

Reconnaissance (1:20,000) Fish and Fish Habitat Stream Inventory of Moonlit Creek

Watershed Code: 400 - 694900 - 48600

Kispiox Forest District Fish and Fish Habitat Inventory Project

Final Report

Prepared for:

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PROJECT REFERENCE INFORMATION

Project Code:	06-KISP-3068-0002-1998
Proponent:	Ministry of Environment, Lands and Parks
Inventory Program:	Forest Renewal BC
Contract Number:	Section of CSK 3068, Skeena Region
FRBC Project Number:	SB96120

WATERSHED INFORMATION

Stream Names:	Moonlit Creek
Watershed Codes:	400 694900 48600
TRIM map sheets	103P.040, 103P.050, 93M.031, 93M.041
Total Number of Reaches:	369
Number of Reaches/Sites Sampled:	19
Fish Species Present:	CH, CO, CT, RB, DV, BT, TR
Biogeoclimatic Zone(s):	ICH, CWH
Survey Dates:	September 18-19, 1997.
MELP Region:	Skeena Region (6)
Management Units:	6-30
Forest District:	Kispiox Forest District
Forest Licensee:	Skeena Cellulose Inc.

CONTRACTOR INFORMATION

Survey Agency:	Triton Environmental Consultants Box 88, Terrace, B.C., V8G 4A2 (250) 635-1494, C172
Project Director:	Adam Lewis, M.Sc., R.P.Bio.
Project Manager:	Arne Lorenz, B.Sc.
Field Crew:	Arne Lorenz, B.Sc, Sam Buchanan, D. Tech., Lloyd Dallyn and Chris Collins
Data Entry:	Lloyd Dallyn and Sam Buchanan, D. Tech.,
Inventory Mapping:	Shannon Shields, B.A., and Michele Patterson, D. Tech.,

DISCLAIMER

The Province has not accepted the contents of this product for the purposes of the Forest Practices Code, and reserves the right to dispute the validity of summarized results. The Province does not necessarily agree with the classification assigned to any individual stream reach, for use in logging plans, silviculture prescriptions or any other application.

ACKNOWLEDGMENTS

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We would like to thank Todd Mahon, Skeena Cellulose Inc. representative who was the contract administrator and provided valuable input throughout the contract, and Paul Giroux, Fisheries Inventory Specialist, Ministry of Environment, Lands and Parks, Skeena Region, who acted as contract monitor and provided technical expertise as well as valuable input throughout the project.

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1. INTRODUCTION

1.1 Project Objectives

Triton Environmental Consultants Ltd. was contracted by the British Columbia Ministry of Environment, Lands and Parks, Fisheries Branch to conduct stream inventories in select watersheds within the Kispiox Forest District. Information was collected on the biological and physical stream characteristics, fish species assemblage, and fish distribution. The purpose of the Reconnaissance (1:20 000) Fish and Fish Habitat Inventory is to describe watershed-wide fish distributions and habitat characteristics for the project area.

1.2 Study Area

The project area is within the Kispiox Forest District in northwestern central British Columbia (Figure 1). The project area covered 11 discrete working areas (Table 1). This report covers Project Working Area #11: Moonlit Creek (Table 1). Moonlit Creek flows SSW into the Kitwanga River approximately 82 km northwest of Smithers (Figure 1). Access to Reach 1 of Moonlit Creek was by vehicle from Highway 37, all other parts of the watershed were accessed by helicopter from Hazelton, B.C..

