

9-2-2004

## Ex. 281-US-428

R. Nawa  
*Oregon Department of Fish and Wildlife*

K. Hartzell  
*Oregon Department of Fish and Wildlife*

Follow this and additional works at: <https://digitalcommons.law.uidaho.edu/klamath>

---

### Recommended Citation

Nawa, R. and Hartzell, K., "Ex. 281-US-428" (2004). *In re Klamath River (Klamath Tribe)*. 245.  
<https://digitalcommons.law.uidaho.edu/klamath/245>

This Expert Report is brought to you for free and open access by the Hedden-Nicely at Digital Commons @ UIdaho Law. It has been accepted for inclusion in In re Klamath River (Klamath Tribe) by an authorized administrator of Digital Commons @ UIdaho Law. For more information, please contact [annablaine@uidaho.edu](mailto:annablaine@uidaho.edu).

Stream: **Fort Creek** >Wood River  
Survey Type: **ODFW Stream Habitat**  
Access: Foot  
Reach: 1  
Start: T33S-R7E-S27SE  
Quad: Fort Klamath  
Date: 2 September 04  
Surveyors: R. Nawa, K. Hartzell  
Distance Surveyed: 1,126 m

#### Valley and stream channel geometry

The stream is in an agricultural valley about 8 km wide. Low terraces slope abruptly to form narrow floodplains that border the 16 m wide creek. Extremely low map measured stream gradient (0.08%) was accompanied by high sinuosity (2.3). Due to extreme sinuosity, oxbows were particularly vulnerable to meander cutoffs. A meander cutoff was found at unit 5 that created a large alcove (actually a backwater pond) (Map). Meander cutoffs increase channel and streambank erosion.

#### Substrate

The streambed was 84 percent sand and organics. About 16 percent was surficial deposits of pumice gravel over sand. Gravel was mostly less than 25 mm in diameter.

#### Spawning Gravel

Surveyors recorded 38 m<sup>2</sup> /km of pumice gravel suitable for steelhead spawning. Gravel suitable for spawning was found on point bars where the stream meandered sharply. Due to high amounts of sand, cobble embeddedness was estimated at 50%. Old redds, presumably made by redband trout, were found at 3 locations.

#### Riparian Vegetation

The stream is in a forested valley bordered by pasture grasses, willows, and pine. The riparian zone (0-30m) had an average of 183 hardwoods and 122 conifers for each 1000 ft of stream. Average shade was 47 percent. Streambank erosion was 6 percent suggesting that grass and willow growth is adequate to protect most streambanks.

#### Wood

Wood averaged 10.1 pieces/100m of stream but wood was not evenly distributed. Wood concentrations were much higher in areas where the stream abutted forested terraces (estimated 50% of reach). Trees appear to remain in the channel where they fall. The stream seems to lack stream power to move wood into debris jams that would affect channel morphology.

#### Rearing and Adult Holding Habitat

About 83 percent of the stream was classified as glide habitat that averaged 0.8 m deep. The reach had 3 pools with well developed hydraulic controls (i.e. tailouts). Two scour pools were found at meander bends and averaged 2 m deep. A meander cutoff created a 598 m<sup>2</sup> backwater pond or alcove that was 0.4 m deep (U5). Wood was not a pool forming factor. An estimated 39 percent of the streambanks were undercut. Undercut streambanks, high amounts of stable wood, and deep pools provide abundant cover for juvenile and adult fish.

#### Stream Temperature

The maximum spot stream temperature was 8.3°C. A spring at unit 4 was 11°C.

Migration Barriers

Culverts under Highway 62 were not a barrier to fish migration because they had no drop at downstream end.

Photo 241 Unit 6  
Large amounts of stable wood are found where the stream erodes forested terraces. Wood density averaged ten pieces/100 m.

Photo 229 Unit 8.  
An 80m<sup>2</sup> patch of pumice gravel was in a rapid below Highway 62. Old rainbow trout redds were observed here.

Stream: Fort Creek  
Survey Type: ODFW Stream Habitat  
Access: Foot  
Reach: 3 (Forest Service)  
Start: T33S-R7E-S23SW  
Quad: Fort Klamath  
Date: 2 September 04  
Surveyors: R. Nawa, K. Hartzell  
Distance Surveyed: 816 m

About 180 m below the Winema Forest boundary a diversion dam was removed and replaced with a very large pump encased in a cement structure (Photo 230). No screen for the newly installed pump was evident. About half of the flow was being removed by the pump.

#### Valley and stream channel geometry

The stream is in a 70 m wide valley bordered by 20 m high forested terraces. Narrow floodplains border the 19 m wide creek. Low stream gradient (0.3%) was accompanied by moderate sinuosity (1.3).

#### Substrate

The streambed was 30 percent sand, 29 percent gravel and 40 percent cobble. Gravel and cobble was pumice rock.

#### Spawning Gravel

Surveyors recorded a total of 175 m<sup>2</sup> of pumice gravel suitable for spawning (map). Circular pits in the gravel appeared to be lamprey redds. The reach was 76 percent riffle but gravel in riffles was poorly sorted. Sand was interspersed with clasts less than 1 inch and cobble 4-6 inches making most gravel unsuitable for spawning. The former impoundment may have prevented sorting.

#### Riparian Vegetation

The stream is bordered by forested slopes. The riparian zone (0-30m) had an average of 122 hardwoods and 386 conifers for each 1000 ft of stream. Average shade was 56 percent. Streambank erosion was only two percent, indicating that vegetation is adequate to protect streambanks.

#### Wood

Wood averaged 11.8 pieces/100m of stream. Trees appear to remain in the channel where they fall. The stream appears to lack stream power to move wood into debris jams that would affect channel morphology.

#### Rearing and Adult Holding Habitat

About 24 percent of the stream was glide habitat that averaged 0.5 m deep. No pools were identified. Undercut streambanks (25%) and high amounts of stable wood provide cover for juvenile and adult fish.

#### Stream Temperature

The maximum spot stream temperature was 9°C. Reservation springs was 8°C at 1645 PDT.

**RIPARIAN**

STREAM: Font Creek (USFS Reach) DATE: 2 Sept 04 NAME: \_\_\_\_\_ PAGE: \_\_\_\_\_ OF: \_\_\_\_\_

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FOB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE
								3-15	15-30	30-50	50-90	90+	
4	LEFT	1	HT	30	40	60	20						
		2	HT	20	60	0	20						
		3	HT	15	60	20	0					1	Panacea
4	RIGHT	1	HT	25	100	20	0						
		2	HS	15	80	0	0			3	2		
		3	HS	30	80	40	0					1	
	LEFT	1											
		2											
		3											
	RIGHT	1											
		2											
		3											
												UNIT # _____	

## SPAWNING HABITAT FORM

Stream Font Green Below 62 Reach # Below 62 Date 2 Sept 07  
 Surveyor(s) R. NAWA See wolverine rubble count

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	UNIT	Rubble Type	Comments
2	G	100	100	79	NP	20% > 1, 50% > 1/2
6	GC	100	100	9	P	> 30% SAND + Fg
2	CC	100	100	8	P	> 30% SAND + Fg
3	G	"	"	7	P	20% > 1 - SURFICIAL COBBLE
4	G	"	"	7	P	20% > 1 "
3	G	"	"	56	P	30% > 1 "
4	G	"	"	6	P	" "
4	G	"	"	4	P	" "
3	G	"	"	4	P	" "
3	GC	"	"	3	P	" "
2	C	"	"	3	P	" "
4	G	"	"	3	P	" "
3	GC	"	"	2	P	" "

Class: G= gravel; C= small cobble (<150mm [6"])  
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.

