Mid-Bulkley Overview FHAP Appendices

Data Forms, Oblique Photos, Stream Classifications,
Stereo Air Photos, and Maps

Appendix 1

FHAP data forms (output from WRP DES)

Overview - Fish Distribution Summary Report

Form Number:
1

Watershed Name:	JOHNNY DAVID CREEK
Watershed Code:	460-778000-00000-00000-0000-0000-000-000-000-000-000-000
Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
2		2		DFO	UN	UN				S		S	S		S				S																				
1		1		LKNOW	UN	UN				S		S	S		S				K	K		K	K		K	K		K	K										

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	BUCK CREEK
2	Watershed Code:	460-636000-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
10		10		MELP	UN	UN																S	S	S														
8		8		MELP	MT	VO				S		S	S		S				K	K	S	K	K	K													
11		11		MELP	MT	EL							H									K	K	K													
7		7		MELP	MT	VO				S		S	S		S				K	K	K	K	K	K													
6		6		MELP	MT	VO				K		K	K		K				K	K	K	K	K	K													
5		5		LKNOW	MT	VO				K		K	K		K				K	K	K	K	K	K													
4		4		SISS	MT	VO				K		K	K		K				K	K	K	K	K	K													
3		3		FISS	MT	VO				K		K	K		K				K	K	K	K	K	K													
2		2		FISS	MT	VO				K		K	K		K			K	K	K	K	K	K	K				S	S		S	S					
1		1		FISS	MT	VO			H	K		K	K		K			K	K	K	K	K	K	K				S	K		S	K					
9		9		MELP	UN	VO																S	S	S													

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	BULKLEY RIVER
3	Watershed Code:	460-000000-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		MELP	FT	FT			K	K		K	K		K			K	K	K			K			K			K											
2		2		SISS	EL	UN			K	K		K	K		S				K	K			K			K			K											
3		3		TG	EL	UN			K	K		K	K		S				K	K			K			K			S											
4		4		TG	MT	SN			K	K		K	K		H				K	K			K			K			S											

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	RICHFIELD CREEK
4	Watershed Code:	460-788200-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BCGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
3		3																				U	U	U	U	U	U											
4		4		MELP	MT	EL																K	K	K	S	S	S											
1		1		SISS	UN	UN				K		S	K		K				K	K	K				H	H	H	H	H	H								
2		2		FISS	UN	UN				K		S	K		K				K	K	K				H	H	H	H	H	H								

Overview - Fish Distribution Summary Report

Form Number:
5

Watershed Name:	ROBERT HATCH CREEK
Watershed Code:	460-788200-05100-00000-0000-0000-000-000-000-000-000-000
Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BCGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		MELP	UN	UN				S			S		S				S						H	H	H												

Overview - Fish Distribution Summary Report

Form Number:
6

Watershed Name:	MCQUARRIE CREEK
Watershed Code:	460-744900-00000-00000-0000-0000-000-000-000-000-000-000
Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
2		2		FISS	UN	UN				S			K						K	K	K	S	S	S														
3		3		MELP	UN	EL							S		S				K	K	K	S	S	S														
1		1		SISS	UN	UN				K		S	K		K				K	K	K	S	S	S														

Overview - Fish Distribution Summary Report

Form Number:
7

Watershed Name:	BYMAN CREEK
Watershed Code:	460-750400-00000-00000-0000-0000-000-000-000-000-000-000
Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		FISS	UN	MT				K		S	K		S				K	S		K	K																

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	EMERSON CREEK
8	Watershed Code:	460-568500-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		SISS	VO	UN												K	S	S	S							S	S	S	S	S	S						
2		2		SISS	UN	UN													S	S	S							S	S	S	S	S	S						
3		3		SISS	UN	UN																																		

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	DOCKRILL CREEK
9	Watershed Code:	460-562100-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		DFO	VO	UN												K	S	S	S	S	S	S				S		S	S		S							
2		2		DFO	UN	UN													S	S	S	S	S	S				S		S	S		S							

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	DUNGATE CREEK
12	Watershed Code:	460-636000-09300-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER
	093L07

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		MELP	UN	UN				K		S	S		S				K	S	S	K	K	S				K	S	S									
2		2	A	MELP	MT	EL				K		S	S		S				K		S	K	K	S				K	S	S									

Overview - Fish Distribution Summary Report

Form Number:
13

Watershed Name:	BARREN CREEK
Watershed Code:	460-704700-00000-00000-0000-0000-000-000-000-000-000-000
Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER
	093L07

BGGS Maps (1:20,000) :

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
2		2		SISS	UN	UN							S		S				S		S	S	S	S	S	S	S												
1		1		DFO	MT					K			K		S				S	S	S	K	S	S	S	S	S												

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	AITKEN CREEK
14	Watershed Code:	460-702000-00000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :
	093L07	

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		SISS	UN	UN							S		S				S	S	S	S	S	S	S	S	S											
2		2		DFO	MT														S	S	S	K	K	S	S	S	S											
3		3		DFO	MT																	K	K	S															

Overview - Fish Distribution Summary Report

Form Number:	Watershed Name:	KLO CREEK
15	Watershed Code:	460-636000-72000-00000-0000-0000-000-000-000-000-000-000
	Forest District:	MORICE

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	093L019
			093L029

Detail No	Sub Basin	Reach No	Section No	Data Source	Survey Method		SK			CH			CO			PK			ST			RB			CT			DV			BT			CM			KO		
					Adults	Juv	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
1		1		MELP	EL																	S		S															
2		2		MELP	EL																	S		S															

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
1	JOHNNY DAVID CREEK	460-778000-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Johnny David Creek	1-20	1:3000

NTS Maps (1:50,000) : ENTER BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1	A	9	669830	6045210	1900	695	655	2.1	97	5.1	RPGW	A	EB	MC	DW	C	2	AC	M		YF		4	A	F
Comments:																											
2		2	A	9	667950	6047550	545	713	695	3.3	97	11.2	RPCW	A	EB	DW		N	1	FE	M		YF		4	A	F
Comments:																											
3		2	B				2655	782	713	2.6	97	9.3	RPGW	A	EB	MC	DW	N	2	AE	M		YF		4	A	M
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:
2

Watershed Name:	BUCK CREEK
Watershed Code:	460-636000-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Buck Creek	1-125	1:3000
	Upper Buck Creek	1-16	1:5000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	Isturbance Type 1	Isturbance Type 2	Isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
12		4	C				1660	759	755	0.2	97	15	RPGW	A	LR	FP	PD	N	2	FC	M	D	YF	PS	2	A	F
Comments:																											
21		8	B				2400	860	850	0.4	97	13	CPB	S	SC			N	1	FC	C		YF		2	N	P
Comments:																											
20		8	A	9	662900	6007200	1400	850	845	0.3	97	10	CPCW	D	PD	SC		N	1	FC	C		YF		3	C	P
Comments:																											
19		7	A	9	659650	6007700	6290	845	825	0.3	97	17	RPGW	A	EB	DW	MC	N	3	FE	S	C	SHR	MF	1	A	G
Comments:																											
18		6	C				490	825	820	1	97	14	RPGW	A	EB	DW		N	3	FE	G		SHR		2	S	G
Comments:																											
17		6	B				2580	820	810	0.4	97	14	RPCW	D	EB	SC		N	1	FE	S		SHR		2	S	G
Comments:																											
16		6	A	9	656580	6010480	2440	810	805	0.2	97	15	RPCW	D	EB	SC		N	2	FE	S		PS		1	S	M
Comments:																											
15		5	C				2640	805	780	0.9	97	16	RPCW	A	EB	JM		N	2	AC	D		PS		2	S	F
Comments:																											
22		8	C				230	875	860	6.5	97	14	SPR	S	PD			F	1	FE	C		YF		2	N	P
Comments:																											
13		5	A	9	654450	6013700	2750	765	759	0.2	97	23	RPGW	A	JM	MC	WG	N	2	AC	M	S	YF	SHR	2	A	G
Comments:																											
11		4	B				1580	755	750	0.3	97	17	RPGW	A	EB	DW	JM	N	2	AC	M		PS		2	A	F
Comments:																											
10		4	A	9	653150	6019100	1850	750	740	0.5	97	19	RPGW	A	MC	EB	JM	N	2	AC	M	D	MF	PS	1	A	M
Comments:																											
8		3	B				820	732	675	7.9	97	13	SPBW	D	SC	SC	PD	C	1	FC	C		PS		1	N	P
Comments:																											

Overview - Habitat Condition Diagnosis Report

7		3	A	9	654250	6022250	1170	675	659	1.4	97	13	CPCW	D	LR	SC	SC	N	2	FE	M		PS		1	N	P
Comments:																														
6		2	C				1060	659	639	1.9	97	23	RPGW	A	DW	EB	BC	N	2	FC	M		PS		1	N	F
Comments:																														
5		2	B				1920	639	622	0.9	97	32	RPGW	A	DW	MB	FP	N	2	AC	S		SHR		1	A	M
Comments:																														
4		2	A	9	655220	6024875	1630	622	592	0.6	97	19	RPCW	D	FP	LR	PD	N	1	FE	M		PS		2	A	P
Comments:																														
28		11	B				2500	980	942	1.5	97	5.5	RPGW	A	DW	MC	EB	N	3	AE	C		MF		2	C	F
Comments:																														
14		5	B				1000	780	765	0.2	97	13	RPCW	D	EB	FP	SC	N	0	N	M		SHR		2	S	P
Comments:																														
27		11	A	9	6E+06	678560	3700	942	914	0.75	97	6.1	L	S	WG			N	4	AE	S	C	SHR	MF	2	C	G
Comments:																														
2		1	B				830	588	582	0.7	97	15	RPCW	D	LR	FP		N	1	N	S		SHR		2	S	P
Comments:																														
3		1	C				1240	592	588	0.3	97	27	RPCW	A	DW	MB	LR	N	2	FE	D		YF		2	S	P
Comments:																														
23		9	A	9	666900	6006820	33	877	875	0.6	97	13	RPGW	S	EB			N	3	FE	C		YF		2	N	P
Comments:																														
9		3	C				400	740	732	2	97	10	CPCW	D	FP	SC	PD	N	2	FC	C		YF		1	C	P
Comments:																														
1		1	A	9	653800	6029100	650	582	580	0.3	97	41	RPGW	A	DW	PD	JM	N	2	AC	D		YF		2	S	P
Comments:																														
24		9	B				10210	901	877	0.2	97	16	RPGW	A	EB	JM	DW	N	4	AC	C		YF		1	N	M
Comments:																														
25		10	A	9	673775	6005470	610	905	901	0.6	97	15	RPGW	A	DW	JM	EB	N	3	AC	C		YF		2	N	G
Comments:																														
26		10	B				710	910	905	0.7	97	39	L	S				N	4	AC	C	D	YF		1	N	G
Comments:																														

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
3	BULKLEY RIVER	460-000000-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Bulkley River	1-124	1:5000

NTS Maps (1:50,000) : ENTER

BCGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
3		2	A	9	651950	6031050	32870	605	589	0.05	97	26	RPGW	A	EB	JM	DW	N	2	AC	M		YF	SHR	1	A	G
Comments:																											
4		3	A	9	662680	6040170	9510	641	645	0.38	97	48	RPGW	A	EB	JM	DW	N	2	AC	D		YF	SHR	1	A	G
Comments:																											
2		1	B				7000	589	586	0.04	97	30	RPGW	A	EB	PD	DW	N	2	AC	D		PS		2	S	G
Comments:																											
5		4	A	9	666500	6043880	15135	660	641	0.13	97	33	RPGW	A	EB	JM	DW	N	3	AE	M	D	MF	YF	1	A	G
Comments:																											
1		1	A	9	646180	6031250	4300	586	585	0.02	97	34	RPGW	A	EB	PD	DW	N	2	FE	D	C	YF	YF	2	A	F
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:
4

Watershed Name: RICHFIELD CREEK
Watershed Code: 460-788200-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Richfield Creek	1-30	1:3000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	Disturbance Type 1	Disturbance Type 2	Disturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	Land Structur 1	Land Structur 2	Canopy	Adj.Harves t /Land	Offchann el
6		2	C				1100	800	767	3	97	7.8	CPB	S				F	2	AC	C		PS		3	N	P
Comments:																											
5		2	B				1250	767	722	3.6	97	7.2	CPB	S		JM		X	1	FE	M		YF		3	N	F
Comments:																											
4		2	A	9	674400	6047939	1150	722	687	3	97	6	CPCW	S				F	2	AE	M	C	YF	MF	3	N	P
Comments:																											
1		1	A	9	672375	6044900	230	665	660	2.2	97	10.5	RPGW	A	DW	MC	EB	N	1	FE	S	G	SHR		2	C	P
Comments:																											
2		1	B				445	672	665	1.5	97	7	RPCW	D	EB	MC	FP	N	1	FE	D	S	YF	SHR	3	A	G
Comments:																											
3		1	C				340	687	672	1.5	97	10	RPGW	A	EB	MC	DW	N	2	AC	D		PS		2	A	M
Comments:																											
7		3	A	9	674450	6049220	600	828	800	4.6	97	6.5	CPB	S				F	1	AE	C		YF		3	N	P
Comments:																											
8		3	B				1000	870	828	4.2	97	10.1	RPCW	S		MC	DW	F	1	AC	C		YF		2	N	M
Comments:																											
9		4	A	9	674875	6049590	300	892	870	7.3	97	13.6	CPCW	S				F	2	FE	M		YF		3	N	U
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:
5

