Appendix 4: Stream Survey Reports and Fish Sampling Photo Documentation by Site

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 | **Stream:** Monashee Creek | **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Header Information

Stream Name:	Monashee Creek	**Stream "Local":**				**Access:**	V2
Watershed Code:	128-8355-618-226-000-000-000-000-000-000-000-000			**Reach No.:**	3	**Reach Length (km):**	**Method:** MW
Location:	Bridge crossing on south fork FSR	**Map #:**	82L/029	**Site No.:**	1	**Length surveyed (m):** 400.0	**Method:** T
		U.T.M. :		**Fish Card:**	Y	**Field:** Yes	**Historical:** No
Date: 10/19/96	**Time:** 15:30	**Agency:** SR	**Survey Crew:** GM \LB \ \ \ \ \ \	**Photos:**	R2: 5, 6	**Air Photos:**	

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	18.5	**Method Av. Chan. Width (m):**	TF	16.8	18.4	15.8	17.4	21.5	20.8
Av. Wet. Width (m):	14.0	**Method Av. Wet. Width (m):**	TF	13.5	12.0	15.1	15.5	13.8	14.1
Av. Max. Rif. Depth (cm):	33	**Av. Max. Riffle Depth (cm):**	MS	20	33	30	40	45	30
Av. Max. Pool Depth (cm):	59	**Av. Max. Pool Depth (cm):**	MS	80	55	40	65	60	55
Gradient (%):	5.0	**Method Gradient:**	CL						

% Pool: 30 **% Riffle:** 65 **% Run:** 5 **% Other:** 0 **Method:** GE

% Side Channel:	0	**Method Side Channel:**	GE
% Debris Area:	0-5	**Method Debris Area:**	GE
% Stable Debris Area:	80	**Method Stable Debris Area:**	GE

Cover

Cover Total % :	25	**Method Cover Total %:**	GE				
Dp Pool : 40 **L.O.D.:**	0	**Boulder:** 55 **In Veg.:**	0	**Over Veg:**	0	**Cutbank:**	5
Crown Closure % :	10	**Method Crown Closure:**	GE	**Aspect :**	N	**Method Aspect:**	GE

Discharge

			Specific Data
Wetted Width (m) :		**Method Wetted Width (m) :**	?
Mean Depth (m) :		**Method Mean Depth (m) :**	?
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**	F
Discharge (m3/s) :		**Method Discharge (m3/s) :**	

Reach Symbol

(Fish)

RB

18 A 5.0	0271
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm):	5	**% Fines (<2mm):**	5
% Gravels:	15	**Small (2-16mm):**	
		Large (16-64mm):	
% Larges:	70	**Small cobble (64-128mm):**	
		Large cobble (128-256mm):	
		Boulder cobble (>256mm):	
% Bedrock:	10	**% Bedrock:**	10
D90 (cm):		**Compaction:**	High

Banks

Height (m):	2.0	**% Unstable:**					40
Textures Fines:	No	**Gravel:**	No	**Larges:**	No	**Bedrock:**	Yes
Confinement:	CO						
Valley: Chan. Ratio:	A						
Stage:	M						
Flood Signs Ht(m):	0.7	**Method Flood Signs:**					
Braided:	Y	**Method Braided:**					
Bars (%):	0	**Method Bars:**					
pH:		**Method pH:**					
02 (ppm):		**Method Dissolved Oxygen:**					
Water Temp. (°C):	4.0	**Method Temperature:**					
Turb. (cm):		**Method Turbidity:**					
Cond. (µmhos):	211	**Method Conductivity:**					AAA

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Creek **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
RB	1	15-200	F				EL
RB	2	15-200	A				EL

Obstructions

Comments

C Deep pools with boulder cover.

Stream Survey Report - Fish Sampling Photos

Reach 3, Site 1 of Monashee Creek, upstream view . Three rainbow trout (fry and adult) were captured at this site.

Reach 3, Site 1 of Monashee Creek, downstream view.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Creek **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-000-000-000-000-000-000-000-000

Location: 50 m d/s of confluence with Silverbell Creek **Map #:** 82L/018

U.T.M. :

Date: 10/20/96 **Time:** 10:30 **Agency:** SR **Survey Crew:** JW \CU\ \ \ \ \ \ \

Reach No.: 6 **Site No.:** 2 **Fish Card:** Y **Photos:** R3: 18, 19, 20

Access: V2

Reach Length (km): **Method:**

Length surveyed (m): 40.0 **Method:** TF

Field: Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	17.1	**Method Av. Chan. Width (m):**	TF	17.3	19.0	17.7	16.3	16.4	16.2
Av. Wet. Width (m):	15.6	**Method Av. Wet. Width (m):**	TF	14.5	16.9	15.5	15.6	15.7	15.3
Av. Max. Rif. Depth (cm):	29	**Av. Max. Riffle Depth (cm):**	MS	22	26	37	40	29	22
Av. Max. Pool Depth (cm):	41	**Av. Max. Pool Depth (cm):**	MS	36	42	33	38	50	49
Gradient (%):	6.0	**Method Gradient:**	CL						

% Pool: 15 **% Riffle:** 55 **% Run:** 25 **% Other:** 5 **Method:** GE

% Side Channel: 0 **Method Side Channel:** GE

% Debris Area: 0-5 **Method Debris Area:** GE

% Stable Debris Area: 60 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 5 **% Fines (<2mm):** 5

% Gravels: 20 **Small (2-16mm):** 5

Large (16-64mm): 15

% Larges: 75 **Small cobble (64-128mm):** 15

Large cobble (128-256mm): 30

Boulder cobble (>256mm): 30

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 90 **Compaction:** High

Cover

Cover Total % : 10 **Method Cover Total %:** GE

Dp Pool : 20 **L.O.D.:** 5 **Boulder:** 60 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 5

Crown Closure % : 5 **Method Crown Closure:** GE **Aspect :** SW **Method Aspect:** GE

Banks

Height (m): 1.9 **% Unstable:** 5

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: FC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m): 0.2 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 10 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 4.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

Discharge

				Specific Data
Wetted Width (m) :	16.9	**Method Wetted Width (m) :**	TF	
Mean Depth (m) :		**Method Mean Depth (m) :**		
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**		
Discharge (m3/s) :		**Method Discharge (m3/s) :**		

Reach Symbol

(Fish)

BT RB

17 B 2.0	0280
(Width, Valley: Channel, Slope)	**(Bed Material)**

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
BT	1	110	A				EL
RB	1	850	J				EL
RB	1	140	A				EL

Obstructions

Comments

C Wide creek with little diversity. Low volume of LWD.

Reach 6, Site 2 of Monashee Creek, upstream view.

Reach 6, Site 2 of Monashee Creek, downstream view.

Reach 6, Site 2 of Monashee Creek, juvenile rainbow trout and adult bulltrout caught 50m downstream of the confluence with Silver Bell Creek.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Creek **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-000-000-000-000-000-000-000-000

Location: Railroad FSR at lower bridge crossing **Map #:** 82L/019

U.T.M. :

Date: 10/19/96 **Time:** 10:00 **Agency:** SR **Survey Crew:** CU\JW\ \ \ \ \ \ \

Reach No.: 7 **Access:**

Site No.: 3 **Reach Length (km):** **Method:**

Fish Card: Y **Length surveyed (m):** 100.0 **Method:**

Photos: R12: 20, 22, 23 **Field:** Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	11.9	**Method Av. Chan. Width (m):**	TF	13.9	11.8	10.1	9.0	12.0	14.7
Av. Wet. Width (m):	9.0	**Method Av. Wet. Width (m):**	TF	12.1	11.5	7.1	8.6	8.3	6.3
Av. Max. Rif. Depth (cm):	18	**Av. Max. Riffle Depth (cm):**	MS	8	13	20	21	19	24
Av. Max. Pool Depth (cm):	51	**Av. Max. Pool Depth (cm):**	MS	31	34	75	81	30	57
Gradient (%):	4.0	**Method Gradient:**	CL						

% Pool: 10 **% Riffle:** 55 **% Run:** 35 **% Other:** 0 **Method:** GE

% Side Channel: 0 **Method Side Channel:** GE

% Debris Area: 0-5 **Method Debris Area:** GE

% Stable Debris Area: 80 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 5 **% Fines (<2mm):** 5

% Gravels: 20 **Small (2-16mm):** 5

Large (16-64mm): 15

% Larges: 75 **Small cobble (64-128mm):** 25

Large cobble (128-256mm): 25

Boulder cobble (>256mm): 25

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 39 **Compaction:** Medium

Cover

Cover Total % : 5 **Method Cover Total %:** GE

Dp Pool : 35 **L.O.D.:** 25 **Boulder:** 20 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 10

Crown Closure % : 5 **Method Crown Closure:** GE **Aspect :** S **Method Aspect:** GE

Banks

Height (m): 1.5 **% Unstable:** 5

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: OC

Valley: Chan. Ratio: C

Stage: M

Flood Signs Ht(m): 0.18 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 10 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 3.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

Discharge

			Specific Data					
Wetted Width (m) :	5.5	**Method Wetted Width (m) :**						
Mean Depth (m) :	0.3	**Method Mean Depth (m) :**	0.2	0.3	0.4	0.3	0.2	
Mean Velocity (m/s) :	1.02	**Method Mean Velocity (m/s**	0.9	1.1	1.0			
Discharge (m3/s) :	2.89	**Method Discharge (m3/s) :**	0.83	1.64	2.12	1.00	1.00	1.00

Reach Symbol

(Fish)

RB

12 C 4.0 | 0280

(Width, Valley: Channel, Slope) | **(Bed Material)**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Creek **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
RB	2	140-195	A				EL

Obstructions

Comments

C Minimal cover; fish only found in deep pools; with low LWD; low diversity and fast moving stream due to lack LWD in channel.

Reach 7, Site 3 of Monashee Creek, upstream view.

Reach 7, Site 3 of Monashee Creek, downstream view.