P = Pumice  
 NP = NOT Pumice

Stream Name Fort Creek (USFS Reach) Rosgen Channel Type \_\_\_\_\_  
 Hydrologic Unit 2 EPA Reach \_\_\_\_\_ EPA EXT \_\_\_\_\_  
 Stream Survey Reach Forest Service Sample # \_\_\_\_\_ Habitat Unit Type R1 Fast/Slow Water \_\_\_\_\_  
 Observers RN, KH Date 9/2/04  
 Procedure  (Wolman, 1954) \_\_\_\_\_ (Bevenger and King, 1995) \_\_\_\_\_ Other \_\_\_\_\_  
 Measurement Device  Ruler \_\_\_\_\_ Gravelometer (FISP US SA-97)

Class Name	Particle Size (mm)	Dot Count	Total #	% Total	Cum. #	Cum %
Small Organic	< 25 mm					
Large Organic	> 25 mm					
Clay	<0.0039					
Silt	0.0039-0.0625					
Fine Sand	0.0625 - 0.25					
Med. Sand	0.25 - 0.5					
Coarse Sand	0.5 - 1.0		9			
VC Sand	1 - 2		0			
VF Gravel	2 - 4		1			
Fine Gravel	4 - 8		2			
Fine Gravel	<del>4 - 8</del>		3			
Med. Gravel	8 - 16		4			
Coarse Gravel	16 - 32		5			
VC Gravel	32 - 64		5			
Sm. Cobble	64 - 128		5			
Lg. Cobble	128 - 256		4			
Sm. Boulder	256 - 512		3			
Med. Boulder	512 - 1024					
Lg. Boulder	1024 - 2048					
VL Boulder	2048 - 4096					
Bedrock						

Total #: 117

Calculations: % Fines <2mm \_\_\_\_\_ % Fines <6mm \_\_\_\_\_ D50 \_\_\_\_\_ D84 \_\_\_\_\_

Notes: Pumice Gravel - Read on Fraseret Line

UTM's: 584751, 4727671

**SPAWNING HABITAT FORM**

Stream Foot Creek Reach Forest Service Date 2 Sept 04  
 Surveyor(s) R. NAWA Wolman Count UNIT 2

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	UNIT	Rock TYPE	Cobble Emb Comments
4	GC	100	100	2	P	50% Emb
80	GC	100	100	2	P	50% Old Reeds visible
4	GC	"	"	2	P	"
5	GC	"	"	2	P	"
5	"	"	"	"	"	"
8	"	"	"	"	"	"
4	"	"	"	"	"	"
6	"	"	"	3	"	"
3	"	"	"	3	"	Old Reeds
10	"	"	"	3	"	Old Reeds
2	"	"	"	3	"	Poorly sorted
2	"	"	"	3	"	"
10	"	"	"	4	"	"
3	"	"	"	4	"	"
8	"	"	"	4	"	"
10	"	"	"	4	"	" Scattered patches
11	"	"	"	4	"	" Scattered patches

Class: G= gravel; C= small cobble (<150mm [6"]) P= Pumice  
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.



**RIPARIAN**

STREAM: Font Creek (Forest Service)

DATE: 2 Sept 03

PAGE: \_\_\_\_\_ OF: \_\_\_\_\_

NAME: \_\_\_\_\_

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					TREE	RIPARIAN NOTE
								3-15	15-30	30-50	50-90	90+		
1	LEFT	1	FP	2	0	0	100					CONIFER		
		2	FP	0	0	20	100					HARDWOOD		
		3	FP	0	0	20	100					CONIFER		
1	RIGHT	1	HT	30	20	20	20					HARDWOOD		
		2	HT	5	40	60	20					CONIFER		
		3	HT	0	40	60	20					HARDWOOD	POUNDSTON	
3	LEFT	1	FP	20	40	40	60					CONIFER		
		2	HT	8	80	80	0					HARDWOOD		
		3	HT	6	40	60	20					CONIFER		
3	RIGHT	1	FP	20	20	40	40					CONIFER		
		2	HT	20	60	20	60					HARDWOOD		
		3	HT	2	40	40	0					CONIFER		
													UNIT # 3 0584787-4727817 AR=21	

WOOD

PAGE: 2 OF

STREAM: Fort Cr (USFS)

NAME: Hartzell

DATE: 9/11/00

UNIT NUMBER	UNIT TYPE	CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	RW < 3	LENGTH CLASS (m)										WOOD NOTE									
							3	6	9	12	15	18	21	24	28	32		36+								
1	BT	M	Z	M	60		1	2	4	1																
2	BT	M	Z	M	30		1	3	1																	
3	BT	M	Z	M	30		1	4	2	1																
4	BT	M	Z	M	30		1	4	2	1																
5	BT	M	Z	M	40		1	2	2	1																
6	BT	M	Z	M	120		1	2	2	5	1															
7	BT	M	Z	M	30		1	2	2	1																
8	BT	M	Z	M	40		1	2	2	1																
9	BT	M	Z	M	40		1	2	2	1																
10	BT	M	Z	M	30		1	2	2	1																
11	BT	M	Z	M	30		1	2	2	1																
12	BT	M	Z	M	30		1	2	2	1																
13	BT	M	Z	M	30		1	2	2	1																
14	BT	M	Z	M	30		1	2	2	1																
15	BT	M	Z	M	30		1	2	2	1																
16	BT	M	Z	M	30		1	2	2	1																
17	BT	M	Z	M	30		1	2	2	1																
18	BT	M	Z	M	30		1	2	2	1																
19	BT	M	Z	M	30		1	2	2	1																
20	BT	M	Z	M	30		1	2	2	1																

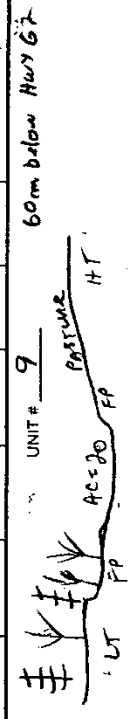
**RIPARIAN**

PAGE: 1 OF: 1  
 NAME: Rich Nawa

DATE: 2 Sept 04

STREAM: Foot CA Below 67

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE			
								TRBE	3-15	15-30	30-50	50-90		90+		
1	LEFT	1	FP	4	20	40	100									
		2	FP	0	40	40	100									
		3	FP	0	40	20	100									
1	RIGHT	1	FP	4	20	40	100									
		2	FP	0	60	80	100									
		3	LT	8	80	20	100									
9	LEFT	1	FP	10	0	0	100									
		2	HT	10	0	0	100									
		3	FP	4	20	40	100									
9	RIGHT	1	FP	0	20	40	100									
		2	FP	0	20	40	100									
		3	LT	10	20	60	100									



FOR EACH RIPARIAN TRANSECT, DRAW AND LABEL THE SURFACES (HT, LT, FP, HS, ETC) OF A CROSS SECTION IN THE BOX PROVIDED ABOVE. DRAWING AND LABELING VEGETATION IS NOT NECESSARY.

**WOOD**

PAGE: 1 OF:

NAME: R. NAWA, Hartzell

DATE: 2 SEPT 04

STREAM: FORT CR. (Below Rt-62)

UNIT NUMBER	UNIT TYPE	CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	RW <3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
1	LP	A	N	S	15	2											
2	LP	A	N	S	30	1											
3	RP	A	N	S	15	2											
4	RP	A	N	M	16	3	1										
5	RP	A	N	F	15	1	2										
6	RP	A	N	S	30		2	1									
7	RP	A	N	S	30		2	2									
8	RP	A	N	S	30		2	2									
9	RP	A	N	S	15	1	2	2									
10	RP	A	N	S	15	2	2	2									
11	RP	A	N	S	30		2	2									
12	RP	A	N	S	30		2	2									
13	RP	A	N	S	30		2	2									
14	RP	A	N	S	30		2	2									
15	RP	A	N	S	30		2	2									
16	RP	A	N	S	30		2	2									
17	RP	A	N	S	30		2	2									
18	RP	A	N	S	30		2	2									
19	RP	A	N	S	30		2	2									
20	RP	A	N	S	30		2	2									
21	RP	A	N	S	30		2	2									
22	RP	A	N	S	30		2	2									
23	RP	A	N	S	30		2	2									
24	RP	A	N	S	30		2	2									
25	RP	A	N	S	30		2	2									
26	RP	A	N	S	30		2	2									
27	RP	A	N	S	30		2	2									
28	RP	A	N	S	30		2	2									
29	RP	A	N	S	30		2	2									
30	RP	A	N	S	30		2	2									
31	RP	A	N	S	30		2	2									
32	RP	A	N	S	30		2	2									
33	RP	A	N	S	30		2	2									
34	RP	A	N	S	30		2	2									
35	RP	A	N	S	30		2	2									
36	RP	A	N	S	30		2	2									
37	RP	A	N	S	30		2	2									
38	RP	A	N	S	30		2	2									
39	RP	A	N	S	30		2	2									
40	RP	A	N	S	30		2	2									
41	RP	A	N	S	30		2	2									
42	RP	A	N	S	30		2	2									
43	RP	A	N	S	30		2	2									
44	RP	A	N	S	30		2	2									
45	RP	A	N	S	30		2	2									
46	RP	A	N	S	30		2	2									
47	RP	A	N	S	30		2	2									
48	RP	A	N	S	30		2	2									
49	RP	A	N	S	30		2	2									
50	RP	A	N	S	30		2	2									
51	RP	A	N	S	30		2	2									
52	RP	A	N	S	30		2	2									
53	RP	A	N	S	30		2	2									
54	RP	A	N	S	30		2	2									
55	RP	A	N	S	30		2	2									
56	RP	A	N	S	30		2	2									
57	RP	A	N	S	30		2	2									
58	RP	A	N	S	30		2	2									
59	RP	A	N	S	30		2	2									
60	RP	A	N	S	30		2	2									
61	RP	A	N	S	30		2	2									
62	RP	A	N	S	30		2	2									
63	RP	A	N	S	30		2	2									
64	RP	A	N	S	30		2	2									
65	RP	A	N	S	30		2	2									
66	RP	A	N	S	30		2	2									
67	RP	A	N	S	30		2	2									
68	RP	A	N	S	30		2	2									
69	RP	A	N	S	30		2	2									
70	RP	A	N	S	30		2	2									
71	RP	A	N	S	30		2	2									
72	RP	A	N	S	30		2	2									
73	RP	A	N	S	30		2	2									
74	RP	A	N	S	30		2	2									
75	RP	A	N	S	30		2	2									
76	RP	A	N	S	30		2	2									
77	RP	A	N	S	30		2	2									
78	RP	A	N	S	30		2	2									
79	RP	A	N	S	30		2	2									
80	RP	A	N	S	30		2	2									
81	RP	A	N	S	30		2	2									
82	RP	A	N	S	30		2	2									
83	RP	A	N	S	30		2	2									
84	RP	A	N	S	30		2	2									
85	RP	A	N	S	30		2	2									
86	RP	A	N	S	30		2	2									
87	RP	A	N	S	30		2	2									
88	RP	A	N	S	30		2	2									
89	RP	A	N	S	30		2	2									
90	RP	A	N	S	30		2	2									
91	RP	A	N	S	30		2	2									
92	RP	A	N	S	30		2	2									
93	RP	A	N	S	30		2	2									
94	RP	A	N	S	30		2	2									
95	RP	A	N	S	30		2	2									
96	RP	A	N	S	30		2	2									
97	RP	A	N	S	30		2	2									
98	RP	A	N	S	30		2	2									
99	RP	A	N	S	30		2	2									
100	RP	A	N	S	30		2	2									