Watershed Name:	ROBERT HATCH CREEK
Watershed Code:	460-788200-05100-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Robert Hatch Creek	1-16	1:3000

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1	A	9	669825	6047800	2800	724	675	1.7	97	6.8	RPGW	A	EB	MC	DW	N	3	AE	D		YF		2	A	P
Comments:																											
2		1	B				2000	782	724	2.9	97	6	RPGW	A	EB	JM	DW	N	3	AC	D		YF		3	A	U
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
6	MCQUARRIE CREEK	460-744900-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	McQuarrie Creek	1-38	1:3000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
4		2	B				2200	782	694	4	97	9	CPCW	S	SC			C	2	AC	C		MF		2	N	F
Comments:																											
1		1	A	9	663825	6045500	360	639	637	0.6	97	9	RPGW	D	LR	FP	MC	N	0	N	S		SHR	PS	2	S	P
Comments:																											
5		2	C				4800	880	782	2	97	9.9	CPCW	S	DW			N	2	AE	C		MF		3	N	P
Comments:																											
2		1	B				1284	656	639	1.3	97	12	RPGW	A	DW	JM	EB	N	1	AE	D		SHR	PS	3	A	P
Comments:																											
3		2	A	9	658070	6047725	1000	694	656	3.8	97	7.1	RPCW	S				N	2	AE	M		YF		2	N	P
Comments:																											
6		3	A	9	656565	6048120	3000	910	880	1	97	6.2	RPCW	A	MC	MB	DW	CV	2	AE	C		YF		2	R	F
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
7	EMERSON CREEK	460-568500-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Emerson Creek	1-35	1:3000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	Disturbance Type 1	Disturbance Type 2	Disturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	Land Structur 1	Land Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1	A	9	640160	6034500	2730	594	563	1.1	97	17.4	RPCW	A	EB	FP	MC	N	1	AC	M		MF		2	R	G
Comments:																											
2		1	B				1290	606	594	0.9	97	12.1	RPGW	A	EB	JM		N	1	AE	C		MF		2	N	M
Comments:																											
3		2	A	9	639050	6033475	2080	726	606	5.8	97	5.9	SPBW	S				F	2	AC	C		MF		2	P	P
Comments:																											
4		3	A	9	634770	6031800	7030	930	726	2.9	97	6.9	RPCW	S	JM			N	1	AC	C		MF		3	N	F
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
8	DOCKRILL CREEK	460-562100-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Dockrill Creek	1-27	1:3000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
4		2	B				1110	697	674	2.1	97	8.5	CPB	S				N	2	AC	C		MF		3	N	P
Comments:																											
1		1	A	9	639170	6037800	640	568	560	1.3	97	13.3	CPCW	D	LR	FP		N	1	FE	D		PS		1	R	P
Comments:																											
3		2	A	9	634250	6039325	3050	674	605	2.3	97	12.8	CPCW	S				N	1	AC	C		MF		2	N	P
Comments:																											
5		2	C				2600	780	697	3.2	97	9.7	CPCW	S				N	1	AC	C		MF		3	N	M
Comments:																											
2		1	B				2140	605	568	1.7	97	13.3	RPCW	A	DW	EB		N	2	AC	M		PS		3	N	G
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
9	KLO CREEK	460-636000-72000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Klo Creek	1-16	1:3000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	Disturbance Type 1	Disturbance Type 2	Disturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	Land Structur 1	Land Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1	A	9	668900	6008580	2400	933	903	1.3	97	21.7	RPGW	A	DW	MC	LR	N	2	AC	M		YF		1	N	G
Comments:																											
2		2	A	9	667300	6011200	1560	946	933	0.8	97	18.3	RPCW	A	DW	FP	MC	N	1	FE	C		YF		2	N	M
Comments:																											
3		2	B				640	951	946	0.8	97	9.3	RPCW	D	LR	PD		N	1	FE	C		YF		2	N	P
Comments:																											
4		2	C				1620	984	951	2	97	13.8	RPCW	A	DW	MC		N	1	AC	M		YF		2	N	F
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number: 10

Watershed Name: BYMAN CREEK

Watershed Code: 460-750400-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Byman Creek	1-55	1:3000

NTS Maps (1:50,000) : ENTER

BCGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	Disturbance Type 1	Disturbance Type 2	Disturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	Land Structur 1	Land Structur 2	Canopy	Adj.Harves t /Land	Offchann el
5		2	B				1400	852	816	2.6	97	10.5	RPCW	A	DW	DW	JM	X	1	AC	M		YF		3	A	M
Comments:																											
2		1	B				1340	679	656	1.7	97	14.8	RPCW	A	MC	DW	PD	N	1	AC	D		PS		2	A	M
Comments:																											
4		2	A	9	664345	6051020	3700	816	712	1	97	7.5	CPB	A	JM			C	1	U	M		YF		3	A	P
Comments:																											
6		2	C				490	880	852	5.2	97	7.6	SPR	A				F	3	AE	C		YF		3	N	P
Comments:																											
7		2	D				400	896	880	4	97	8	RPCW	D	JM			X	2	AE	C		YF		3	N	P
Comments:																											
8		3	A	9	668875	6052275	1032	915	896	1.8	97	8.4	CPCW	D	JM	EB		X	1	AC	C		PS		2	N	P
Comments:																											
9		3	B				690	940	915	3.6	97	5.5	CPCW	D	JM			N	1	AE	C		PS		2	N	P
Comments:																											
10		3	C				546	980	940	7.3	97	6.6	SPBW	S	JM			F	3	FC	C		YF		2	N	P
Comments:																											
3		1	C				1040	712	679	3.2	97	8.9	RPCW	A	MC	EB	JM	N	1	AC	M		YF		4	A	M
Comments:																											
1		1	A	9	666390	6046390	1650	656	639	1	97	11.1	RPGW	A	DW	PD		CV	1	FE	D		YF		3	A	F
Comments:																											

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	DUNGATE CREEK
11	Watershed Code:	460-636000-09300-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	DUNGATE	1-99	1:3000

NTS Maps (1:50,000) :	ENTER

BGGS Maps (1:20,000) :	093L037
	093L038
	093L028

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1	A	9	655220	6026505	400	648	638	2.5	97	6.3	RPGW	A	DW	EB	MC	BD	2	AC	S		PS	INIT	2	A	G
Comments:	OTHER LAND-USES INCLUDE SETTLEMENT, CLEARCUT, AND ROAD CLEARING. MOST OF THIS AREA IS ALLUVIAL FAN WHICH WAS BURNED FOR CATTLE GRAZING FOLLOWING SALE OF BV CONCRETE (WHICH INITIALLY OPERATED ON THE PROPERTY). BEAVER DAMS ARE PROBABLE ANNUALLY BREACHED BUT WILL BE A BARRIER TO GENERAL USE OF THE SYSTEM AS AN ALTERNATIVE HABITAT TO THE BUCK MAINSTEM FOR REARING AND HOLDING.																										
4		2	B				2300	820	680	6.1	97	8	CPCW	A	DW	JM	MC	F	2	AE	M		MF		3	A	P
Comments:	THREE SETS OF IMPASSABLE FALLS. MASS MOVEMENTS WHICH CAN BE LINKED TO RANGE USE/LAND CLEARING HISTORY. OTHERS AND OTHER POTENTIAL MOVEMENT IS VISIBLE FROM D/S LEFT UPSLOPE CUTBLOCK. LARGE MASS MOVEMENT AT UPSLOPE ROAD INTO MOST D/S UNNAMED TRIBUTARY TO DUNGATE. HIGHER LEVELS OF AGGRADATION AND INCREASED WB WITNESSED D/S OF THE CONFLUENCE.																										
6		3	A	9	6E+06	659740	1500	924	885	2.6	97	2.6	CPCW	S				N	3	AE	M		MF		3	R	P
Comments:	EQUITY MINE RD. AND DUNGATE FSR X-ING ARE IMPACTING. SEDIMENT DELIVERY FROM EQUITY FILL SLOPE EROSION. CROSS-DITCHES W/OUT SETTLING POOLS OR SEDIMENT FILTERING ARE LIKELY DELIVERING SEDIMENT TO CHANNEL. OLD BRIDGE TROUGH AT X-ING IS CHANNELIZING CREEK AND IS LEADING TO AGGRADATION IN AN UNSTABLE BAR UPSTREAM AND LIKELY CAUSING SOME EROSION DOWNSTREAM.																										
7		3	B				2200	987	924	2.9	97	3	RPCW	A	DW	EB		N	9	AE	M		MF		4	R	U
Comments:	OLD ROAD X-ING AND CLEARED AREA HAS ERODING BANKS AND LATERAL INSTABILITY. EQUITY ROAD EROSION VISIBLE IN LARGE SCALE AIR PHOTOS-UNSTABLE FINE TEXTURED FILL IS ERODING INTO FLOODPLAIN AND CHANNEL. THIS IS EVIDENT IN SILTATION DOWNSTREAM BEHIND LOG JAMS AND IN POINT AND MID-CHANNEL BARS.																										
5		2	C				2340	885	820	2.7	97	6	RPCW	A	DW	MB	FP	N	2	AE	M		MF		3	R	P
Comments:	EQUITY MINE ROAD FILL SLOPE ERODING. UPSLOPE FORESTRY TO D/S RIGHT. UNNAMED TRIB. DRAINING AREA DOES NOT APPEAR TO BE IMPACTED, OR IMPACTING DUNGATE. MASS MOVEMENTS OFF D/S LEFT CUTBLOCK.																										
2		1	B				600	664	648	2.6	97	5.6	RPCW	A	DW			N	9	AE	M		YF		3	A	F
Comments:	OFF-CHANNEL AREA IS AN AGGRADED TRIBUTARY. RANGE USE THROUGHOUT THIS SECTION, IMPACTING RIPARIAN UNDERSTORY AND CHANNEL FROM GRAZING/TRAMPLING. SEVERAL MASS MOVEMENTS FROM UPSLOPE ROAD ON D/S RIGHT AND UPSLOPE CUTBLOCK AT D/S LEFT.																										
3		2	A	9	6E+06	659550	360	680	664	4.4	97	6.5	RPCW	S	JM			F	2	AE	M		MF		3	N	P
Comments:	SOUTH FACING SLOPE WAS DISTURBED AT SOME POINT IN THE RECENT PAST. FALLS IS NOT THOUGHT TO BE A BARRIER AT HIGHER FLOWS-EVENLY SPACED PLANGE POOLS UP THE FACE AND NO OVERVERTICAL SECTIONS VISIBLE.																										
8		4		9	6E+06	663620					97		RPCW	S				N	9	U	M		MF		4	R	U
Comments:	LARGE CLEARCUT ON UPSLOPE AT D/S LEFT. DOES NOT APPEAR TO BE ANY MASS MOVEMENTS INTO GULLIES OR UNNAMED TRIBS. EQUITY MINE RD STILL PARALLELS CREEK																										

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
12	BARREN CREEK	460-704700-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	Barren Creek	1-27	1:5000

NTS Maps (1:50,000) : ENTER BGGS Maps (1:20,000) :

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
3			B				1800	740	665	4.2	97	5.6	RPCW	A	DW	EB		N	9	AE	M		MF	YF	4	A	U
Comments:	FSR CULVERT IS UNDERSIZED AND THEREFORE IS CAUSING EROSION U/S DURING FLOOD FLOWS. THIS IS EXACERBATED BY COMPLETE LOSS OF RIPARIAN AT THE ADJACENT POWERLINE CORRIDOR. APPARENT SLUMP AT PLATE 14 ABOVE ATV TRACK/CATTLE PATH. EXTENSIVE RANGE IMPACTS TO RIPARIAN UNDERSTORY AND ASSOCIATED IMPACTS TO CHANNEL.																										
2		2	A	9	658030	6039980	1500	665	617	3.2	97	6.3	RPGW	A	DW	EB	EB	CV	9	AE	D	G	YF	INIT	4	A	U
Comments:	SLIDE AT PLATE 4, LIKELY EXACERBATED BY CATTLE TRAMPLING AND/OR LAND CLEARING (SHOULD BE CHECKED OUT IN DETAILED ASSESSMENT). COMPLETE LOSS OF RIPARIAN AT CLEARED LAND, POWERLINE CORRIDOR AND ALONG GRAVEL ROAD IN FLOODPLAIN. CATTLE IMPACTS TO RIPARIAN AND CHANNEL. NORTH ROAD FSR CULVERT IS A MAJOR BARRIER- ELEVATED AND EROSION FROM FILL SLOPE AND BELOW CULVERT.																										
1		1		9	660640	6038220	400	617	609	2	97	5.7	RPGW	A	DW	WG	MC	CV	9	AE	D	S	YF	SHR	4	A	U
Comments:	DRAINS INTO OXBOW. HEAVY AGGRADATION OF FINES AND SEVERAL CHANNEL THREADS BELOW HIGHWAY. RAILWAY CULVERT IS LIKELY IMPASSABLE AT HIGHER AND LOWEST FLOWS. SEVERAL CATTLE CROSSINGS.																										
4		3		9	657825	6040685	1450	835	740	6.6	97	4.2	RPCW	S				F	9	AE	M		MF		4	C	U
Comments:	FALLS JUST U/S OF REACH 2/3 BREAK IS ALMOST CERTAINLY A BARRIER. UPSLOPE CLEARCUTS DO NOT APPEAR TO BE CAUING ANY IMPACT TO CHANNEL OR RIPARIAN.																										