Reach 7, Site 3 of Monashee Creek, 195mm rainbow trout.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Creek **Watershed Code:** 128-8355-618-226-000-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-000-000-000-000-000-000-000-000

Location: At end of access road and beginning of trail to Pinnacles **Map #:** 82L/029

U.T.M. :

Date: 10/20/96 **Time:** 09:00 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.: 8 **Access:**

Site No.: 4 **Reach Length (km):** **Method:**

Fish Card: N **Length surveyed (m):** 100.0 **Method:** HC

Photos: R2: 15, 16, 17, 18, 19 **Field:** Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	18.3	**Method Av. Chan. Width (m):**	TF	12.3	15.4	17.9	20.0	21.2	23.1
Av. Wet. Width (m):	9.8	**Method Av. Wet. Width (m):**	TF	9.9	7.9	7.8	12.2	8.8	11.9
Av. Max. Rif. Depth (cm):	20	**Av. Max. Riffle Depth (cm):**	MS	17	19	25	16	14	29
Av. Max. Pool Depth (cm):	55	**Av. Max. Pool Depth (cm):**	MS	60	45	70	65	59	30
Gradient (%):	2.0	**Method Gradient:**	CL						

% Pool: 40 **% Riffle:** 5 **% Run:** 55 **% Other:** 0 **Method:** GE

% Side Channel: 0-10 **Method Side Channel:** GE

% Debris Area: >15 **Method Debris Area:** GE

% Stable Debris Area: 60 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 45 **% Fines (<2mm):** 45

% Gravels: 40 **Small (2-16mm):**

Large (16-64mm):

% Larges: 15 **Small cobble (64-128mm):**

Large cobble (128-256mm):

Boulder cobble (>256mm):

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 10 **Compaction:** Medium

Cover

Cover Total % : 30 **Method Cover Total %:** GE

Dp Pool : 40 **L.O.D.:** 25 **Boulder:** 5 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 20

Crown Closure % : 5 **Method Crown Closure:** GE **Aspect :** W **Method Aspect:** GE

Banks

Height (m): 1.0 **% Unstable:**

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: UC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m): 0.2 **Method Flood Signs:** AAA

Braided: Y **Method Braided:**

Bars (%): 10 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 3.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): 85 **Method Conductivity:**

Discharge

			Specific Data					
Wetted Width (m) :	3.9	**Method Wetted Width (m) :**						
Mean Depth (m) :	0.3	**Method Mean Depth (m) :**	0.4	0.3	0.3	0.2	0.3	0.1
Mean Velocity (m/s) :	0.43	**Method Mean Velocity (m/s**	0.4	0.4	0.5			
Discharge (m3/s) :	0.09	**Method Discharge (m3/s) :**	0.43	0.41	0.52	1.00	1.00	1.00

Reach Symbol

(Fish)

BT RB

18 B 2.0	5410
(Width, Valley: Channel, Slope)	**(Bed Material)**

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
BT	2	240-260	A				EL
RB	3	60-90	J				EL

Obstructions

Comments

C Deep pools; good volume of LWD; undercut banks with overhanging vegetation; low gradient with good gravels. Very braided with gravel bars throughout.

Reach 8, Site 4 of Monashee Creek, upstream view.

Reach 8, Site 4 of Monashee Creek, downstream view.

Reach 8, Site 4 of Monashee Creek, 260mm bull trout.

Reach 8, Site 4 of Monashee Creek, 240mm bull trout.

Reach 8, Site 4 of Monashee Creek, 60mm rainbow trout.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Half Mile Creek **Watershed Code:** 128-8355-618-226-180-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Half Mile Creek **Stream "Local":** **Access:** V4

Watershed Code: 128-8355-618-226-180-000-000-000-000-000-000-000 **Reach No.:** 1 **Reach Length (km):** **Method:**

Location: 10 m u/s from confluence with Monashee Creek **Map #:** 82L/018 **Site No.:** 1 **Length surveyed (m):** 100.0 **Method:**

U.T.M. : **Fish Card:** Y **Field:** Yes **Historical:** No

Date: 10/18/96 **Time:** 14:35 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \ **Photos:** R1:1, 2, 3 **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	1.3	**Method Av. Chan. Width (m):**	TF	1.2	1.4	1.3	1.0	1.7	1.0
Av. Wet. Width (m):	0.5	**Method Av. Wet. Width (m):**	TF	0.2	0.5	0.2	0.5	0.9	0.6
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**							
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**							
Gradient (%):	4.0	**Method Gradient:**	CL						

% Pool: 10 **% Riffle:** 25 **% Run:** 65 **% Other:** 0 **Method:** GE

% Side Channel:	>40	**Method Side Channel:**	GE
% Debris Area:	>15	**Method Debris Area:**	GE
% Stable Debris Area:	90	**Method Stable Debris Area:**	GE

Bed Material

% Fines (<2mm):	65	**% Fines (<2mm):**	65
% Gravels:	30	**Small (2-16mm):**	
		Large (16-64mm):	
% Larges:	5	**Small cobble (64-128mm):**	
		Large cobble (128-256mm):	
		Boulder cobble (>256mm):	
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	15	**Compaction:**	Low

Cover

Cover Total % :	5	**Method Cover Total %:**	GE				
Dp Pool : 0 **L.O.D.:**	0	**Boulder:**	5	**In Veg.:**	90	**Over Veg:**	0
Crown Closure % :	15	**Method Crown Closure:**	GE	**Aspect :**		**Method Aspect:**	

Cutbank: 5

Banks

Height (m):	0.5	**% Unstable:**	10				
Textures Fines:	Yes	**Gravel:**	No	**Larges:**	No	**Bedrock:**	No
Confinement:	UC						
Valley: Chan. Ratio:	D						
Stage:	L						
Flood Signs Ht(m):	0.1	**Method Flood Signs:**					
Braided:	Y	**Method Braided:**					
Bars (%):	0	**Method Bars:**					
pH:		**Method pH:**					
02 (ppm):		**Method Dissolved Oxygen:**					
Water Temp. (°C):	6.0	**Method Temperature:**					
Turb. (cm):		**Method Turbidity:**					
Cond. (µmhos):	399	**Method Conductivity:**					

Discharge

				Specific Data					
Wetted Width (m) :	0.5	**Method Wetted Width (m) :**		0.2	0.5	0.2	0.5	0.9	0.6
Mean Depth (m) :	0.3	**Method Mean Depth (m) :**		0.4	0.2	0.3	0.4	0.2	0.5
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**							
Discharge (m3/s) :		**Method Discharge (m3/s) :**							

Reach Symbol

(Fish)

NF

1 D 4.0 | 6310

(Width, Valley: Channel, Slope) | **(Bed Material)**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Half Mile Creek **Watershed Code:** 128-8355-618-226-180-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Comments

C The first 20 m of channel is available for fish access. After 20m there is no defined channel, the channel goes underground. There are better gravels upstream but the slope of 45 degrees is a barrier. There was not enough streamflow to measure velocity. The stream forks 40 meters upstream from the confluence.

Reach 1, Site 1 of Half Mile Creek, upstream view at the confluence with Monashee Creek.

Reach 1, Site 1 of Half Mile Creek, downstream view at the confluence with Monashee Creek.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Monashee Creek **Watershed Code:** 128-8355-618-226-181-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Monashee Creek **Stream "Local":** tributary 3

Watershed Code: 128-8355-618-226-181-000-000-000-000-000-000-000

Location: South of Half Mile Creek **Map #:** 82L/018

U.T.M. :

Date: 10/19/96 **Time:** 08:20 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R1: 13, 14

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 100.0 **Method:** **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.0	**Method Av. Chan. Width (m):**	
Av. Wet. Width (m):	0.0	**Method Av. Wet. Width (m):**	
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**	
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**	
Gradient (%):	0.0	**Method Gradient:**	

% Pool: 0 **% Riffle:** 0 **% Run:** 0 **% Other:** 0 **Method:**

% Side Channel:	0	**Method Side Channel:**	
% Debris Area:	0	**Method Debris Area:**	
% Stable Debris Area:		**Method Stable Debris Area:**	

Specific Data

Bed Material

% Fines (<2mm):	**% Fines (<2mm):**
% Gravels:	**Small (2-16mm):**
	Large (16-64mm):
% Larges:	**Small cobble (64-128mm):**
	Large cobble (128-256mm):
	Boulder cobble (>256mm):
% Bedrock:	**% Bedrock:**
D90 (cm):	**Compaction:**

Cover

Cover Total % : **Method Cover Total %:**

Dp Pool : **L.O.D.:** **Boulder:** **In Veg.:** **Over Veg:** **Cutbank:**

Crown Closure % : **Method Crown Closure:** **Aspect :** **Method Aspect:**

Banks

Height (m): **% Unstable:**

Textures Fines: No **Gravel:** No **Larges:** No **Bedrock:** No

Confinement:

Valley: Chan. Ratio:

Stage: Dry

Flood Signs Ht(m): **Method Flood Signs:**

Braided: **Method Braided:**

Bars (%): **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

Discharge

Wetted Width (m) : **Method Wetted Width (m) :**

Mean Depth (m) : **Method Mean Depth (m) :**

Mean Velocity (m/s) : **Method Mean Velocity (m/s**

Discharge (m3/s) : **Method Discharge (m3/s) :**

Specific Data

Reach Symbol

(Fish)

NF

0 E 0.0 | 0000

(Width, Valley: Channel, Slope) | **(Bed Material)**

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Unnamed tributary to Monashee Creek

Watershed Code: 128-8355-618-226-181-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				VO

Obstructions

Comments

C No defined channel exists this is demonstrated by a lack of fluvial processes.

Reach 1, Site 1 of Tributary 3 to Monashee Creek, upstream view alongside Hwy. 6.

Reach 1, Site 1 of Tributary 3 to Monashee Creek, downstream view at Hwy. 6.

Reach 1, Site 1 of Half Mile Creek, view of fork in the channel.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Monashee Creek **Watershed Code:** 128-8355-618-226-182-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Monashee Creek **Stream "Local":** Cedar Gulch

Watershed Code: 128-8355-618-226-182-000-000-000-000-000-000-000

Location: 35 m u/s of confluence with Monashee Creek **Map #:** 82L/018

U.T.M. :

Date: 10/19/96 **Time:** 09:00 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R1: 15, 16, 17, 18

Access: FT **Reach Length (km):** **Method:** **Length surveyed (m):** 500.0 **Method:** HC **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	1.6	**Method Av. Chan. Width (m):**	TF	2.2	1.4	1.4	2.1	1.1	1.4
Av. Wet. Width (m):	0.9	**Method Av. Wet. Width (m):**	TF	1.1	0.9	0.8	1.0	0.6	1.0
Av. Max. Rif. Depth (cm):	5	**Av. Max. Riffle Depth (cm):**	MS	4	5	7	3	7	5
Av. Max. Pool Depth (cm):	8	**Av. Max. Pool Depth (cm):**	MS	8	10	5	9	12	7
Gradient (%):	35.0	**Method Gradient:**	CL						

% Pool: 5 **% Riffle:** 40 **% Run:** 0 **% Other:** 55 **Method:** GE

% Side Channel: 0-10 **Method Side Channel:** GE

% Debris Area: >15 **Method Debris Area:** GE

% Stable Debris Area: 80 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 20 **% Fines (<2mm):** 20

% Gravels: 30 **Small (2-16mm):**

Large (16-64mm):

% Larges: 50 **Small cobble (64-128mm):**

Large cobble (128-256mm):

Boulder cobble (>256mm):

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 40 **Compaction:** High

Cover

Cover Total % : 5 **Method Cover Total %:**

Dp Pool : 5 **L.O.D.:** 40 **Boulder:** 40 **In Veg.:** 0 **Over Veg:** 0 **Cutbank:** 15

Crown Closure % : 80 **Method Crown Closure:** GE **Aspect :** NW **Method Aspect:** GE

Banks

Height (m): 1.0 **% Unstable:** 30

Textures Fines: No **Gravel:** No **Larges:** Yes **Bedrock:** No

Confinement: EN

Valley: Chan. Ratio: A

Stage: L

Flood Signs Ht(m): 0.3 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 0 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 5.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): 279 **Method Conductivity:**

Discharge

				Specific Data					
Wetted Width (m) :	0.9	**Method Wetted Width (m) :**	TF	1.1	0.9	0.8	1.0	0.6	1.0
Mean Depth (m) :	0.6	**Method Mean Depth (m) :**	MS	0.2	0.9	0.6			
Mean Velocity (m/s) :	0.39	**Method Mean Velocity (m/s**	F	0.3	0.4	0.4			
Discharge (m3/s) :	0.06	**Method Discharge (m3/s) :**	F						

Reach Symbol

(Fish)

NF

2 A 35.0	2350
(Width, Valley: Channel, Slope)	**(Bed Material)**

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Unnamed tributary to Monashee Creek

Watershed Code:

Stream Survey Report

128-8355-618-226-182-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Comments

C Water begins to flow 300m downstream of Highway 6. The entire stream is above 20% gradient. A 10m long cascade of 42% gradient exists 35m upstream of the confluence with Monashee Creek.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Cedar Gulch, upstream view.