Table 1. Watershed working areas within the Kispiox Forest District

Working Area #	Working Area	Stream Network	Watershed Code
1	Shedin Creek	Unnamed Creeks, Sperry Creek, Rosenthal Creek, Damsumlo Creek ⇒ Shedin Creek ⇒ Babine River ⇒ Skeena River ⇒ Pacific Ocean	480 027800
2	Goathead Creek	Unnamed Creeks ⇒ Goathead Creek ⇒ Shedin Creek ⇒ Babine River ⇒ Skeena River ⇒ Pacific Ocean	480 027800 11600
3	West Kitsuns Creek Tributary	Unnamed Creeks ⇒ Unnamed Creek ⇒ Kitsuns Creek ⇒ Kitsegucla River ⇒ Skeena River ⇒ Pacific Ocean	450 318200 18200 45700
4	Kitsuns Creek	Unnamed Creek ⇒ Kitsuns Creek ⇒ Kitsegucla River ⇒ Skeena River ⇒ Pacific Ocean	450 318200
5	Larkworthy Creek	Unnamed Creeks ⇒ Larkworthy Creek ⇒ Skeena River ⇒ Pacific Ocean	400 593800
6	Cranberry River Tributaries	Unnamed Creeks ⇒ Cranberry River ⇒ Nass River ⇒ Pacific Ocean	530-000000
7	Carrigan Creek Tributaries	Unnamed Creeks ⇒ Carrigan Creek ⇒ Skeena River ⇒ Pacific Ocean	400 519600
8	Skeena River Tributaries (S. of Larkworthy Cr.)	Unnamed Creeks ⇒ Skeena River ⇒ Pacific Ocean	400-
9	Deep Canoe Creek	Unnamed Creeks ⇒ Deep Canoe Creek ⇒ Skeena River ⇒ Pacific Ocean	400 574200
10	Skeena River Tributaries (S. of Sicintine R.)	Unnamed Creeks ⇒ Skeena River ⇒ Pacific Ocean	400
11	Moonlit Creek	Unnamed Creeks ⇒ Moonlit Creek ⇒ Kitwanga River ⇒ Skeena River ⇒ Pacific Ocean	400 694900 48600

Figure 1. Project overview map

1.3 Background data Review

Taylor (1996) indicate coho salmon (*Oncorhynchus kisutch*) and Dolly Varden char (*Salvelinus malma*) near the Highway 37 bridge in Reach 1 of Moonlit Creek. The Fisheries Information Summary System (FISS) Map 103P/8 indicates Dolly Varden char in Reach 1 and coho spawning in Reach 2 of Moonlit Creek.

2. METHODS

Standard methodology as outlined in Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures (RIC 1997) for performing stream inventories were followed. The reconnaissance level fish and fish habitat inventory is a sample-based survey covering whole watersheds as defined from 1:20,000 scale maps and air photos. The project includes 6 phases as listed below:

- Phase 1: Data Review: A review of all available background information was completed. All known fisheries information is summarized in this report; new data were transcribed onto the 1:20,000 TRIM maps, and 1:50,000 NTS maps to update Fisheries Information Summary System (FISS) database (DFO).
- Phase 2: Classification and Sampling Design: A comprehensive map and air photo review was completed for all waterbodies identified on 1:20,000 TRIM maps. Reach characteristics (gradient, order, pattern, confinement) were recorded for all streams within the project area and recorded on the Reach Table (RIC,1997). The Reach Table was used to generate a sample size (a subset of reaches to be sampled) within the working area based on RIC guidelines. The Reach Totals and Sample Size Sheet (RIC, 1997) was generated which provides a summary of the number of reaches of each type (based on gradient class, size and pattern/confinement) to be sampled. Detailed Reach Forms were completed for selected reaches to be sampled.
- Phase 3: Project Plan: A field sampling plan was developed to sample sites in a variety of stream gradients and stream orders. The purpose of the plan was to describe watershed wide fish distribution, not necessarily to sample all potential fish bearing reaches. Data from Phases 1 and 2, and the Project Plan were presented to and approved by Paul Giroux, MELP Fisheries Inventory Specialist.

- Phase 4: Field Inventory: Field sampling of selected sites was completed from September 18-19, 1997.
- Phase 5: Data Entry and Analysis: Field sampling data (including site cards, fish cards, and photodocumentation) were entered into the FDIS database. 1:50,000 scale NTS maps of the study area were updated with new information as per the FISS Data Compilation and Mapping Procedures (DFO, 1997).
- Phase 6: Reporting and Final Mapping: Field and office data were mapped using Arc View and Arc Info software, photographs were scanned and printed, and draft and final reports were completed.

2.1 Changes To Methodology

2.1.1 Phase 2

The required number of sample sites as determined by the Reach Sampling Summary were chosen with bias (rather than randomly) to incorporate biological concerns (fish distribution) and access issues. Additional reaches were chosen upstream and downstream of known barriers to determine limits of fish distribution.

