

8-20-2004

Ex. 280-US-449

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Oregon Department of Fish and Wildlife

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Stream: Whiskey Creek
Tributary to: Sprague River > Williamson River
Survey Type: ODFW Stream Habitat
Access: Canoe to mouth, then foot
Reach: 1 Hess Reach
Start Survey: T36S-R11E-S12SE
Quad: Beatty
Date Surveyed: 20 August 04
Surveyors: R. Nawa, K. Hartzell
Report: R. Nawa, C. Huntington
Distance Surveyed: 0.6 km

Valley and Stream Channel Geometry

The stream was incised in a low lying meadow adjacent to the Sprague River. Two adjacent interconnected channels were dry. During high spring flows, lower Whiskey Creek is comprised of several anastomosing channels (distributaries) that flow into the Sprague River (See USGS Beatty 7.5 quad map). Moderate sinuosity (1.6) was accompanied by very low stream gradient (0.08%). Low terraces sloped gently to constrain narrow floodplains adjacent to the 1.3 m wide creek. The channel appears incised at U19. A 0.05 m high bedrock step at the beginning of the reach (U4) probably prevents further downcutting.

Substrate

The streambed was very fine textured. An estimated 95 percent of the streambed was sand/organics, two percent gravel, and two percent bedrock.

Spawning Gravel

A 3 m² patch of gravel near the mouth of the stream was not counted because it was 90% dry and 90% fine gravel (5-15 mm diameter).

Riparian Vegetation

No shade was recorded because grass and sage brush dominate the riparian zone. Lush grass along streambanks appeared to have no current livestock use (Photo 124). About 16 percent of streambanks were actively eroding. Channel incision contributed to the severity of eroding streambanks.

Wood

No wood was found in the channel because there are no trees on streambanks.

Rearing and Adult holding Habitat

Extremely low stream gradient caused the stream to be mostly pools (20%) and glides (73%). Maximum pool depths averaged 0.5 m deep. Glides averaged 0.2 m deep. Streamflow was nearly intermittent at the upper end of reach (U23-U25).

Stream Temperature

High summer stream temperature (23.5°C) reduces potential for salmonid rearing.

**Photo 124. Unit 30.
Downstream view into
Hess reach 1. Lush grass
growth has stabilized
most streambanks (16%
eroding streambanks in
reach 1.)**

**Photo 123.
Upstream view of
unsurveyed private land
above U30. Heavy grazing
has resulted in 100%
eroding streambanks.
Channel appears incised.**

Stream: Whiskey Creek
Tributary to: Sprague River > Williamson River
Survey Type: ODFW Stream Habitat
Access:Foot
Reach: 3 Smith Reach
Start: T36S-R12E-S19NW
Quad:Beatty
Date Surveyed: 19 August 04
Surveyors: R. Nawa, K. Hartzell
Report: R. Nawa, C. Huntington
Distance Surveyed: 2.6 km

Historical Background

Long time residents V. Smith and B. Topham reported to us that ground water pumping in the Sprague Valley reduces flows at local springs along Whiskey Creek. Rainbow trout historically spawned at springs along Whiskey Creek (e.g., springs in section 13 at U9, Photo 107). In recent years, flows from springs are inadequate to support potential spawning trout. Abundant willows once supported beaver along Whiskey Creek in reach 3.

Valley and Stream Channel Geometry

The beginning of the reach was dominated by a 2.7 ha beaver pond (U1-U5; Photo 103). (The active beaver dam is located on B. Topham's property below the beginning of the survey.) From U2 to U9 the stream was in a marsh with saturated, mucky soils bordering the stream for up to 30 m. Above U9 the creek was in a heavily grazed pasture that ranged from 200 m to 600 m wide. Moderate sinuosity (1.5) was accompanied by very low map measured stream gradient (0.08 %). Low terraces sloped abruptly to constrain narrow floodplains adjacent to the 1-5 m wide creek. The channel is vulnerable to downcutting. Active downcutting and channel widening was apparent at U15 and U20 (Photo 114).

Substrate

The streambed was very fine textured. An estimated 99 percent of the streambed was sand/organics with only one percent gravel.

Spawning Gravel

A 14.5°C tributary spring flows for 60 m to join Whiskey Creek (U9 map, Photo 107). A total of five m² of spawning gravel was found in this spring-fed tributary. Gravel was in small patches <1 m². A larger patch of gravel at the spring source was 1-2 cm gravel. Flows at this spring were very low compared to the high water mark on boulders along bank. Gauge height at the spring was 0.70 m.

Riparian Vegetation

Grass dominates the riparian zone. Occasional willows are dying back and in poor vigor. Cattle grazing along saturated floodplains has created patches of bare soil and hummocks of grass and sedges in the lower portion of the reach (U2-U9). Existing grass cover is inadequate to stabilize streambanks. About 24 percent of streambanks were actively eroding. Shade from terraces averaged only one percent.

Wood

No wood was found in the channel because there are no trees on streambanks.