Reach 1, Site 1 of Cedar Gulch, downstream view.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Cedar Gulch, upstream view at confluence with Monashee Creek. Cedar Gulch has a gradient of 37% at this point.

Reach 1, Site 1 of Cedar Gulch, downstream view at confluence with Monashee Creek.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Pass Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-256-000-000-000-000-000-000-000

Location: 240 m u/s of the confluence with Monashee Creek **Map #:** 82L/018

U.T.M. :

Date: 10/19/96 **Time:** 09:30 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R1: 19, 20, 21, 22, 23

Access: FT **Reach Length (km):** **Method:** **Length surveyed (m):** 300.0 **Method:** HC **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	5.8	**Method Av. Chan. Width (m):**	TF	6.4	6.6	5.7	5.7	4.3	5.8
Av. Wet. Width (m):	3.7	**Method Av. Wet. Width (m):**	TF	4.2	3.6	2.9	3.8	3.9	4.0
Av. Max. Rif. Depth (cm):	18	**Av. Max. Riffle Depth (cm):**	MS	17	10	22	15	20	27
Av. Max. Pool Depth (cm):	58	**Av. Max. Pool Depth (cm):**	MS	35	60	81	48	73	52
Gradient (%):	7.0	**Method Gradient:**	CL						

% Pool: 25 **% Riffle:** 60 **% Run:** 15 **% Other:** 0 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: >15 **Method Debris Area:** GE

% Stable Debris Area: 20 **Method Stable Debris Area:** GE

Cover

Cover Total % : 20 **Method Cover Total %:** GE

Dp Pool : 40 **L.O.D.:** 30 **Boulder:** 20 **In Veg.:** 0 **Over Veg:** 0 **Cutbank:** 10

Crown Closure % : 30 **Method Crown Closure:** GE **Aspect :** NW **Method Aspect:** GE

Discharge

			Specific Data					
Wetted Width (m) :	3.7	**Method Wetted Width (m) :**	4.2	3.6	2.9	3.8	3.9	4.0
Mean Depth (m) :	0.2	**Method Mean Depth (m) :**	0.1	0.2	0.3	0.2	0.1	0.1
Mean Velocity (m/s) :	0.52	**Method Mean Velocity (m/s**	0.6	0.6	0.3			
Discharge (m3/s) :	0.37	**Method Discharge (m3/s) :**	0.37	0.50	0.24			

Reach Symbol

(Fish)

NF

6 B 7.0 | 2530

(Width, Valley: Channel, Slope) | **(Bed Material)**

Bed Material

% Fines (<2mm): 20 **% Fines (<2mm):** 20

% Gravels: 45 **Small (2-16mm):**

Large (16-64mm):

% Larges: 35 **Small cobble (64-128mm):**

Large cobble (128-256mm):

Boulder cobble (>256mm):

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 1 **Compaction:** Medium

Banks

Height (m): 1.0 **% Unstable:** 5

Textures Fines: No **Gravel:** Yes **Larges:** No **Bedrock:** No

Confinement: FC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m): 0.3 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 0 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 5.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): 288 **Method Conductivity:**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Height (m)	Type	Location
0.8	F	20.0

Comments

C Unable to find fish, however, RB exist upstream. There is good fish habitat, good volume of: LWD; pools; and undercut banks.

Reach 1, Site 1 of Monashee Pass Creek, upstream view.

Reach 1, Site 1 of Monashee Pass Creek, downstream view.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Monashee Pass Creek, logjam approximately 50m upstream of the confluence with Monashee Creek

Reach 1, Site 1 of Monashee Pass Creek at confluence with Monashee Creek.

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Unnamed tributary to Monashee Pass Creek

Watershed Code: 128-8355-618-226-256-001-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Monashee Pass Creek
Stream "Local": tributary 7
Watershed Code: 128-8355-618-226-256-001-000-000-000-000-000-000
Location: 20 m d/s of Hwy. 6 at culvert crossing.
Map #: 82L/018
U.T.M. :
Date: 10/18/96 **Time:** 16:30 **Agency:** SR **Survey Crew:** GM \LU \ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R1: 7, 8, 9, 10, 11, 12
Access: V2
Reach Length (km): **Method:**
Length surveyed (m): 100.0 **Method:**
Field: Yes **Historical:** No
Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	2.2	**Method Av. Chan. Width (m):**	TF	2.3	1.6	1.8	1.7	1.8	3.7
Av. Wet. Width (m):	0.0	**Method Av. Wet. Width (m):**	GE						
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**							
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**							
Gradient (%):	3.0	**Method Gradient:**	CL						
% Pool: 0	**% Riffle:** 0	**% Run:** 0	**% Other:** 0	**Method:** GE					
% Side Channel:	0	**Method Side Channel:**	GE						
% Debris Area:	5-15	**Method Debris Area:**	GE						
% Stable Debris Area:	0	**Method Stable Debris Area:**	GE						

Bed Material

% Fines (<2mm):	20	**% Fines (<2mm):**	20
% Gravels:	50	**Small (2-16mm):**	
		Large (16-64mm):	
% Larges:	30	**Small cobble (64-128mm):**	
		Large cobble (128-256mm):	
		Boulder cobble (>256mm):	
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	30	**Compaction:**	High

Cover

Cover Total % : **Method Cover Total %:**
Dp Pool : **L.O.D.:** **Boulder:** **In Veg.:** **Over Veg:** **Cutbank:**
Crown Closure % : 25 **Method Crown Closure:** **Aspect :** NW **Method Aspect:**

Discharge

		Specific Data
Wetted Width (m) :	**Method Wetted Width (m) :**	
Mean Depth (m) :	**Method Mean Depth (m) :**	
Mean Velocity (m/s) :	**Method Mean Velocity (m/s**	
Discharge (m3/s) :	**Method Discharge (m3/s) :**	

Banks

Height (m):	0.3	**% Unstable:**					10
Textures Fines:	Yes	**Gravel:**	No	**Larges:**	No	**Bedrock:**	No
Confinement:	OC						
Valley: Chan. Ratio:	B						
Stage:	Dry						
Flood Signs Ht(m):	0.2	**Method Flood Signs:**					
Braided:	N	**Method Braided:**					
Bars (%):	0	**Method Bars:**					
pH:		**Method pH:**					
02 (ppm):		**Method Dissolved Oxygen:**					
Water Temp. (°C):		**Method Temperature:**					
Turb. (cm):		**Method Turbidity:**					
Cond. (µmhos):		**Method Conductivity:**					

Reach Symbol

(Fish)

(Width, Valley: Channel, Slope) | **(Bed Material)**

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 **Stream:** Unnamed tributary to Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-001-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				VO

Obstructions

Comments

C Stream appears to have good flows during the spring. Tributary 1 is dry at its confluence with Monashee Pass Creek.

Reach 1, Site 1 of Tributary 7 to Monashee Pass Creek, upstream view below Hwy. 6.

Reach 1, Site 1 of Tributary 7 to Monashee Pass Creek, downstream view below Hwy. 6.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Tributary 7 to Monashee Pass Creek, downstream view at culvert under Hwy. 6.

Reach 1, Site 1 of Tributary 7 to Monashee Pass Creek, downstream at confluence with Monashee Pass Creek.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Tributary 7 to Monashee Pass Creek, upstream at confluence with Monashee Pass Creek.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-002-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Monashee Pass Creek **Stream "Local":** tributary 9 **Access:** V2

Watershed Code: 128-8355-618-226-256-002-000-000-000-000-000-000 **Reach No.:** 1 **Reach Length (km):** **Method:**

Location: Hwy. 6 culvert crossing. **Map #:** 82L/018 **Site No.:** 1 **Length surveyed (m):** 200.0 **Method:** GE

U.T.M. : **Fish Card:** Y **Field:** Yes **Historical:** No

Date: 10/19/96 **Time:** 14:30 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ **Photos:** R2: 3, 4 **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	0.9	**Method Av. Chan. Width (m):**	TF	0.9	0.8	0.7	1.0	0.9	1.2
Av. Wet. Width (m):	0.0	**Method Av. Wet. Width (m):**	GE						
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**							
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**							
Gradient (%):	7.0	**Method Gradient:**	CL						

% Pool: 0 **% Riffle:** 0 **% Run:** 0 **% Other:** 0 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 5 **Method Debris Area:** GE

% Stable Debris Area: 5 **Method Stable Debris Area:** GE

Cover

Cover Total % : 10 **Method Cover Total %:** GE

Dp Pool : 10 **L.O.D.:** 0 **Boulder:** 0 **In Veg.:** 0 **Over Veg:** 40 **Cutbank:** 50

Crown Closure % : **Method Crown Closure:** **Aspect :** **Method Aspect:**

Discharge

		Specific Data
Wetted Width (m) :	**Method Wetted Width (m) :**	
Mean Depth (m) :	**Method Mean Depth (m) :**	
Mean Velocity (m/s) :	**Method Mean Velocity (m/s**	
Discharge (m3/s) :	**Method Discharge (m3/s) :**	

Reach Symbol

(Fish)

NF

18 A 7.0	3520
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm):	30	**% Fines (<2mm):**	30
% Gravels:	50	**Small (2-16mm):**	
		Large (16-64mm):	
% Larges:	20	**Small cobble (64-128mm):**	
		Large cobble (128-256mm):	
		Boulder cobble (>256mm):	
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	7	**Compaction:**	Low

Banks

Height (m):	0.6	**% Unstable:**	50
Textures Fines:	Yes	**Gravel:** No **Larges:** No **Bedrock:**	No
Confinement:			
Valley: Chan. Ratio:			
Stage:	Dry		
Flood Signs Ht(m):	0.3	**Method Flood Signs:**	
Braided:	N	**Method Braided:**	
Bars (%):	0	**Method Bars:**	
pH:		**Method pH:**	
02 (ppm):		**Method Dissolved Oxygen:**	
Water Temp. (°C):		**Method Temperature:**	
Turb. (cm):		**Method Turbidity:**	
Cond. (µmhos):		**Method Conductivity:**	

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 **Stream:** Unnamed tributary to Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-002-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				VO

Obstructions

Comments

C Very deep narrow channel with good gravels.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Tributary 9 to Monashee Pass Creek, upstream view.