2.1.2 Phase 4

All sample site locations (except for no visible channel sites) were marked in the field with flagging tape and with the ILP and site numeric identifier (NID) on a steel tag fixed to a blaze on a tree.

2.1.3 Phase 5

Photographic data were edited when entered into FDIS from the original field data forms to reduce duplication of photographs and to eliminate poor quality photographs. Field data forms remain unaltered as a permanent record for the sample site. All photos were taken with 35mm slide film, and scanned using a Nikon LS-1000 film scanner. Slides were scanned at 300 dpi, and saved as *.JPG files (.8 compression). Stored photo files are ~300kb, and uncompress to ~5mg each. Digital photos were printed as thumbnails using Corel Mosaic. All site photos were copied to CD, 2 copies have been sent to MELP Smithers, and Triton will retain 1 copy on file.

2.1.4 Phase 6

The inventory and interpretative maps were combined to produce one map. The working area is indicated by blue coloured stream lines. Fish presence is represented by light red highlighting over stream lines (sampled: solid or inferred: dashed) and no fish presence is represented by light blue highlighting over stream lines (sampled: solid or inferred: dashed). Stream classifications are provided for sampled reaches only. Stream summary symbols provide the following information for each sampled site:

- sample site ID,
- fish species presence, not sampled or no fish caught,
- stream or wetland,
- reach confinement,
- reach gradient,
- reach pattern,
- site gradient,
- site channel width,
- site morphology,
- site dominant substrate type,
- site disturbance(s) if applicable, and
- stream classification.

2.2 Field Assessments

The Moonlit Creek watershed was surveyed on September 18-19, 1997. Field assessments followed procedures outlined in Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures (RIC, 1997). Generally, the process we followed in the field was to:

- assess the watershed during a helicopter overflight to confirm reach boundaries, identify access points, and photograph reaches at a watershed scale.
- assess each reach on the ground by completing a standard site card, sampling for fish presence, completing a fish collection card and photographing representative habitats.
- identify key features such as barriers to fish migration, spawning locations and bridges; photograph and recorded features on site cards with a unique numeric identifier (NID).

Sample site lengths were equal to the greater of 100m or 10 bankfull widths. Stream widths were determined by measuring the channel width with a tape measure, or by visual estimate. At least 6 channel width measurements were made within each reach, each one at least one channel width distance apart. These measurements were averaged to determine the average channel width. Stream gradients were measured using a

clinometer. Stream morphology was determined using the *Channel Assessment Procedures Guidebook* (MOF 1996). Depths were measured using a folding meter stick. Water quality (pH and conductivity) was assessed using a Hannah pHTestr2™ and TDSTestr3™. Turbidity was assessed by ground estimate. Habitat quality was assessed for rearing, spawning, overwintering and cover, each of these habitat types was rated as either Good, Fair, Moderate or Poor. Wildlife observations were noted.

2.3 Fish Sampling

Fish presence was determined by electrofishing at least 100m² or 10 bankfull widths of habitat in each reach using a Smith Root Model 12B electroshocker. Captured fish were measured (nose-fork length) and keyed out to species using the *Field Key to the Freshwater Fishes of British Columbia* (McPhail and Carveth, 1994). Bull trout and Dolly Varden char were identified to species based on Haas and McPhail (1991) which describe distinguishing meristic characteristics. Fish collection forms were completed for each site where fish sampling occurred.

3. INVENTORY DATA

3.1 Survey Information

A total of 369 reaches were identified within the Moonlit working area. A total of 19 sample sites were visited for inventory purposes.

Project inventory maps are presented in Appendix A - Inventory Map. Individual site card information and fish collection data is presented in Appendix B - Stream Site Data from FDIS and Fish Collection Data. Individual site photographs and contact sheets are presented in Appendix C - Photograph Captions and Contact Sheets.

3.1.1 Problems

Watershed codes were not available at the time of mapping and have therefore not been included. All streams were identified with a numeric interim locational point (ILP), ILP's are used throughout this report to identify specific streams.