Overview - Habitat Condition Diagnosis Report

Form Number:	Watershed Name:	Watershed Code:
13	AITKEN CREEK	460-702000-00000-00000-0000-0000-000-000-000-000-0

Air Photographs Covering Watershed Area	Photo Series:	Photo Number:	Scale:
	AITKEN CREEK	1-37	1:5000

NTS Maps (1:50,000) : ENTER

BGGS Maps (1:20,000) : 093L048

Detail Numbe	Sub Basin	Reach Numbe	Sectio n Code	UTM Zone	UTM Easting	UTM Northing	Length (m)	Elevation (m) Upper	Elevation (m) Lower	Gradien t (%)	Photo Year	Width (m)	Channel Type	Channel	isturbance Type 1	isturbance Type 2	isturbance Type 3	Barriers	Pools Code	LWD Code	Riparian Type 1	Riparian Type 2	tand Structur 1	tand Structur 2	Canopy	Adj.Harves t /Land	Offchann el
1		1		9	661800	6035895	1800	645	609	2	97	18	RPGW	A	DW	FP	MC	BD	1	FC	M	G	YF	SHR	1	A	P
Comments:	BD WILL BE AN ACCESS PROBLEM IF NOT SEASONALLY BREACHED BY FRESHET. ROAD X-ING AND RANGE USE ON ALLUVIAL FAN. APPEARS TO BE AN INCISED CHANNEL.																										
2		2		9	662800	6034460	2100	740	645	4.5	97	10	CPCW	D	JM	SC		F	1	FC	M		MF		2	A	P
Comments:	OTHER LAND-USE IS CLEAR-CUT FORESTRY (SBFEP). ONE AREA OF CLEARED LAND ABOVE CANYON-CLEARED TO EDGE. FALLS IS A BARRIER TO ANADROMOUS SPP.																										
3		3	A	9	666985	6032060	4000	801	740	1.5	97	12	RPCW	A	DW	EB	JM	N	2	AC	S	M	SHR	MF	1	C	F
Comments:	OTHER LAND-USE IS ROAD CROSSINGS. OFTEN POOR ACCESS TO OFFCHANNEL. EXTENSIVE CLEARCUTTING ABOVE ROAD CROSSING.																										
4		3	B				2200	809	801	0.4	97	8.5	L	S				BD	4	FE	S		SHR		1	C	G
Comments:	OTHER LAND-USES INCLUDE ROAD X-ING AND FORESTRY. DAM AT END OF SECTION POSSIBLY BLOCKING ACCESS TO OLD MAN LAKE.																										

Overview - Preliminary Habitat Assessment Report

Form Number:
1

Watershed Name:	BARREN CREEK				
Watershed Code:	460-704700-00000-00000-0000-0000-000-000-000-000-000-000				
UTM Zone:	9	Easting:	6037578	Northing:	660785

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L048

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1		RPGW	A	M	L	Poor culvert access at railway/highway, severe impacts to riparian function from range-use, loss of access to oxbow at mouth due to aggradation	M	Culvert replacement, oxbow rehabilitation and restoration of access, promote single channel thread below highway, re-establish riparian understory
2		2	A	RPGW	A	H	M	Poor culvert access at FSR and erosion from FSR fill slope, impacts to riparian function from land clearing and range use, debris fall likely accelerated by range-use and/or land clearing	H	Culvert replacement and fill slope stabilization at FSR, re-establish riparian understory and revegetate at grassland/road right-of-way, assess cause of debris fall and stabilize if caused by land-use.
3		2	B	RPCW	A	H	M	FSR culvert causing erosion u/s at powerline corridor , possible slump at ATV/cattle trail, impacts to riparian function from range use and land clearing.	M	Stabilize streambanks at FSR crossing, stabilize apparent slump, re-establish riparian understory and release some conifers.
4		3		RPCW	S	H	M	None	L	None

Overview - Preliminary Habitat Assessment Report

Form Number:
2

Watershed Name:	BULKLEY RIVER				
Watershed Code:	460-000000-00000-00000-0000-0000-000-000-000-000-000-000				
UTM Zone:	9	Easting:	6122835	Northing:	584342

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L047
			93L048
			93L058
			93L059

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1	PPER BULKLE	1	A	RPGW	A	M	L	CHANNEL INCISION AND INCREASED FLOODPLAIN ISOLATION, BANK EROSION AT CLEARED LAND, LOSS OF LWD FUNCTION, LOSS OF RIPARIAN AT HAY LAND, LOSS OF POOL DEPTH DUE TO IN-FILLING FROM FINES.	M	BANK STABILIZATION (VEGETATIVE OR INTERATIVE METHODS SHOULD BE HIGHEST PRIORITY TECHNIQUES), MAINSTEM TO FLOODPLAIN
2	PPER BULKLE	1	B	RPGW	A	M	M	MASS MOVEMENTS AT FSR CULVERT AND POWERLINE CROSSING, CHANNELIZING BY HIGHWAY, RAILWAY, URBAN / INDUSTRIAL DEVELOPMENT =DECREASE IN CHANNEL SINUOSITY+CHANNEL INCISION (AVULSIONS EVIDENT, DISCONNECTION FROM FLOODPLAIN, SEVERE BANK EROSION)LOSS OF RIPARIAN.	M	RESTORE ACCESS TO OFFCHANNEL AREAS, RIPARIAN REVEGETATION AND BANK STABILIZING IN CLEARED AREAS, STABILIZE UPSLOPE IMPACTS, SUBSTITUTE RIP-RAPPED AREAS FOR INTEGRATIVE METHODS OF BANK STABILIZING TO PROVIDE HABITAT FOR TARGET SPECIES.
3	PPER BULKLE	2		RPGW	A	M	L	HIGHWAY AND RAILWAY BLOCKING ACCESS TO FLOODPLAIN =DECREASED WATER AND SEDIMENT STORAGE AND LOSS OF REARING /OVERWINTERING HABITAT, LOSS OF RIPARIAN AND PEAK FLOWS CAUSING IRREGULAR LATERAL INSTABILITY AND BANK EROSION, HIGH H20 AND SED'N FROM MAJOR TRIBS	H	RESTORE ACCESS TO OFFCHANNEL AREAS , CREATE MULTIPLE LATERAL LOG JAM STRUCTURES IN COMBINATION WITH BANK STABILIZING (INTEGRATIVE METHODS PREFERRED) TO CATCH DEBRIS PRIOR TO BUILDUP AND CREATE NEAR-BANK HABITAT, REVEGETATE OR REPLACE RIP-RAPPED SECTIONS
4	PPER BULKLE	3		RPGW	A	H	L	CHANNELIZING AND FLOODPLAIN CUTOFF BY RAILWAY/HIGHWAY, REMOVAL OF LWD AND EXPOSURE OF SEDIMENT WEDGE AT CN LOG JAM, RIPARIAN LOSSES AND BANK INSTABILITY AT HAY LAND, SEDIMENT AND PEAK FLOW INPUTS FROM TRIBS. (ESP. BYMAN)	H	RESTORE ACCESS TO OFFCHANNEL AREAS, THRU CULVERT REPLACEMENT, STABILIZE BANKS (USING INTEGRATED METHODS), REVEGETATE OR REPLACE RIP-RAPPED SECTIONS, STABILIZE SEDIMENT WEDGE AT CN LOG JAM
5	PPER BULKLE	4		RPGW	A	H	L	RAILWAY CUTTING OFF OFFCHANNEL ACCESS, LOSS OF RIPARIAN AND BANK INSTABILITY AT HAY LAND	L	RESTORE OFFCHANNEL ACCESS THRU CULVERT REPLACEMENT, BANK STABILIZATION AT CLEARED LAND (INTEGRATED METHODS PREFERRED)

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Form Number:
3

Watershed Name:	BUCK CREEK
Watershed Code:	460-636000-00000-00000-0000-0000-000-000-000-000-000-000

UTM	Zone:	Easting:	Northing:
	9	6030692	652065

NTS Maps (1:50,000) :	BGGS Maps (1:20,000) :
ENTER	93L047
	93L037
	93L027
	93L028
	93L018
	93L019

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	A	M	L	LOSS OF RIPARIAN CAUSING BANK EROSION AND AVULSION, U/S CHANNELIZING CAUSING BANK EROSION, UNSTABLE AND EXCESSIVE DEPOSITION, LOG JAMS, POSSIBLE HIGHER PEAK FLOW IMPACTS ON CHANNEL, RIPARIAN, AND LWD FUNCTION	H	RIPARIAN REVEGETATION, BANK STABILIZATION, SCALPING OF MID-CHANNEL BARS, BLOCK MOUTH OF AVULSION AND ARMOUR, COMPLEX SECTION WITH LWD
2		1	B	RPCW	D	L	M	DUAL BANK CHANNELIZATION CAUSING DEGRADATION AND UNSTABLE DEPOSITION DOWNSTREAM. LOSS OF RIPARIAN FUNCTION DUE TO CHANNELIZING. COMPLETE LOSS OF COMPLEXITY AND HOLDING HABITAT. IMPACTS FROM POSSIBLE HIGHER PEAK FLOWS ON CHANNEL, LWD FUNCTION.	H	RESTORATION OF RIFFLE-POOL SEQUENCE AND CROSS-CHANNEL COMPLEXITY, ASSESS CURRENT RIPARIAN AND REESTABLISH CONIFERS, ESTABLISH ACCESS AND COVER ON OFFCHANNEL POND. STABILIZE UPSLOPE MASS MOV'TS AND PREVENT TOE EROSION
3		1	C	RPCW	A	M	M	CHANNELIZING ON D/S RIGHT BANK, BANK INSTABILITY, RIPARIAN LOSS, AGGRADATION PRIOR TO SECTION B, LOSS OF FLOODPLAIN ACCESS, POSSIBLE MASS MOV'T INTO FLOODPLAIN FROM UPSLOPE ROAD. EFFECTS FROM POSSIBLE HIGHER PEAK FLOWS ON LWD, CHANNEL AND RIPARIAN	H	STABILIZE UPSLOPE MASS MOVEMENT IF NOT NATURALLY STABILIZED AND DEACTIVATE ADJACENT TRAIL/ROAD IF ERODING SIGNIFICANTLY. REPLANT RIPARIAN ALONG CHANNELIZED BANK, CREATE LATERAL COMPLEXITY WITH LWD
4		2	A	RPCW	D	H	H	EROSION, RIPARIAN LOSS AND COMPACTION AT POWERLINE X-ING, GULLY FAILURES FROM UPSLOPE QUARRY, POSSIBLE HIGHER PEAK FLOW IMPACTS ON CHANNEL, RIPARIAN AND LWD FUNCTION.	H	STABILIZE UPSLOPE SEDIMENT SOURCES.
5		2	B	RPGW	A	M	L	EXTENSIVE LAND CLEARING FOR AGRICULTURE CAUSING BANK EROSION AND IRREGULAR LATERAL MOVEMENT (@ ONE BEND ESP.), ADDITION OF FINES AND RIPARIAN LOSS @ BV CONCRETE AND ADJACENT LAND CLEARING OF MOUTH OF DUNGATE. SED'T INPUTS FROM DUNGATE. AVULSIONS.	H	RIPARIAN REVEGETATION THROUGHOUT CLEARED LAND. BANK STABILIZING AT AREAS OF IRREGULAR LATERAL MOVEMENT. CREATION OF SCOUR POOLS TO FLUSH FINES, SORT GRAVELS, AND IMPROVE HABITAT VALUE