Reach 1, Site 1 of Tributary 9 to Monashee Pass Creek, downstream view.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Pass Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-256-000-000-000-000-000-000-000

Location: 30 m d/s from Hwy. 6 culvert crossing **Map #:** 82L/018

U.T.M. :

Date: 10/18/96 **Time:** 14:00 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.: 2 **Site No.:** 2 **Fish Card:** Y **Photos:** R1: 4, 5, 6

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 100.0 **Method:** **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	4.6	**Method Av. Chan. Width (m):**	TF	4.4	4.2	4.2	5.3	4.6	4.8
Av. Wet. Width (m):	3.4	**Method Av. Wet. Width (m):**	TF	3.6	3.4	3.3	3.5	3.4	3.3
Av. Max. Rif. Depth (cm):	17	**Av. Max. Riffle Depth (cm):**	MS	18	18	16	16	14	18
Av. Max. Pool Depth (cm):	27	**Av. Max. Pool Depth (cm):**	MS	25	20	18	25	32	40
Gradient (%):	3.0	**Method Gradient:**	CL						

% Pool: 15 **% Riffle:** 75 **% Run:** 10 **% Other:** 0 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 5 **Method Debris Area:** GE

% Stable Debris Area: 10 **Method Stable Debris Area:** GE

Cover

Cover Total % : 10 **Method Cover Total %:** GE

Dp Pool : 40 **L.O.D.:** 5 **Boulder:** 40 **In Veg.:** 0 **Over Veg:** 5 **Cutbank:** 10

Crown Closure % : **Method Crown Closure:** ? **Aspect :** **Method Aspect:**

Discharge

				Specific Data					
Wetted Width (m) :	3.4	**Method Wetted Width (m) :**	TF	3.6	3.4	3.3	3.5	3.4	3.3
Mean Depth (m) :	0.2	**Method Mean Depth (m) :**	TF	0.1	0.2	0.3	0.2	0.1	0.1
Mean Velocity (m/s) :	0.59	**Method Mean Velocity (m/s**		0.6	0.6	0.5			
Discharge (m3/s) :	3.57	**Method Discharge (m3/s) :**		2.52	3.74	4.46			

Reach Symbol

(Fish)

RB

5 B 3.0	1360
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm): 10 **% Gravels:** 30 **% Larges:** 60 **% Bedrock:** 0 **D90 (cm):** 30

% Fines (<2mm): 10 **Small (2-16mm):** **Large (16-64mm):** **Small cobble (64-128mm):** **Large cobble (128-256mm):** **Boulder cobble (>256mm):** **% Bedrock:** 0 **Compaction:** Medium

Banks

Height (m): 1.0 **Textures Fines:** No **Confinement:** OC **Valley: Chan. Ratio:** B **Stage:** M **Flood Signs Ht(m):** 0.5 **Braided:** N **Bars (%):** 0 **pH:** **02 (ppm):** **Water Temp. (°C):** **Turb. (cm):** **Cond. (µmhos):**

% Unstable: 30 **Gravel:** Yes **Larges:** No **Bedrock:** No **Method Flood Signs:** **Method Braided:** **Method Bars:** **Method pH:** **Method Dissolved Oxygen:** **Method Temperature:** **Method Turbidity:** **Method Conductivity:**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
RB	3	165-260	A				EL

Obstructions

Comments

C Mainly riffle habitat some shallow pools with very little LWD.

Reach 2, Site 2 of Monashee Pass Creek, upstream view.

Reach 2, Site 2 of Monashee Pass Creek, downstream view.

Reach 2, Site 2 of Monashee Pass Creek, fish passage barrier is a 0.8m culvert under Hwy. 6.

Reach 2, Site 2 of Monashee Pass Creek, 2 adult rainbow trout captured downstream of the culvert.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Pass Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-256-000-000-000-000-000-000-000

Location: Monashee Pass FSR culvert crossing **Map #:** 82L/018

U.T.M. :

Date: 10/19/96 **Time:** 14:00 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.: 4 **Access:** V2

Site No.: 3 **Reach Length (km):** **Method:**

Fish Card: Y **Length surveyed (m):** 100.0 **Method:**

Photos: R2: 1, 2 **Field:** Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	3.0	**Method Av. Chan. Width (m):**	TF	1.9	2.8	3.2	3.2	3.7	3.4
Av. Wet. Width (m):	0.0	**Method Av. Wet. Width (m):**	GE						
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**							
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**							
Gradient (%):	10.0	**Method Gradient:**	CL						

% Pool: 0 **% Riffle:** 0 **% Run:** 0 **% Other:** 0 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 10 **Method Debris Area:** GE

% Stable Debris Area: 30 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 20 **% Fines (<2mm):** 20

% Gravels: 40 **Small (2-16mm):**

Large (16-64mm):

% Larges: 40 **Small cobble (64-128mm):**

Large cobble (128-256mm):

Boulder cobble (>256mm):

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 13 **Compaction:** Low

Cover

Cover Total % : **Method Cover Total %:**

Dp Pool : 20 **L.O.D.:** 30 **Boulder:** 0 **In Veg.:** 0 **Over Veg:** 0 **Cutbank:** 50

Crown Closure % : 75 **Method Crown Closure:** GE **Aspect :** **Method Aspect:**

Banks

Height (m): 0.7 **% Unstable:** 60

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: OC

Valley: Chan. Ratio: C

Stage: Dry

Flood Signs Ht(m): 0.5 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 0 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

Discharge

			Specific Data
Wetted Width (m) :	0.0	**Method Wetted Width (m) :**	
Mean Depth (m) :		**Method Mean Depth (m) :**	
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**	
Discharge (m3/s) :		**Method Discharge (m3/s) :**	

Reach Symbol

(Fish)

NF

3 C 10.0	2440
(Width, Valley: Channel, Slope)	**(Bed Material)**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				VO

Obstructions

Comments

C Dry stream channel at the time of survey.

Reach 4, Site 3 of Monashee Pass Creek, upstream view of dry channel in October 1996.

Reach 4, Site 3 of Monashee Pass Creek, downstream view of dry channel in October 1996.

Reach 4, Site 3 of Monashee Pass Creek, upstream view of Monashee Pass FSR culvert crossing in June 1997.

Reach 4, Site 3 of Monashee Pass Creek, downstream view from Monashee Pass FSR culvert crossing in June 1997.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Monashee Pass Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-256-000-000-000-000-000-000-000

Location: Upstream site on mainstem creek **Map #:** 82L/018

U.T.M. :

Date: 10/19/96 **Time:** 16:00 **Agency:** SR **Survey Crew:** GM \LB \ \ \ \ \ \ \

Reach No.:	4	**Access:**			V2
Site No.:	4	**Reach Length (km):**		**Method:**	
Fish Card:	Y	**Length surveyed (m):**	100.0	**Method:**	
Photos:	R1: 23, 24	**Field:**	Yes	**Historical:**	No
		Air Photos:			

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	6.0	**Method Av. Chan. Width (m):**	TF	8.4	6.2	5.3	6.8	4.8	4.3
Av. Wet. Width (m):	1.7	**Method Av. Wet. Width (m):**	TF	1.3	2.5	1.4	1.6	2.2	1.1
Av. Max. Rif. Depth (cm):	5	**Av. Max. Riffle Depth (cm):**	MS	6	5	5	6	5	4
Av. Max. Pool Depth (cm):	18	**Av. Max. Pool Depth (cm):**	MS	19	18	25	7	27	14
Gradient (%):	12.0	**Method Gradient:**	CL						

% Pool: 40 **% Riffle:** 50 **% Run:** 10 **% Other:** 0 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 35 **Method Debris Area:** GE

% Stable Debris Area: 60 **Method Stable Debris Area:** GE

Cover

Cover Total % : 10 **Method Cover Total %:** GE

Dp Pool : 20 **L.O.D.:** 40 **Boulder:** 30 **In Veg.:** 0 **Over Veg:** 0 **Cutbank:** 10

Crown Closure % : 60 **Method Crown Closure:** GE **Aspect :** **Method Aspect:**

Discharge

				Specific Data					
Wetted Width (m) :	1.7	**Method Wetted Width (m) :**	TF	1.3	2.5	1.4	1.6	2.2	1.1
Mean Depth (m) :	0.1	**Method Mean Depth (m) :**	MS	0.1	0.1	0.1	0.1	0.1	
Mean Velocity (m/s) :	0.34	**Method Mean Velocity (m/s**	F	0.3	0.3	0.4	0.4	0.3	
Discharge (m3/s) :	0.34	**Method Discharge (m3/s) :**	F	0.33	0.28	0.39	0.44	0.28	

Reach Symbol

(Fish)

NF

6 A 12.0	2260
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm):	20	**% Fines (<2mm):**	20
% Gravels:	20	**Small (2-16mm):**	
		Large (16-64mm):	
% Larges:	60	**Small cobble (64-128mm):**	
		Large cobble (128-256mm):	
		Boulder cobble (>256mm):	
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):		**Compaction:**	Low

Banks

Height (m):	1.2	**% Unstable:**	60
Textures Fines:	No	**Gravel:** Yes **Larges:** No **Bedrock:**	No
Confinement:	CO		
Valley: Chan. Ratio:	A		
Stage:	M		
Flood Signs Ht(m):	0.7	**Method Flood Signs:**	
Braided:	N	**Method Braided:**	AAA
Bars (%):	0	**Method Bars:**	
pH:		**Method pH:**	
02 (ppm):		**Method Dissolved Oxygen:**	
Water Temp. (°C):	4.0	**Method Temperature:**	
Turb. (cm):		**Method Turbidity:**	
Cond. (µmhos):	205	**Method Conductivity:**	

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Monashee Pass Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Comments

C The channel has a step pool morphology with signs of extreme flows demonstrated by undercut banks and bank depth. Property owner claims a spring starts approximately 100 m d/s from site 4.

Channel Assessment Procedure Field Notes Sub basin: Monashee creek Site #: 2650

General Information

Date: 24/10/96 Crew: DS & JK Weather: Clear

Macro reach: 6C Photo roll & frame: R:X F:10, 11, 12, 13 & 14

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	11.3	15.6	18.3	16.0	14.3
d(cm):	90	105	115	52	40
s(%):	3	1	5	1	
D (cm):	14	22	20	22	20

Average Width: 1510.0 Average Slope: 2

Average Depth: 80.4 Average largest stone moved by water: 19.6

Relative Roughness (Rr): 0.24 Rr*Rw: 0.32

Relative Width (Rw): 0.01 Power Index (PI): 242808.00

Field Indicators of Disturbance

Bed sediment

- ☒ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☒ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☒ B1: Abandonded channels
- ☒ B2: Eroding banks
- ☒ B3: Avulsions

Woody Debris

- ☒ D1: Small woody debris
- ☒ D2: LWD function
- ☒ D3: Recently formed LWD jams

Distance (m) 500 Disturbance type A3

Bank type A3/5 Channel type CPb w

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Excessive LWD and an 80m blowout is the result of a cutblock on the right side of the creek and an old road on the left side.

Exposed banks are common in Reach 6C.

LWD jams are present in Reach 6C of Monashee Creek. There is a log pile that may provide a source of LWD for future instream habitat improvement at this or other sites.

Upstream of the site there is a 70m zone of heavily aggraded channel.

Channel Assessment Procedure Field Notes Sub basin: Monashee Creek Site #: 2651

General Information

Date: 23/10/96 Crew: DS & GM & LJ Weather: Over cast

Macro reach: 7 Photo roll & frame: R:8227 F:16A & 17A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	8.0	7.7	14.7	9.2	8.7
d(cm):	60	73	75	72	69
s(%):	7	7	5	3	5
D (cm):	23	22	18.5	14	13

Average Width: 966.0 Average Slope: 5.4

Average Depth: 69.8 Average largest stone moved by water: 18.1

Relative Roughness (Rr): 0.26 Rr*Rw: 0.49

Relative Width (Rw): 0.02 Power Index (PI): 364104.72

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☒ B1: Abandonded channels
- ☐ B3: Avulsions
- ☒ B2: Eroding banks

Woody Debris

- ☒ D1: Small woody debris
- ☒ D2: LWD function
- ☒ D3: Recently formed LWD jams

Distance (m) 300 Disturbance type A2

Bank type A4/5 Channel type SPbw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 7, Monashee Creek shows the extensive riffle, a midchannel bar and disturbed stonelines.