3.2 Fish Distribution

Chinook salmon (*Oncorhynchus tshawytscha*), rainbow (*O. mykiss*) and cutthroat trout (*O. clarki*), Dolly Varden (*Salvelinus malma*), bull trout (*S. confluentus*), and trout (unidentified to species) were captured in Moonlit Creek watershed. A bull trout carcass

and associated redd were observed in the first major left bank tributary (ILP 00009 map sheet 103P.040) to Moonlit Creek just upstream from the confluence.

Fish distribution is limited by two main barriers within the watershed as follows:

- a 15m waterfall barrier in Reach 2 of Moonlit Creek approximately 8.1 km upstream from the mouth, and
- a 4m waterfall barrier in Reach 1 of the first major left bank tributary (ILP 00009 map sheet 103P.040) approximately 0.5 km upstream from the mouth.

No resident fish populations exist upstream of these noted barriers.

3.3 Fish Habitat

The Moonlit Creek watershed has both spawning and rearing habitat throughout mainstem and lower gradient tributaries. Reach 1 of Moonlit Creek is within the larger valley floor of the Kitwanga River. This reach contains the best overall habitat for all life phases of salmonids. Reach 2 is entrenched and provides minimal refuge habitat for juvenile salmonids.

A critical spawning location for bull trout was identified by the presence of a carcass and a redd in ILP 00009 (map sheet 103P.040) approximately 50m upstream from the confluence with Moonlit Creek.

3.4 Fish Condition

All captured fish appeared to be healthy. Chinook salmon ranged in size from 56mm - 70mm; one rainbow trout was 97mm in length; one cutthroat was 82mm in length; trout ranged in size from 35mm - 44mm; Dolly Varden ranged in size from 45mm - 53mm; and bull trout ranged in size from 45mm - 680mm. The bull trout carcass (680mm in length) was assumed to be spawned out by the presence of a nearby redd. The stomach cavity had been consumed by a bear therefore the carcass was not examined internally. No attempt was made to examine captured fish internally for the determination of maturity.

3.5 Rehabilitation/Enhancement Opportunities

Stream rehabilitation is suggested in a small left bank tributary to Moonlit Creek (ILP 00005 map sheet 103P.040). Past logging adjacent to this stream has left tree limbs within the channel and has removed all mature streamside vegetation. This stream should be cleaned of limbs within the cutblock portion to improve fish access into this portion of the stream. Dolly Varden were observed immediately downstream of the cutblock portion of the stream.

3.6 Follow-up Sampling

No follow-up sampling is recommended for the Moonlit Creek watershed. The sampling rate and locations of sites determined the fish distribution at the 1:20,000 level for the entire watershed.

3.7 Other Concerns/Interest Points

The Moonlit Creek watershed contains sympatric populations of bull trout and Dolly Varden. No hybrids of the two species were encountered during our sampling. Genetic testing in sympatric populations of bull trout and Dolly Varden in western Washington found no evidence of hybridization or introgression (Leary and Allendorf, 1997). Recent research indicates that sympatric populations of bull trout and Dolly Varden are not as uncommon as once believed (Gordon Haas, pers. comm. 1998). More intensive research is required to determine the frequency of this occurrence and the ecological importance.

Bull trout are identified as a wildlife species at risk by the Forest Practices Code and are blue listed by the British Columbia Conservation Data Centre.

3.8 Non-Fish Bearing Reaches

Non-fish bearing reach reports are provided for relevant reaches including intermittent streams (Table 2). The most downstream reach of a stream which was determined to be non-fish bearing is identified in the report. All subsequent reaches upstream are non-fish bearing by default and are not identified separately. No reports are provided for the TRIM anomaly of a no visible channel - a channel that appears on a TRIM map but was not found in the field.

Table 2. Non-Fish Bearing Status Report for the Moonlit Creek Watershed

Initial Sampling Date	Follow-up Sampling Date	Watershed Code or ILP Number	Stream Name	Reach Number	Site Number	Map Sheet Number	Capture Method (electrofishing settings)	Area Covered (m ²)	Sampling Effort	Cond. (µS)	Water Temp. (deg. Celsius)	Flow Stage (VO)	Turbidity (VO)	Known Fish Presence (u/s-d/s)	Obstructions to Fish Migration	Seasonal Habitat Availability	Seasonal Fish Use
18/09/1997	-	400-694900486	Moonlit Creek	2	1105	103P.040	EF, 300/70/6	300	350 seconds	180	6	Low	Clear	CH, RB, DV, BT downstream of barrier	15m waterfall 7.5km upstream of mouth	All	None
18/09/1997	-	9	Unnamed	1	3001	103P.040	EF, 200/60/8	440	441 seconds	150	6.5	Low	Clear	DV, BT downstream of falls in this stream	4m falls 380m upstream of mouth	All	None