Rearing and Adult Holding Habitat

Extremely low stream gradient caused the stream to be mostly pools (82%) and glides (17%). The beaver pond was 0.9 m deep. Maximum pool depths above the beaver pond averaged 0.7 m. Glides averaged 0.4 m deep.

Stream Temperature

The beaver pond at U1 was 23°C at 1130 pdt. A 14.5°C spring-fed tributary (U9) cooled Whiskey Creek to 24.5° (1330pdt). Above the spring, the maximum spot stream temperature was 29°C at 1610 pdt. Warm 29-31°C water flowed into Whiskey Creek mainstem from flood irrigation at U20.

Photo 103 Unit 1
A 2.7 ha beaver
pond/marsh dominated
the lower portion of the
reach. Note lack of
rushes and trampled
sedges above fenceline
where reach begins.

Photo 107 Unit 9
A 60 m long
springbrook (14.5°C)
had 5 m² of spawning
gravel. Low flows are
attributed to ground
water pumping.

Photo 114 Unit 20
Despite riparian fencing,
the channel is widening
and downcutting resulting
in severe streambank
erosion.

• Hess
• Smith

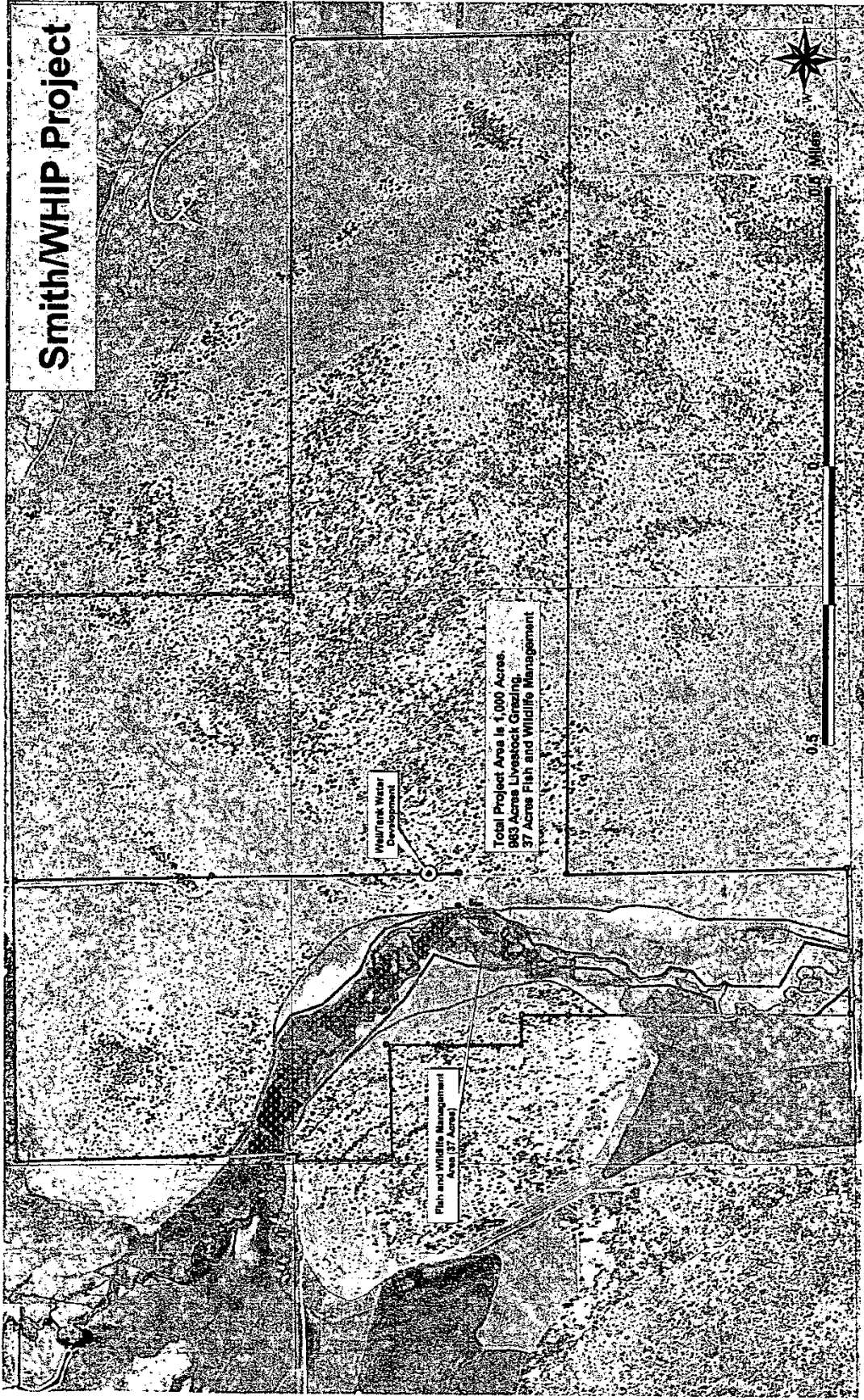


0635296
1702372

0 5 1 MILE
0 1000 FEET 0 500 1000 METERS
Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

Sprague R.