UNIT-2

PAGE: 1 OF 1

STREAM: Font Creek (Forest Service) DATE: 9 SEP 04 NUMERATOR: R. Mann

UNIT #	UNIT TYPE	DEPTH* PTC	DEPTH**	VERIFIED LENGTH	WIDTH	S/O	PERCENT SUBSTRATE			BLDR BDRCK	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
							SND	GRVL	CBLE						
1	GL	0.40				95	5					20	GS	AUTOMATIC FLOW RECORDERS, PUMPS GRAVEL	
2	RF	0.30				3	40	40				30		PUMPS GRAVEL, LAMINAR PAPER?	
3	RF	0.30					25	50				30		PUMPS GRAVEL	
4	RF	0.30					15	35				20			
5	GL	0.60					30	30	40	6	20			RESERVATION SPANIS = 46 @ 1643	
V															
V															
V															

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

\*\* ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

STREAM: Fort Cr. (USFS)

DATE: 9/2/04

ESTIMATOR: Hartzell

REACH #	UNIT #	CHNL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL		FLOOD PRONE		TERRACE		NOTE		
							LEFT	RIGHT	HT.	WIDTH	HT.	WIDTH	HT.	WIDTH		VWT	
085	1	00	100	155	17	0.6	29	55	1.4	21	2.0	60	4.0	10	18	Start @ USFS Bound	
	2	00	100	250	19	1.0	52	35									
	3	00	100	250	20	1.0	40	55	0.8	21	1.6	132	2.6	42	4		
X	5	00	100	65	17	0.6	70	62	0.8	17	1.6	18	4.5	23	2	End @ Spring HW	

\* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.



UNIT-2

PAGE: 1 OF 1

Below  
Font Creek (Hwy 62)

NUMERATOR: R. MAWA

DATE: 2 Sept 04

STREAM: Font Creek

UNIT #	UNIT TYPE	DEPTH*	DEPTH**	PTC	VERIFIED LENGTH	WIDTH	S/O	SND	GRVL	CBLE	BLDR	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE #
1	10	CC						50	50							
2	9	SP	2.2	.7			90	10					5	5		NO DRIP ON CHANNEL HS @ 0930
3	8	RP	0.8				85	15					5	10		Pumice GRAVEL
4	7	GL	0.7				80	20					20	20		Pumice GRAVEL
5	6	GL	0.8				80	20					10	30		Pumice GRAVEL
6	5	AL	0.4				100							60		ALCOVE FROM MPAWMA CV1011
7	4	GL	0.8				50	10					10	50	SS	SPWLS AT R/B 53 @ 1030
8	3	GL	0.8				30	30						50		Pumice GRAVEL
9	2	GL	0.9				60	20						50		Pumice GRAVEL
10	V 1	AP	1.7	.6			100	5						40		Stream Bend 470 @ 1145
11																
12																
13																
14																
15																
16																
17																
18																
19																
20	V															
21																
22																
23																
24																
25																
26																
27																
28																
29																
30	V															

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

\*\* ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

UNIT NUMBERS GO DOWN BECAUSE WE SURVEYED DOWNSTREAM

UNIT - 1

PAGE: 1 OF: \_\_\_\_\_

ESTIMATOR: Hartzell

STREAM: Fort Cr (Below Rt-62) DATE: 9/2/04

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL HT*	ACTIVE CHANNEL WIDTH	FLOOD PRONE		TERRACE		NOTE	
								LEFT	RIGHT			HT.	WIDTH	HT.	WIDTH		VWI
BR62	19	GP	00	100	24	2	0.5	90	90	1.0	20	2.0	41	35	50	24	Double Culv.
	9	RP	00	100	75	4	0	40	50								
	8	GP	00	100	145	12	0.5	31	60								
	6	GP	00	100	155	12	0.5	53	52								
	5	AL	10	00	46	3	0	11	12								
	4	GP	00	100	250	13	0.5	59	60								
	3	GP	00	100	250	14	0.5	50	10								
	2	GP	00	100	166	13	0.5	30	22								
	1	LP	00	100	40	13	0	50	34	1.2	16	2.4	100	2.5	7150	24	

\* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.



PHOTO RECORD

PAGE: 1 OF: 1

STREAM: Fort Cr. SURVEY TYPE: OR. PLAN  BASIN  MIXED

BASIN OR GCG: Wood FILM: DIGITAL  SLIDE  PRINTS

SURVEY CREW: RN, Klt ROLL #: MAILER #:

224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525  
 526  
 527  
 528  
 529  
 530  
 531  
 532  
 533  
 534  
 535  
 536  
 537  
 538  
 539  
 540  
 541  
 542  
 543  
 544  
 545  
 546  
 547  
 548  
 549  
 550  
 551  
 552  
 553  
 554  
 555  
 556  
 557  
 558  
 559  
 560  
 561  
 562  
 563  
 564  
 565  
 566  
 567  
 568  
 569  
 570  
 571  
 572  
 573  
 574  
 575  
 576  
 577  
 578  
 579  
 580  
 581  
 582  
 583  
 584  
 585  
 586  
 587  
 588  
 589  
 590  
 591  
 592  
 593  
 594  
 595  
 596  
 597  
 598  
 599  
 600  
 601  
 602  
 603  
 604  
 605  
 606  
 607  
 608  
 609  
 610  
 611  
 612  
 613  
 614  
 615  
 616  
 617  
 618  
 619  
 620  
 621  
 622  
 623  
 624  
 625  
 626  
 627  
 628  
 629  
 630  
 631  
 632  
 633  
 634  
 635  
 636  
 637  
 638  
 639  
 640  
 641  
 642  
 643  
 644  
 645  
 646  
 647  
 648  
 649  
 650  
 651  
 652  
 653  
 654  
 655  
 656  
 657  
 658  
 659  
 660  
 661  
 662  
 663  
 664  
 665  
 666  
 667  
 668  
 669  
 670  
 671  
 672  
 673  
 674  
 675  
 676  
 677  
 678  
 679  
 680  
 681  
 682  
 683  
 684  
 685  
 686  
 687  
 688  
 689  
 690  
 691  
 692  
 693  
 694  
 695  
 696  
 697  
 698  
 699  
 700  
 701  
 702  
 703  
 704  
 705  
 706  
 707  
 708  
 709  
 710  
 711  
 712  
 713  
 714  
 715  
 716  
 717  
 718  
 719  
 720  
 721  
 722  
 723  
 724  
 725  
 726  
 727  
 728  
 729  
 730  
 731  
 732  
 733  
 734  
 735  
 736  
 737  
 738  
 739  
 740  
 741  
 742  
 743  
 744  
 745  
 746  
 747  
 748  
 749  
 750  
 751  
 752  
 753  
 754  
 755  
 756  
 757  
 758  
 759  
 760  
 761  
 762  
 763  
 764  
 765  
 766  
 767  
 768  
 769  
 770  
 771  
 772  
 773  
 774  
 775  
 776  
 777  
 778  
 779  
 780  
 781  
 782  
 783  
 784  
 785  
 786  
 787  
 788  
 789  
 790  
 791  
 792  
 793  
 794  
 795  
 796  
 797  
 798  
 799  
 800  
 801  
 802  
 803  
 804  
 805  
 806  
 807  
 808  
 809  
 810  
 811  
 812  
 813  
 814  
 815  
 816  
 817  
 818  
 819  
 820  
 821  
 822  
 823  
 824  
 825  
 826  
 827  
 828  
 829  
 830  
 831  
 832  
 833  
 834  
 835  
 836  
 837  
 838  
 839  
 840  
 841  
 842  
 843  
 844  
 845  
 846  
 847  
 848  
 849  
 850  
 851  
 852  
 853  
 854  
 855  
 856  
 857  
 858  
 859  
 860  
 861  
 862  
 863  
 864  
 865  
 866  
 867  
 868  
 869  
 870  
 871  
 872  
 873  
 874  
 875  
 876  
 877  
 878  
 879  
 880  
 881  
 882  
 883  
 884  
 885  
 886  
 887  
 888  
 889  
 890  
 891  
 892  
 893  
 894  
 895  
 896  
 897  
 898  
 899  
 900  
 901  
 902  
 903  
 904  
 905  
 906  
 907  
 908  
 909  
 910  
 911  
 912  
 913  
 914  
 915  
 916  
 917  
 918  
 919  
 920  
 921  
 922  
 923  
 924  
 925  
 926  
 927  
 928  
 929  
 930  
 931  
 932  
 933  
 934  
 935  
 936  
 937  
 938  
 939  
 940  
 941  
 942  
 943  
 944  
 945  
 946  
 947  
 948  
 949  
 950  
 951  
 952  
 953  
 954  
 955  
 956  
 957  
 958  
 959  
 960  
 961  
 962  
 963  
 964  
 965  
 966  
 967  
 968  
 969  
 970  
 971  
 972  
 973  
 974  
 975  
 976  
 977  
 978  
 979  
 980  
 981  
 982  
 983  
 984  
 985  
 986  
 987  
 988  
 989  
 990  
 991  
 992  
 993  
 994  
 995  
 996  
 997  
 998  
 999  
 1000