Downstream view shows the LWD function and a log jam. This site is considered to be moderately aggrading.

Channel Assessment Procedure Field Notes Sub basin: Monashee Creek Site #: 2652

General Information

Date: 23/10/96 Crew: DS & GM & LJ Weather: Over cast

Macro reach: 8 Photo roll & frame: R:8227 F:18A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	7.2	7.9	7.3	14.7	7.8
d(cm):	53	54	61	35	41
s(%):	4	2.5	2.6	2.5	4.0
D (cm):	15.5	21	18	16	18

Average Width: 898.0 Average Slope: 3.12

Average Depth: 48.8 Average largest stone moved by water: 17.7

Relative Roughness (Rr): 0.36 Rr*Rw: 0.71

Relative Width (Rw): 0.02 Power Index (PI): 136725.89

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 150 Disturbance type S

Bank type A3/4 Channel type SPb w

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of the stable Reach 8, Monashee Creek.

Channel Assessment Procedure Field Notes Sub basin: Tributary 32 to Monashee creek Site #: 2653

General Information

Date: 18/10/96 Crew: DS & SB Weather: Sun

Macro reach: 1A Photo roll & frame: R:8285 F:14 &15

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	5.9	6.0	11.0	9.2	6.7
d(cm):	110	55	87	92	55
s(%):	13.5	5	9	2	12
D (cm):	26	27	29	27	12

Average Width: 776.0 Average Slope: 8.3

Average Depth: 79.8 Average largest stone moved by water: 24.2

Relative Roughness (Rr): 0.30 Rr*Rw: 0.95

Relative Width (Rw): 0.03 Power Index (PI): 513975.84

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☒ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☒ B2: Eroding banks
- ☒ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☒ D3: Recently formed LWD jams

Distance (m) 120 Disturbance type A3

Bank type A3/4 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Downstream view of Reach 1A, Tributary 32 to Monashee Creek shows an unnaturally wide channel due to aggradation.

View of failed landing shows the slide and unstable logs.

Channel Assessment Procedure Field Notes Sub basin: Tributary 32 to Monashee creek Site #: 2654

General Information

Date: 18/10/96 Crew: DS & SB Weather: Clear

Macro reach: 1B Photo roll & frame: R:8285 F:16,17 &18

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	8.7	8.9	7.2	13.6	14.4
d(cm):	65	43	74	72	82
s(%):	5	7	6	5.5	13
D (cm):	22	24	18	10	16

Average Width: 1056.0 Average Slope: 7.3

Average Depth: 67.2 Average largest stone moved by water: 18

Relative Roughness (Rr): 0.27 Rr*Rw: 0.46

Relative Width (Rw): 0.02 Power Index (PI): 518031.36

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☒ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B3: Avulsions
- ☒ B2: Eroding banks

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 300 Disturbance type A3

Bank type A4/5 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Water is running down the road, settling on the bridge and overflowing into the creek, therefore the drainage needs to be improved.

A slide and blowdown from the west side into Reach 1, Tributary 32 to Monashee Creek.

The bridge crossing consists of two bridges on top of one another. The channel is narrowed by the abutments and if any failure occurs there will be a large impact to the creek, therefore, the bridges should be removed.

Channel Assessment Procedure Field Notes Sub basin: Tributary 32 to Monashee creek Site #: 2655

General Information

Date: 18/10/96 Crew: DS & SB Weather: Overcast

Macro reach: 1C Photo roll & frame: R:8285 F:19

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	5.2	5.0	6.4	4.3	5.3
d(cm):	82	60	40	54	52
s(%):	12	6	13.5	6.5	11
D (cm):	17	22	23	19	19

Average Width: 524.0 Average Slope: 9.8

Average Depth: 57.6 Average largest stone moved by water: 20

Relative Roughness (Rr): 0.35 Rr*Rw: 1.33

Relative Width (Rw): 0.04 Power Index (PI): 295787.52

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Morphology

- ☐ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Woody Debris

- ☐ D1: Small woody debris
- ☐ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 150 Disturbance type S

Bank type A4/5 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Reach 1C, Tributary 32 to Monashee Creek does have stable sections upstream of the double bridge crossing. This site was considered a control site.

Channel Assessment Procedure Field Notes Sub basin: Tributary 32 to Monashee creek Site #: 2656

General Information

Date: 18/10/96 Crew: DS & SB Weather: Overcast

Macro reach: 1D Photo roll & frame: R:8285 F:20 & 21

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	4.7	4.8	13.2	5.0	6.2
d(cm):	47	54	51	78	58
s(%):	12	12	12.5	18	11.5
D (cm):	16	22	18	23	18

Average Width: 678.0 Average Slope: 13.2

Average Depth: 57.6 Average largest stone moved by water: 19.4

Relative Roughness (Rr): 0.34 Rr*Rw: 0.96

Relative Width (Rw): 0.03 Power Index (PI): 515496.96

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☒ D3: Recently formed LWD jams

Distance (m) 130 Disturbance type A1

Bank type A4/5 Channel type SPr

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Reach 1, Tributary 32 to Monashee Creek has been impacted by a landing and a disturbed log dump. Disturbance in the channel is indicated by multiple channels.

Upstream view of site 2656 shows the disturbed stonelines, LWD function and minimal pool area.

Channel Assessment Procedure Field Notes Sub basin: Monashee creek Site #: 2657

General Information

Date: 18/10/96 Crew: DS & SB Weather: Overcast

Macro reach: 8A Photo roll & frame: R:8285 F:22 & 23

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	7.9	8.0	4.7	5.6	6.8
d(cm):	55	46	50	62	56
s(%):	5	5	2.5	3	5
D (cm):	19	21	19	17	14

Average Width: 660.0 Average Slope: 4.1

Average Depth: 53.8 Average largest stone moved by water: 18

Relative Roughness (Rr): 0.33 Rr*Rw: 0.91

Relative Width (Rw): 0.03 Power Index (PI): 145582.80

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☐ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 50 Disturbance type A2

Bank type A4/5 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 8, Monashee Creek has minimal pool area, therefore, inicating an aggrading channel.

The bridge has vegetation growing on it, rotten stringers, 3 of 4 abutments are eroded, the bridge is sinking and sediment is evident in the channel. The bridge requires removal.

Channel Assessment Procedure Field Notes Sub basin: Monashee creek Site #: 2658

General Information

Date: 18/10/96 Crew: DS & SB Weather: Snow

Macro reach: 8B Photo roll & frame: R:8284 F:24 & 25

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	5.1	5.6	5.2	5.8	6.4
d(cm):	71	58	55	62	41
s(%):	4.5	9	6	7	4
D (cm):	21	19	18	17	20

Average Width: 562.0 Average Slope: 6.1

Average Depth: 57.4 Average largest stone moved by water: 19

Relative Roughness (Rr): 0.33 Rr*Rw: 1.12

Relative Width (Rw): 0.03 Power Index (PI): 196778.68

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 200 Disturbance type S

Bank type A4 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 8B, Monashee Creek shows an abandoned bridge with a rotten deck.

Upstream view of Reach 8 downstream of the bridge. The main channel has 2 abandoned channels associated with it, however the channel is considered stable.

Channel Assessment Procedure Field Notes Sub basin: Railroad creek Site #: 2660

General Information

Date: 22/10/96 Crew: DS & GM Weather: Over cast

Macro reach: 1 Photo roll & frame: R:8227 F:8A, 9A, 10A & 11A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	11.3	8.6	8.7	7.6	11.2
d(cm):	36	66	54	86	99
s(%):	3	1.5	1.5	2	5
D (cm):	14	12	14	13	19

Average Width: 948.0 Average Slope: 2.6

Average Depth: 68.2 Average largest stone moved by water: 14.4

Relative Roughness (Rr): 0.21 Rr*Rw: 0.32

Relative Width (Rw): 0.02 Power Index (PI): 168099.36

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 100 Disturbance type A1

Bank type A3/5 Channel type CPw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 1, Railroad Creek shows bars and minimal pool area indicating some aggradation.

Downstream view showing LWD function.

On the access road to site 2660 an old wooden culvert is not functioning and the creek is flowing over the road. The culvert should be unplugged or replaced.

Channel Assessment Procedure Field Notes Sub basin: Tributary 1 to Railroad Creek Site #: 2661

General Information

Date: 23/10/96 Crew: GM & DS & LJ Weather: O/C

Macro reach: 1 Photo roll & frame: R:8227 F:19A & 20A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	1.6	1.3	3.9	3.2	2.8
d(cm):	29	27	50	22	21
s(%):	7	5	36	12	24
D (cm):	7	9	7	7.5	6.5

Average Width: 256.0 Average Slope: 16.8

Average Depth: 29.8 Average largest stone moved by water: 7.4

Relative Roughness (Rr): 0.25 Rr*Rw: 0.72

Relative Width (Rw): 0.03 Power Index (PI): 128163.84

Field Indicators of Disturbance

Bed sediment

- ☒ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B3: Avulsions
- ☐ B2: Eroding banks

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 10 Disturbance type A1

Bank type A3/4 Channel type SPw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Downstream view of Reach 1, Tributary 1 to Railroad Creek shows a homogenous bed texture and extensive riffles indicating some aggradation.

Channel Assessment Procedure Field Notes Sub basin: Railroad Creek Site #: 2662

General Information

Date: 23/10/96 **Crew:** DS & GM & LJ **Weather:** Snow

Macro reach: 1A **Photo roll & frame:** No photo

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	0.92	0.6	0.66	0.26	0.59
d(cm):	14	18	11	14	10
s(%):	18	18	18	18	18
D (cm):	6	5.5	6	5	6

Average Width: 60.6 **Average Slope:** 18

Average Depth: 13.4 **Average largest stone moved by water:** 5.7

Relative Roughness (Rr): 0.43 **Rr*Rw:** 4.00

Relative Width (Rw): 0.09 **Power Index (PI):** 14616.72

Field Indicators of Disturbance

Bed sediment

- ☒ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Morphology

- ☐ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Woody Debris

- ☒ D1: Small woody debris
- ☐ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 300 **Disturbance type** A1

Bank type A1/2 **Channel type** SPg

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Channel Assessment Procedure Field Notes Sub basin: Tributary 6 to Railroad Creek Site #: 2665

General Information

Date: 23/10/96 **Crew:** DS & GM & LJ **Weather:** Snow

Macro reach: 1 **Photo roll & frame:** R:8227 F:23A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	1.3	1.8	1.2	2.4	3.8
d(cm):	26	27	19	25	48
s(%):	24	23	23	29	30
D (cm):	6	5	5	5.5	5.5

Average Width: 210.0 **Average Slope:** 25.8

Average Depth: 29 **Average largest stone moved by water:** 5.4

Relative Roughness (Rr): 0.19 **Rr*Rw:** 0.48

Relative Width (Rw): 0.03 **Power Index (PI):** 157122.00

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☒ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☒ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 350 **Disturbance type** A2

Bank type **Channel type** SPbw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Channel Assessment Procedure Field Notes Sub basin: Tributary 6.1 to Railroad creek Site #: 2666

General Information

Date: 23/10/96 Crew: DS & GM & LJ Weather: Snow

Macro reach: 1 Photo roll & frame: R:8227 F:24A R:X F:0A&1A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	6.6	8.2	7.7	7.4	5.5
d(cm):	32	36	22	22	20
s(%):	21	31	25	29	32
D (cm):	8.5	8	9	8	7

Average Width: 708.0 Average Slope: 27.6

Average Depth: 26.4 Average largest stone moved by water: 8.1

Relative Roughness (Rr): 0.31 Rr*Rw: 0.35

Relative Width (Rw): 0.01 Power Index (PI): 515877.12

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☐ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 100 Disturbance type S

Bank type A3/4 Channel type SPrbw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 1 of Tributary 6.1 to Railroad Creek shows the LWD function and extensive cascades in this stable channel.