Smith/WHIP Project



Whiskey Cr.

RIPARIAN

PAGE: 2 OF 2
 NAME: R. Upton / K.H

DATE: 19 Jul 04

STREAM: Whisky Creek (Smith Ranch)

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FOIB % COVER	COUNT (DBH in CENTIMETERS)				RIPARIAN NOTE	
								TREE	3-15	15-30	30-50		50-90
20	LEFT	1	LT	5	0	0	80	CONIFER					
		2	LT	0	0	0	80	HARDWOOD					
		3	LT	0	0	0	80	CONIFER					
20	RIGHT	1	LT	5	0	0	60	HARDWOOD					
		2	LT	0	0	0	80	CONIFER					
		3	LT	0	0	0	80	HARDWOOD					
40	LEFT	1	LT	5	0	0	80	CONIFER					
		2	LT	0	0	0	80	HARDWOOD					
		3	LT	0	0	0	80	CONIFER					
40	RIGHT	1	LT	5	0	0	80	HARDWOOD					
		2	LT	0	0	0	80	CONIFER					
		3	LT	0	0	0	80	HARDWOOD					

UNIT # 40 0636210 - 4698398

UNIT # 20 0636351 - 4699018



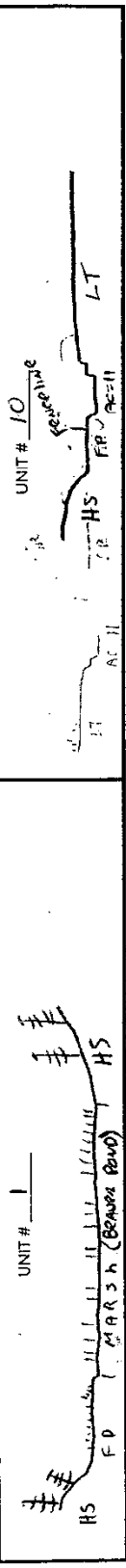
RIPARIAN

PAGE: 1 OF 2

DATE: 19 AUG 04 NAME: R. NAUWA

STREAM: Whiskey Creek (Smith Ranch)

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE	
								3-15	15-30	30-30	50-90	90+		
LEFT	1	FP	D		0	0	60	CONIFER						
	2	FP	47%		0	0	40	HARDWOOD						
	3	HS	87%		0	20	0	CONIFER						
RIGHT	1	FP	13		10	80	80	HARDWOOD						
	2	HS	2		30	60	60	CONIFER						
	3	HS	12		40	60	60	HARDWOOD						
LEFT	1	FP	5		0	0	60	CONIFER						
	2	FP	0		0	0	80	HARDWOOD						
	3	FP	0		0	0	80	CONIFER						
RIGHT	1	FP	5		0	0	60	HARDWOOD						
	2	LT	0		0	0	80	CONIFER						
	3	LT	0		0	0	80	HARDWOOD						



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.

UNIT-2

PAGE: 1 OF 2

STREAM: Whiskey Creek (Smith Reach) DATE: 19 Aug 04

NUMERATOR: S. NAWA

UNIT #	UNIT TYPE	DEPTH*	DEPTH**	DEPTH** PTC	VERIFIED LENGTH	WIDTH	SIO	SND	PERCENT SUBSTRATE	BLDR	CBLE	BDRCK	BDRCK COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
1	BP	.9					100										73° @ 1130 - 4.5m Reach
2	BP	.4					100										
3	BP	.3					100										
4	BP	.3					100										
5	BP	.4					100										
6	LP	.4					100										76° @ 1330
7	GL	.6					100										
8	LP	.8		.5			100						5	50			
9	GL	.6					90		5	5			53	10		SS	58° @ 1400
V10	LP	1.2		.6		Reach	100										
11	RI	.25					100										
12	LP	.70		.27			100							10			
13	GL	.60					100							20			
14	GL	.40					100						8	20			
15	GL	.70					100										100 84° 1500
16	GL	.30					90		10					100			down slope abundant
17	RI	.15					60		40					100			< 1" gravel
18	GL	.25					50		20					100			
19	RI	.15					60		40					100			
V20	GL	.25					95		5					100			84° @ 1607
21	RI	.05				90.0	100							100			84° @ 1607 - 10.0m Reach
22	RI	.20					100							100			
23	LP	.45		.28			100							100			
24	RI	.10					100							60			88° @ 1615
25	GL	.30					100							50			
26	RI	.20					30					70		50			Bank Down Across Channel
27	GL	.35					100							30			
28	RI	.20					100							20			
29	LP	.70		.20			100							40			
V30	RI	.20				15.7	100										