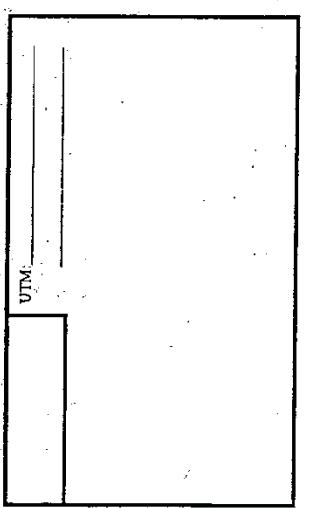
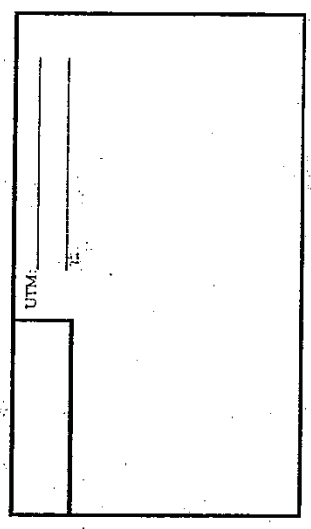
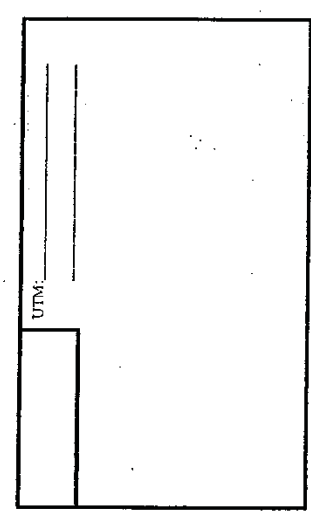
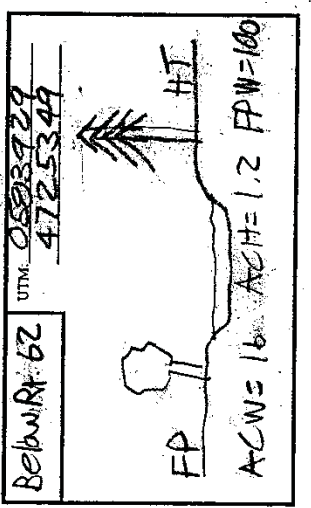
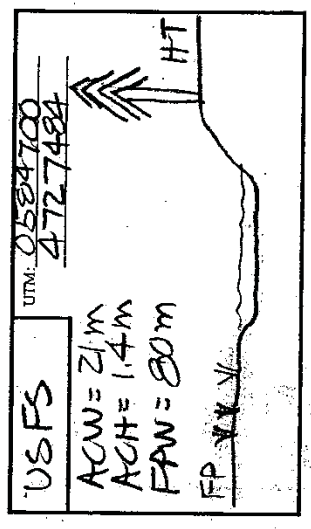
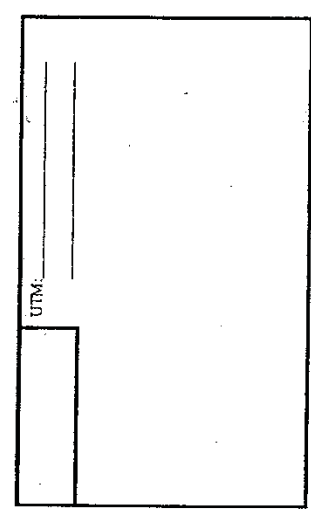
PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: 224/29	5	9/2/04	1020	Wood Nabris Looking DS
2: 225/29			1145	US View of Barn / Ranchhouse
3: 226/30				DS View
4: 227/31				LR View
5: 228/32				RR View
6: 229/33	8		1205	US View of Pumice Gravel
7: 230/34			1330	DS View of New Diversion and Continuing Channel
8: 231/35			1340	DS View
9: 232/36				DS View / Diversion Structure in Distance
10: 233/37				LR View
11: 234/38				RR View
12: 235/39	2		1515	RR View of Wolman Gravel Count
13: 236/40	3		1540	US View
14: 237/41	3		1540	DS View
15: 238/42	3		1615	View of Stream Pile on Spawning Gravel
16: 239/43	9	9/2/04	1730	RR View of Rip
17: 240/44	9		1739	LR View of Rip
18: 241/45	1		1740	US View above Hury 52 Bridge
19: 241/45				
20:				
21:				
22:				
23:				
24:				
25:				
26:				
27:				
28:				
29:				
30:				
31:				
32:				
33:				
34:				
35:				
36:				
37:				
38:				
39:				
40:				

REACH: Fort Cr. PAGE: 1 OF:     

STREAM: Fort Cr. CREW: RN, KH

BASIN: Wood USGS 7.5' MAP NAMES:     

DATE	REACH #	UNIT NUMBER	CHANL FORM	VALLEY FORM	VWI	VEG CLASS		LAND USE		WATER TEMP	STRM FLOW	LOCATION TWN-RNG-SEC-1/4	PHOTO #	REACH NOTE
						DOM.	SUB-DOM.	DOM.	SUB-DOM.					
9/2/04	BR62	1	US	WF	24	C30	S	LT	LG	470	LF	33S 75E 21S 29/1145		
9/2/04	USFS	1	CT	CT	18	C30	S	LT	NU	400	LF	33S 75E 23 NE 24/1330		FS Boundary



### SPAWNING HABITAT FORM

Stream Fort Creek Reach Forest Service Date 2 Sept 04

Surveyor(s) R. NAWA Wolman Count UNIT 2

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	UNIT	Rock TYPE	Cobble / EMB	Comments
4	GC	100	100	28	P	50%	No Emb
80	CC	100	100	28	P	50%	old Roads visible
4	GC	"	"	28	P	"	
5	GC	"	"	28	P	"	
5	"	"	"	" 8	"	"	
8	"	"	"	" 8	"	"	
4	"	"	"	" 8	"	"	
6	"	"	"	37	"	"	
3	"	"	"	37	"	"	Old Road
10	"	"	"	37	"	"	Old Road
2	"	"	"	37	"	"	Poorly sorted
2	"	"	"	37	"	"	"
10	"	"	"	" 7	"	"	"
3	"	"	"	" 7	"	"	"
8	"	"	"	46	"	"	"
10	"	"	"	46	"	"	" Scattered patches
11	"	"	"	46	"	"	Scattered patches

Class: G= gravel; C= small cobble (<150mm [6"]) P= pumice  
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.