Downstream view of Reach 1 shows the LWD function.

Upstream view of Reach1 of Tributary 9 to Railroad Creek shows the sediment in the settling pool. Sediment is predominant throughout the channel system.

Channel Assessment Procedure Field Notes Sub basin: Railroad creek Site #: 2671

General Information

Date: 20/10/96 Crew: GM & DS Weather: Snow

Macro reach: 2 Photo roll & frame: R:8227 F:14A & 15A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	9.2	7.0	6.5	6.6	9.3
d(cm):	52	67	62	40	53
s(%):	4.5	8	4.0	3.5	8.5
D (cm):	13.5	14.0	11	15	11

Average Width: 772.0 Average Slope: 5.7

Average Depth: 54.8 Average largest stone moved by water: 12.9

Relative Roughness (Rr): 0.24 Rr*Rw: 0.39

Relative Width (Rw): 0.02 Power Index (PI): 241141.92

Field Indicators of Disturbance

Bed sediment

- ☒ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☒ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☒ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☒ C5: Disturbed stone lines

Woody Debris

- ☒ D1: Small woody debris
- ☒ D2: LWD function
- ☒ D3: Recently formed LWD jams

Distance (m) 65 Disturbance type A2

Bank type A3 Channel type SP bw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of Reach 2, Railroad Creek shows extensive riffles, disturbed stonelines, LWD function and a homogenous bed texture that all contribute to the aggrading nature of the channel.

Channel Assessment Procedure Field Notes Sub basin: Tributary 16 to Railroad creek Site #: 2672

General Information

Date: 20/10/96 Crew: GM & DS Weather: O/C

Macro reach: 1 Photo roll & frame: R:8227 F:12A & 13A

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	3.4	3.6	2.5	5.2	2.4
d(cm):	78	50	46	78	46
s(%):	10	8.5	8	6.5	7.5
D (cm):	11	12	9	11	14

Average Width: 342.0 Average Slope: 8.1

Average Depth: 59.6 Average largest stone moved by water: 11.4

Relative Roughness (Rr): 0.19 Rr*Rw: 0.64

Relative Width (Rw): 0.03 Power Index (PI): 165103.92

Field Indicators of Disturbance

Bed sediment

- ☒ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☒ C1: Extensive riffles or cascades
- ☐ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☐ D1: Small woody debris
- ☐ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 100 Disturbance type S

Bank type A3/4 Channel type SPbw

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Downstream view of Reach 1, Tributary 16 to Railroad Creek showing a stable channel with minor disturbance of multiple channels.

Upstream view of Reach 1 shows the stable condition of the reach.

Channel Assessment Procedure Field Notes Sub basin: Railroad creek Site #: 2673

General Information

Date: 17/10/96 Crew: SB & DS Weather: Snowing

Macro reach: 2 Photo roll & frame: R:8285 F:5 & 6

Measurements and Calculations

Station:	1	2	3	4	5
Wb (m):	3.4	2.4	2.8	2.6	4.5
d(cm):	35	43	24	33	31
s(%):	8	19	10	18	15
D (cm):	12	10	13	10	12

Average Width: 314.0 Average Slope: 14

Average Depth: 33.2 Average largest stone moved by water: 11.4

Relative Roughness (Rr): 0.34 Rr*Rw: 1.25

Relative Width (Rw): 0.04 Power Index (PI): 145947.20

Field Indicators of Disturbance

Bed sediment

- ☐ S1: Homogeneous bed texture
- ☐ S2: Sediment fingers
- ☐ S3: Sediment wedges
- ☐ S4: Extensive bars
- ☐ S5: Extensively scoured zones

Morphology

- ☐ C1: Extensive riffles or cascades
- ☒ C2: Minimal pool area
- ☐ C3: Elevated mid-channel bars
- ☒ C4: Multiple channels or braids
- ☐ C5: Disturbed stone lines

Banks

- ☐ B1: Abandonded channels
- ☐ B2: Eroding banks
- ☐ B3: Avulsions

Woody Debris

- ☒ D1: Small woody debris
- ☒ D2: LWD function
- ☐ D3: Recently formed LWD jams

Distance (m) 130 Disturbance type S

Bank type A4 Channel type SPb

A (Alluvial): 1=silt, 2=sand, 3=gravel, 4=cobble, 5=boulder
(e.g. A 4/5=Alluvial, cobble over boulder)
N (Non-alluvial): 1=till, 2=colluvium, 3=bedrock
(e.g. N 3=Non-alluvial bedrock)

Upstream view of unnatural section of Reach 2, Railroad Creek upstream of a lake. The normally cobble bed texture has been replaced with fine dirt.

Upstream view of natural cobble channel with minimal pool area and LWD function.

Downstream view of Reach 2, Pinnacle Creek shows the bridge crossing over a stable channel.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Monashee Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Monashee Creek **Stream "Local":** tributary 32

Watershed Code: 128-8355-618-226-256-000-000-000-000-000-000-000

Location: End of road and beginning of Mount Beaven trail **Map #:** 82L/029

U.T.M. :

Date: 10/19/96 **Time:** 12:30 **Agency:** SR **Survey Crew:** JW \CU \ \ \ \ \ \

Reach No.: 2 **Site No.:** 2 **Fish Card:** Y **Photos:** R13: 3, 4

Access: V2

Reach Length (km): **Method:**

Length surveyed (m): 100.0 **Method:**

Field: Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	6.9	**Method Av. Chan. Width (m):**	TF	6.7	7.0	7.1	4.4	9.0	7.4
Av. Wet. Width (m):	5.7	**Method Av. Wet. Width (m):**	TF	5.7	5.3	6.4	3.9	8.3	4.4
Av. Max. Rif. Depth (cm):	17	**Av. Max. Riffle Depth (cm):**	MS	24	15	16	18	17	10
Av. Max. Pool Depth (cm):	35	**Av. Max. Pool Depth (cm):**	MS	40	30	32	40	38	32
Gradient (%):	17.0	**Method Gradient:**	CL						

% Pool: 25 **% Riffle:** 30 **% Run:** 40 **% Other:** 10 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 20 **Method Debris Area:** GE

% Stable Debris Area: 75 **Method Stable Debris Area:** GE

Cover

Cover Total % : 20 **Method Cover Total %:** GE

Dp Pool : 25 **L.O.D.:** 25 **Boulder:** 20 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 20

Crown Closure % : 5 **Method Crown Closure:** GE **Aspect :** SW **Method Aspect:** GE

Discharge

		Specific Data
Wetted Width (m) :	**Method Wetted Width (m) :**	
Mean Depth (m) :	**Method Mean Depth (m) :**	
Mean Velocity (m/s) :	**Method Mean Velocity (m/s**	
Discharge (m3/s) :	**Method Discharge (m3/s) :**	

Reach Symbol

(Fish)

NF

7 B 17.0	1360
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm): 5

% Gravels: 30

% Larges: 65

% Bedrock: 0

D90 (cm): 70

% Fines (<2mm): 5

Small (2-16mm): 10

Large (16-64mm): 20

Small cobble (64-128mm): 25

Large cobble (128-256mm): 25

Boulder cobble (>256mm): 15

% Bedrock: 0

Compaction: Medium

Banks

Height (m): 0.5

Textures Fines: Yes

Confinement: FC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m):

Braided: N

Bars (%): 5

pH:

02 (ppm):

Water Temp. (°C): 2.0

Turb. (cm):

Cond. (µmhos):

% Unstable: 10

Gravel: No **Larges:** No **Bedrock:** No

Method Flood Signs:

Method Braided:

Method Bars:

Method pH:

Method Dissolved Oxygen:

Method Temperature:

Method Turbidity:

Method Conductivity:

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 **Stream:** Unnamed tributary to Monashee Creek **Watershed Code:** 128-8355-618-226-256-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Comments

C Only 100m were electroshocked due to low water temp. Good pool habitat and LWD cover. Cutblock and road in riparian zone.

Reach 2, Site 2 of Tributary 32 to Monashee Creek, upstream view.

Reach 2, Site 2 of Tributary 32 to Monashee Creek, downstream view.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed Creek to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed Creek to Railroad Creek **Stream "Local":** tributary 19

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: Km 22 on Railroad Creek FSR and 250m u/s of confluence with Monashee Creek **Map #:** 82L/019 **U.T.M. :**

Date: 10/19/96 **Time:** 14:05 **Agency:** SR **Survey Crew:** CU \JW\ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R13: 7, 8, 9, 10

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 150.0 **Method:** **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	5.9	**Method Av. Chan. Width (m):**	TF	8.9	5.4	5.8	4.6	4.5	6.0
Av. Wet. Width (m):	3.9	**Method Av. Wet. Width (m):**	TF	5.3	3.3	3.8	4.3	3.6	3.0
Av. Max. Rif. Depth (cm):	11	**Av. Max. Riffle Depth (cm):**	MS	6	9	17	13	16	4
Av. Max. Pool Depth (cm):	24	**Av. Max. Pool Depth (cm):**	MS	25	19	18	34	20	26
Gradient (%):	10.0	**Method Gradient:**	CL						

% Pool: 20 **% Riffle:** 25 **% Run:** 40 **% Other:** 5 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 10 **Method Debris Area:** GE

% Stable Debris Area: 75 **Method Stable Debris Area:** GE

Cover

Cover Total % : 20 **Method Cover Total %:** GE

Dp Pool : 30 **L.O.D.:** 25 **Boulder:** 20 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 15

Crown Closure % : 15 **Method Crown Closure:** GE **Aspect :** **Method Aspect:**

Discharge

				Specific Data				
Wetted Width (m) :	3.3	**Method Wetted Width (m) :**	TF	3.3				
Mean Depth (m) :	0.1	**Method Mean Depth (m) :**	MS	0.1	0.1	0.2	0.1	0.1
Mean Velocity (m/s) :	0.53	**Method Mean Velocity (m/s**	F	0.7	0.3	0.6		
Discharge (m3/s) :	0.22	**Method Discharge (m3/s) :**	F	0.15	0.13	0.38		

Reach Symbol

(Fish)

NF

6 B 10.0 | 1270

(Width, Valley: Channel, Slope) | **(Bed Material)**

Bed Material

% Fines (<2mm): 5 **% Fines (<2mm):** 5

% Gravels: 25 **Small (2-16mm):** 10 **Large (16-64mm):** 15

% Larges: 70 **Small cobble (64-128mm):** 15 **Large cobble (128-256mm):** 30 **Boulder cobble (>256mm):** 25

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 25 **Compaction:** Medium

Banks

Height (m): 1.5 **% Unstable:** 5

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: FC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m): 0.2 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 5 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 3.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed Creek to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Height (m)	Type	Location
1.5	X	

Comments

C Good LWD and overhanging vegetation. Possible barrier on Railroad Creek.