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

UNIT - 1

PAGE: 2 OF 2
ESTIMATOR: Hartzell

STREAM: Whiskey (Smith) DATE: 8/19/04

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL HT.*	FLOOD PRONE		TERRACE		NOTE	
								LEFT	RIGHT		HT.	WIDTH	HT.	WIDTH		VWI
SMITH	31	GL	00	100	54	3.0	0.5	0	0							
	32	LP	00	100	44	3.0	0.5	0	0							
	33	GL	00	100	150	2.3	0.5	0	0							
	34	GL	00	100	150	2.5	0.5	0	0							
	35	SP	11	0	27	2.4	0.5	0	0							Former Main Channel! No Flo
	36	GL	00	100	95	1.1	0.5	0	0							
	37	R1	00	100	4	0.8	1.0	0	0							
	38	GL	00	100	40	1.6	0.5	0	0							
	39	LP	05	100	12	1.0	0.5	0	0							
V	40	GL	00	100	11	6.3	0.5	0	0	0.75	2.8	15	90	None	50	EM@ E-W Fendline

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

UNIT - 1

STREAM: Whiskey

DATE: 8/19/04

ESTIMATOR: Hartzel

PAGE: 1 OF 2

Irrigation Outflow from Alluvial fan

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL		FLOOD PRONE		TERRACE		VWI	NOTE
								LEFT	RIGHT	HT*	WIDTH	HT	WIDTH	HT	WIDTH		
Smith	1	BP	00	100	190	100	0.5	2	2	1.1	24	2.2	152	3.0	173	1.2	State N.S. Enclosed
	2	BP	01	50	320	10	0.5	0	0								
	3	BP	02	50	290	10	0.5	0	0								
	4	BP	00	100	90	12	0.5	0	0								
	5	BP	01	60	110	12	0.5	0	0								
	6	LP	02	40	150	10	0.5	2	0								
	7	GL	00	100	250	11	0.5	0	0								
	8	LP	00	100	130	10	0.5	0	0								
	9	GL	11	20	105	6.6	0.5	30	2								LB Spring Tab
	10	LP	01	200	64	5.4	0.5	0	0	1.2	11	24	7150	None	30		
	11	RP	00	100	4	2.3	1.0	0	0								
	12	LP	00	100	50	4.5	1.5	0	0								
	13	GL	00	100	90	5.0	0.6	0	0								
	14	GL	00	100	90	5.5	0.5	0	0								
	15	RI	11	50	35	2.5	1.5	0	0								RB Tab A
	16	GL	01	50	145	2.3	0.5	0	0								
	17	RI	00	100	23	2.0	1.0	0	0								
	18	GL	00	100	30	1.9	0.5	0	0								
	19	RI	00	100	15	1.9	1.0	0	0								
	20	GL	01	92	150	1.8	0.5	0	0	0.55	3.5	11	7.5	12	9	50	RB Tab B
	21	RI	11	2	75	0.3	4.0	0	0								
	22	RI	00	100	14	1.2	0.5	0	0								
	23	LP	00	100	36	1.4	0.5	0	0								
	24	RI	11	20	89	0.5	0.5	0	0								RR Tab C
	25	GL	01	80	19	2.0	0.5	0	0								
	26	RI	00	100	6	1.5	1.0	0	0								
	27	GL	00	100	105	1.9	0.5	0	0								
	28	RI	00	100	11	2.0	1.0	0	0								
	29	LP	00	100	34	2.2	0.5	0	0								
	30	RI	00	100	16	2.6	1.0	0	0								

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

REACH

PAGE: 1 OF:

STREAM: Whiskey (Smith)

CREW: KH, RN

Basin: Sprague

USGS 7.5' MAP NAMES:

DATE	REACH #	UNIT NUMBER	CHANL FORM		VALLEY FORM		VWI	VEG CLASS		LAND USE		WATER TEMP	STRM FLOW	LOCATION TWP-RNG-SEC-1/4	PHOTO #	REACH NOTE
			FORM	FORM	FORM	FORM		DOM.	SUB-DOM.	DOM.	SUB-DOM.					
01/19/04	Smith	1-10	CH	OV	OV	1.2	R	C30	AG	AG	H6	73° F	F	38S 12E 11N W10V 130		N S Fenceline

SMITH
 UTM: 0655843
 4700165
 ACW = 124m
 AGH = 1.1
 FPW = 152m
 HS
 HS
 Fence Across Beaver Dam March

UTM:

UTM:

UTM:

UTM:

UTM:

REACH

CREW: _____

STREAM: _____

BASIN: _____

USGS 7.5' MAP NAMES: _____

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

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

PHOTO RECORD

PAGE: 1 OF: _____

STREAM: Whisky Cr. (Smith Reach) SURVEY TYPE: OR. PLAN BASIN MIXED

BASIN OR GCG: SPNACUE FILM: DIGITAL SLIDE PRINTS

SURVEY CREW: RH, KH ROLL #: _____ MAILER #: _____

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1A 101	1	9 APR 04	1130	UPSTREAM (w/SIGN)
2: 102	1	"	"	DOWNSTREAM
3: 103	1	"	"	RIGHT BANK Looking West across stream
4: 104	1	"	"	UPSTREAM from mid channel
5: 105	4	"	1300	DOWNSTREAM 0636251-4699892
6: 106	5	"	"	UPSTREAM " - "
7: 107	9	"	1400	SPRING SOURCE AT Smith Residence
8: 109	9	"	"	" close up
9: 109	10	"	1500	Ripon #2 UPSTREAM
10: 110	10	"	"	DOWN LEFT BANK
11: 111	10	"	"	
12: 112	10	"	"	RIGHT BANK
13: 113	20	"	1620	UPSTREAM Ripon #3
14: 114	20	"	1620	DOWNSTREAM Ripon #3
15: 115	34	"	1720	Washes out channel spanning structure 0636291-4698598
16: 116	21	"	1745	Emigration Return?
17: 117	?	"	1745	?
18: A 118	3:	"	1830	?
19:				
20:				
21:				
22:				
23:				
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39:				
40:				

PHOTO RECORD

PAGE: _____ OF: _____

STREAM: _____ SURVEY TYPE: OR. PLAN BASIN MIXED

BASIN OR GCG: _____ FILM: DIGITAL SLIDE PRINTS

SURVEY CREW: _____ ROLL #: _____ MAILER #: _____

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:				
2:				
3:				
4:				
5:				
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7:				
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40:				

PAGE: 1 OF:

CREW: KH, RN

REACH: Sprague & Whiskey (Hess Pop)

STREAM: Sprague

BASIN: Sprague

USGS 7.5' MAP NAMES:

DATE	REACH #	UNIT NUMBER	CHANNL FORM	VALLEY FORM	VWI	VEG CLASS DOM.	VEG CLASS SUB-DOM.	LAND USE DOM.	LAND USE SUB-DOM.	WATER TEMP	STRM FLOW	LOCATION TWP-RNG-SEC-1/4	PHOTO # / TIME	REACH NOTE
01/04/1989	1	1	CT	CT	50	P	B	AG	LG	72°F	LF	36S, 11E, 12SE	1115	NS Fenwainc
02/04/1989	7	7	CT	CT	22	P	B	AG	LG	74°F	LF	36S, 11E, 12SE	1450	Mainchoyrd

UTM: _____

UTM: 0685126
4702189

Sprague (Hess)

HT
ACW = 32m
AC# = 1.0m
FPN = 45m
HT

UTM: 0534967
4701983

Whiskey (Hess)

HT
ACW = 4.4m
FPN = 8.5m
AC# = 0.5m
HT

UTM: _____

UTM: _____

UTM: _____

REACH

CREW: _____

STREAM: _____

USGS 7.5' MAP NAMES: _____

BASIN: _____

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

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UNIT - 1

PAGE: 1 OF: _____

ESTIMATOR: Hartzell

DATE: 07/01/04

STREAM: Whiskey (Hess)

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %		SHADE (0-90)		ACTIVE CHANNEL HT.*	FLOOD PRONE		TERRACE		NOTE	
							LEFT	RIGHT	HT.	WIDTH		HT.	WIDTH	HT.	WIDTH		
Hess	1	RP	00	100	8	0.9	1.0	0	0	0.5	4.2	1.0	8.5	1.9	34	50	Skate N-S Female line
	2	SP	00	100	6	2.0	0.5	0	0								
	3	SP	00	100	7	1.2	0.5	0	0								
	4	SP	00	100	10	0.8	0.5	0	0								
	5	SP	00	100	4	2.0	0.5	0	0								
	6	LP	00	100	9	1.5	0.5	0	0								Drop: 0.05
	7	SP	00	100	80	1.9	0.5	0	0								
	8	LP	00	100	15	2.2	0.5	0	0								
	9	GL	00	100	13	1.9	0.5	0	0								
	10	LP	00	100	12	2.1	0.5	0	0	0.45	3.5	0.9	13	1.5	20	50	
	11	GL	00	100	58	2.1	0.5	0	0								
	12	GL	11	5	25	0.3	0.5	0	0								
	13	LP	01	95	14	1.6	0.5	0	0								Lt Bank Springs Trib
	14	DC	00	100	5.5	1.7	0.5	0	0								
	15	LP	02	100	3.5	0.9	0.5	0	0								
	16	DC	00	100	6.2	1.2	0.5	0	0								
	17	GL	00	100	7.0	0.6	0.5	0	0								
	18	SP	00	100	14	1.6	0.5	0	0								
	19	GL	00	100	82	1.7	0.5	0	0								
	20	DC	00	100	2.5	1.0	0.5	0	0								
	21	GL	00	100	5.2	1.9	0.5	0	0	0.4	4.0	0.8	50	None	50		
	22	SP	00	100	10	2.1	0.5	0	0								
	23	RI	00	100	23	0.5	0.5	0	0								
	24	LP	00	100	16	0.9	0.5	0	0								Channel Almost Dry
	25	RI	00	100	23	0.4	0.5	0	0								
	26	LP	00	100	29	1.9	0.5	0	0								
	27	RI	00	100	4	0.3	0.5	0	0								
	28	GL	00	100	44	1.0	0.5	0	0								
	29	DC	00	100	8.5	1.0	0.5	0	0								
	30	GL	00	100	13	1.2	0.5	0	0								EMO E-W FL

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

UNIT-2

PAGE: _____ OF: _____

STREAM: Whiskey Cr. (Hess Ranch) DATE: 20 Aug 04 NUMERATOR: R. NAWO / K.H.

