

9-2-2004

## Ex. 281-US-428

R. Nawa  
*Oregon Department of Fish and Wildlife*

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*Oregon Department of Fish and Wildlife*

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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/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		Panacea
4	RIGHT	1	HT	25	100	20	0		1	1				
		2	HS	15	80	0	0		3		2			
		3	HS	30	80	40	0				1	1		
	LEFT	1												
		2												
		3												
	RIGHT	1												
		2												
													UNIT # _____	



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





**RIPARIAN**

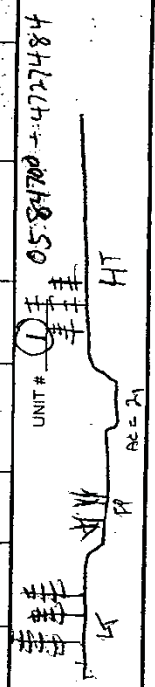
STREAM: FOOT CREEK (Forest Service)

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

DATE: 2 Sept 03

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

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	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	1	1				
		3	HT	0	40	60	20	HARDWOOD	1	1				POWERS
3	LEFT	1	FP	20	40	40	60	CONIFER						
		2	HT	8	80	80	0	HARDWOOD	2	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						



UNIT # 3 0584787-4727817



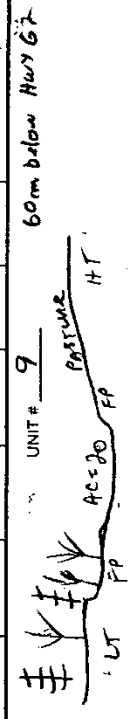
**RIPARIAN**

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											



UNIT # 1 FP HT FP LT  
 0583 989 - 472349  
 UNIT # 9 FP HT FP LT  
 60m below Hwy 67

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	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		A	N	M	16	3												
5		A	N	F	15	1												
6		A	N	S	30	2												
7		A	N	S	30	2												
8		A	N	S	30	2												
9		A	N	S	15	1												
10		A	N	S	15	2												
11		A	N	S	30	2												
12		A	N	S	30	2												
13		A	N	S	30	2												
14		A	N	S	30	2												
15		A	N	S	30	2												
16		A	N	S	30	2												
17		A	N	S	30	2												
18		A	N	S	30	2												
19		A	N	S	30	2												
20		A	N	S	30	2												
21		A	N	S	30	2												
22		A	N	S	30	2												
23		A	N	S	30	2												
24		A	N	S	30	2												
25		A	N	S	30	2												
26		A	N	S	30	2												
27		A	N	S	30	2												
28		A	N	S	30	2												
29		A	N	S	30	2												
30		A	N	S	30	2												
31		A	N	S	30	2												
32		A	N	S	30	2												
33		A	N	S	30	2												
34		A	N	S	30	2												
35		A	N	S	30	2												
36		A	N	S	30	2												
37		A	N	S	30	2												
38		A	N	S	30	2												
39		A	N	S	30	2												
40		A	N	S	30	2												
41		A	N	S	30	2												
42		A	N	S	30	2												
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47		A	N	S	30	2												
48		A	N	S	30	2												
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96		A	N	S	30	2												
97		A	N	S	30	2												
98		A	N	S	30	2												
99		A	N	S	30	2												
100		A	N	S	30	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 RECORDING, PUMPE GRAVEL	
2	RF	0.30				3	40	40				30		PUMPE GRAVEL, LAMINAR PAPER?	
3	RF	0.30					25	50				30		PUMPE GRAVEL	
4	RF	0.30					15	35				20			
5	GL	0.60					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)

UNIT - 1

PAGE: 2 OF

STREAM: Fort Cr. (USFS)

DATE: 9/2/04

ESTIMATOR: Hartzell

REACH #	UNIT #	UNIT TYPE	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		
USFS	1	01	00	100	155	17	0.6	29	55	1.4	21	2.0	60	4.0	10	18	Start @ USFS Bound
	2	01	00	100	250	19	1.0	52	35	0.8	21	1.6	132	2.6	42	4	
	3	01	00	100	250	20	1.0	40	55	0.8	21	1.6	132	2.6	42	4	
	4	01	00	100	96	21	1.0	50	50	0.8	17	1.6	18	4.5	23	2	End @ Spring HW
	5	01	00	100	65	17	0.6	70	62	0.8	17	1.6	18	4.5	23	2	