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6		2	C	RPGW	A	M	M	GULLY FAILURE FROM CUTBLOCK ON D/S RIGHT, LOSS OF ACCESS TO OFFCHANNEL AREAS FROM LATERAL MOVEMENT AND CHANNEL INCISION DUE TO POSSIBLE HIGHER PEAK FLOWS AND RIPARIAN LOSSES AT CLEARED AGRICULTURAL LAND, EXTENSIVE FINES FROM IN-SECTION AND U/S SOURCES	H	STABILIZE UPSLOPE MASS MOV'T. REESTABLISH ACCESS TO OFFCHANNEL AREAS. RIPARIAN REVEGETATION AT CLEARED AREAS AND BANK STABILIZATION AT AREAS OF IRREGULAR LATERAL MOVEMENT. CREATION OF SCOUR POOLS TO FLUSH FINES, SORT GRAVELS, AND IMPROVE HABITAT VALUE
7		3	A	CPCW	D	M	L	IMPACTS FROM POSSIBLE HIGHER PEAK FLOWS INCLUDE LOSS OF LWD FUNCTION, AND DEGRADATION OF CASCADE CRESTS (STONELINES). INCREASING HOMOGENIZATION OF HABITAT.	M	REBUILD STONE LINES.
8		3	B	SPBW	D	L	L	EROSION OF STEP-POOL CONTROLS AND BED MATERIAL LIKELY DUE TO DEGRADATION.	M	UNKNOWN- COMPLEX HYDRAULIC/NATURAL MASS MOV'T PROCESSES AT WORK. LEVEL 2 REQUIRED AT A MINIMUM BEFORE SUGGESTING RESTORATION OPPORTUNITIES.
9		3	C	CPCW	D	M	L	IMPACTS FROM POSSIBLE INCREASED PEAK FLOWS INCLUDE CHANNEL HOMOGENIZATION, LOSS OF LWD FUNCTION , AND LIKELY HAVE LEAD TO A LARGER THAN NORMAL LOG JAM AT THE BOTTOM OF THE SECTION.	M	REBUILD STONE LINES AND PLACE LWD FOR ENERGY DISSIPATION, CATCHING BED SEDIMENT AND CREATING HABITAT COMPLEXITY.
10		4	A	RPGW	A	M	H	GULLY FAILURE FROM CUTBLOCK, DEBRIS AVALANCHES FROM CLEARED LAND, LOSS OF OR DAMAGE TO RIPARIAN FUNCTION @ CLEARED/RANGE LAND. HIGHER PEAK FLOWS COMBINED WITH ABOVE CAUSING CHANNEL STRAGHTENING AND SIMPLIFICATION, LOSS OF O/C ACCESS,LOSS OF LWD FUNCTION	H	STABILIZE UPSLOPE MASS MOVEMENTS, RIPARIAN REVEGETATION AT CLEARED LAND. BANK STABILIZATION AT AREAS OF IRREGULAR LATERAL STABILITY. REDISTRIBUTE LWD AND PLACE TO RECREATE FUNCTION.
11		4	B	RPGW	A	M	L	OLD ROAD SLUMPING INTO CREEK, RIPARIAN LOSSES AT CLEARED LAND, ROAD, POWERLINE CORRIDOR AND BRIDGE. CUMULATIVE IMPACTS FROM POSSIBLE PEAK FLOWS ON RIPARIAN AND CHANNEL + LWD FUNCTION.	M	DEACTIVATE AND REVEGETATE OLD ROAD (IF ACCESS NOT REQUIRED), RIPARIAN PLANTING @ CLEARED LANDS.
12		4	C	RPGW	A	M	L	ACCUMULATION OF BED MATERIAL U/S OF BRIDGE POSSIBLY LINKED TO SLIDE@ROAD, DAMAGE TO RIPARIAN UNDERSTORY AND BANK STABILITY FUNCTION FROM RANGE USE, POSSIBLE PEAK FLOW AND SEDIMENT DELIVERY FROM U/S IS CAUSING LOSS OF COMPLEXITY IN RIFFLE-POOL SEQUENCE	H	STABILIZE SLIDE ABOVE ROAD, REESTABLISH RIPARIAN UNDERSTORY. STABILIZE BANKS @ SITES OF IRREGULAR LATERAL MOVEMENT.
13		5	A	RPGW	A	M	M	SLUMP AT RANGE-LAND + RIPARIAN LOSS, CAUSING BANK EROSION ON OPPOSITE BANK, AREA OF LOG JAMS/LATERAL ACTIVITY WITH SUBSEQUENT LARGE SEDIMENT WEDGES ABOVE GEOMORPH. NOTCH PT. INDICATES UPSTREAM SEDIMENT SOURCES AND POSSIBLE PEAK FLOWS-3+ CHANNELS HERE	H	LARGE SEDIMENT/LWD CATCHMENT AREA IS TOO COMPLEX TO ATTEMPT PRELIM. PRESCRIPTION-FIELD STUDY NECESSARY TO UNDERSTAND/PREDICT DYNAMICS. STABILIZE SLUMPING AND ADJACENT BANK@CLEARED LAND. RIPARIAN RESTORATION AT OTHER CLEARED LAND SITES.
14		5	B	RPCW	D	M	L	CHANNEL HOMOGENIZATION AND DEGRADATION DUE TO POSSIBLE PEAK FLOWS, LOSS OF RIPARIAN AND SUBSEQUENT ENERGY DISSIPATION AND COMPLEXITY FROM LWD INPUTS	H	COMPLEX AND ADD ENERGY DISSIPATION AND CATCH BED SEDIMENT WITH MATERIAL OF APPROPRIATE CLAST AND LWD SIZE. RIPARIAN REVEGETATION COMBINED WITH TEMPORARY ARMOURING UNTIL ESTABLISHED.

15		5	C	RPCW	A	M	M	RIP-RAPPING AND CHANNELIZING AT SMALL BRIDGE-LIKELY LEADING TO AGGRADATION D/S, LARGE FINE-TEXTURED SLUMP AT CLEARED LAND-EVIDENCE OF CATTLE TRACK ABOVE, BANK EROSION BELOW BRIDGE AND SLIDE ON OPPOSITE BANKS. RIPARIAN LOSSES AT CLEARED LAND.	H	STABILIZE SLUMP IF DUE TO, OR EXAGGERATED BY, LAND-USE. REPLACE BRIDGE@STRAIGHTER SECTION D/S AND REMOVE RIP-RAP. REVEGETATE BANKS @ CHANNELIZED AREA, ARMOUR WITH TEMPORARY MATERIAL. RIPARIAN RESTORATION AT BANK EROSION, AND TEMPORARY ARMOURING.
16		6	A	RPCW	D	M	M	CLAY SLUMP POSSIBLY RELATED TO LAND-USE. BANK EROSION, O/C AREAS DISCONNECTED. LOSS OF RIPARIAN TO SWISS FIRE IN SECTIONS, RANGE-USE, TRIBUTARIES MAY BE DELIVERING SEDIMENT FROM SWISS FIRE AREA. BUCK FLATS ROAD MAY HAVE UNDERSIZED CULVERTS ON TRIBS.	H	UNKNOWN-LEVEL 2 REQUIRED TO ASSESS STATE OF RIPARIAN REGENERATION, UPSLOPE SEDIMENT DELIVERY AND HYDROLOGY IMPACTS FROM FIRE, AND CAUSES OF OFFCHANNEL ISOLATION.
17		6	B	RPCW	D	M	L	LOSS OR DAMAGE TO RIPARIAN FUNCTION IN MANY AREAS DUE TO SWISS FIRE, ERODING BANKS AND LOSS OF O/C ACCESS DUE TO POSSIBLE HIGHER PEAK FLOWS, RANGE-USE, AND RIPARIAN DAMAGE BUCK FLATS ROAD MAY HAVE UNDERSIZED CULVERTS ON TRIBS.	H	UNKNOWN-LEVEL 2 REQUIRED TO ASSESS STATE OF RIPARIAN REGENERATION, UPSLOPE SEDIMENT DELIVERY AND HYDROLOGY IMPACTS FROM FIRE, AND CAUSES OF OFFCHANNEL ISOLATION.
18		6	C	RPGW	A	M	L	LOSS OR DAMAGE TO RIPARIAN FUNCTION IN MANY AREAS DUE TO SWISS FIRE, ERODING BANKS AND LOSS OF O/C ACCESS DUE TO POSSIBLE HIGHER PEAK FLOWS, RANGE-USE, AND RIPARIAN DAMAGE. BUCK FLATS ROAD MAY HAVE UNDERSIZED CULVERTS ON TRIBS.	H	UNKNOWN-LEVEL 2 REQUIRED TO ASSESS STATE OF RIPARIAN REGENERATION, UPSLOPE SEDIMENT DELIVERY AND HYDROLOGY IMPACTS FROM FIRE, AND CAUSES OF OFFCHANNEL ISOLATION.
19		7		RPGW	A	M	L	LOSS OF RIPARIAN AND BANK EROSION AT CLEARED/RANGE-USE LAND ON BENDS. ALSO AT SMALL CUTBLOCK. LOSS OF SOME O/C ACCESS, POSSIBLY DUE TO INCREASED PEAK FLOWS IN COMBINATION W/ BANK EROSION. AVULSIONS. AGGRADATION AND IRREGULAR LATERAL INSTABILITY.	M	RIPARIAN REPLANTING AND BANK STABILIZING IN AREAS OF SEVERE IRREGULAR BANK EROSION AT CLEARED AND/OR RANGE-USE LAND.
20		8	A	CPCW	D	H	L	SMALL CUTBLOCK AT BEGINNING OF SECTION=LOSS OF RIPARIAN. IMPACTS FROM POSSIBLE HIGHER PEAK FLOWS INCLUDE LOSS OF LWD FUNCTION, AND DEGRADATION OF CASCADE CRESTS (STONELINES). INCREASING HOMOGENIZATION OF HABITAT.	M	RESTABLISH COMPLEX CANOPY COVER AT CUTBLOCK. REBUILD STONE LINES.
21		8	B	CPB	S	M	L	MPACTS FROM POSSIBLE HIGHER PEAK FLOWS INCLUDE LOSS OF LWD FUNCTION, AND DEGRADATION OF CASCADE CRESTS (STONELINES). INCREASING HOMOGENIZATION OF HABITAT.	M	REBUILD STONE LINES.
22		8	C	SPR	S	L	L	NONE	L	NONE
23		9	A	RPGW	S	H	L	NONE	L	NONE
24		9	B	RPGW	A	M	L	RECEIVING HIGHER LEVELS OF WATER AND SEDIMENT FROM KLO CK.	M	LEVEL 2 ASSESSMENT REQUIRED ON BOTH CREEKS TO ASSESS THE SOURCE(S) OF SEDIMENT AND HYDROLOGY.
25		10	A	RPGW	A	H	L	RECEIVING HIGHER LEVELS OF WATER AND SEDIMENT FROM KLO CK.	M	LEVEL 2 ASSESSMENT REQUIRED ON BOTH CREEKS TO ASSESS THE SOURCE(S) OF SEDIMENT AND HYDROLOGY
26		10	B	L	S	H	L	NONE	L	NONE

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27		11	A	L	S	M	L	WATER QUALITY IMPACTS FROM EQUITY SILVER MINE AMD.	L	NONE
28		11	B	RPGW	A	H	M	FAILING DITCHLINES, AND DELIVERY OF FINES FROM FSR. POSSIBLE SEDIMENT DELIVERY FROM TRIBUTARIES DUE TO FAILURES AT U/S CUTBLOCKS. INADEQUATELY SIZED CULVERTS AT TRIBUTARIES CAUSING EROSION D/S. LIKELY INCREASED PEAK FLOW IMPACTS DUE TO ECA.	H	STABILIZING OF HILLSLOPES ABOVE DITCHLINES, STABILIZE DITCHLINES. REPLACE UNDERSIZED CULVERTS ON TRIBUTARIES IF NEEDED. CONIFER RELEASE @ HEAVY ALDER GROWTH SECTIONS.