UNIT #	UNIT TYPE	DEPTH*	DEPTH** PTC	VERIFIED LENGTH	WIDTH	PERCENT SUBSTRATE			BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
						S/O	SND	GRVL					
1	RI	0.05				40	60					<1" Gravel	
2	SP	0.62	0.03			90	10						
3	GL	0.20				90	10						
4	SR							100				0.05 Drop	
5	GL	0.15				70	10	20					
6	LP	0.35	0.05			95		5				C5?	
7	GL	0.25	0.10			90		10	30				
8	LP	0.60				100			50			Manna → Pool	
9	GL	0.25				100			30				
V 10	LP	0.55	0.15	11.5	2.3	100			10			Manna → Pool	
11	GL	0.25				100						730 @ 1200	
12	GL	0.05				100						640 @ 1200	
13	LP	0.30	0.05			100						SS?	
14	DC					100							
15	LP	0.05				100							
16	DC					95	5						
17	GL	0.15	0.03			95	5					740 @ 1220	
18	SP	1.0	0.03			100						UC 1500 Channel	
19	GL	0.30				100			30				
V 20	DC					100							
21	GL	0.20		51.0	1.6	100			30				
22	SP	0.45	0.03			100			30				
23	RI	0.10				100			10	10		ALMOST INTERMITTENT FLOW	
24	LP	0.40	0.03			100							
25	RI	0.05				100			10	5		ALMOST INTERMITTENT FLOW	
26	LP	1.50	0.03			100			5	5			
27	RI	0.05				100			5	10			
28	G	0.10				100							
29	DC					100							
V 30	G	0.15				100			50			063511 - 4701654	

ANASTASIOSKI CHANNEL

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

RIPARIAN

PAGE 1 OF 2
 NAME: R. Nagwa / K.H.

DATE: 20 Aug 04

STREAM: Whiskey Cr. (Hess Ranch)

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORP % COVER	COUNT (DBH in CENTIMETERS)				TREE	RIPARIAN NOTE
								3-15	15-30	30-50	50-90		
1	LEFT	1	FP	10	0	0	60					CONIFER	
		2	FP	6	0	20	60					HARDWOOD	
		3	LT	6	0	40	40					CONIFER	
1	RIGHT	1	FP	10	0	0	40					HARDWOOD	
		2	FP	6	0	0	20					CONIFER	
		3	FP	0	0	0	20					HARDWOOD	
10	LEFT	1	FP	8	0	0	20					CONIFER	
		2	LT	0	0	20	40					HARDWOOD	
		3	LT	0	0	40	40					CONIFER	
10	RIGHT	1	LT	12	0	20	40					HARDWOOD	
		2	LT	0	0	20	40					CONIFER	
		3	LT	0	0	40	40					HARDWOOD	

UNIT # 1 0634968 470983

UNIT # 10 0634999-4701865



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: Whiskey (Hess) DATE: 8/20/04 NAME: NANA PAGE: 2 OF: 2

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+		
	LEFT	1	LT	20	0	0	80	CONIFER						
		2	LT	0	0	0	80	HARDWOOD						
		3	LT	0	0	0	80	CONIFER						
21	RIGHT	1	LT	20	0	0	80	HARDWOOD						
		2	LT	0	0	0	80	CONIFER						
		3	LT	0	0	0	80	HARDWOOD						
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
	RIGHT	1						HARDWOOD						
		2						CONIFER						
		3						HARDWOOD						
								UNIT # 0635159-4707110						
								UNIT # 21						
								Perception						
								LT						
								LT						
								LT						

PHOTO RECORD

PAGE: 2 OF: 2

STREAM: Whiskey Cr. (Hess Road) SURVEY TYPE: OR. PLAN BASIN MIXED

BASIN OR GCG: SPAGUE FILM: DIGITAL SLIDE PRINTS

SURVEY CREW: RN, KH ROLL #: _____ MAILER #: _____

	PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:	A 119	1	20 AUG 04	1120	UPSTREAM - at PROPERTY BOUNDARY
2:	120	1	"	1120	DOWNSTREAM (below PROPERTY BOUNDARY)
3:	121	21	"	1230	UPSTREAM Ripra # 3
4:	122	21	"	1230	DOWNSTREAM "
5:	123	30	"	1315	UPSTREAM (Above PROPERTY LINE)
6:	A 124	30	"	1315	DOWNSTREAM
7:					
8:					
9:					
10:					
11:					
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37:					
38:					
39:					
40:					

