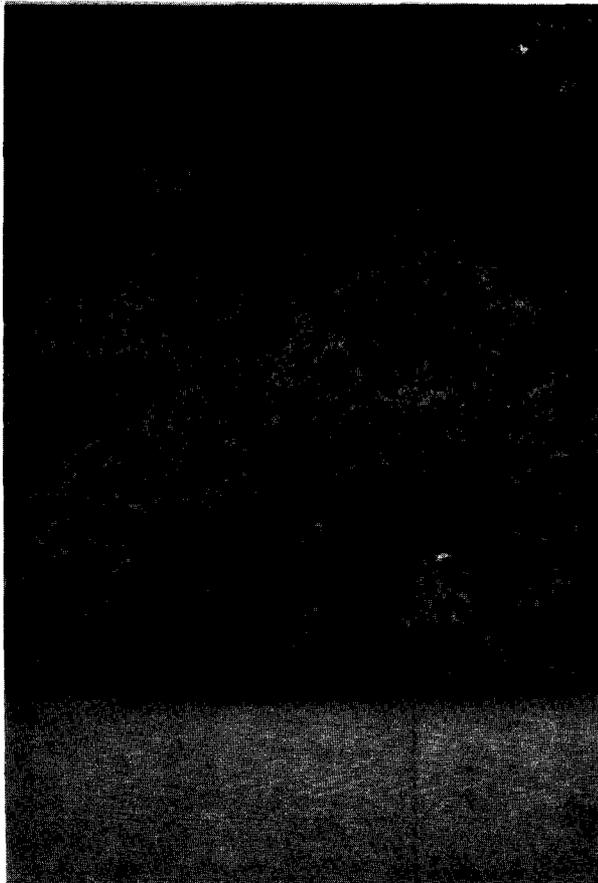
115-33-025

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1967			550 Sockeye	
1968			350 Sockeye	
1970			115 Sockeye 35 Coho	
1971			300 Sockeye	
1972			2,300 Sockeye	
1975			150 Sockeye	
1976		4	600 Sockeye	