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Form Number:						
4	Watershed Name:	DUNGATE CREEK				
	Watershed Code:	460-636000-09300-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6026057	Northing:	654611

NTS Maps (1:50,000) :	ENTER	BCGS Maps (1:20,000) :	93L037
			93L038
			93L028
			93L039

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	A	M	L	HISTORIC LAND-USE BY BV CONCRETE=LOSS OF RIPARIAN, HEAVY SEDIMENTATION. FAN BURNED FOR RANGE USE=LATERAL INSTABILITY+EROSION,LOSS OF RIPARIAN FUNCTION. RESIDENCE W/CREEK X-INGS,ERODING CULVERTS/DITCHES,COLLAPSED BRIDGE. LARGE BD'S. IMPACTS FROM EQUITY RD.	H	ASSESS FOR BARRIER AT COLLAPSED BRIDGE, REPLANT RIPARIAN AT FAN AND SECURE ACCESS FOR FISH TO U/S HABITAT, POSSIBLY VIA RESTORING SINGLE CHANNEL REGIME AND BANK STABILIZING TECHNIQUES.
2		1	B	RPCW	A	H	H	MASS MOV'TS FROM UPSLOPE ROAD AND CUTBLOCK. RANGE USE IMPACTS ON RIPARIAN. IMPACTS FROM EQUITY MINE RD. U/S.	H	STABILIZE UPSLOPE MASS MOVEMENTS, ASSESS FOR FURTHER ACTIVITY. REESTABLISH RIPARIAN UNDERSTORY IN DAMAGED AREAS.
3		2	A	RPCW	S	H	H	NONE	M	NONE
4		2	B	CPCW	A	M	H	MASS MOVEMENTS AT RANGE LAND, CUTBLOCK #34, AND FROM AN UPSLOPE LOGGING ROAD OVER AN UNNAMED TRIBUTARY. AGGRADATION NOTED D/S OF TRIB. CONFLUENCE	H	STABILIZE UPSLOPE SEDIMENT SOURCES
5		2	C	RPCW	A	L	H	MASS MOVEMENT FROM CUTBLOCK #34. EROSION OF EQUITY MINE ROAD FILL SLOPE	M	STABILIZE UPSLOPE SEDIMENT SOURCES
6		3	A	CPCW	S	L	M	EROSION OF EQUITY MINE ROAD FILL SLOPE AND DUNGATE FSR DITCHLINES	M	STABILIZE UPSLOPE SEDIMENT SOURCES
7		3	B	RPCW	A	L	M	BANK EROSION AT PULLED BRIDGE SITE, EROSION OF EQUITY MINE RD. FILL SLOPE	M	STABILIZE UPSLOPE SEDIMENT SOURCES
8		4		RPCW	S	L	U	UNKNOWN	L	NONE

Overview - Preliminary Habitat Assessment Report

Form Number:	Watershed Name:	RICHFIELD CREEK				
5	Watershed Code:	460-788200-00000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6043051	Northing:	672118

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L059
			93L060
			93L069
			93L070

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	A	M	L	LATERAL INSTABILITY AND BANK EROSION AT SEVERAL SITES, LOSS OF AND/OR DAMAGE TO RIPARIAN FUNCTION AT HAY LAND, RESIDENCES, RAILWAY X-ING CHANNELIZING CREEK AND LIKELY RESPONSIBLE FOR SOME LATERAL INSTABILITY AND AVULSION D/S. U/S IMPACTS.	H	ENERGY DISSIPATING AND COMPLEXING BELOW RAILWAY BRIDGE. PLANT RIP-RAP W/ WOODY VEG. RIPARIAN REESTABLISHMENT
2		1	B	RPCW	D	L	L	CHANNELIZING@HIGHWAY X-ING AND LOSS OF COMPEXITY (POSSIBLE ACCESS PROBLEMS FROM LACK OF VELOCITY REFUGES?), SCOURING BELOW HIGHWAY. BANK EROSION AND LOSS OF RIPARIAN FUNCTION DUE TO CATTLE IMPACTS, CLEARED LAND @ POWERLINE X-ING, RESIDENCES.	H	RECREATE POOL/RIFFLE SEQUENCES, LATERAL COMPLEXITY, AND ENERGY DISSIPATION AT HIGHWAY X-ING. USE INTEGRATED METHODS TO ARMOUR BANKS AT BRIDGE AND CREATE COVER. RIPARIAN RESTORATION AND TEMPORARY BANK ARMOURING UNTIL ESTABLISHED @ CLEARED LANDS.
3		1	C	RPGW	A	M	M	LARGE ROATIONAL SLUMP@REACH BREAK, POSSIBLY DUE TO LAND CLEARING AND RANGE-USE @SITE, HEAVY RANGE USE OVER WHOLE SECTION = WQ, RIPARIAN, BANK STABILITY IMPACTS TO HABITAT. GREATER SLUMPING AT CLEARED FIELD AREAS.	H	STABILIZE SLUMP IF CAUSED BY LAND-USE. RIPARIAN RESTORATION.
4		2	A	CPCW	S	H	M	MINOR RANGE USE IMPACTS ON RIPARIAN UNDERSTORY.	M	CONIFER RELEASE IN RIPARIAN IN BOTTOM SECTION-NEED TO ESTABLISH PRESENCE OF SHADE-TOLERANTS IN LEVEL 2.
5		2	B	CPCW	S	L	L	NONE	L	NONE
6		2	C	CPB	S	L	L	NONE	L	NONE
7		3	A	CPB	S	L	L	NONE	L	NONE
8		3	B	RPCW	S	L	L	NONE	L	NONE
9		4		CPCW	S	H	L	NONE	L	NONE

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Form Number:	
6	

Watershed Name:	ROBERT HATCH CREEK				
Watershed Code:	460-788200-05100-00000-0000-0000-000-000-000-000-000-000				
UTM Zone:	9	Easting:	6044047	Northing:	672531

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L059
			93L068

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	A	M	L	HEAVY CATTLE RANCHING CAUSING LOSS/DAMAGE TO RIPARIAN, EXTENSIVE BANK INSTABILITY AND AGGRADATION, SEVERAL CATTLE/ATV STREAM CROSSINGS. EXTENSIVE AGGRADATION @ MOUTH POSSIBLY CAUSING AN ACCESS PROBLEM.	H	BRIDGES@CROSSINGS, RIPARIAN RESTORATION, ENCOURAGE DISTINCT SINGLE CHANNEL @ MOUTH.
2		1	B	RPGW	A	M	L	AS ABOVE (LESS EXTENSIVE DAMAGE TO RIPARIAN)	M	AS ABOVE

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Form Number:	Watershed Name:	BYMAN CREEK				
7	Watershed Code:	460-750400-00000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6043647	Northing:	665559

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L048
			93L058

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	A	L	M	LOSS OF COMPLEXITY/SINUOSITY/LWD ABOVE PEROW CONFLUENCE=LOSS OF HOLDING/REARING HABITATS. WATER LEVELS NEGLIGIBLE AT BASEFLOWS. LOSS OF RIPARIAN IN SECTIONS CHANNELIZING @ RAILWAY X-ING. POSSIBLE ACCESS PROBLEMS THRU HIGHWAY CULVERT.	H	RECONNECT O/C AREA TO CHANNEL AND MAINTAIN FLOWS FOR ACCESS. REPLACE CULVERT @ HIGHWAY WITH OPEN-BOTTOMED CV OR BRIDGE IF AN ACCESS PROBLEM. OTHER OPPORTUNITIES UNKNOWN UNTIL DETAILED ASSESSMENT COMPLETE.
2		1	B	RPCW	A	L	L	BANK EROSION AND LOSS OF/DAMAGE TO RIPARIAN FROM RANGE USE, CLEARING OF FAN, POWERLINE X-ING. POSSIBLE PEAK FLOWS, SEDIMENT DELIVERY DUE TO U/S FIRE. LOW WATER LEVELS AND LOSS OF POOLS DUE TO AGGRADATION.	H	UNKNOWN-DETAILED ASSESSMENT REQUIRED AT A MINIMUM TO SEPARATE POSSIBLE PEAK FLOWS AND FIRE VS. RANGE USE VS. LAND CLEARING IMPACTS
3		1	C	RPCW	A	M	H	BANK EROSION AND RIPARIAN LOSS/DAMAGE FROM RANGE USE. POSSIBLE SLUMP AND LOADED GULLY FROM UPSLOPE ROAD. POSSIBLE PEAK FLOWS AND SEDIMENTATION FROM U/S FIRE.	H	UNKNOWN-DETAILED ASSESSMENT REQUIRED AT A MINIMUM TO SEPARATE POSSIBLE PEAK FLOWS AND FIRE VS. RANGE USE VS. LAND CLEARING IMPACTS
4		2	A	CPB	A	M	M	BANK EROSION AND RIPARIAN LOSS/DAMAGE FROM RANGE USE. POSSIBLE PEAK FLOWS AND SEDIMENTATION FROM U/S FIRE.	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED AT A MINIMUM TO SEPARATE POSSIBLE PEAK FLOWS AND FIRE VS. RANGE USE VS. LAND CLEARING IMPACTS
5		2	B	RPCW	A	L	L	POSSIBLE SEDIMENTATION AND PEAK FLOWS FROM FIRE AREA U/S	M	NONE
6		2	C	SPR	A	L	L	POSSIBLE SEDIMENTATION AND PEAK FLOWS FROM FIRE AREA U/S	L	NONE
7		2	D	RPCW	D	L	L	POSSIBLE SEDIMENTATION AND PEAK FLOWS FROM FIRE AREA U/S	L	NONE
8		3	A	CPCW	D	L	M	LOSS OF RIPARIAN, MASS MOVEMENTS AND POSSIBLE PEAK FLOWS DUE TO PEROW FIRE AND POSSIBLY TO SALVAGE LOGGING	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED ATA MINIMUM TO DETERMINE INTERACTION OF HYDROLOGY AND SLOPE PROCESSES AND SOURCE OF IMPACTS.
9		3	B	CPCW	D	L	H	LOSS OF RIPARIAN, MASS MOVEMENTS AND POSSIBLE PEAK FLOWS DUE TO PEROW FIRE AND POSSIBLY TO SALVAGE LOGGING	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED ATA MINIMUM TO DETERMINE INTERACTION OF HYDROLOGY AND SLOPE PROCESSES AND SOURCE OF IMPACTS.
10		3	C	SPBW	S	L	H	NONE	L	NONE

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Form Number:
8

Watershed Name:	MCQUARRIE CREEK
Watershed Code:	460-744900-00000-00000-0000-0000-000-000-000-000-000-000

UTM Zone:	Easting:	Northing:
9	6043338	664371

NTS Maps (1:50,000) :	BGGS Maps (1:20,000) :
ENTER	93L048
	93L058

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPGW	D	L	L	CHANNELIZED BETWEEN TWO ROADS, RAILWAY X-ING AND HIGHWAY X-ING = LOSS OF SINUOSITY AND COMPLEXITY. LOSS OF RIPARIAN AND RIPARIAN FUNCTION. SCOURING OF CHANNEL BED AND INCREASED SEDIMENT DELIVERY TO BULKLEY.	H	RECREATE POOL HABITAT AND COMPLEXITY + ADD ENERGY DISSIPATION. RIPARIAN RESTORATION ALONG DYKE AND AT HIGHWAY/RAILWAY X-INGS
2		1	B	RPGW	A	M	M	CHANNELIZING ON D/S LEFT@BOTTOM OF SECTION CAUSING INCREASED LATERAL INSTABILITY ON RIGHT BANK = BANK EROSION. AGGRADATION HERE PRIOR TO CONSTRICTED D/S CHANNEL. HAY FARMING AND RANGE USE = RIPARIAN IMPACTS. MASS MOV'TS POSSIBLY FRUSTRATED BY RANGE-USE.	H	STABILIZE MASS MOVEMENTS IF LAND-USE RELATED. ASSESS FEASIBILITY OF REMOVING DYKING AND/OR REPLACE WITH AN INTEGRATED FORM OF BANK STABILIZING. RIPARIAN RESTORATION AT CLEARED LAND. PROVIDE ACCESS AND ENHANCEMENT TO SPRING-FED OFF-CHANNEL PONDS.
3		2	A	RPCW	S	M	M	NONE	M	NONE
4		2	B	SPBW	S	L	M	NONE	M	NONE
5		2	C	RPCW	S	H	L	NONE	M	NONE
6		3		RPCW	A	H	H	SEVERAL MASS MOVEMENTS SEEM TO BE ORIGINATING FROM ROAD. AGGRADED CHANNEL IN THIS REACH. CULVERT @ ROAD X-ING IS POSSIBLY A BARRIER. CULVERT IS POSSIBLY UNDERSIZED AS INDICATED BY ELEVATED BARS UPSTREAM.	H	CULVERT REPLACEMENT WITH A SUITABLE STRUCTURE ALLOWING ACCESS @ ALL FLOWS. STABILIZE MASS MOVEMENTS FROM ROAD.