PHOTO RECORD

PAGE: _____ OF: _____

STREAM: _____ SURVEY TYPE: OR. PLAN BASIN MIXED

BASIN OR GCG: _____ FILM: DIGITAL SLIDE PRINTS

SURVEY CREW: _____ ROLL #: _____ MAILER #: _____

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:				
2:				
3:				
4:				
5:				
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STREAM SUMMARY

WHISKEY CREEK

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Substrate Percent Wetted Area						Large Boulders (>0.5m)
					S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
70	3,876	4.2	0.34	38,374	93	0	3	1	1	2	66

Habitat Group	Wetted Area	
	(m ²)	Percent
Dammed & BW Pools	26,500	69.06%
Scour Pools	4,562	11.89%
Glides	6,982	18.19%
Riffles	302	0.79%
Rapids	0	0.00%
Cascades	0	0.00%
Step/Falls	0	0.00%
Dry	28	0.07%
Culverts	0	0.00%

REACH 1

T36S-R11E-S12SE

REACH 1

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	50 30	VWI Range:	50-50 50-50

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 ²)	Dry Units
Primary	571	888	4
Secondary	25	8	0

571 x 3.9 = 2227

Channel Dimensions (m)

Wetted	Active	Floodprone n = 3	First Terrace n = 2
Width: 1.3	Width: 3.9	23.8 (8.5 - 50)	27.0 (20 - 34)
Depth: 0.24	Height: 0.5	0.9 (0.8 - 1)	1.7 (1.5 - 1.9)

W:D ratio: 8.7

Stream Flow Type: LF

Average Unit Gradient 0.4%

Water temperature (°C) 22.0 - 22.0

Entrenchment (ACW:FPW ratio): 6.1

Habitat Units/100m (total channel length): 5.0

Habitat Units/100m (primary channel length) 5.3

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	AG	LG
Riparian Vegetation:	P	B

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	16%	Reach avg: 0%
Undercut Banks:	.1%	Range: 0 - 0

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):		
Volume (m ³):		
Key pieces (>=12m x 0.60m):		

OREGON DEPARTMENT OF FISH AND WILDLIF

WHISKEY CREEK

HABITAT INVENTORY

Report Date: 9/27/2004

Survey Date:

8/20/2004

REACH 1		T36S-R11E-S12SE					REACH 1					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
DRY CHANNEL	4	23	1.2	0.00	28	0	99	0	1	0	0	0
GLIDE	11	405	1.4	0.19	656	0	95	0	2	0	0	3
POOL-LATERAL SCOUR	7	79	1.5	0.39	126	0	99	0	0	0	0	1
POOL-STRAIGHT SCOUR	3	30	1.9	0.69	55	0	97	0	3	0	0	0
RIFFLE	4	60	0.5	0.06	30	0	85	0	15	0	0	0
STEP/BEDROCK	1	0	0.8	0.10	0	0	0	0	0	0	0	100
Total:	30	596	1.3	0.24	896	0	Avg 92	0	3	0	0	5

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(#/100m ²)
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	10	109	1.6	0.48	182	20.26%	0	0.0
Glides	11	405	1.4	0.19	656	73.29%	0	0.0
Riffles	4	60	0.5	0.06	30	3.34%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	1	0	0.8	0.10	0	0.01%	0	0.0
Dry	4	23	1.2	0.00	28	3.10%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

POOL SUMMARY				
	Total	Total of all Channel Lengths		Primary Channel Length
		# / Km	# / Km	# / Km
All Pools:	10	16.8		17.5
Pools >=1m deep:	1	1.7		1.8
Complex pools (LWD pieces>=3):	0	0.0		0.0
Pool frequency (channel widths/pool):	15.3			
Residual pool depth (avg):	0.43			

OREGON DEPARTMENT OF FISH AND WILDLIFE

WHISKEY CREEK

HABITAT INVENTOR

Report Date: 9/27/2004

Survey Date:

8/20/2004

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

REACH 1

Summary of Riparian Zone (0-30m)

3 transects

Total hardwoods/1000	0
Total conifers/1000 ft	0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-30cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-50cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	0		0		0	
Shrub cover	3		10		20	
Grass/forb cover	53		53		50	

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		0		0	
Low terrace	50		67		83	
Floodplain	50		33		17	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	13		2		1	

OREGON DEPARTMENT OF FISH AND WILDLIF

WHISKEY CREEK

HABITAT INVENTORY

Report Date: 9/27/2004

Survey Date:

8/20/2004

REACH 3		T36S-R12E-S19NW					REACH 3					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
GLIDE	15	1,480	3.3	0.40	6,325	61	97	0	3	0	0	0
POOL-BEAVER DAM	5	990	28.8	0.46	26,500	0	100	0	0	0	0	0
POOL-LATERAL SCOUR	8	638	4.7	0.65	4,316	5	100	0	0	0	0	0
POOL-STRAIGHT SCOUR	1	27	2.4	0.85	65	0	100	0	0	0	0	0
RIFFLE	11	145	1.6	0.22	272	0	84	0	7	3	6	0
Total:	40	3,280	6.3	0.42	37,478	66	Avg 94	0	3	1	2	0