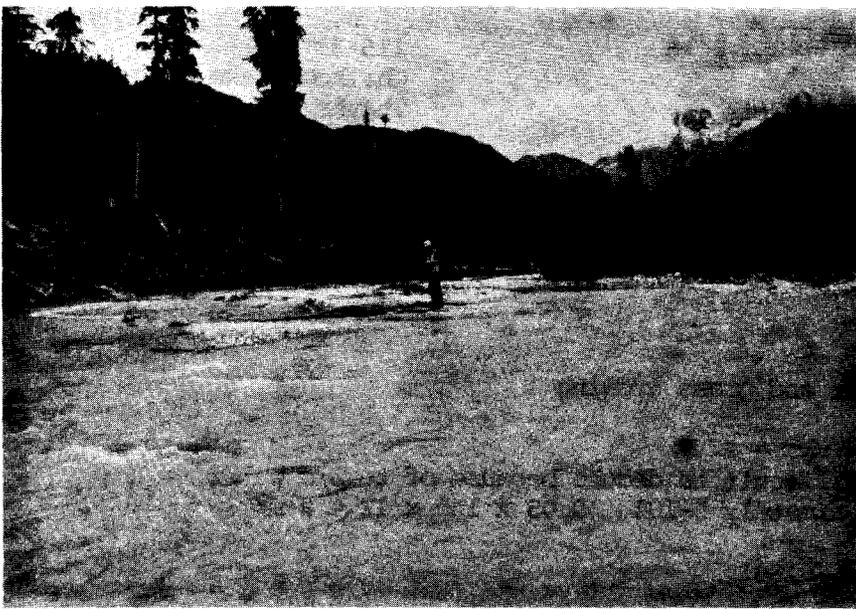
115-33-030

At mouth



115-33-030

Dolly Varden use
grassy cutbanks



115-33-030
Chilkoot River



115-33-030
Sockeye spawning area



115-33-030
Upper sockeye
spawning grounds

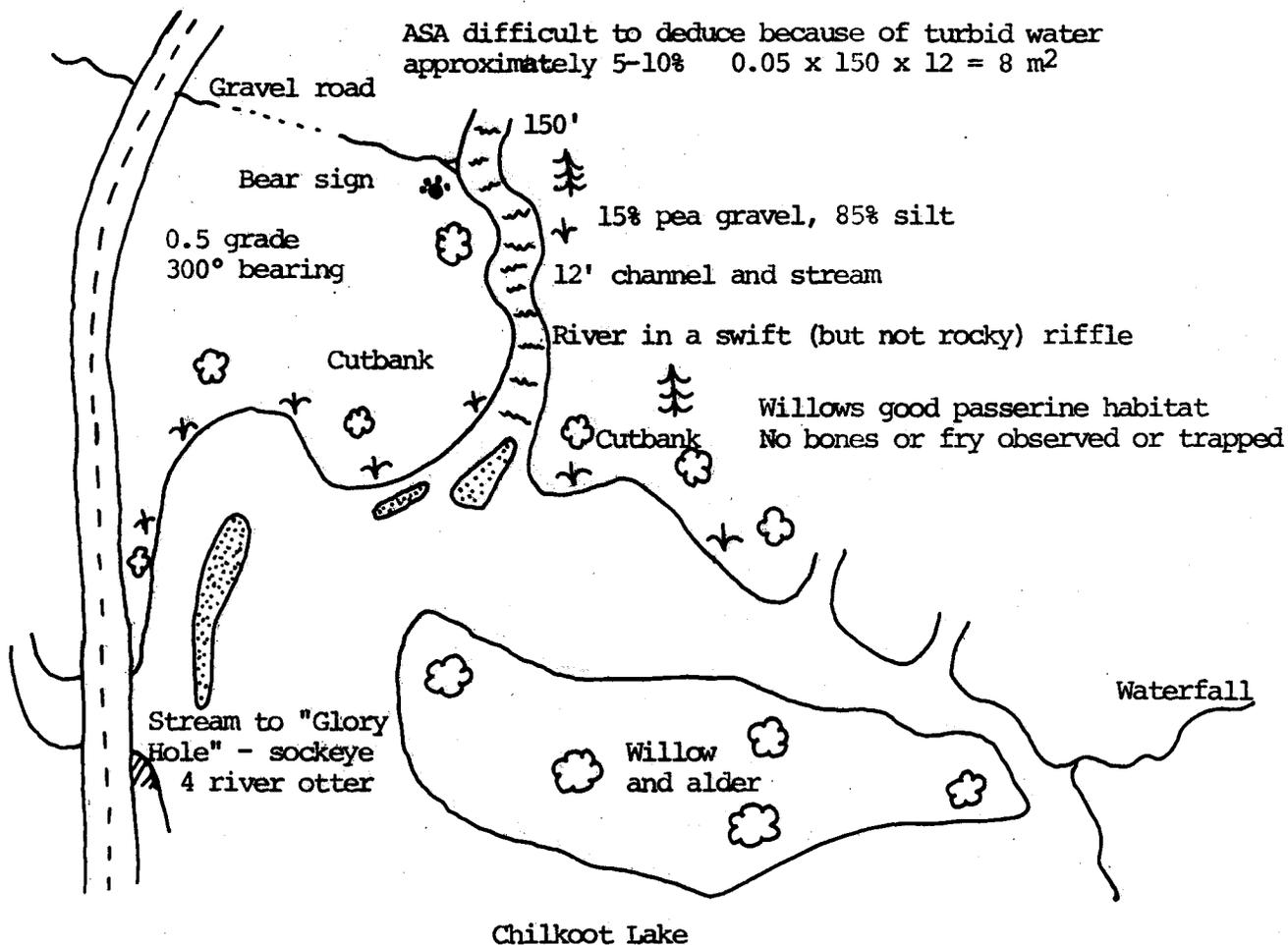
Weather: overcast
 Air: 67°F
 Water: 48°F, glacial silt, 22 cfs
 pH: 7.5

115-33-030
 Chilkoot Lake head stream
 Thayer/Berg
 7/25/79 1330 hours
 Chilkoot River

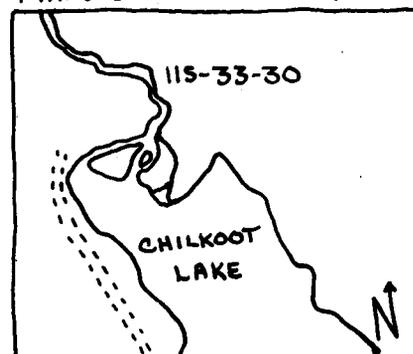
Water receding from high water stage, swift with no pools.

Moderate canopy.

Cutbanks with willow, alder and grass growing down to water level.