4. REFERENCES

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- Haas, G.R. and J.D. McPhail. 1991. Systematics and distributions of Dolly Varden (*Salvelinus malma*) and bull trout (*Salvelinus confluentus*) in North America. Can. J. Fish. Aquat. Sci. 48:2191-221.
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- Taylor, J.A. 1996. Assessment of Juvenile Coho Population Levels in Selected Lakes and Streams Within the Skeena River Watershed, British Columbia, Between 11 and 31 August, 1995. Prepared for Department of Fisheries and Oceans, Northern Coho Studies Unit, Pacific Biological Station.

Appendix A - Inventory Map

Appendix B - Stream Site Data from FDIS and Fish Collection Data

Appendix C - Photograph Captions and Contact Sheets

Photo Date	Watershed/ Working area	Stream Name or ILP	ILP Mapsheet	Card Site #	Site or Feature NID	NID Mapsheet #	Roll #	Frame #	CD#	Folder	Image	Focal Length (St, Wd, Te)	Dir (Up, Dn, Xs, Fish, Ae)	Comments (Description and/or scale item)
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	1	KISPIOX	25	1	Te	Fish	CH 70mm.
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	2	KISPIOX	25	2	Te	Fish	RB 97mm.
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	4	KISPIOX	25	3	Te	Fish	DV 47 mm
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	5	KISPIOX	25	4	Te	Fish	BT 76 mm
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	7	KISPIOX	25	5	Te	Fish	BT 77mm
97-Sep-18	Moonlit	Moonlit Reach 1		3083	03083	103P.040	25	8	KISPIOX	25	6	St	Up	Bend in creek, run/glide.
97-Sep-18	Moonlit	Moonlit Reach 3		1103	01103	103P.040	25	9	KISPIOX	25	7	St	Dn	Logs across channel, person on right bank.
97-Sep-18	Moonlit	Moonlit Reach 3		1103	01103	103P.040	25	10	KISPIOX	25	8	St	Up	Eroding right bank, boulders in foreground.
97-Sep-18	Moonlit	00074	103P.040	1104	01104	103P.040	25	11	KISPIOX	25	9	St	Up	Riffle, person walking on left.
97-Sep-18	Moonlit	00074	103P.040	1104	01104	103P.040	25	12	KISPIOX	25	10	St	Up	Small cascade over logs, person on left.
97-Sep-18	Moonlit	00074	103P.040	1104	01104	103P.040	25	13	KISPIOX	25	11	St	Dn	Mossy logs across channel.
97-Sep-18	Moonlit	00074	103P.040	1104	01104	103P.040	25	14	KISPIOX	25	12	St	Up	Channel becomes confined by valley walls.
97-Sep-18	Moonlit	Moonlit Reach 2		1105	01105	103P.040	25	15	KISPIOX	25	13	St	Dn	Long boulder/cobble riffle.
97-Sep-18	Moonlit	Moonlit Reach 2		1105	01105	103P.040	25	16	KISPIOX	25	14	St	Up	Run, log across channel.
97-Sep-18	Moonlit	Moonlit Reach 2		1106	02108	103P.040	25	17	KISPIOX	25	15	St	Ae	Triple falls in Reach 2.
97-Sep-18	Moonlit	Moonlit Reach 2		1106	02109	103P.040	25	19	KISPIOX	25	16	St	Ae	Single vertical falls, cut off in photo, added for site card photo requirement only.
97-Sep-18	Moonlit	Moonlit Reach 2		1106	01106	103P.040	25	20	KISPIOX	25	17	Te	Fish	CT 82mm
97-Sep-18	Moonlit	Moonlit Reach 2		1106	01106	103P.040	25	21	KISPIOX	25	18	Te	Fish	DV 52mm
97-Sep-18	Moonlit	Moonlit Reach 2		1106	01106	103P.040	25	22	KISPIOX	25	19	St	Dn	Pool with branch sticking out.
97-Sep-18	Moonlit	Moonlit Reach 2		1106	01106	103P.040	25	23	KISPIOX	25	20	St	Up	Riffle section.
97-Sep-18	Moonlit	Moonlit Reach 2		1106	01106	103P.040	25	24	KISPIOX	25	21	St	Dn	Debris on right, pool downstream.
97-Sep-19	Moonlit	00102	103P.050	1109	01109	103P.050	26	1	KISPIOX	26	1	St	Up	Confluence with ILP 00103, hat in foreground.
97-Sep-19	Moonlit	00103	103P.050	1108	01108	103P.050	26	2	KISPIOX	26	2	St	Dn	Mossy LWD in background, herb layer on banks.
97-Sep-19	Moonlit	00103	103P.050	1108	01108	103P.050	26	3	KISPIOX	26	3	St	Up	Mossy SWD, hat on right.
97-Sep-19	Moonlit	00102	103P.050	1109	01109	103P.050	26	4	KISPIOX	26	4	St	Up	SWD in channel, fern on right.
97-Sep-19	Moonlit	00102	103P.050	1109	01109	103P.050	26	5	KISPIOX	26	5	St	Dn	Fuzzy photo of small channel.