Overview - Preliminary Habitat Assessment Report

Form Number:						
9	Watershed Name:	AITKEN CREEK				
	Watershed Code:	460-702000-00000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6037113	Northing:	660794

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L048

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1		RPGW	A	M	M	FAN CLEARING FOR RANGE-USE=HIGH LATERAL INSTABILITY, BANK EROSION, INCISION. THIS+FORD HAS LED TO SEDIMENTATION AND POOL IN-FILLING, LOSS OF SINUOSITY/COMPLEXITY, AND COMPACTION. SECTIONS OF RIPARIAN DAMAGED. POSSIBLE HIGHER PEAK FLOWS.	H	BANK STABILIZATION AND RIPARIAN RESTORATION. RECREATE POOL HABITAT AND LATERAL COMPEXITY.
2		2	A	CPCW	D	M	M	LARGE AREAS OF LOGGED/RANGE LAND TO LIP OF CANYON MAY BE INCREASING WATER DRAINAGE OVER UNSTABLE SLOPES. POSSIBLE HIGHER PEAK FLOWS DUE TO U/S LAND CLEARING.	L	UNKNOWN.
3		3	A	RPCW	A	M	L	LOSS OF O/C ACCESS DUE TO AGGRADATION. ERODING BANKS AND AVULSIONS DUE TO LOGGING OF RIPARIAN. FELLING INTO STREAM=LOG JAMS. ICHANNEL AND RIPARIAN IMPACTS FROM POSSIBLE PEAK FLOWS.	H	RIPARIAN RESTORATION. RECONNECT CHANNEL TO FLOODPLAIN IN SPECIFIC AREAS.
4		3	B	L	S	L	L	POSSIBLE ACCESS PROBLEMS BETWEEN LAKE AND CREEK DUE TO DAM. POSSIBLE IMPACTS OF DAM ON CREEK HYDROLOGY.	M	SECURE FISH ACCESS TO LAKE AND ENSURE BUFFERING OF WATER LEVELS FOR CHANNEL STABILITY AND HABITAT PROTECTION.

Overview - Preliminary Habitat Assessment Report

Form Number:	Watershed Name:	KLO CREEK				
10	Watershed Code:	460-636000-72000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6006698	Northing:	668056

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L019
			93L028

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1		RPGW	A	M	L	HIGHLY AGGRADED CHANNEL BUT SOURCE OF MATERIAL IS UNKNOWN. U/S UPSLOPE LOGGING IS EXTENSIVE+ OLD PAUL FIRE, LARGE QUARRY IN UPPER REACHES. THEORETICALLY HAS HIGHER PEAK FLOWS, BUT ALSO FREQUENT NATURAL MASS MOVEMENTS. NATURAL OR ANTHROPOGENIC IMPACTS?	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED
2		2	A	RPCW	A	M	H	ONE OLD SLIDE NOTED FROM CUTBLOCK, AND SEVERAL OTHER CUTBLOCKS ON UPSLOPE IN THIS REACH. POSSIBLE CHANGE IN RUNOFF/INFILTRATION PATHWAYS THRU SENSITIVE SOILS IS INCREASING MASS MOVEMENTS. OTHERWISE, SAME AS REACH 1.	H	STABILIZE MASS MOVEMENT FROM CUTBLOCK. DETAILED ASSESSMENT REQUIRED PRIOR TO ESTABLISHING OTHER OPPORTUNITIES.
3		2	B	RPCW	D	M	M	CUTBLOCKS ON UPSLOPE IN THIS REACH. POSSIBLE CHANGE IN RUNOFF/INFILTRATION PATHWAYS THRU SENSITIVE SOILS IS INCREASING MASS MOVEMENTS. OTHERWISE, SAME AS REACH 1.	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED
4		2	C	RPCW	A	M	M	CUTBLOCKS ON UPSLOPE IN THIS REACH. POSSIBLE CHANGE IN RUNOFF/INFILTRATION PATHWAYS THRU SENSITIVE SOILS IS INCREASING MASS MOVEMENTS. OTHERWISE, SAME AS REACH 1.	M	UNKNOWN-DETAILED ASSESSMENT REQUIRED

Overview - Preliminary Habitat Assessment Report

Form Number:						
11	Watershed Name:	JOHNNY DAVID CREEK				
	Watershed Code:	460-778000-00000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6043783	Northing:	670288

NTS Maps (1:50,000) : ENTER BGGS Maps (1:20,000) :

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1		RPGW	A	M	L	CULVERT AT HIGHWAY CROSSING MAY BE A BARRIER. HEAVY RANGE USE ABOVE HIGHWAY = COMPACTION, LOSS OF RIPARIAN FUNCTIONS, BANK EROSION, AGGRADATION, WATER QUALITY CONCERNS. LOSS OF RIPARIAN FUNCTION + BANK EROSION AT POWERLINE X-ING.	H	REPLACE CULVERT WITH OPEN BOTTOM STRUCTURE IF PROVEN TO BE A BARRIER. RIPARIAN RESTORATION AND BANK ARMOURING AT RANGE USE/POWERLINE X-ING.
2		2	A	RPCW	A	M	M	CREEP ON CLEARED SLOPES ABOVE CREEK INDICATES MASS MOV'T POTENTIAL. HEAVY RANGE USE = LOSS OF RIPARIAN FUNCTIONS, BANK EROSION, COMPACTION, AGGRADATION, WATER QUALITY CONCERNS. SEVERAL ATV/CATTLE CROSSINGS ARE POINT SOURCES OF SEDIMENT.	H	STABILIZE CREEPING HILLSLOPES. RIPARIAN RESTORATION. BRIDGE INSTALLATION AT CATTLE/ATV CROSSINGS
3		2	B	RPGW	A	H	M	CREEP ON CLEARED SLOPES ABOVE CREEK INDICATES MASS MOV'T POTENTIAL. LOWER INTENSITY RANGE USE WITH CORRESPONDINGLY REDUCED LEVEL OF IMPACT.	M	STABILIZE CREEPING HILLSLOPES. RIPARIAN RESTORATION.

Overview - Preliminary Habitat Assessment Report

Form Number:							
12	Watershed Name:	EMERSON CREEK					
	Watershed Code:	460-568500-00000-00000-0000-0000-000-000-000-000-000-000					
	UTM	Zone:	9	Easting:	6035783	Northing:	641953

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L046
			93L045

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	RPCW	A	M	M	ONE, POTENTIALLY TWO, SLIDES FROM THE TELKWA FSR MAIN. CHANNELIZING AT THE RAILWAY AND FSR IS CAUSING AGGRADATION UPSTREAM AND HIGHER WATER VELOCITIES IN THE CHANNELIZED SECTION	H	CREATE HABITAT COMPLEXITY AND RENERGY DISSIPATION AT THE CHANNELIZED SECTION. STABILIZE UPSLOPE SEDIMENT INPUTS
2		1	B	RPCW	A	H	L	NONE OBSERVED. RECIEVING SEDIMENT FROM LARGE SLIDE UPSTREAM (REACH 2), SO COMPACTION AND SMOTHERING OF GRAVELS IS LIKELY	L	NONE
3		2		SPBW	S	L	H	LARGE SLIDE FROM FIRE BREAK AT UPSLOPE CUTBLOCK (OPENING #12)	H	STABILIZE UPSLOPE AREA
4		3		RPCW	S	L	L	NONE	L	NONE

Overview - Preliminary Habitat Assessment Report

Form Number:						
13	Watershed Name:	DOCKRILL CREEK				
	Watershed Code:	460-562100-00000-00000-0000-0000-000-000-000-000-000-000				
	UTM Zone:	9	Easting:	6036776	Northing:	640775

NTS Maps (1:50,000) :	ENTER	BGGS Maps (1:20,000) :	93L046
			93L047

Detail Number	Sub Basin Name	Reach Numbe	Section	Channel Type	Channel Stability	Habitat Value	Upslope Impact	Major Habitat Impacts	Priority	Restoration Opportunities
1		1	A	CPCW	D	M	L	CHANNELIZED AND DIVERTED AT AND BELOW FSR BRIDGE CAUSING LOSS OF HABITAT COMPLEXITY, POOL HABITAT. AGGRADATION ABOVE AND BELOW FSR BRIDGE	H	RESTORATION OF NATURAL CHANNEL GEOMETRY, OR HABITAT COMPLEXING
2		1	B	RPCW	A	H	M	TWO CUTBLOCKS (OPENINGS #11, 14) WITH LOGGING TO STREAMBANKS CAUSING INCREASES IN LATERAL MOVEMENT AND ERODING BANKS.	M	RIPARIAN PLANTING AND BANK STABILIZING AT ERODING BANKS AND CONIFER RELEASE IN RIPARIAN/RIPARIAN RESTORATION THROUGHOUT CUTBLOCK MARGINS
3		2	A	CPCW	S	M	M	NONE	L	NONE
4		2	B	CPCW	S	H	M	NONE	L	NONE
5		2	C	CPCW	S	H	M	NONE	L	NONE

Appendix 3
Harcopies of GIS Maps

Appendix 6

Oblique Photos

Plate 1: Mouth of the Mid (or Upper)- Bulkley River at the Morice River confluence. Locally known as "The Forks". This is an important holding area for many of the anadromous species using the Upper Bulkley.

Plate 2: Representative photo of Reach 1 (taken at near baseflow conditions on October 2, 1997).

Plate 3: Large rotational clay slump at the Michelle Bay FSR. Occurred at a culvert for a small intermittent unnamed creek and was likely caused by the geotechnical and/or hydraulic failure of the fine-textured fill.

Plate 4: A large ground and surface water-fed sidechannel of Reach 1 which has been cutoff from the mainstem for fish access. Locally known as "Silverthorne" because Silverthorne Creek was diverted into this area from the Morice watershed.

Plate 5: Reactivated offchannel area behind Paul's Automotive. Reactivated during the spring flood of 1997. The reactivation of relic channels is an internal sediment source.

Plate 6: Powerline crossing of Bulkley River at Houston showing an actively eroding section on the cleared slope.

Plate 7: Bank erosion on a bend at cleared land in Reach 2. Note the height of banks relative to width of channel and deposition of fines in point bars downstream (foreground). Taken at midflow conditions in July, 1997.

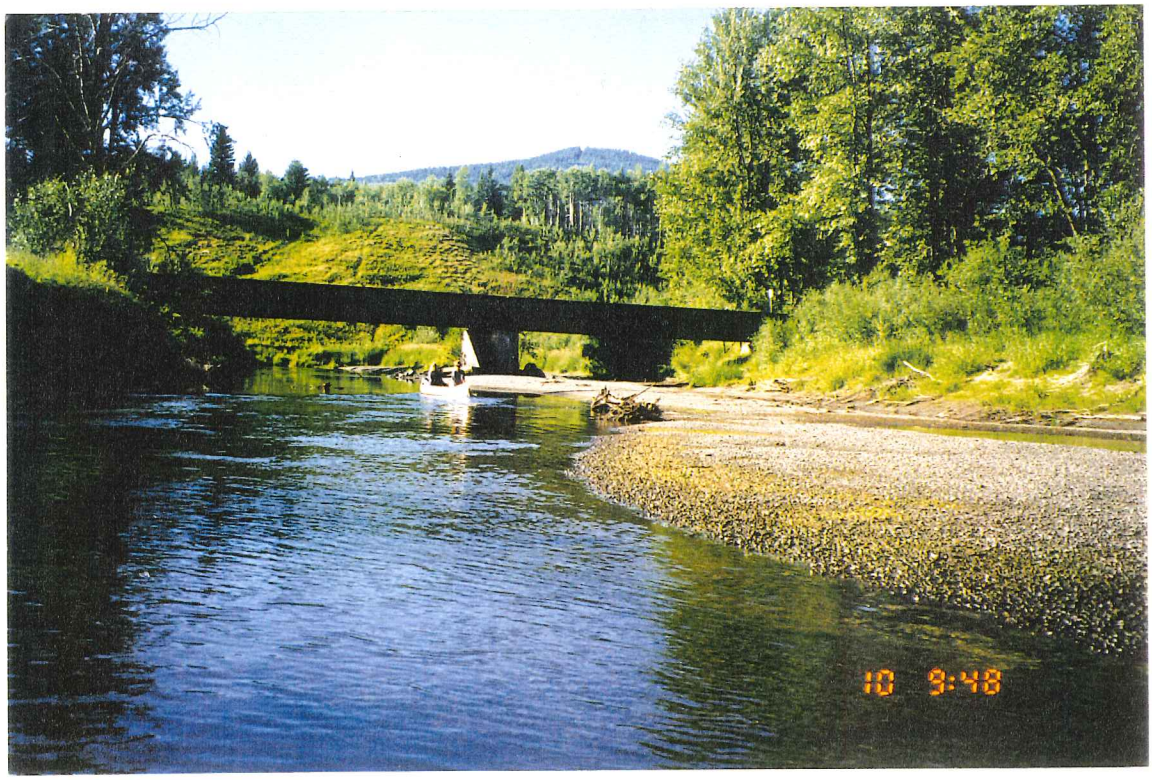

Plate 8: Unstable aggradation occurring behind a CNR railway bridge pillar in Reach 2 near Houson. Deposited just downstream of a rip-rapped bend.