Reach 1, Site 1 of Tributary 19 to Railroad Creek, upstream view.

Reach 1, Site 1 of Tributary 19 to Railroad Creek, downstream view.

Reach 1, Site 1 of Tributary 19 to Railroad Creek, view of 1.5m high rockfall / logjam.

Reach 1, Site 1 of Tributary 19 to Railroad Creek, view of confluence with Railroad Creek.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Railroad Creek **Stream "Local":** Pinnacle Creek

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: Railroad FSR lower crossing approximately 500m u/s of confluence with Railroad Creek **Map #:** 82L/019 **U.T.M. :**

Date: 10/19/96 **Time:** 15:20 **Agency:** SR **Survey Crew:** CU \JW\ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R13: 10, 12, 13

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 120.0 **Method:** **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	6.5	**Method Av. Chan. Width (m):**	TF	9.1	5.0	6.1	7.6	5.5	5.6
Av. Wet. Width (m):	4.8	**Method Av. Wet. Width (m):**	TF	8.9	3.2	3.3	4.0	4.9	4.4
Av. Max. Rif. Depth (cm):	9	**Av. Max. Riffle Depth (cm):**	MS	16	7	8	5	10	7
Av. Max. Pool Depth (cm):	31	**Av. Max. Pool Depth (cm):**	MS	28	31	33	34	30	30
Gradient (%):	9.0	**Method Gradient:**	CL						

% Pool: 20 **% Riffle:** 35 **% Run:** 25 **% Other:** 10 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 10 **Method Debris Area:** GE

% Stable Debris Area: 90 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 10 **% Gravels:** 20 **% Larges:** 70 **% Bedrock:** 0 **D90 (cm):** 65

% Fines (<2mm): 10 **Small (2-16mm):** 5 **Large (16-64mm):** 15 **Small cobble (64-128mm):** 20 **Large cobble (128-256mm):** 20 **Boulder cobble (>256mm):** 30 **% Bedrock:** 0 **Compaction:** Medium

Cover

Cover Total % : 10 **Method Cover Total %:** GE

Dp Pool : 30 **L.O.D.:** 20 **Boulder:** 30 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 10

Crown Closure % : 15 **Method Crown Closure:** GE **Aspect :** SW **Method Aspect:** GE

Banks

Height (m): 1.0 **Textures Fines:** Yes **Confinement:** OC **Valley: Chan. Ratio:** C **Stage:** M **Flood Signs Ht(m):** 0.17 **Braided:** N **Bars (%):** 5 **pH:** **02 (ppm):** **Water Temp. (°C):** 3.0 **Turb. (cm):** **Cond. (µmhos):**

% Unstable: 0 **Gravel:** No **Larges:** No **Bedrock:** No **Method Flood Signs:** **Method Braided:** **Method Bars:** **Method pH:** **Method Dissolved Oxygen:** **Method Temperature:** **Method Turbidity:** **Method Conductivity:**

Discharge

				Specific Data				
Wetted Width (m) :	4.2	**Method Wetted Width (m) :**	TF	4.2				
Mean Depth (m) :	0.2	**Method Mean Depth (m) :**	MS	0.1	0.3	0.3	0.3	0.1
Mean Velocity (m/s) :	0.94	**Method Mean Velocity (m/s**	F	0.6	1.0	1.2		
Discharge (m3/s) :	0.95	**Method Discharge (m3/s) :**	F	0.29	1.07	1.50		

Reach Symbol

(Fish)

RB

6 C 9.0	1270
(Width, Valley: Channel, Slope)	**(Bed Material)**

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
RB	2	130-197	A				EL

Obstructions

Comments

C Cascade pool channel morphology.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Pinnacle Creek, upstream view.

Reach 1, Site 1 of Pinnacle Creek, downstream view.

Reach 1, Site 1 of Pinnacle Creek, adult rainbow trout.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Railroad Creek **Stream "Local":** Pinnacle Creek **Access:** V2

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000 **Reach No.:** 2 **Reach Length (km):** **Method:**

Location: Upper road crossing km 22 **Map #:** 82L/019 **Site No.:** 2 **Length surveyed (m):** 110.0 **Method:**

U.T.M. : **Fish Card:** Y **Field:** Yes **Historical:** No

Date: 10/20/96 **Time:** 15:20 **Agency:** SR **Survey Crew:** CU \JW \ \ \ \ \ \ \ **Photos:** R14: 1, 2 **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	5.1	**Method Av. Chan. Width (m):**	TF	6.3	6.0	4.9	4.5	4.8	3.9
Av. Wet. Width (m):	4.1	**Method Av. Wet. Width (m):**	TF	5.1	4.5	4.4	3.9	3.4	3.5
Av. Max. Rif. Depth (cm):	13	**Av. Max. Riffle Depth (cm):**	MS	12	4	12	9	20	19
Av. Max. Pool Depth (cm):	29	**Av. Max. Pool Depth (cm):**	MS	20	30	23	42	31	30
Gradient (%):	7.0	**Method Gradient:**	CL						

% Pool: 20 **% Riffle:** 45 **% Run:** 30 **% Other:** 5 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 10 **Method Debris Area:** GE

% Stable Debris Area: 90 **Method Stable Debris Area:** GE

Cover

Cover Total % : 15 **Method Cover Total %:** GE

Dp Pool : 30 **L.O.D.:** 15 **Boulder:** 25 **In Veg.:** 0 **Over Veg:** 20 **Cutbank:** 10

Crown Closure % : 15 **Method Crown Closure:** GE **Aspect :** SW **Method Aspect:** GE

Discharge

				Specific Data				
Wetted Width (m) :	3.3	**Method Wetted Width (m) :**	TF	3.3				
Mean Depth (m) :	0.2	**Method Mean Depth (m) :**	MS	0.1	0.2	0.2	0.2	0.1
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**	F	1.0	0.5	0.6		
Discharge (m3/s) :	0.32	**Method Discharge (m3/s) :**	F	0.32	0.35	0.30		

Reach Symbol

(Fish)

NF

5 B 7.0 | 1270

(Width, Valley: Channel, Slope) | **(Bed Material)**

Bed Material

% Fines (<2mm):	5	**% Fines (<2mm):**	5
% Gravels:	20	**Small (2-16mm):**	10
		Large (16-64mm):	10
% Larges:	75	**Small cobble (64-128mm):**	20
		Large cobble (128-256mm):	25
		Boulder cobble (>256mm):	30
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	60	**Compaction:**	Medium

Banks

Height (m):	0.5	**% Unstable:**	0
Textures Fines:	Yes	**Gravel:** No **Larges:** No **Bedrock:**	No
Confinement:	FC		
Valley: Chan. Ratio:	B		
Stage:	M		
Flood Signs Ht(m):	0.05	**Method Flood Signs:**	
Braided:	N	**Method Braided:**	
Bars (%):	5	**Method Bars:**	
pH:		**Method pH:**	
02 (ppm):		**Method Dissolved Oxygen:**	
Water Temp. (°C):	2.5	**Method Temperature:**	
Turb. (cm):		**Method Turbidity:**	
Cond. (µmhos):		**Method Conductivity:**	

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Unnamed tributary to Railroad Creek

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Comments

C Pools of poor quality; old cutblocks on either side of stream; good overhanging vegetation.

Reach 2, Site 2 of Pinnacle Creek, upstream view. Note the extensive build-up of LWD.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Railroad Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: Approximately 1.4km u/s of confluence with Pinnacle Creek at confluence with small tributary. **Map #:** 82L/019 **U.T.M. :**

Date: 10/20/96 **Time:** 13:07 **Agency:** SR **Survey Crew:** CU \JW\ \ \ \ \ \ \

			Access:		V2
Reach No.:	2	**Reach Length (km):**		**Method:**	
Site No.:	1	**Length surveyed (m):**	15.0	**Method:**	
Fish Card:	Y	**Field:** Yes		**Historical:**	No
Photos:	R13: 21	**Air Photos:**			

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	9.4	**Method Av. Chan. Width (m):**	TF	12.2	10.5	8.9	8.2	7.3	9.1
Av. Wet. Width (m):	6.8	**Method Av. Wet. Width (m):**	TF	8.0	6.0	6.3	5.1	6.9	8.8
Av. Max. Rif. Depth (cm):	17	**Av. Max. Riffle Depth (cm):**	MS	10	11	20	26	19	18
Av. Max. Pool Depth (cm):	60	**Av. Max. Pool Depth (cm):**	MS	103	75	81	48	20	35
Gradient (%):	5.0	**Method Gradient:**	GE						

% Pool: 25 **% Riffle:** 45 **% Run:** 25 **% Other:** 5 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 5 **Method Debris Area:** GE

% Stable Debris Area: 90 **Method Stable Debris Area:** GE

Cover

Cover Total % : 15 **Method Cover Total %:** GE

Dp Pool : 50 **L.O.D.:** 15 **Boulder:** 15 **In Veg.:** 0 **Over Veg:** 10 **Cutbank:** 10

Crown Closure % : 25 **Method Crown Closure:** GE **Aspect :** NW **Method Aspect:** GE

Discharge

				Specific Data				
Wetted Width (m) :	6.3	**Method Wetted Width (m) :**	TF	6.3				
Mean Depth (m) :	0.2	**Method Mean Depth (m) :**	MS	0.2	0.1	0.2	0.2	0.1
Mean Velocity (m/s) :	0.85	**Method Mean Velocity (m/s**	F	1.0	0.9	0.7		
Discharge (m3/s) :	0.86	**Method Discharge (m3/s) :**	F	1.03	0.88	0.68		

Reach Symbol

(Fish)

RB

9 B 5.0	1360
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm):	10	**% Fines (<2mm):**	10
% Gravels:	30	**Small (2-16mm):**	10
		Large (16-64mm):	20
% Larges:	60	**Small cobble (64-128mm):**	15
		Large cobble (128-256mm):	25
		Boulder cobble (>256mm):	20
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	49	**Compaction:**	Medium

Banks

Height (m):	1.5	**% Unstable:**					5
Textures Fines:	Yes	**Gravel:**	No	**Larges:**	No	**Bedrock:**	No
Confinement:	FC						
Valley: Chan. Ratio:	B						
Stage:	M						
Flood Signs Ht(m):	0.2	**Method Flood Signs:**					
Braided:	N	**Method Braided:**					
Bars (%):	10	**Method Bars:**					
pH:		**Method pH:**					
02 (ppm):		**Method Dissolved Oxygen:**					
Water Temp. (°C):	4.0	**Method Temperature:**					
Turb. (cm):		**Method Turbidity:**					
Cond. (µmhos):		**Method Conductivity:**					

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Railroad Creek

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
RB	2	190-235	A				EL

Obstructions

Comments

C Good shade and spawning gravels.

Reach 2, Site 1 of Railroad Creek, upstream view.

Reach 2, Site 1 of Railroad Creek, downstream view.