**SPAWNING HABITAT FORM**

Stream Font Moon Rd. 52 Reach 4 Below 62 Date 2 Sept 04

Surveyor(s) R. NAVA See within 1/4 mile

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	UNIT	Rock Type	Comments
2	G	100	100	9	NP	20% > 1 ; 50% > 1/2
6	GC	100	100	9	P	730% SAND + FG
2	CC	100	100	8	P	730% SAND + FG
3	G	"	"	7	P	20% > 1 - SURFICIAL DEPOSIT
4	G	"	"	7	P	20% > 1 "
3	G	"	"	56	P	20% > 1 "
4	C	"	"	6	P	" "
4	G	"	"	4	P	" "
3	G	"	"	4	P	" "
3	GC	"	"	3	P	" "
2	C	"	"	3	P	" "
4	C	"	"	3	P	" "
3	G	"	"	2	P	" "

Class: G= gravel; C= small cobble (<150mm [6"])  
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.

P= Pumice  
 NP= NOT Pumice

UNIT-2

PAGE: 1 OF: \_\_\_\_\_

STREAM: FORT CREEK (Hwy 62) Below (Hwy 62)

DATE: 2 SEPT 04

NUMERATOR: R. MAWA

UNIT #	UNIT TYPE	DEPTH* DEPTH**	DEPTH** PTC	VERIFIED LENGTH	WIDTH	S/O	SND	PERCENT SUBSTRATE	BLDR	CBLE	BLDR	BLDRCK	BDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE #
1	CC						50	50									No Drop on culverts 450 @ 0930
2	SP	2.2	.7				90	10							5		
3	RP	0.8					85	15						5	10		Pumice GRAVEL
4	GL	0.7					80	20						20	20		Pumice GRAVEL
5	GL	0.8				20	60	20						10	30		Pumice GRAVEL
6	AL	0.4				100									60		ALCOVE FROM MEADOWS CUTOFF
7	GL	0.8				50	40	10						10	50	SS	SPRINK AT 09 50 @ 1030
8	GL	0.8				50	30	20							50		Pumice GRAVEL
9	GL	0.9				60	20	20							50		Pumice GRAVEL
10	LP	1.7	.6			100		5							40		MEADOWS BEND 47 @ 1145
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20	V																
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30	V																

MAX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS  
 \*\* ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

UNIT NUMBERS GO DOWN BECAUSE WE SURVEYED DOWNSTREAM

UNIT-2

PAGE: 1 OF 1

STREAM: Font Creek (Forest Service) DATE: 2 SEP 04 NUMERATOR: R. MAWLE

UNIT #	UNIT TYPE	DEPTH* PTC	VERIFIED LENGTH	WIDTH	PERCENT SUBSTRATE			BLDR BDRCK	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
					SO	SND	GRVL						
1	GL	0.40			95	5				20	GS	AUTOMATIC FLOW RECONSTRUCTION, Pumice Gravel	
2	RF	0.30				20	40	40		30		Pumice Gravel, LAMINAR Pools?	
3	RI	0.30				25	25	50		30		Pumice Gravel	
4	RI	0.30				15	35	50		20			
5	GL	0.60				30	30	40	6	20		RESERVATION SPRAWS = 46 @ 1.643	
V													
V													
V													

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS  
 \*\* ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

WOOD

UNIT NUMBER	UNIT TYPE	CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	RW < 3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
1	LP	A	N	S	15	2											
2	LP	A	N	S	30	1											
3	RP	A	N	S	15	2											
4	RP	A	N	M	15	3											
5	X	5	N	S	15	1											
6	GT	5	N	S	30	1		1									
7	GT	5	N	S	30	1		4									
8	GT	5	N	S	30	1		1									
9	GT	5	N	S	15	1											
10	GT	5	N	S	15	1											
11	GT	5	N	S	30	2		3	2								
12	GT	5	N	S	30	2		3	2								
13	GT	5	N	S	30	1											
14	GT	5	N	S	45	2											
15	GT	5	N	S	45	1											
16	GT	5	N	S	30	2											
17	GT	5	N	S	30	3											
18	GT	5	N	S	45	2											
19	GT	5	N	S	45	1											
20	GT	5	N	S	30	2											
21	GT	5	N	S	30	2											
22	GT	5	N	S	45	1											
23	GT	5	N	S	45	2											
24	GT	5	N	S	30	3											
25	GT	5	N	S	30	1											
26	GT	5	N	S	30	3											
27	GT	5	N	S	30	3											
28	GT	5	N	S	30	3											
29	GT	5	N	S	30	3											
30	GT	5	N	S	30	3											
31	GT	5	N	S	30	1											
32	GT	5	N	S	30	3											
33	GT	5	N	S	30	3											
34	GT	5	N	S	30	3											
35	GT	5	N	S	30	3											
36	GT	5	N	S	30	3											
37	GT	5	N	S	30	3											
38	GT	5	N	S	30	3											
39	GT	5	N	S	30	3											
40	GT	5	N	S	30	3											
41	GT	5	N	S	30	3											
42	GT	5	N	S	30	3											
43	GT	5	N	S	30	3											
44	GT	5	N	S	30	3											
45	GT	5	N	S	30	3											
46	GT	5	N	S	30	3											
47	GT	5	N	S	30	3											
48	GT	5	N	S	30	3											
49	GT	5	N	S	30	3											
50	GT	5	N	S	30	3											
51	GT	5	N	S	30	3											
52	GT	5	N	S	30	3											
53	GT	5	N	S	30	3											
54	GT	5	N	S	30	3											
55	GT	5	N	S	30	3											
56	GT	5	N	S	30	3											
57	GT	5	N	S	30	3											
58	GT	5	N	S	30	3											
59	GT	5	N	S	30	3											
60	GT	5	N	S	30	3											

**WOOD**

PAGE: 2 OF \_\_\_\_\_

STREAM: Fort Cr (USFS)

DATE: 9/21/04

NAME: Hartzell

UNIT NUMBER	UNIT TYPE	CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	RW <3	3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
1	GL	W	N	M	60			1	2	4			1					
2	GL	W	N	M	40			1	1									
3	GL	W	N	M	30			3	1									
4	GL	W	N	M	30			1	4	2								
5	GL	W	N	M	30			1	4	2								
6	GL	W	N	M	40			1	2	2			2	1				
7	GL	W	N	M	20			1	2	2			1	2	1			
8	GL	W	N	M	20			1	2	2			1	2	1			
9	GL	W	N	M	20			1	2	2			1	2	1			
10	GL	W	N	M	20			1	2	2			1	2	1			
11	GL	W	N	M	20			1	2	2			1	2	1			
12	GL	W	N	M	20			1	2	2			1	2	1			
13	GL	W	N	M	20			1	2	2			1	2	1			
14	GL	W	N	M	20			1	2	2			1	2	1			
15	GL	W	N	M	20			1	2	2			1	2	1			
16	GL	W	N	M	20			1	2	2			1	2	1			
17	GL	W	N	M	20			1	2	2			1	2	1			
18	GL	W	N	M	20			1	2	2			1	2	1			
19	GL	W	N	M	20			1	2	2			1	2	1			
20	GL	W	N	M	20			1	2	2			1	2	1			
21	GL	W	N	M	20			1	2	2			1	2	1			
22	GL	W	N	M	20			1	2	2			1	2	1			
23	GL	W	N	M	20			1	2	2			1	2	1			
24	GL	W	N	M	20			1	2	2			1	2	1			
25	GL	W	N	M	20			1	2	2			1	2	1			
26	GL	W	N	M	20			1	2	2			1	2	1			
27	GL	W	N	M	20			1	2	2			1	2	1			
28	GL	W	N	M	20			1	2	2			1	2	1			
29	GL	W	N	M	20			1	2	2			1	2	1			
30	GL	W	N	M	20			1	2	2			1	2	1			
31	GL	W	N	M	20			1	2	2			1	2	1			
32	GL	W	N	M	20			1	2	2			1	2	1			
33	GL	W	N	M	20			1	2	2			1	2	1			
34	GL	W	N	M	20			1	2	2			1	2	1			
35	GL	W	N	M	20			1	2	2			1	2	1			
36	GL	W	N	M	20			1	2	2			1	2	1			
37	GL	W	N	M	20			1	2	2			1	2	1			
38	GL	W	N	M	20			1	2	2			1	2	1			
39	GL	W	N	M	20			1	2	2			1	2	1			
40	GL	W	N	M	20			1	2	2			1	2	1			
41	GL	W	N	M	20			1	2	2			1	2	1			
42	GL	W	N	M	20			1	2	2			1	2	1			
43	GL	W	N	M	20			1	2	2			1	2	1			
44	GL	W	N	M	20			1	2	2			1	2	1			
45	GL	W	N	M	20			1	2	2			1	2	1			
46	GL	W	N	M	20			1	2	2			1	2	1			
47	GL	W	N	M	20			1	2	2			1	2	1			
48	GL	W	N	M	20			1	2	2			1	2	1			
49	GL	W	N	M	20			1	2	2			1	2	1			
50	GL	W	N	M	20			1	2	2			1	2	1			



UNIT - 1

PAGE: 1 OF 1

ESTIMATOR: Hartzell

STREAM: Fort Cr. (Below Rt. 68) DATE: 9/2/04

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL HT.*	ACTIVE CHANNEL WIDTH	FLOOD PRONE		TERRACE		NOTE	
								LEFT	RIGHT			HT.	WIDTH	HT.	WIDTH		VWI
BR62	19	GP	00	100	21	2	0.5	90	90	1.0	20	2.0	41	35	50	30	Hwy 62 Double Culv.
	9	RP	00	100	24	7	0	40	50								
	8	RP	00	100	75	14	1.0	35	20								
	7	GL	00	100	145	12	0.5	31	60								
	6	GL	00	100	155	12	0.5	55	32								
	5	AL	10	00	46	3	0	11	12								
	4	GL	00	100	250	13	0.5	59	60								
	3	GL	00	100	250	14	0.5	50	10								
	2	GL	00	100	166	13	0.5	38	22								
	1	LP	00	100	40	13	0	50	34	1.2	16	2.4	100	2.5	7150	21	

\* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.