\* 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	% BDR ACTIVE	% UNDER CUT	COMMENT CODES	NOTE #
1	10	CC						50	50							
2	9	SP	2.2	.7				90	10					5		NO DRIP ON CHANNEL HS @ 0930
3	8	RP	0.8					85	15					10		Pumice GRAVEL
4	7	GL	0.7					80	20					20		Pumice GRAVEL
5	6	GL	0.8				20	60	20					30		Pumice GRAVEL
6	5	AL	0.4				100							60		ALCOVE FROM MPAWMA CV1011
7	4	GL	0.8				50	40	10					50	SS	SPWLS AT R/B 53 @ 1030
8	3	GL	0.8				30	30	20					50		Pumice GRAVEL
9	2	GL	0.9				60	20	20					50		Pumice GRAVEL
10	V 1	AP	4.7	.6			100		5					40		Stream Bend 470 @ 1145
11																
12																
13																
14																
15																
16																
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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 #:

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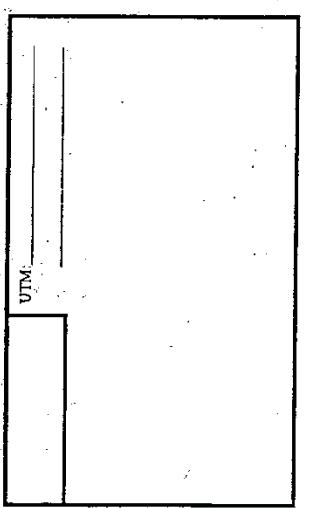
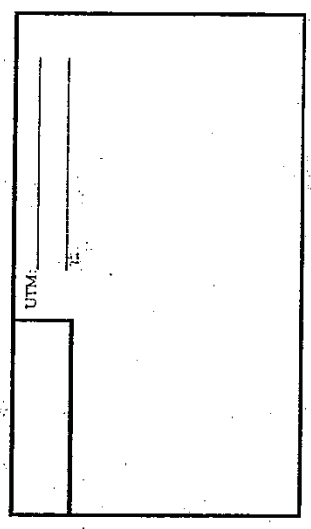
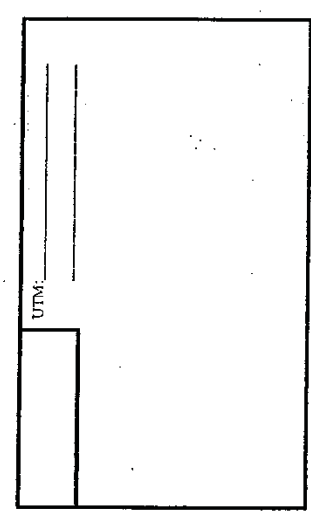
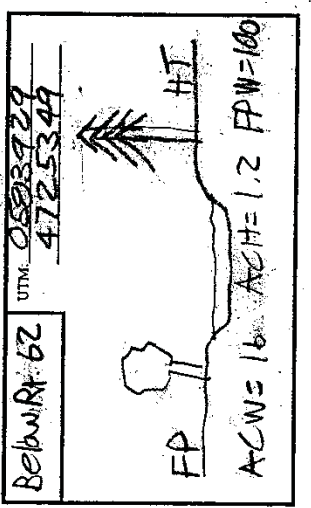
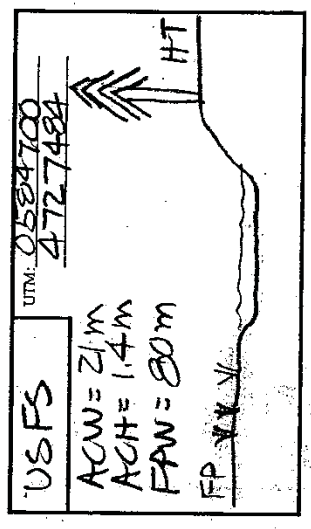
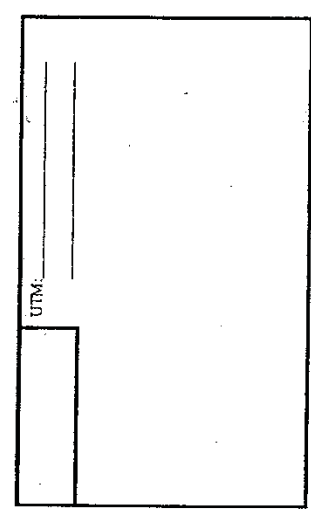
PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: 224/29	5	9/2/04	1020	Wood Nabris Looking DS
2: 225/29			1145	US View of Barn / Ranchhouse
3: 226/30				DS View
4: 227/31				LR View
5: 228/32				RR View
6: 229/33	8		1205	US View of Pumice Gravel
7: 230/34			1330	DS View of New Diversion 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	DS 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				
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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