Stream Survey Report - Fish Sampling Photos

Reach 2, Site 1 of Railroad Creek, adult rainbow trout.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Railroad Creek **Stream "Local":** tributary 15

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: 140m u/s of confluence with Railroad Creek **Map #:** 82L/019

U.T.M. :

Date: 10/20/96 **Time:** 13:01 **Agency:** SR **Survey Crew:** JW \CU\ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** Y **Photos:** R13: 24, 25

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 160.0 **Method:** **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data					
Av. Chan. Width (m):	2.0	**Method Av. Chan. Width (m):**	TF	1.9	1.4	1.1	1.8	3.4	2.1
Av. Wet. Width (m):	1.8	**Method Av. Wet. Width (m):**	TF	1.8	1.5	1.1	1.6	3.2	1.4
Av. Max. Rif. Depth (cm):	11	**Av. Max. Riffle Depth (cm):**	MS	11	10	15	13	4	13
Av. Max. Pool Depth (cm):	18	**Av. Max. Pool Depth (cm):**	MS	22	31	21	14	6	14
Gradient (%):	19.0	**Method Gradient:**	CL						

% Pool: 20 **% Riffle:** 30 **% Run:** 40 **% Other:** 10 **Method:** GE

% Side Channel: **Method Side Channel:** GE

% Debris Area: 15 **Method Debris Area:** GE

% Stable Debris Area: 90 **Method Stable Debris Area:** GE

Bed Material

% Fines (<2mm): 5 **% Fines (<2mm):** 5

% Gravels: 20 **Small (2-16mm):** 10

Large (16-64mm): 10

% Larges: 75 **Small cobble (64-128mm):** 25

Large cobble (128-256mm): 30

Boulder cobble (>256mm): 20

% Bedrock: 0 **% Bedrock:** 0

D90 (cm): 38 **Compaction:** Medium

Cover

Cover Total % : 15 **Method Cover Total %:** GE

Dp Pool : 30 **L.O.D.:** 20 **Boulder:** 15 **In Veg.:** 0 **Over Veg:** 20 **Cutbank:** 15

Crown Closure % : 45 **Method Crown Closure:** GE **Aspect :** E **Method Aspect:** GE

Banks

Height (m): 1.0 **% Unstable:** 10

Textures Fines: Yes **Gravel:** No **Larges:** No **Bedrock:** No

Confinement: OC

Valley: Chan. Ratio: B

Stage: M

Flood Signs Ht(m): 0.19 **Method Flood Signs:**

Braided: N **Method Braided:**

Bars (%): 5 **Method Bars:**

pH: **Method pH:**

02 (ppm): **Method Dissolved Oxygen:**

Water Temp. (°C): 4.0 **Method Temperature:**

Turb. (cm): **Method Turbidity:**

Cond. (µmhos): **Method Conductivity:**

Discharge

				Specific Data		
Wetted Width (m) :	2.0	**Method Wetted Width (m) :**	TF	2.0		
Mean Depth (m) :	0.1	**Method Mean Depth (m) :**	MS	0.0	0.1	0.1
Mean Velocity (m/s) :	1.52	**Method Mean Velocity (m/s**	F	1.6	1.6	1.3
Discharge (m3/s) :	0.42	**Method Discharge (m3/s) :**	F	0.54	0.26	0.46

Reach Symbol

(Fish)

NF

2 B 19.0 | 1270

(Width, Valley: Channel, Slope) | **(Bed Material)**

DFO/MoELP Stream Survey Form

Stream Survey Report

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Height (m)	Type	Location
0.5	CV	

Comments

C Electroshocked from mouth to road crossing where creek gradient increases to at least 28%.

Reach 1, Site 1 of Tributary 15 to Railroad Creek, upstream view.

Reach 1, Site 1 of Tributary 15 to Railroad Creek, downstream view.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Unnamed tributary to Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Unnamed tributary to Railroad Creek **Stream "Local":** tributary 16

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: 2.2 km u/s from the confluence with Railroad Creek **Map #:** 82L.019

U.T.M. :

Date: 7/18/97 **Time:** 13:00 **Agency:** SR **Survey Crew:** PK \KS\ \ \ \ \ \ \

Reach No.: 1 **Site No.:** 1 **Fish Card:** N **Photos:** 20, 21, 22

Access: V2 **Reach Length (km):** **Method:** **Length surveyed (m):** 250.0 **Method:** HC **Field:** Yes **Historical:** No **Air Photos:**

Channel Characteristics

				Specific Data				
Av. Chan. Width (m):	6.7	**Method Av. Chan. Width (m):**	TF	5.0	6.8	6.5	7.8	7.6
Av. Wet. Width (m):	4.6	**Method Av. Wet. Width (m):**	TF	3.2	5.6	4.2	4.5	5.4
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**						
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**						
Gradient (%):	5.0	**Method Gradient:**	CF					

% Pool: 30 **% Riffle:** 60 **% Run:** 10 **% Other:** 0 **Method:** GE

% Side Channel: 10-40 **Method Side Channel:**

% Debris Area: >15 **Method Debris Area:**

% Stable Debris Area: 90 **Method Stable Debris Area:**

Cover

Cover Total % : 70 **Method Cover Total %:** GE

Dp Pool : 10 **L.O.D.:** 20 **Boulder:** 5 **In Veg.:** 5 **Over Veg:** 45 **Cutbank:** 15

Crown Closure % : 20 **Method Crown Closure:** GE **Aspect :** **Method Aspect:**

Discharge

		Specific Data
Wetted Width (m) :	**Method Wetted Width (m) :**	
Mean Depth (m) :	**Method Mean Depth (m) :**	
Mean Velocity (m/s) :	**Method Mean Velocity (m/s**	
Discharge (m3/s) :	**Method Discharge (m3/s) :**	

Reach Symbol

(Fish)

EB

7 E 5.0	1540
(Width, Valley: Channel, Slope)	**(Bed Material)**

Bed Material

% Fines (<2mm): 15 **% Gravels:** 45 **% Larges:** 40 **% Bedrock:** 0 **D90 (cm):**

% Fines (<2mm): 15 **Small (2-16mm):** 25 **Large (16-64mm):** 20 **Small cobble (64-128mm):** 20 **Large cobble (128-256mm):** 10 **Boulder cobble (>256mm):** 10 **% Bedrock:** 0 **Compaction:** Medium

Banks

Height (m): 0.2 **Textures Fines:** No **Confinement:** OC **Valley: Chan. Ratio:** E **Stage:** M **Flood Signs Ht(m):** **Braided:** Y **Bars (%):** **pH:** **02 (ppm):** **Water Temp. (°C):** 8.0 **Turb. (cm):** **Cond. (µmhos):** 108

% Unstable: 5 **Gravel:** Yes **Larges:** No **Bedrock:** No **Method Flood Signs:** **Method Braided:** **Method Bars:** **Method pH:** **Method Dissolved Oxygen:** **Method Temperature:** **Method Turbidity:** **Method Conductivity:**

DFO/MoELP Stream Survey Form

30-Sep-97

Stream: Unnamed tributary to Railroad Creek

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
EB	2	105-120	J				EL

Obstructions

Comments

Reach 1, Site 1 of Tributary 16 to Railroad Creek, upstream view, taken downstream of lake.

Reach 1, Site 1 of Tributary 16 to Railroad Creek, downstream view.

Stream Survey Report - Fish Sampling Photos

Reach 1, Site 1 of Tributary 16 to Railroad Creek, juvenile eastern brook trout.

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Header Information

Stream Name: Railroad Creek **Stream "Local":**

Watershed Code: 128-8355-618-226-682-000-000-000-000-000-000-000

Location: 375m d/s of culvert crossing **Map #:** 82L019

U.T.M. :

Date: 9/5/97 **Time:** 10:30 **Agency:** SR **Survey Crew:** PK \KS\ \ \ \ \ \ \

Reach No.: 3 **Access:** V2

Site No.: 2 **Reach Length (km):** **Method:**

Fish Card: N **Length surveyed (m):** 500.0 **Method:** HC

Photos: 17,18,19 **Field:** Yes **Historical:** No

Air Photos:

Channel Characteristics

				Specific Data				
Av. Chan. Width (m):	6.2	**Method Av. Chan. Width (m):**	TF	3.0	4.7	5.3	13.4	4.6
Av. Wet. Width (m):	2.8	**Method Av. Wet. Width (m):**	TF	2.0	2.1	2.7	4.6	2.8
Av. Max. Rif. Depth (cm):		**Av. Max. Riffle Depth (cm):**						
Av. Max. Pool Depth (cm):		**Av. Max. Pool Depth (cm):**						
Gradient (%):	5.0	**Method Gradient:**	CF					

% Pool: 35 **% Riffle:** 55 **% Run:** 10 **% Other:** 0 **Method:** GE

% Side Channel:	0-10	**Method Side Channel:**	GE
% Debris Area:	>15	**Method Debris Area:**	GE
% Stable Debris Area:	80	**Method Stable Debris Area:**	GE

Cover

Cover Total % :	20	**Method Cover Total %:**	GE					
Dp Pool :	10	**L.O.D.:**	30	**Boulder:**	0	**In Veg.:**	15	**Over Veg:**	30	**Cutbank:**	15
Crown Closure % :	20	**Method Crown Closure:**	GE	**Aspect :**		**Method Aspect:**					

Discharge

				Specific Data				
Wetted Width (m) :	6.2	**Method Wetted Width (m) :**	TF	3.0	4.7	5.3	13.4	4.6
Mean Depth (m) :	2.8	**Method Mean Depth (m) :**	TF	2.0	2.1	2.7	4.6	2.8
Mean Velocity (m/s) :		**Method Mean Velocity (m/s**						
Discharge (m3/s) :		**Method Discharge (m3/s) :**						

Reach Symbol

(Fish)

NF

6 D 5.0 | 1630

(Width, Valley: Channel, Slope) | **(Bed Material)**

Bed Material

% Fines (<2mm):	5	**% Fines (<2mm):**	5
% Gravels:	60	**Small (2-16mm):**	30
		Large (16-64mm):	30
% Larges:	35	**Small cobble (64-128mm):**	25
		Large cobble (128-256mm):	10
		Boulder cobble (>256mm):	0
% Bedrock:	0	**% Bedrock:**	0
D90 (cm):	15	**Compaction:**	Low

Banks

Height (m):	0.2	**% Unstable:**	5
Textures Fines:	No	**Gravel:** Yes **Larges:** No **Bedrock:**	No
Confinement:	OC		
Valley: Chan. Ratio:	D		
Stage:	M		
Flood Signs Ht(m):		**Method Flood Signs:**	
Braided:	Y	**Method Braided:**	
Bars (%):		**Method Bars:**	
pH:		**Method pH:**	
02 (ppm):		**Method Dissolved Oxygen:**	
Water Temp. (°C):	5.0	**Method Temperature:**	
Turb. (cm):		**Method Turbidity:**	
Cond. (µmhos):	88	**Method Conductivity:**	

DFO/MoELP Stream Survey Form

30-Sep-97 **Stream:** Railroad Creek **Watershed Code:** 128-8355-618-226-682-000-000-000-000-000-000-000

Stream Survey Report

Stream/Valley Cross-Section

Fish Summary

Species	No.	Size Range (mm)	Life Phase	Use	Use 2	Use 3	Method/ Reference
NF			U				EL

Obstructions

Height (m)	Type	Location
12.0	F	367.0

Comments

C The channel morphology is Cpcw. LWD plays an important role in the channel.

Reach 3, Site 2 of Railroad Creek, upstream view.

Reach 3, Site 2 of Railroad Creek, downstream view.