UNIT - 1

PAGE: 2 OF

ESTIMATOR: Hartzell

DATE: 9/2/04

STREAM: Fort Cr. (USFS)

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL HT*	WIDTH	FLOOD PRONE		TERRACE		NOTE	
								LEFT	RIGHT			HT.	WIDTH	HT.	WIDTH		VMI
USFS 1	01	00	00	100	155	17	0.5	29	55	1.4	21	2.0	60	4.0	70	18	Started S. USFS Bound
2	R1	00	00	100	250	19	1.0	52	35								
3	R1	00	00	100	250	20	1.0	40	55	0.8	21	1.6	32	2.6	42	4	
4	R1	00	00	100	96	21	1.0	30	50								
V 5	01	00	00	100	65	17	0.5	70	62	0.8	17	1.6	18	4.5	23	2	End @ Spring HW

\* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.

REACH: Fort Cr. PAGE: 1 OF: 1

STREAM: Fort Cr. CREW: RN, KH

BASIN: Weed USGS 7.5' MAP NAMES: \_\_\_\_\_

DATE	REACH #	UNIT NUMBER	CHANL FORM	VALLEY FORM	VVI	VEG CLASS		LAND USE		WATER TEMP	STRM FLOW	LOCATION TWP-R-NG-SEC-1/4	PHOTO #	REACH NOTE
						DOM.	SUB-DOM.	DOM.	SUB-DOM.					
9/2/04	18R62	1	US	WF	21	C30	S	LT	LG	470	LF	33S.75E.27S.E29/1145		
9/2/04	USFS	1	CT	CT	19	C30	S	LT	NU	490	LF	33S.75E.23N.E34/1330	FS Boundary	

UTM: \_\_\_\_\_

UTM: 0584700  
4727484

USFS  
ACW = 21m  
ACH = 1.4m  
FPW = 80m  
FP  
HT

UTM: 0583929  
4725349

FP  
ACW = 16  
ACH = 1.2  
FPW = 100  
HT

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

REACH

PAGE: \_\_\_\_\_ OF: \_\_\_\_\_

STREAM: \_\_\_\_\_

CREW: \_\_\_\_\_

BASIN: \_\_\_\_\_

USGS 7.5' MAP NAMES: \_\_\_\_\_

DATE	REACH #	UNIT NUMBER	CHANL FORM		VALLEY FORM	VVI	VEG CLASS		LAND USE		WATER		STRM FLOW	LOCATION TWN-RNG-SEC-1/4	PHOTO # / TIME	REACH NOTE
			FORM	FORM			DOM.	SUB-DOM.	DOM.	SUB-DOM.	TEMP					

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

UTM: \_\_\_\_\_

**STREAM SUMMARY**

**FORT CREEK**

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate Percent Wetted Area						Large Boulders (>0.5m)
					S/O	Snd	Grv	Cbl	Bldr	Bdrk	
15	1,988	14.5	0.77	30,632	31	36	20	12	0	0	6

Habitat Group	Wetted Area	
	(m <sup>2</sup> )	Percent
Dammed & BW Pools	598	1.95%
Scour Pools	928	3.03%
Glides	16,248	53.04%
Riffles	12,816	41.84%
Rapids	0	0.00%
Cascades	0	0.00%
Step/Falls	0	0.00%
Dry	0	0.00%
Culverts	42	0.14%

Pool attributes

no bldr  
 no undercut  
 pieces LWD  
 no sheltered pools

OREGON DEPARTMENT OF FISH AND WILDLIF

FORT CREEK

HABITAT INVENTORY

Report Date: 9/27/2004

Survey Date:

9/2/2004

REACH 1		T33S-R07E-S27SE					REACH 1					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
CULVERT CROSSING	1	21	2.0	0.70	42	0	0	50	50	0	0	0
GLIDE	5	966	12.8	0.78	12,508	0	36	46	18	0	0	0
POOL-ALCOVE	1	46	13.0	0.40	598	0	100	0	0	0	0	0
POOL-LATERAL SCOUR	2	64	15.0	1.95	928	0	48	45	7	0	0	0
RIFFLE W/ POCKETS	1	75	14.0	0.80	1,050	0	0	85	15	0	0	0
<b>Total:</b>	10	1,172	12.3	0.97	15,126	0	<b>Avg</b> 38	46	17	0	0	0

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )	
Dammed & BW Pools	1	46	13.0	0.40	598	3.95%	0	0.0	
Scour Pools	2	64	15.0	1.95	928	6.14%	0	0.0	
Glides	5	966	12.8	0.78	12,508	82.69%	0	0.0	
Riffles	1	75	14.0	0.80	1,050	6.94%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	0	0			0	0.00%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	1	21	2.0	0.70	42	0.28%	0	0.0	

POOL SUMMARY			
	Total of all Channel Lengths		Primary Channel Length
	Total	# / Km	# / Km
All Pools:	3	2.6	2.7
Pools >=1m deep:	2	1.7	1.8
Complex pools (LWD pieces>=3):	1	0.9	0.9
Pool frequency (channel widths/pool):	21.7		
Residual pool depth (avg):	1.30		

OREGON DEPARTMENT OF FISH AND WILDLIF

FORT CREEK

HABITAT INVENTORY

Report Date: 9/27/2004

Survey Date 9/2/2004

REACH 1

T33S-R07E-S27SE

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	0%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	100%
Valley Width Index	26	WVI Range:	<del>21-30</del> 21-30

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	100%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
Alt. Terrace/Hill	0%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m2)	Dry Units
Primary	1,126	14,528	0
Secondary	46	598	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 2	First Terrace n = 2
Width: 12.3	Width: 18.0	70.5 ( 41 - 100 )	125.0 ( 50 - 200 )
Depth: 0.97	Height: 1.1	2.2 ( 2 - 2.4 )	3.0 ( 2.5 - 3.5 )

W:D ratio: 16.7

Entrenchment (ACW:FPW ratio): 4.2

Stream Flow Type: LF

Habitat Units/100m (total channel length): 0.9

Average Unit Gradient 0.5%

Habitat Units/100m (primary channel length) 0.9

Water temperature (°C) 9.0 - 9.0

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	LT	LG
Riparian Vegetation:	C30	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	6%	Reach avg: 47%
Undercut Banks:	39%	Range: 13 - 100

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	114	10.1
Volume (m <sup>3</sup> ):	64	5.7
Key pieces (>=12m x 0.60m):	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

FORT CREEK

HABITAT INVENTOR Report Date: 9/27/2004

Survey Date: 9/2/2004

**RIPARIAN ZONE VEGETATION SUMMARY**

REACH 1

REACH 1

Summary of Riparian Zone (0-30m) 2 transects

Total hardwoods/1000	183
Total conifers/1000 ft	122
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	2.0	0.0	1.0	0.0	0.0	0.0	3.0
15-30cm	0.5	0.0	0.0	0.0	0.5	0.0	1.0	0.0
30-50cm	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.5	2.0	0.0	1.0	1.5	0.0	0.7	1.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	15		30		35	
Shrub cover	30		40		25	
Grass/forb cover	100		100		100	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		0		0	
High terrace	0		25		25	
Low terrace	0		0		50	
Floodplain	100		75		25	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	6		3		7	



OREGON DEPARTMENT OF FISH AND WILDLIFE

FORT CREEK

HABITAT INVENTORY

Report Date: 9/27/2004

Survey Date:

9/2/2004

REACH 2		T33S-R07E-S23NE					REACH 2					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
GLIDE	2	220	17.0	0.50	3,740	6	48	15	18	20	0	0
RIFFLE	3	596	20.0	0.30	11,766	0	0	20	33	47	0	0
<b>Total:</b>	<b>5</b>	<b>816</b>	<b>18.8</b>	<b>0.38</b>	<b>15,506</b>	<b>6</b>	<b>Avg 19</b>	<b>18</b>	<b>27</b>	<b>36</b>	<b>0</b>	<b>0</b>

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	0	0			0	0.00%	0	0.0
Glides	2	220	17.0	0.50	3,740	24.12%	6	0.2
Riffles	3	596	20.0	0.30	11,766	75.88%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	0	0			0	0.00%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	0	0.0	0.0
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	0	0.0	0.0
Pool frequency (channel widths/pool):	0.0		
Residual pool depth (avg):			

REACH 2

T33S-R07E-S23NE

REACH 2

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	<del>45</del> 45	VWI Range:	<del>2-10</del> 23-70

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	100%	Braided Channel	0%
Alt. Terrace/Hill	0%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m <sup>2</sup> )	Dry Units
Primary	816	15,506	0
Secondary	0	0	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 3	First Terrace n = 3
Width: 18.8	Width: 19.7	36.7 ( 18 - 60 )	45.0 ( 23 - 70 )
Depth: 0.38	Height: 1.0	2.0 ( 1.6 - 2.8 )	3.7 ( 2.6 - 4.5 )

W:D ratio: 20.8

Entrenchment (ACW:FPW ratio): 1.8

Stream Flow Type: LF

Habitat Units/100m (total channel length): 0.6

Average Unit Gradient 0.9%

Habitat Units/100m (primary channel length) 0.6

Water temperature (°C) 9.0 - 9.0 ...

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	LT	NU
Riparian Vegetation:	C30	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	2%	Reach avg: 56%
Undercut Banks:	25%	Range: 47 - 77

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	96	11.8
Volume (m <sup>3</sup> ):	199	24.4
Key pieces (>=12m x 0.60m):	8	1.0

**RIPARIAN ZONE VEGETATION SUMMARY**

REACH 2

REACH 2

Summary of Riparian Zone (0-30m) 3 transects

Total hardwoods/1000	122
Total conifers/1000 ft	386
Total conifers >20" dbh/1000 f	41
Total conifers >35" dbh/1000 f	20

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.3	0.7	2.0	0.7	0.3	0.0	2.7	1.3
15-30cm	0.3	0.7	1.0	0.0	0.0	0.0	1.3	0.7
30-50cm	0.0	0.0	1.0	0.0	0.7	0.0	1.7	0.0
50-90cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
>90cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
Total/100m2	0.7	1.3	4.0	0.7	1.7	0.0	2.1	0.7

Canopy closure and ground cover

	Zone 1	Zone 2	Zone 3
	0-10 meters (%)	10 - 20 meters (%)	20 - 30 meters (%)
Canopy closure	37	53	43
Shrub cover	30	30	40
Grass/forb cover	40	33	23

Predominant landform in each zone

	Zone 1	Zone 2	Zone 3
	0-10 meters (%)	10 - 20 meters (%)	20 - 30 meters (%)
Hillslope	0	17	17
High terrace	50	67	67
Low terrace	0	0	0
Floodplain	50	17	17
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	21	11	9

---

Summary of Riparian Zone (0-30m) for all reaches                      5 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/1000	146
Total conifers/1000 ft	280
Total conifers >20" dbh/1000 f	24
Total conifers >35" dbh/1000 f	12

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3 0-30 meters	
	Conifer	Hardwood
3-15cm	1.6	2.0
15-30cm	1.2	0.4
30-50cm	1.4	0.0
50-90cm	0.2	0.0
>90cm	0.2	0.0

---

**RIPARIAN ZONE VEGETATION**

Reach 1

Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
2	LF	1	FP	10	0	0	100	Conifer							
								Hardwood							
2	LF	2	HT	10	0	0	100	Conifer							
								Hardwood							
2	LF	3	HT	10	0	0	100	Conifer							
								Hardwood							
2	RT	1	FP	4	20	40	100	Conifer							
								Hardwood							
2	RT	2	FP	0	20	40	100	Conifer							
								Hardwood							
2	RT	3	LT	10	20	60	100	Conifer							
								Hardwood							
10	LF	1	FP	4	20	40	100	Conifer			1				
								Hardwood	1						
10	LF	2	FP	0	40	40	100	Conifer							
								Hardwood							
10	LF	3	FP	0	40	20	100	Conifer				1			
								Hardwood							
10	RT	1	FP	4	20	40	100	Conifer							
								Hardwood	3						
10	RT	2	FP	0	60	80	100	Conifer							
								Hardwood	2						
10	RT	3	LT	8	80	20	100	Conifer			1		1		
								Hardwood							

**RIPARIAN ZONE VEGETATION**

Reach 2

Reach 2

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
11	LF	1	FP	2	0	0	100	Conifer							
								Hardwood							
11	LF	2	FP	0	0	20	100	Conifer							
								Hardwood							
11	LF	3	FP	0	0	20	100	Conifer							
								Hardwood							
11	RT	1	HT	30	20	20	20	Conifer							
								Hardwood							
11	RT	2	HT	5	40	60	20	Conifer		1		1			
								Hardwood	1						
11	RT	3	HT	0	40	60	20	Conifer			1			PONDEROSA PINE	
								Hardwood							
13	LF	1	FP	20	40	40	60	Conifer							
								Hardwood	2						
13	LF	2	HT	8	80	80	0	Conifer	2						
								Hardwood							
13	LF	3	HT	6	40	60	20	Conifer							
								Hardwood							
13	RT	1	FP	20	20	40	40	Conifer							
								Hardwood		2					
13	RT	2	HT	20	60	20	60	Conifer			1				
								Hardwood	1						
13	RT	3	HT	2	40	40	0	Conifer	1						
								Hardwood							
14	LF	1	HT	30	40	60	20	Conifer							
								Hardwood							
14	LF	2	HT	20	60	0	20	Conifer	1	1					
								Hardwood							
14	LF	3	HT	15	60	20	0	Conifer						1 PONDEROSA PINE	
								Hardwood							
14	RT	1	HT	25	100	20	0	Conifer	1	1					
								Hardwood							
14	RT	2	HS	15	80	0	0	Conifer	3		2				
								Hardwood							
14	RT	3	HS	30	80	40	0	Conifer			1	1			
								Hardwood							

# FORT CREEK

REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	1	LP	00	40			MEANDER BEND
1	2	GL	00	206			PUMICE GRAVEL
1	3	GL	00	456			PUMICE GRAVEL
1	4	GL	00	706	SS		RB SPRING; 11C AT 1030
1	5	AL	10				MEANDER CUTOFF ALCOVE
1	6	GL	00	861			PUMICE GRAVEL
1	7	GL	00	1006			PUMICE GRAVEL
1	8	RP	00	1081			PUMICE GRAVEL
1	10	CC	00	1126	CC	END AT HWY 62 DOUBLE CULVERT	NO DROP ON CULVERTS; 7.5C-0930
2	11	GL	00	1281	GS	START AT FS BOUNDARY	AUTOMATED FLOW RECORDER
2	12	RI	00	1531			PUMICE GRAVEL; LAMPREY REDDS
2	13	RI	00	1781			PUMICE GRAVEL
2	15	GL	00	1942		END AT SPRING HEADWATERS	RESERVATIONS SPRINGS; 8C-1645

PHOTO RECORD

PAGE: 1 OF: 1

STREAM: Fort Cr. SURVEY TYPE: OR. PLAN  BASIN  MIXED

BASIN OR GCG: Wood FILM: DIGITAL  SLIDE  PRINTS

SURVEY CREW: RN, KH ROLL #: \_\_\_\_\_ MAILER #: \_\_\_\_\_

Hwy 62 USFS Reach, Below Rt. 62

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: <del>29</del> B 29	5	9/2/04	0720	Wood Habits Looking DS
2: <del>29</del> 29			1145	US View of Barn / Ranchhouse
3: <del>30</del> 30				US View
4: <del>31</del> 31				LR View
5: <del>32</del> 32				RR View
6: <del>33</del> 33	8		1205	US View of Pumloc Gravel
7: <del>34</del> 34			1339	DS View of New Diversion and Continuing Channel
8: <del>35</del> 35			1348	US View
9: <del>36</del> 36				US View (Diversion Structure in Distance)
10: <del>37</del> 37				LR View
11: <del>38</del> 38				RR View
12: <del>39</del> 39	7		1515	RR View of Wolman Gravel Count
13: <del>40</del> 40	3		1540	US View
14: <del>41</del> 41	3		1540	US View
15: <del>42</del> 42	3		1615	View of Stream Pile on Spawning Gravel
16: <del>43</del> 43	9	9/2/04	1738	RB View of Rip
17: <del>44</del> 44	9		1739	LB View of Rip
18: <del>45</del> B 45 241	1		1740	US View above Hwy 62 Bridge
19:				
20:				
21:				
22:				
23:				
24:				
25:				
26:				
27:				
28:				
29:				
30:				
31:				
32:				
33:				
34:				
35:				
36:				
37:				
38:				
39:				
40:				