Photo Date	Watershed/ Working area	Stream Name or ILP	ILP Mapsheet	Card Site #	Site or Feature NID	NID Mapsheet #	Roll #	Frame #	CD#	Folder	Image	Focal Length (St, Wd, Te)	Dir (Up, Dn, Xs, Fish, Ae)	Comments (Description and/or scale item)
97-Sep-19	Moonlit	00081	103P.050	1110	01110	103P.050	26	6	KISPIOX	26	6	St	Dn	Logs across channel, angular black cobbles.
97-Sep-19	Moonlit	00081	103P.050	1110	01110	103P.050	26	7	KISPIOX	26	7	St	Up	Branches in channel, person in background in yellow.
97-Sep-19	Moonlit	00060	103P.050	1111	01111	103P.050	26	11	KISPIOX	26	8	St	Dn	Trees fallen into channel.
97-Sep-19	Moonlit	00060	103P.050	1111	01111	103P.050	26	12	KISPIOX	26	9	St	Dn	Many trees in/across channel
97-Sep-19	Moonlit	00060	103P.050	1111	01111	103P.050	26	13	KISPIOX	26	10	St	Up	Boulder, cobble riffle, alder on left.
97-Sep-18	Moonlit	Moonlit Re	103P.040	3083	03083	103P.040	124	1	KISPIOX	124	1	St	U	Person in channel, yellow jacket.
97-Sep-18	Moonlit	Moonlit Re	103P.040	3083	03083	103P.040	124	2	KISPIOX	124	2	St	D	Cobble exposed, alder hanging over water.
97-Sep-18	Moonlit	00002	103P.040	3084	3084	103P.040	124	3	KISPIOX	124	3	St	U	No visible channel at Hwy Xing.
97-Sep-18	Moonlit	00003	103P.040	3085	3085	103P.040	124	4	KISPIOX	124	4	St	X	No visible channel at Hwy Xing.
97-Sep-18	Moonlit	00009	103P.040	3086	3086	103P.040	124	5	KISPIOX	124	5	St	U	Map on right, steps and logs across channel.
97-Sep-18	Moonlit	00009	103P.040	3086	3086	103P.040	124	6	KISPIOX	124	6	St	D	Person electrofishing, tree fallen across channel.
97-Sep-18	Moonlit	00009	103P.040	3087	03087	103P.040	124	7	KISPIOX	124	7	St	D	Person on log, logs across channel.
97-Sep-18	Moonlit	00009	103P.040	3087	03087	103P.040	124	8	KISPIOX	124	8	St	U	Logs across channel.
97-Sep-18	Moonlit	00009	103P.040	3087	03087	103P.040	124	9	KISPIOX	124	9	St	U	Eroding bank, person shocking.
97-Sep-18	Moonlit	00009	103P.040	3087	03087	103P.040	124	10	KISPIOX	124	10	St	U	Person shocking in pool under log.
97-Sep-18	Moonlit	00014	103P.040	3088	03088	103P.040	124	11	KISPIOX	124	11	St	U	Person shocking, step pool type habitat.
97-Sep-18	Moonlit	00014	103P.040	3088	03088	103P.040	124	12	KISPIOX	124	12	St	U	Person standing on log, step pool type habitat.
97-Sep-18	Moonlit	00014	103P.040	3088	03088	103P.040	124	13	KISPIOX	124	13	St	D	Mossy logs criss crossed over channel.
97-Sep-18	Moonlit	00014	103P.040	3088	03088	103P.040	124	14	KISPIOX	124	14	St	U	Person's head behind large log, small falls visible.
97-Sep-18	Moonlit	00005	103P.040	3089	03089	103P.040	124	15	KISPIOX	124	15	St	D	Clearcut with stream.
97-Sep-18	Moonlit	00005	103P.040	3089	03089	103P.040	124	16	KISPIOX	124	16	St	U	Notebook mid channel.
97-Sep-18	Moonlit	00005	103P.040	3089	03089	103P.040	124	17	KISPIOX	124	17	St	U	Person sitting on bank.
97-Sep-18	Moonlit	00005	103P.040	3089	03089	103P.040	124	18	KISPIOX	124	18	St	Ae	Stream in cutblock, aerial view.
97-Sep-19	Moonlit	00009	103P.040	3091	04037	103P.040	124	19	KISPIOX	124	19	St	Ae	Falls 4m, poor photo, upstream limit of fish use.
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	21	KISPIOX	124	20	St	Fish	Trout, 35mm
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	22	KISPIOX	124	21	St	Fish	BT 94mm
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	23	KISPIOX	124	22	St	Fish	DV 62mm