MAP: SKAGWAY (B-2)



115-33-030
 Upper Chilkoot River
 7/25/79 1415 hours
 Overcast
 Walker/Edgington/
 Eastwood
 Air: 67°F
 Water: 47°F
 pH: 7.0

Spawning Area

780' (237.8m)
 300' (91.5m)
 Width 45' (13.7m)

50% cobble
 50% gravel

40% ASA, poor, hardpan

300' x 70' x 70% ASA = 14700 ft² (1361.1m²)
 180' x 60' x 30% ASA = 3240 ft² (300.0m²)
 300' x 45' x 40% ASA = 5400 ft² (500.0m²)
 80' x 40' x 60% ASA = 1920 ft² (177.8m²)

Gradient 2°
 Bearing 315°

480' (146.3m)
 180' (54.9m)
 Width 60' (18.3m)

Trap 1 hr. set
 15 Dolly Varden
 Bear tracks
 ASA 30%
 Bearing 252°
 300' (91.5m)

300' (91.5m)
 Width 70' (21.3m)

Trap 1 hr. set-2 coho,
 3 Dollys
 Mudbanks along slough
 10% boulder
 50% cobble 1 red salmon
 40% gravel
 ASA 70%
 poor, hardpan
 Deep fast water
 Bearing 229°

Continues same upstream, round granitic cobble and gravel.

Hard packed gravel, increasing amount of sand in slow water.

1' deep across

First channel to go dry at low water.

80' (24.4m)
 Width 40' (12.2m)