Stream Name FOOT CREEK (USFS Reach) Rosgen Channel Type \_\_\_\_\_  
 Hydrologic Unit 2 EPA Reach \_\_\_\_\_ EPA EXT \_\_\_\_\_  
 Stream Survey Reach Forest Service Sample # \_\_\_\_\_ Habitat Unit Type R1 Fast/Slow Water \_\_\_\_\_  
 Observers RN, KH Date 9/2/04  
 Procedure  (Wolman, 1954) \_\_\_\_\_ (Bevenger and King, 1995) \_\_\_\_\_ Other \_\_\_\_\_  
 Measurement Device  Ruler \_\_\_\_\_ Gravelometer (FISP US SA-97) \_\_\_\_\_

Class Name	Particle Size (mm)	Dot Count	Total #	% Total	Cum. #	Cum %
Small Organic	< 25 mm					
Large Organic	> 25 mm					
Clay	<0.0039					
Silt	0.0039-0.0625					
Fine Sand	0.0625 - 0.25					
Med. Sand	0.25 - 0.5					
Coarse Sand	0.5 - 1.0		9			
VC Sand	1 - 2		0			
VF Gravel	2 - 4		1			
Fine Gravel	4 - 6		2			
Fine Gravel	6 - 8		3			
Med. Gravel	8 - 16		9			
Coarse Gravel	16 - 32		27			
VC Gravel	32 - 64		29			
Sm. Cobble	64 - 128		26			
Lg. Cobble	128 - 256		8			
Sm. Boulder	256 - 512		3			
Med. Boulder	512 - 1024					
Lg. Boulder	1024 - 2048					
VL Boulder	2048 - 4096					
Bedrock						

Total #: 117

Calculations: % Fines <2mm \_\_\_\_\_ % Fines <6mm \_\_\_\_\_ D50 \_\_\_\_\_ D84 \_\_\_\_\_

Notes: Pumice GRAVEL - RECD on TRANSACT LINE  
UTMS: 584751, 4727671

Stream Name \_\_\_\_\_ Rosgen Channel Type \_\_\_\_\_  
 Hydrologic Unit \_\_\_\_\_ EPA Reach \_\_\_\_\_ EPA EXT \_\_\_\_\_  
 Stream Survey Reach \_\_\_\_\_ Sample # \_\_\_\_\_ Habitat Unit Type \_\_\_\_\_ Fast/Slow Water \_\_\_\_\_  
 Observers \_\_\_\_\_ Date \_\_\_\_\_  
 Procedure \_\_\_\_\_ (Wolman, 1954) \_\_\_\_\_ (Bevenger and King, 1995) \_\_\_\_\_ Other \_\_\_\_\_  
 Measurement Device \_\_\_\_\_ Ruler \_\_\_\_\_ Gravelometer (FISP US SA-97) \_\_\_\_\_

Class Name	Particle Size (mm)	Dot Count	Total #	% Total	Cum. #	Cum %
Small Organic	< 25 mm					
Large Organic	> 25 mm					
Clay	<0.0039					
Silt	0.0039-0.0625					
Fine Sand	0.0625 - 0.25					
Med. Sand	0.25 - 0.5					
Coarse Sand	0.5 - 1.0					
VC Sand	1 - 2					
VF Gravel	2 - 4					
Fine Gravel	4 - 6					
Fine Gravel	6 - 8					
Med. Gravel	8 - 16					
Coarse Gravel	16 - 32					
VC Gravel	32 - 64					
Sm. Cobble	64 - 128					
Lg. Cobble	128 - 256					
Sm. Boulder	256 - 512					
Med. Boulder	512 - 1024					
Lg. Boulder	1024 - 2048					
VL Boulder	2048 - 4096					
Bedrock						

Total #: \_\_\_\_\_

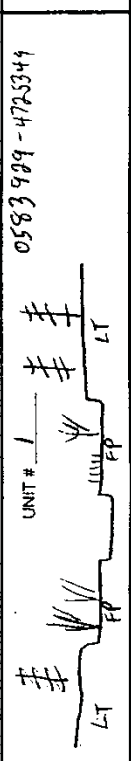
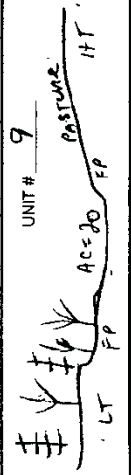
Calculations: % Fines <2mm \_\_\_\_\_ % Fines <6mm \_\_\_\_\_ D50 \_\_\_\_\_ D84 \_\_\_\_\_

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**RIPARIAN**

STREAM: Font CR Below 62      DATE: 2 Sept 04      NAME: Rich Noun      PAGE: 1 OF:       

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE				
								3-15	15-30	30-50	50-90	90+					
1	LEFT	1	FP	4	20	40	100				1						
		2	FP	0	40	40	100										
		3	FP	0	40	20	100					1					
1	RIGHT	1	FP	4	20	40	100										
		2	FP	0	60	80	100				3						
		3	LT	8	80	20	100					2					
9	LEFT	1	FP	10	0	0	100										
		2	HT	10	0	0	100										
		3	HT	10	0	0	100										
9	RIGHT	1	FP	7	20	40	100										
		2	FP	0	20	40	100										
		3	LT	10	20	60	100										



FOR EACH RIPARIAN TRANSECT, DRAW AND LABEL THE SURFACES (HT, LT, FP, HS, ETC.) OF A CROSS SECTION IN THE BOX PROVIDED ABOVE. DRAWING AND LABELING VEGETATION IS NOT NECESSARY.

**RIPARIAN**

STREAM: FOOT CREEK (FOOT SWAMP)

DATE: 2 Sept 03

NAME: NAMES

PAGE: 2 OF       

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FOHB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE	
								3-15	15-30	30-50	50-90	90+		
1	LEFT	1	FP	2	0	0	100	CONIFER						
		2	FP	0	0	20	100	HARDWOOD						
		3	FP	0	0	20	100	CONIFER						
1	RIGHT	1	HT	30	20	20		HARDWOOD						
		2	HT	5	40	60	20	CONIFER	1	1				
		3	HT	0	40	60	20	HARDWOOD	1	1				Pondrest
3	LEFT	1	FP	20	40	40	60	CONIFER	2					
		2	HT	8	80	80	0	HARDWOOD	2					
		3	HT	6	40	60	20	CONIFER						
3	RIGHT	1	FP	20	20	40	40	HARDWOOD						
		2	HT	20	60	20	60	CONIFER	2	1				
		3	HT	2	40	40	0	HARDWOOD	1					

UNIT # 1 0584700-4727484 HT  
 UNIT # 3 0584787-4727817 HT  
 UNIT # 3 0584700-4727484 HT  
 UNIT # 3 0584787-4727817 HT

**RIPARIAN**

PAGE: 3 OF         
 NAME: Nawia

DATE: 2 Sept 04

STREAM: Font Creek (USFS Reach)

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE	
								3-15	15-30	30-50	50-90	90+		
4	LEFT	1	HT	30	40	60	20							
		2	HT	20	60	0	20		1					
		3	HT	15	60	20	0					1		
4	RIGHT	1	HT	25	100	20	0			1				
		2	HS	15	80	0	0		3		2			
		3	HS	30	80	40	0				1			
	LEFT	1												
		2												
		3												
	RIGHT	1												
		2												
		3												
												UNIT #		



**RIPARIAN**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

STREAM: \_\_\_\_\_ DATE: \_\_\_\_\_ NAME: \_\_\_\_\_

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH IN CENTIMETERS)				RIPARIAN NOTE	
									3-15	15-30	30-50	50-90		90+
	LEFT	1						CONIFER						
								HARDWOOD						
		2						CONIFER						
								HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	RIGHT	1						CONIFER						
								HARDWOOD						
		2						CONIFER						
								HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	LEFT	1						CONIFER						
								HARDWOOD						
		2						CONIFER						
								HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	RIGHT	1						CONIFER						
								HARDWOOD						
		2						CONIFER						
								HARDWOOD						
		3						CONIFER						
								HARDWOOD						
													UNIT # _____	

FOR EACH RIPARIAN TRANSECT, DRAW AND LABEL THE SURFACES (HT, LT, FP, HS, ETC) OF A CROSS SECTION IN THE BOX PROVIDED ABOVE. DRAWING AND LABELING VEGETATION IS NOT NECESSARY.