Plate 9: Large, valley-bottom log jam at the upstream end of a channel island showing dewatered sidechannel. Typical lateral activity for a meandering gravel/sand bed channel such as the Mid-Bulkley. These log jams create good rearing habitat for juveniles, especially in such a reach which may be limited in near-bank habitat.

Plate 10: Mouth of a large avulsion which occurred in Reach 2 between Knockholt and Houston (see plates 26-27 of Bulkley River photo mosaics).

Plate 11: Typical oxbow which has either limited or no access to fish and floodwaters due to floodplain development of the railway and highway corridors. Reach 2, Bulkley River.

Plate 12: One of two major log jams which threatened or damaged property during the spring flood of 1997. The log jam was removed by heavy equipment working in the stream and LWD was moved to the side of the river. The wood remains in the confines of the active channel width, as does the large sediment wedge which built up behind it. (see plates 84-85 of Bulkley River photo mosaics)

Plate 13: An area of good, clean uncompacted spawning gravels were found just downstream of the CN Log Jam, and are now threatened due to the large, exposed sediment wedge.

Plate 14: Mouth of Buck Creek.

Plate 15: Upstream end of avulsion in Buck Creek Reach 1A, with log jam in foreground.

Plate 16: Extensive bank erosion downstream of the channelized section of Buck Creek (Reach 1B).

Plate 17: Representative photo of Reach 1B (channelized section) of Buck Creek. Taken at near baseflow conditions, October, 1997.

Plate 19: Slide scarp of large rotational slump above Buck Creek, Reach 1C. The slump is occurring at the edge of a suburban road along the lip of the slope. It is shows high connectivity to the active channel of Buck Creek.

Plate 20: Reach 2 of Buck Creek, showing powerline crossing and gravel quarries. The right-of-way is eroding from runoff being concentrated down the road to the creek crossing (to the left of the photo).

Plate 21: Large grassy slope below gravel quarry showing the recently revegetated slip surface of a slide into Buck Creek. Adjacent slopes showed signs of movement as well.

Plate 22: Powerline access road in Reach 2, Buck Creek, eroding due to concentration of runoff. An external source of fine sediment.

Plate 23: Representative photo of Reach 4 below the first Buck Flats Road bridge.

Plate 24: Road adjacent to Buck Creek in Reach 4B eroding directly into creek.

Plate 25: Representative photo of Reach 5, Buck Creek.

Plate 26: Old bridge abutment at the second Buck Flats Road bridge is wasting into the creek.

Plate 27: Extensive rip-rapped section of Reach 6, Buck Creek along the Buck Flats road.

Plate 28: Aerial view of the Buck Creek portion of the Swiss Fire (the creek is visible to the left).

Plate 29: Extensive logging above Goosly Lake.

Plate 30: Representative photo of Upper Buck Creek, Reach 11B.

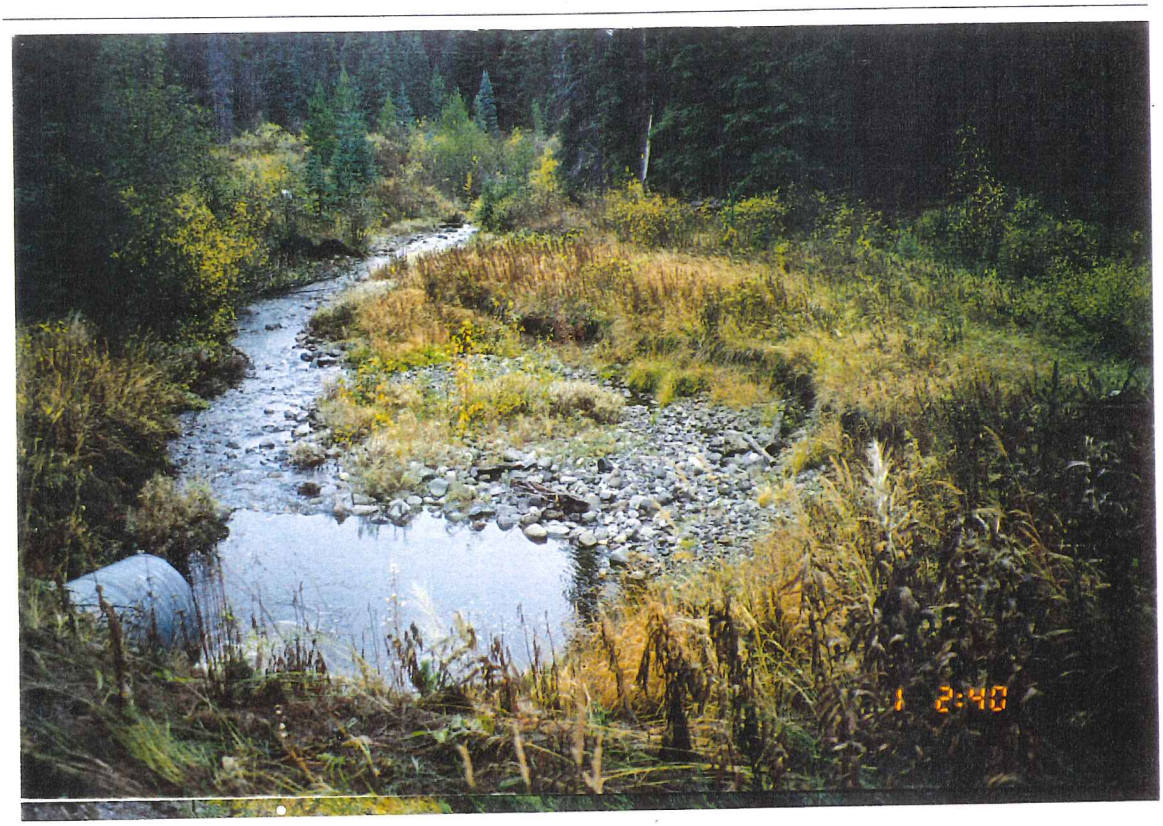

Plate 31: Erosion and bank instability below FSR crossing of Unnamed Creek draining from the southwest into the top of Reach 11, Upper Buck Creek.

Plate 32: Failing crossditch line on FSR delivering sediment to Upper Buck Creek, Reach 11B.

Plate 33: Failing slope above culvert on FSR is a source of fines to Upper Buck Creek, Reach 11B.

Plate 34: Large mass movement from the farm road upslope of Dungate Creek, Reach 1 (to the North) into the floodplain.

Plate 35: The first set of impassable falls on Dungate Creek, Reach 2. Note overhanging section and absence of ledges/pools which is the crux to fish passage.

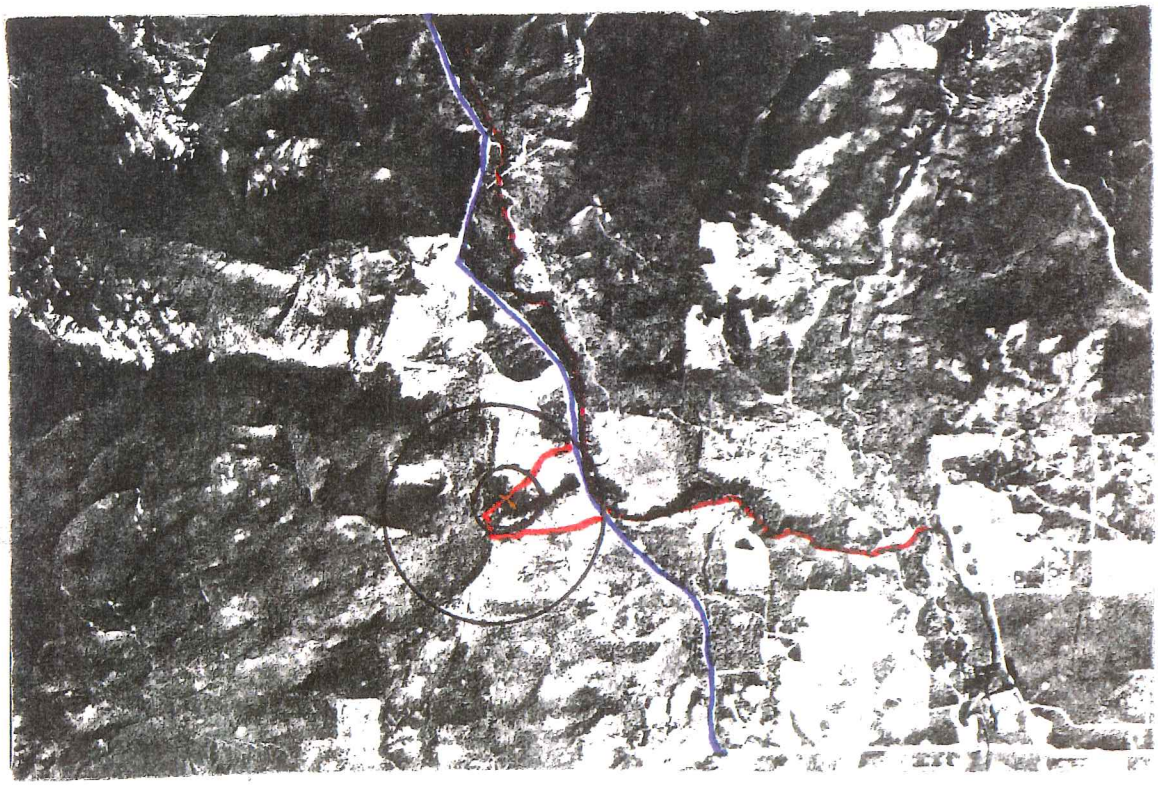

Plate 36: 1:50 000 air photo of slide from road into unnamed creek (orange=FSR, yellow=slide, purple=Equity Mine Road, red=Dungate Creek).

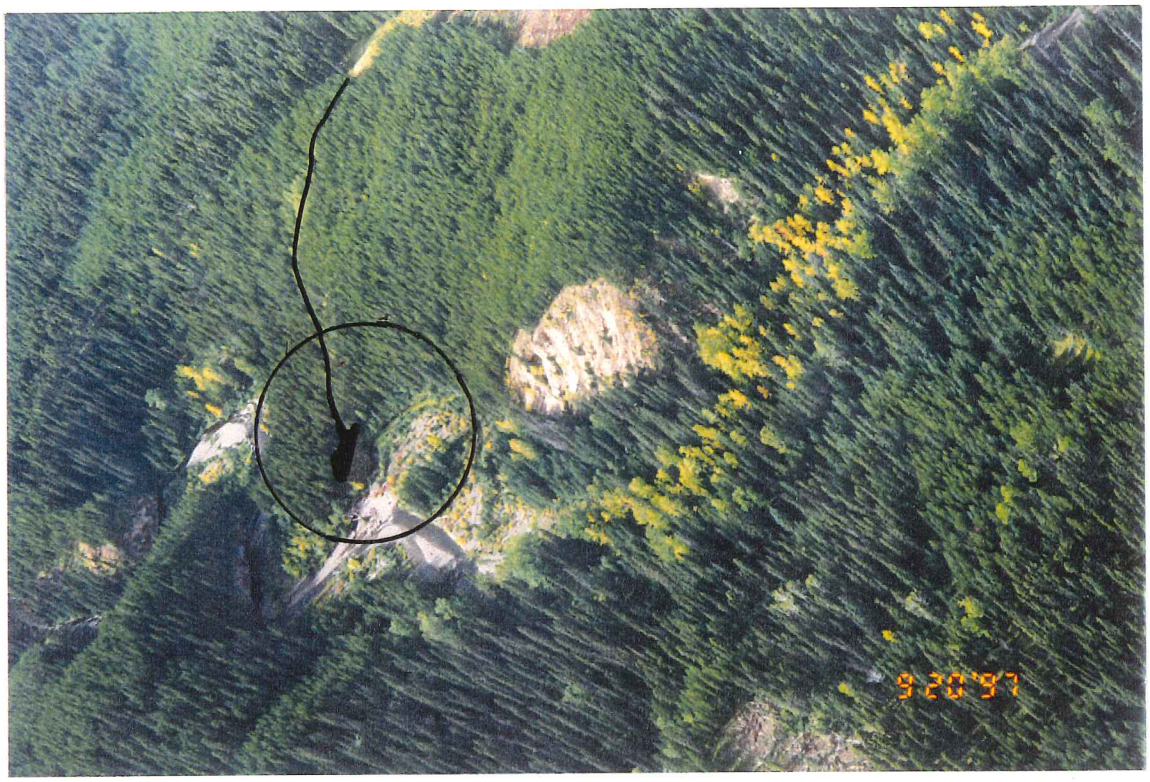

Plate 37: Representative photo of Klo Creek, Reach 2. Path of a gully failure from an upslope clearcut is indicated by the black line.