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																	
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17																	
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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

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

STREAM: Fort Cr. (Below Rt. 62)

NAME: R. NAWA, Hartzell

DATE: 2 SEPT 04

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	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	GP	A	N	E	30		1											
6	GP	A	N	S	30		2											
7	GP	A	N	N	30		2											
8	GP	A	N	N	15		1											
9	GP	A	N	N	15		1											
10	GP	A	N	N	30		2											
11	GP	A	N	N	30		2											
12	GP	A	N	N	30		2											
13	GP	A	N	N	30		2											
14	GP	A	N	N	30		2											
15	GP	A	N	N	30		2											
16	GP	A	N	N	30		2											
17	GP	A	N	N	30		2											
18	GP	A	N	N	30		2											
19	GP	A	N	N	30		2											
20	GP	A	N	N	30		2											
21	GP	A	N	N	30		2											
22	GP	A	N	N	30		2											
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24	GP	A	N	N	30		2											
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31	GP	A	N	N	30		2											
32	GP	A	N	N	30		2											
33	GP	A	N	N	30		2											
34	GP	A	N	N	30		2											
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93	GP	A	N	N	30		2											
94	GP	A	N	N	30		2											
95	GP	A	N	N	30		2											
96	GP	A	N	N	30		2											
97	GP	A	N	N	30		2											
98	GP	A	N	N	30		2											
99	GP	A	N	N	30		2											
100	GP	A	N	N	30		2											

**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	2	1								
6	GL	W	N	M	40			1	2	2			2	1				
7	GL	W	N	M	20			1	2	2			1					
8	GL	W	N	M	20			1	2	2			1					
9	GL	W	N	M	20			1	2	2			1					
10	GL	W	N	M	20			1	2	2			1					
11	GL	W	N	M	20			1	2	2			1					
12	GL	W	N	M	20			1	2	2			1					
13	GL	W	N	M	20			1	2	2			1					
14	GL	W	N	M	20			1	2	2			1					
15	GL	W	N	M	20			1	2	2			1					
16	GL	W	N	M	20			1	2	2			1					
17	GL	W	N	M	20			1	2	2			1					
18	GL	W	N	M	20			1	2	2			1					
19	GL	W	N	M	20			1	2	2			1					
20	GL	W	N	M	20			1	2	2			1					
21	GL	W	N	M	20			1	2	2			1					
22	GL	W	N	M	20			1	2	2			1					
23	GL	W	N	M	20			1	2	2			1					
24	GL	W	N	M	20			1	2	2			1					
25	GL	W	N	M	20			1	2	2			1					
26	GL	W	N	M	20			1	2	2			1					
27	GL	W	N	M	20			1	2	2			1					
28	GL	W	N	M	20			1	2	2			1					
29	GL	W	N	M	20			1	2	2			1					
30	GL	W	N	M	20			1	2	2			1					
31	GL	W	N	M	20			1	2	2			1					
32	GL	W	N	M	20			1	2	2			1					
33	GL	W	N	M	20			1	2	2			1					
34	GL	W	N	M	20			1	2	2			1					
35	GL	W	N	M	20			1	2	2			1					
36	GL	W	N	M	20			1	2	2			1					
37	GL	W	N	M	20			1	2	2			1					
38	GL	W	N	M	20			1	2	2			1					
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40	GL	W	N	M	20			1	2	2			1					
41	GL	W	N	M	20			1	2	2			1					
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43	GL	W	N	M	20			1	2	2			1					
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45	GL	W	N	M	20			1	2	2			1					
46	GL	W	N	M	20			1	2	2			1					
47	GL	W	N	M	20			1	2	2			1					
48	GL	W	N	M	20			1	2	2			1					
49	GL	W	N	M	20			1	2	2			1					
50	GL	W	N	M	20			1	2	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	