Gradient 1°
 Bearing 350°

60% cobble
 20% gravel
 20% sand
 ASA 60%

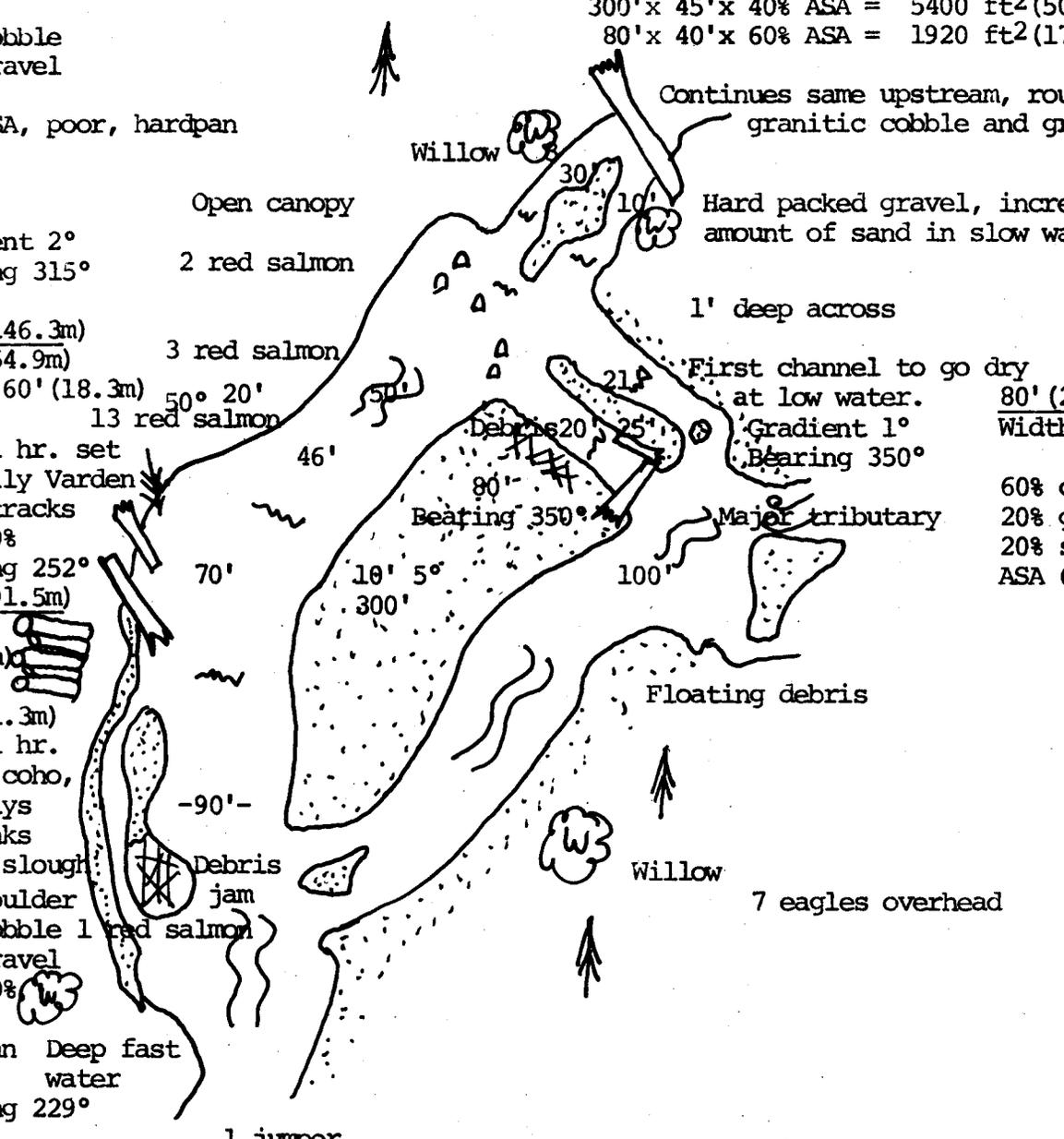
Major tributary

Floating debris

Willow

7 eagles overhead

1 jumper



Name: Chilkoot River
Latitude: 59 19 30 N
Longitude: 135 33 00 W
Geodetic Map No: Skagway B-2
Location: Head of Chilkoot Lake

Catalog No: 115-33-030
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 50 miles
Drainage Area: (USFWS) 17.6 square miles
Water Supply Type: Glacial and ground runoff

Trails & Survey Routes: Banks are brushy, but walkable. The major obstacle for foot survey is the multiple braids which must be crossed.

Aerial Survey Notes: Area surveyed had too narrow a channel to survey by air. Additionally, the water is opaque from silt.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Sockeye, pink, chum & coho use the stream.

Schooling Areas: Off mouth.

Spawning Areas: In area surveyed at mouth ASA = 8
Upper portion of area surveyed = 2330

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: Chilkoot Lake is a popular sport fishing area.

LAND USE (history, present, proposed): Nearby logging road, recreational use of lake by sport fishermen in boats.

REHABILITATION POTENTIAL: None needed.

SOILS: Stable cutbanks (grass and shrubs growing down to water level).

GAME RESOURCES (species, use, habitat): Boreal toad along bank, four river otter outside of mouth, bear sign upstream.

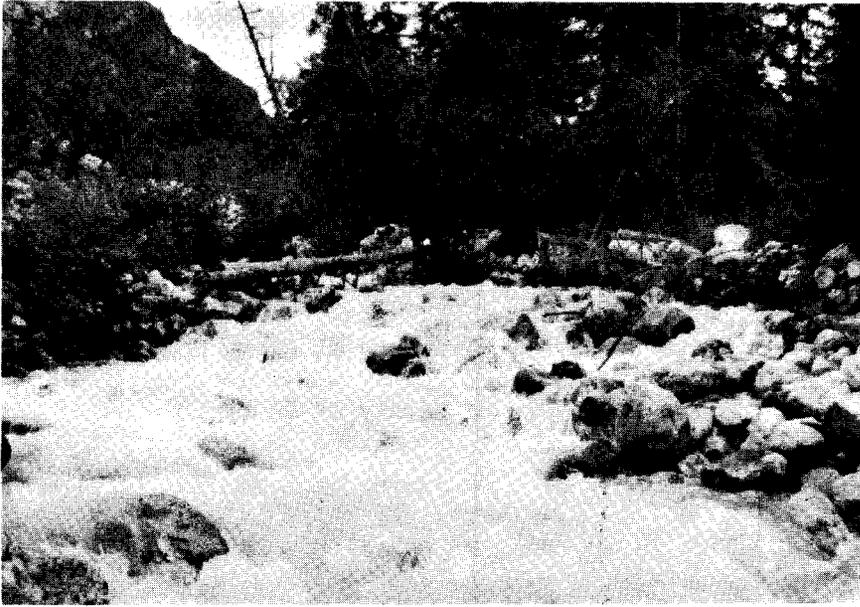
PEAK ESCAPEMENT RECORD

115-33-030

Chilkoot River

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/26/77			3,000 Sockeye	Twenty at Glory Hole
8/7/79			100 Sockeye	Twenty at Glory Hole

Tributary to
Chilkoot River



7/25/79 17:20

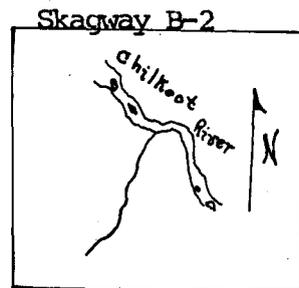
Walker

Air Temp. - 66°

Water Temp. - 47°

PH = 7.0

Mouth of stream that enters into Chilkoot River consists of a 13° gradient cascade over boulders and large cobble, mid-stream consists of 10° gradient rapids and cascades. Very few places for migrating salmonids to rest. Very large boulders throughout. Width approximately 25' and estimated flow of 90 cfs. Stream bordered by alder. From mouth to bridge - approximately 300'. Above bridge, stream is a rapid mountain runoff bordered by 6' high unstable cobble banks, substrate similar to below bridge. One trap set for 50 minutes - no fish. This is not a salmon stream.