Plate 38: Mosaic of large gravel quarry located in the headwaters of Klo Creek. Dead standing timber from the Paul Fire can be seen in the background overtopping the regen.

Plate 39: Representative photo of Richfield Creek, Reach 1.

Plate 40: Large slump at the Reach ½ break of Richfield Creek. Note the numerous active blocks below the bottom slide scarp. Cattle use the benches of this slide for passage across and down to the waterline.

Plate 41: Representative photo of Reach 2, Richfield Creek.

Plate 42: Impassable falls located at the end of Reach 2A, Richfield Creek.

Plate 43: Eroding fire break in the headwaters of Redtop Creek is causing a debris torrent into the forest below the Granisle Highway crossing. This erosion is entering a large wetland complex at Redtop Creek, but the capacity of this wetland for sediment storage is unknown.

Plate 44: Debris torrent fan below Granisle highway. Note that the bottom sections of the tree trunks are buried. The fan was approximately 10 metres wide at its snout. This is not an appreciably large torrent, but may be a persistent problem over many years to come.

Plate 45: Eroding fire break at clearcut in the headwaters of Robert Hatch Creek which delivers sediment into a wetland area behind a beaver dam. The water running over this fire break is Robert Hatch Creek.

Plate 46: Mouth of Johnny David Creek.

Plate 47: Highway culvert on Johnny David Creek. This culvert does not appear to be a barrier due to gradient and height of inlet/outlet above the channel surface. It may be impassable due to water velocities at higher flows and water levels at low flows. Photo taken at low flows.

Plate 48: Cattle crossing at Johnny David Reach 1. Representative substrate and riparian condition are illustrated here. Taken at low flow conditions.

Plate 49: Extensive erosion of the North Road FSR fill slope into an intermittent Unnamed tributary to Johnny David Creek. The fill slope is eroding on both sides of the crossing due to use of relatively fine-textured fill.

Plate 50: Old skid trail leading down into intermittent Unnamed tributary to Johnny David Creek at North Road FSR is eroding into the channel.

Plate 51: Culvert at highway crossing on Byman Creek. This culvert appears to be passable as a function of height above the water surface, length, diameter, and gradient. It is suspected to be a barrier due to water velocities at high flows and water levels at low flows.

Plate 52: Blocked culvert to downstream end of offchannel area on Byman Creek. The other side of the culvert is high and dry.

Plate 53: Representative photo of Reach 1, Byman Creek. Photo taken at baseflow conditions (September, 1997).

Plate 54: Debris torrents and flows at Byman Creek, Reach 3 in the Row fire area. This activity occurs at or just below the lip of the canyon. There has been extensive salvage logging here which may play a part in the landslide activity.

Plate 55: Representative photo of McQuarrie Creek, Reach 1. Taken in October, 1997 at mid to low flow conditions.

Plate 56: Culvert on McQuarrie Creek at the North Road FSR. This culvert may be a barrier to fish migration due to water levels and velocities, as well as length. It will definitely become more of a problem as height from the water surface to the culvert inlet increases due to downcutting. Note the already extensive erosion.

Plate 57: Aggradation above North Road FSR culvert on McQuarrie Creek. There is good fish habitat and minimal land-use from here to McQuarrie Lake provided that no barriers exist in the upstream canyon.

Plate 58: Barren Creek at the Bulkley River. Note that the mouth is heavily aggraded with fine material and one culvert is blocked in the background. These concrete culverts at the CN Rail crossing are very smooth and consequently water velocities will be high. They are also probably too undersized to facilitate fish passage in even normal bankfull flood events.

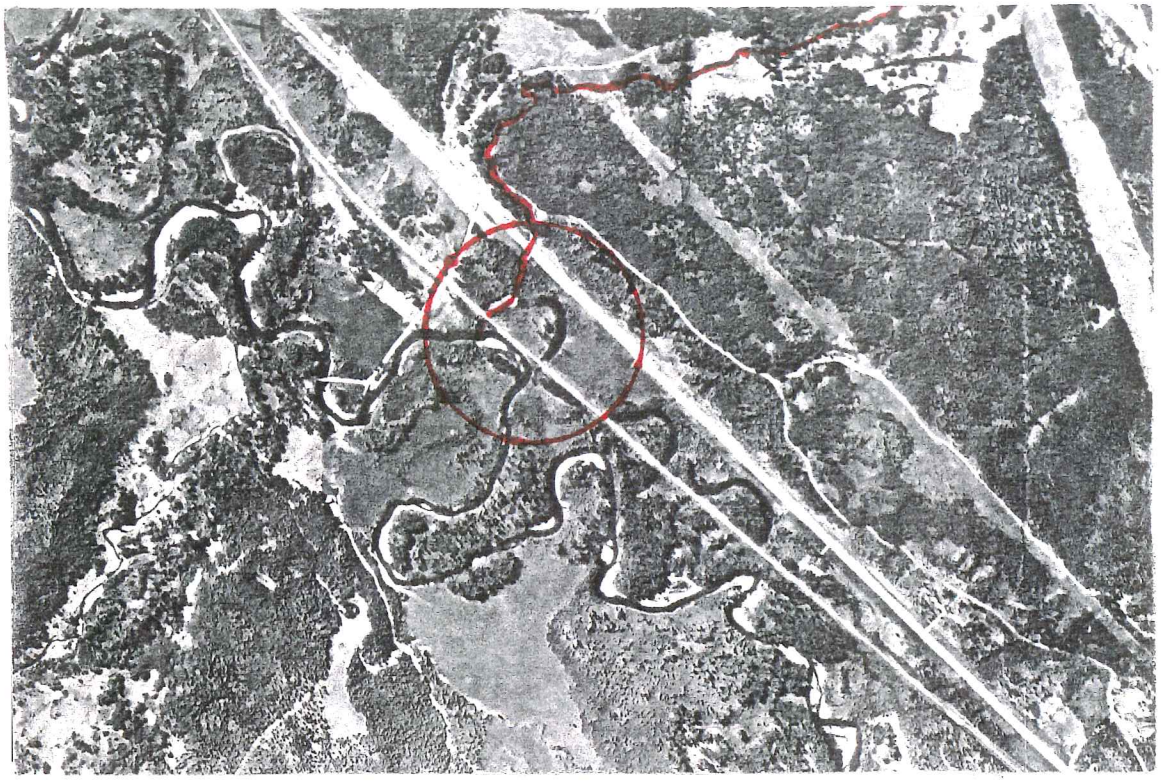

Plate 59: Copy of an air photo showing the oxbow that Barren Creek enters prior to its confluence with the Bulkley River. The area of interest and Barren Creek are delineated in red. The oxbow acts as a large settling pond for the creek, but the channel thread is now aggraded and anastomised. Access through this area, which is also heavily used for cattle ranching, is questionable.

Plate 60: Representative photo of Reach 1, Barren Creek upstream of the oxbow area. Taken at mid to low flow conditions, October, 1997.

Plate 61: Mass movement just upstream of the Reach ½ break on Barren Creek. The slide may have been caused by land clearing, as indicated by the secondary successional poplar forest above.

Plate 62: Culvert at North Road FSR crossing of Barren Creek. The culvert is thought to be a barrier to fish passage due to the absence of a plunge pool and the accumulation of rubble at the outlet, and height above the stream surface.

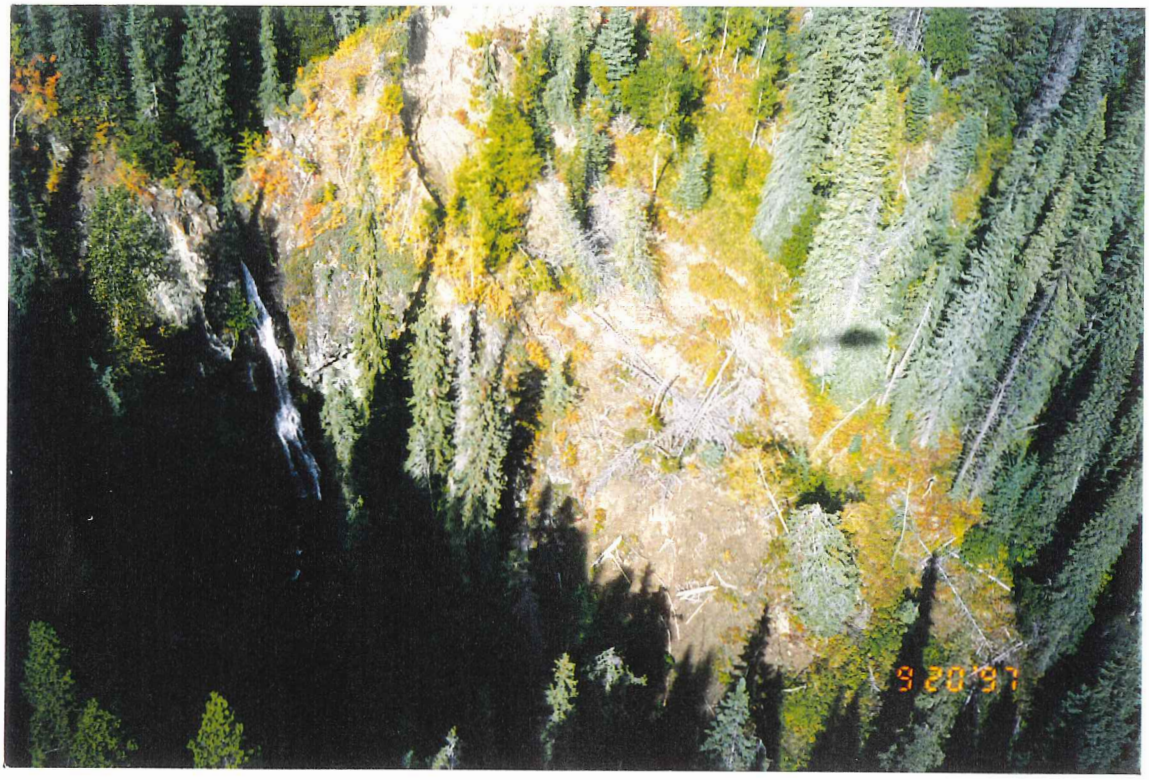

Plate 63: Falls just upstream of the Reach 2/3 break on Barren Creek. These falls are thought to be impassable due to height, gradient and distance between possible resting points. There is one overhanging section.

Appendix 8

Time-Series Air Photos used in the Mid-Bulkley Overview FHAP

Time-Series Air Photos used in the Mid-Bulkley Overview FHAP

Flightline	Year	Scale	Photo #'s	Waterbody
BC7333	1973	1:10 000	71, 74, 105, 251	Buck Creek, Bulkley Reach 1B
BC7359	1973	1:10 000	181	Buck Creek
BC7360	1973	1:10 000	70	Buck Creek
BC7727	1977	1:10 000	1-4, 85, 86, 88	Aitken Creek, McKilligan Creek
BC7728	1977	1:10 000	78, 79, 114, 115	Barren Creek, Bulkley Reach 2
BC7735	1977	1:10 000	77-81	Richfield, Robert Hatch, Johnny David, Byman, McQuarrie Creeks
BC7745	1977	1:10 000	93-96	Richfield, Robert Hatch, Johnny David, Byman Creeks
BC86072	1986	1:50 000	41, 42, 59	Buck Creek
BC87062	1987	1:50 000	31, 32, 35-38, 120, 121, 124-126, 139-141, 148	All
30BCB91181	1991	1:10 000	95, 137, 143, 225, 264, 267	Buck, Aitken, McKilligan Creeks
30BCB91182	1991	1:10 000	10, 32, 48, 96, 120, 172, 174, 176, 177, 217, 220, 222, 225	Richfield, Robert Hatch, Johnny David, Byman, McQuarrie, Aitken, Emerson, Dockrill Creeks

Appendix 9

Stream/Riparian Classifications for Known Fish Bearing Stream Reaches

Stream/Riparian Classifications for Known Fish Bearing Stream Reaches*

Waterbody	Reaches	Stream Classification
Bulkley River	all	S1
Buck Creek	1-2	S1
	3A-8B	S2
	11	S2
Barren Creek	1-2A	S2
Aitken Creek	3	S2
McQuarrie Creek	1-2B	S2
Byman Creek	1A	S2
Richfield Creek	1-2A	S2

* Classified as per the methods outlined in the *BC Forest Practices Code Riparian Management Area Guidebook* (pages 4-7)