Photo Date	Watershed/ Working area	Stream Name or ILP	ILP Mapsheet	Card Site #	Site or Feature NID	NID Mapsheet #	Roll #	Frame #	CD#	Folder	Image	Focal Length (St, Wd, Te)	Dir (Up, Dn, Xs, Fish, Ae)	Comments (Description and/or scale item)
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	24	KISPIOX	124	23	St	Fish	BT 95mm
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	25	KISPIOX	124	24	St	Fish	BT 153mm
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	26	KISPIOX	124	25	St	D	Helicopter downstream.
97-Sep-19	Moonlit	Moonlit Re	103P.040	3090	03090	103P.040	124	27	KISPIOX	124	26	St	U	Bedrock walls, mossy boulder mid channel.
97-Sep-19	Moonlit	00009	103P.040	3091	03091	103P.040	124	28	KISPIOX	124	27	St	U	View upstream from mouth
97-Sep-19	Moonlit	00009	103P.040	3091	03091	103P.040	124	29	KISPIOX	124	28	St	Fish	BT carcass
97-Sep-19	Moonlit	00009	103P.040	3091	04038	103P.040	124	31	KISPIOX	124	29	St	X	BT redd
97-Sep-19	Moonlit	00009	103P.040	3091	04038	103P.040	124	32	KISPIOX	124	30	St	U	BT redd
97-Sep-19	Moonlit	00009	103P.040	3091	03091	103P.040	124	33	KISPIOX	124	31	St	U	Vertical wall on right.
97-Sep-19	Moonlit	00053	103P.040	3092	03092	103P.040	124	34	KISPIOX	124	32	St	U	View upstream from mouth, bucket and person.
97-Sep-19	Moonlit	00053	103P.040	3092	03092	103P.040	124	35	KISPIOX	124	33	St	D	View downstream to mouth.
97-Sep-19	Moonlit	00053	103P.040	3092	03092	103P.040	124	36	KISPIOX	124	34	St	U	Boulders, mossy log, person upstream just visible.
97-Sep-19	Moonlit	00053	103P.040	3092	04039	103P.040	124	37	KISPIOX	124	35	St	U	Person next to 10m falls.
97-Sep-19	Moonlit	00030	103P.050	3093	03093	103P.050	11	1	KISPIOX	11	1	St	U	Person shocking in mid channel.
97-Sep-19	Moonlit	00030	103P.050	3093	03093	103P.050	11	2	KISPIOX	11	2	St	D	Pool behind fallen logs.