Name: _____
Latitude: 59 23 55 N
Longitude: 135 39 45 W
Geodetic Map No: Skagway B-2
Location: Stream dumps into Chilkoot River approximately 2.5 miles above Chilkoot Lake.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: Approximately 1.25 miles
Drainage Area: 0.61 square miles
Water Supply Type: Surface runoff possible contribution from hanging glacier.

Trails & Survey Routes: Road access.

Aerial Survey Notes: Not needed.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Cascading stream with gradient up to and over 13°. This stream has a velocity barrier for fish.

Schooling Areas: None noted.

Spawning Areas: None noted.

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

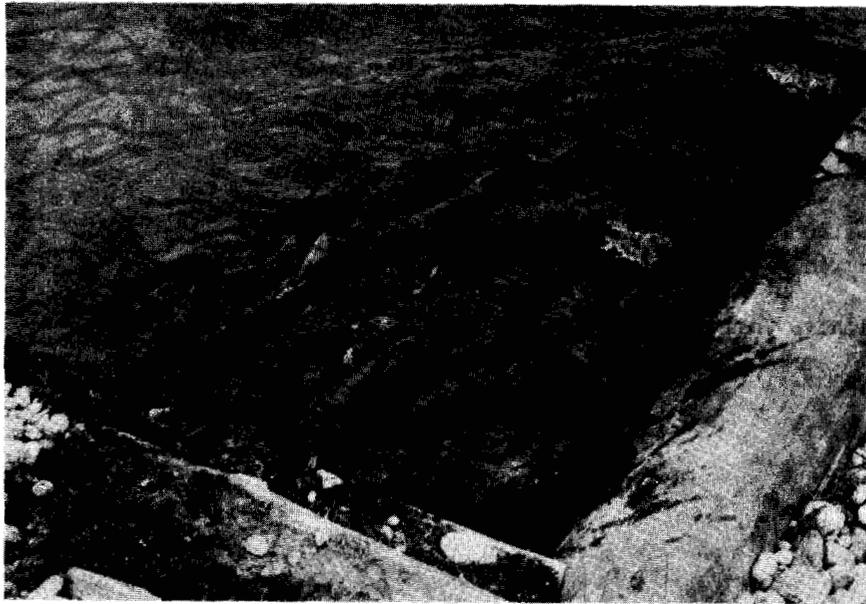
LAND USE (history, present, proposed): _____

REHABILITATION POTENTIAL: N/A

SOILS: Unstable cobble banks.

GAME RESOURCES (species, use, habitat): None noted.

Brown Stain Creek



Tributary to Chilkoot River,
schooling below bridge.



Excellent spawning.

7/25/79 16:15
 Walker, Edgington,
 Eastwood
 Air Temp. - 63°
 Water Temp. - 42°
 ph - 7.0
 flow-est 20 cfs

Stream continues to meander.
 Stream heavily utilized by
 red salmon, though sand bottom
 continues, est. 500 red salmon
 in stream to this point. Abun-
 dant coho rearing.

117.4m
 45.7m
 9.1m Wide

95% sand, 5% gravel
 Pool/riffle 30/70
 ASA 90%
 Spawning salmon throughout
 Gradient 1°
 Bearing 249°

71.6m
 21.3m
 6.1m Wide

85% gravel, 15% sand
 Slow riffles throughout
 ASA 75%
 Bearing 287°

Many bear kills
 throughout.