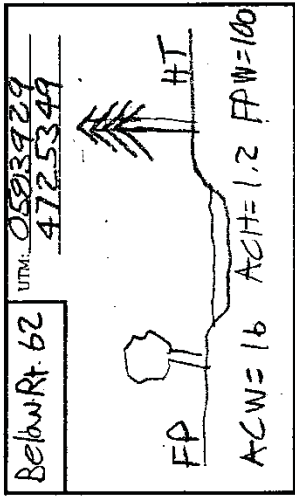
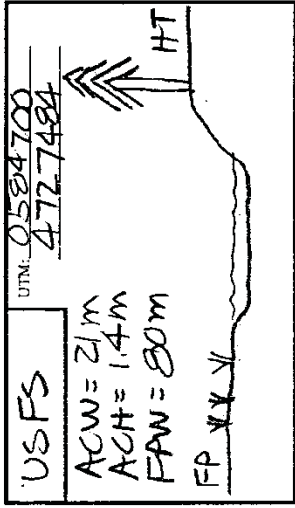
\* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.



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.89/1145		
9/2/04	USFS	1	CT	CT	19	C30	S	LT	NU	490	LF	33S.75E.23NEB4/1330	FS Boundary	

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



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 TEMP	STRM FLOW	LOCATION TWN-RNG-SEC-1/4	PHOTO # / TIME	REACH NOTE
						DOM.	SUB-DOM.	DOM.	SUB-DOM.					

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	Total of all Channel Lengths	
		# / Km	Primary Channel Length # / 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	VWI 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	
	Conifer (%)		Conifer (%)		Conifer (%)	
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	
	Conifer (%)		Conifer (%)		Conifer (%)	
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

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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 Habris 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	1739	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 TRANSCT 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 #: \_\_\_\_\_

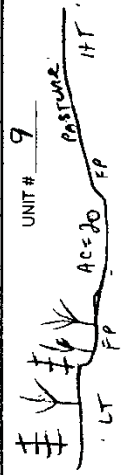
Calculations: % Fines <2mm \_\_\_\_\_ % Fines <6mm \_\_\_\_\_ D50 \_\_\_\_\_ D84 \_\_\_\_\_

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

**RIPARIAN**

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

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FOIB % 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					1				
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									

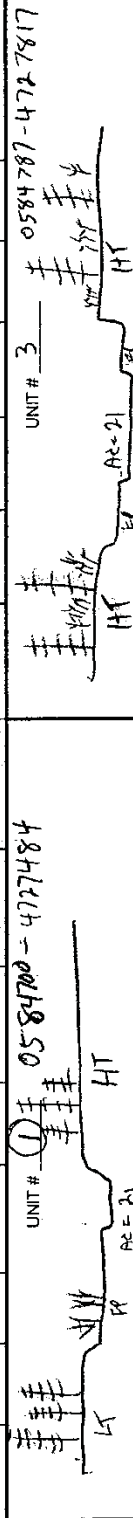


FOR EACH RIPARIAN TRANSECT, DRAW AND LABEL THE SURFACES (HT, LT, FP, HS, ETC.) OF A CROSS SECTION IN THE BOX PROVIDED ABOVE. DRAWING AND LABELING VEGETATION IS NOT NECESSARY.

**RIPARIAN**

STREAM: FOOT CREEK (FOOT SWAMP) DATE: 2 Sept 03 NAME: Nemo PAGE: 2 OF     

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE		
								TREE	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	1					



**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	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 #		
												584914-472-8046		

**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.