50.3m
 19.8m
 5.5m Wide

85% gravel, 15% sand
 ASA 85%, excellent

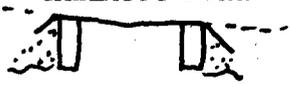
30.5m
 30.5m
 3.4m Wide

10% cobble, 60% gravel,
 30% sand
 Pool/riffle 20/80
 ASA 70%

50 rearing coho

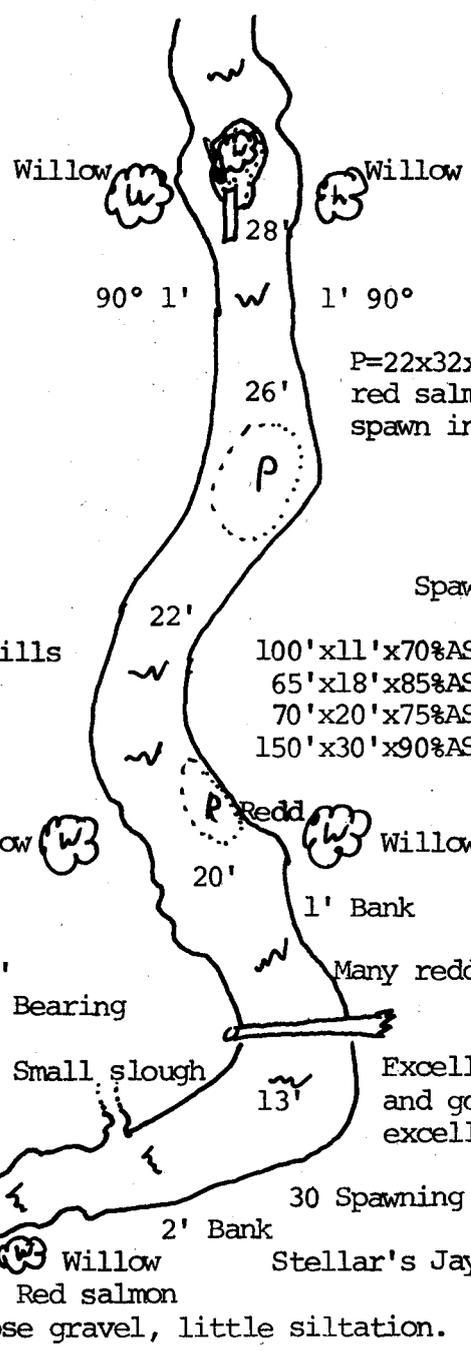
Bear kill 11'

Gradient 2° Chilkoot Road



Chilkoot River

50 red salmon waiting to
 enter stream, bridge good
 holding area.



P=22x32x1' Sand bottom,
 red salmon attempting to
 spawn in pool.

Spawning Area

- 100'x11'x70%ASA=770ft² (71.3m²)
- 65'x18'x85%ASA=994.5ft² (92.1m²)
- 70'x20'x75%ASA=1050ft² (97.2m²)
- 150'x30'x90%ASA=4050ft² (375m²)

Dense canopy of
 overhanging willow.

Many redds throughout.

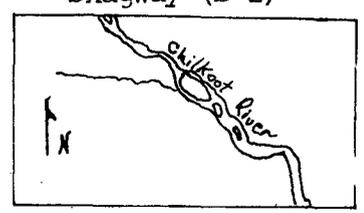
Excellent spawning conditions
 and good willow overhang for
 excellent rearing.

30 Spawning red salmon.

Stellar's Jay

Loose gravel, little siltation.

Skagway (B-2)



Name: Brown Stain Creek on Chilkoot Road
Latitude: 59 24 15 N.
Longitude: 135 40 30 W.
Geodetic Map No: Skagway B-2
Location: Approximately 3 miles north of Chilkoot Lake. Stream enters Chilkoot River from the west.

Catalog No: _____
Former Stream No: _____
Work Area: Haines - Skagway
Watershed Length: 1 mile
Drainage Area: 0.47 sq. miles
Water Supply Type: Ground runoff

Trails & Survey Routes: Stream easily walked with many bear trails bordering it.

Aerial Survey Notes: Dense willow canopy completely obscures stream.

Anchorage: N/A

Tide Stage when Surveyed: N/A

RESOURCES

COMMERCIAL FISHERIES (species, escapement, timing, spawning area):
Very good sockeye stream with many actively spawning, estimated numbers approximately 500.

ASA = $635.6m^2$

Schooling Areas: Bridge acts as good holding area for fish awaiting trip upstream.

Spawning Areas: Heavy spawning activity throughout. $635.6m^2$

SHELLFISH POTENTIAL: N/A

SPORT FISHERIES: None noted.

LAND USE (history, present, proposed): Appears in natural state.

REHABILITATION POTENTIAL: None needed.

SOILS: Stable.

GAME RESOURCES (species, use, habitat): Much bear activity throughout, Stellar's jay near bridge.

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