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m ²)	Percent	Number	(# / 100m ²)	
Dammed & BW Pools	5	990	28.8	0.46	26,500	70.71%	0	0.0	
Scour Pools	9	665	4.4	0.67	4,381	11.69%	5	0.1	
Glides	15	1,480	3.3	0.40	6,325	16.88%	61	1.0	
Riffles	11	145	1.6	0.22	272	0.73%	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 of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	14	4.3	5.3
Pools >=1m deep:	1	0.3	0.4
Complex pools (LWD pieces>=3):	0	0.0	0.0
Pool frequency (channel widths/pool):	6.7		
Residual pool depth (avg):	0.24		

OREGON DEPARTMENT OF FISH AND WILDLIF
HABITAT INVENTORY

Report Date: 9/27/2004

WHISKEY CREEK
Survey Date 8/20/2004

REACH 3

T36S-R12E-S19NW

REACH 3

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	100%	Wide Floodplain	0%
Valley Width Index	16.7 31	VWI Range:	12-40 12-50

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	2,647	32,126	0
Secondary	633	5,352	0

Channel Dimensions (m)

Wetted		Active	Floodprone n = 4	First Terrace n = 2
Width:	6.3	Width: 35.2	112.4 (7.5 - 200)	91.0 (9 - 173)
Depth:	0.42	Height: 0.9	1.8 (1.1 - 2.4)	2.1 (1.2 - 3)

W:D ratio: 32.8

Stream Flow Type: LF

Average Unit Gradient 0.3%

Water temperature (°C) 23.0 - 23.0

Entrenchment (ACW:FPW ratio): 15.2

Habitat Units/100m (total channel length): 1.2

Habitat Units/100m (primary channel length): 1.5

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	AG	HG
Riparian Vegetation:	P	C30

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	24%	Reach avg: 1%
Undercut Banks:		Range: 0 - 18

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):		
Volume (m ³):		
Key pieces (>=12m x 0.60m):		

OREGON DEPARTMENT OF FISH AND WILDLIFE

WHISKEY CREEK

HABITAT INVENTOR Report Date: 9/27/2004

Survey Date: 8/20/2004

RIPARIAN ZONE VEGETATION SUMMARY

REACH 3

REACH 3

Summary of Riparian Zone (0-30m) 4 transects

Total hardwoods/1000	0
Total conifers/1000 ft	0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-30cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-50cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)	(%)	(%)	(%)	(%)	(%)
Canopy closure	1		4		5	
Shrub cover	10		8		10	
Grass/forb cover	70		73		68	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)	(%)	(%)	(%)	(%)	(%)
Hillslope	0		13		25	
High terrace	0		0		0	
Low terrace	50		63		63	
Floodplain	50		25		13	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	5		1		3	

**OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY - RIPARIAN SURVEY**

**WHISKEY CREEK
8/20/2004**

Summary of Riparian Zone (0-30m) for all reaches 7 transects

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

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

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	0-30 meters	
	Conifer	Hardwood
3-15cm	0.0	0.0
15-30cm	0.0	0.0
30-50cm	0.0	0.0
50-90cm	0.0	0.0
>90cm	0.0	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		
1	LF	1	FP	10	0	0	60							Conifer Hardwood
1	LF	2	FP	6	0	20	60							Conifer Hardwood
1	LF	3	LT	6	0	40	40							Conifer Hardwood
1	RT	1	FP	10	0	0	40							Conifer Hardwood
1	RT	2	FP	6	0	0	20							Conifer Hardwood
1	RT	3	FP	0	0	0	20							Conifer Hardwood
10	LF	1	FP	8	0	0	20							Conifer Hardwood
10	LF	2	LT	0	0	20	40							Conifer Hardwood
10	LF	3	LT	0	0	40	40							Conifer Hardwood
10	RT	1	LT	12	0	20	40							Conifer Hardwood
10	RT	2	LT	0	0	20	40							Conifer Hardwood
10	RT	3	LT	0	0	40	40							Conifer Hardwood
21	LF	1	LT	20	0	0	80							Conifer Hardwood
21	LF	2	LT	0	0	0	80							Conifer Hardwood
21	LF	3	LT	0	0	0	80							Conifer Hardwood
21	RT	1	LT	20	0	0	80							Conifer Hardwood
21	RT	2	LT	0	0	0	80							Conifer Hardwood
21	RT	3	LT	0	0	0	80							Conifer Hardwood

RIPARIAN ZONE VEGETATION

Reach 3

Reach 3

Unit	Side	Zone	Surface	Slope	Cover (percent)			Diameter class (cm)					Notes	
					Canopy	Shrub	Grass	3-15	15-30	30-50	50-90	>90		
31	LF	1	FP	0	0	0	60							Conifer Hardwood
31	LF	2	FP	4	0	0	40							Conifer Hardwood
31	LF	3	HS	8	0	20	0							Conifer Hardwood
31	RT	1	FP	13	10	80	80							Conifer Hardwood
31	RT	2	HS	2	30	60	60							Conifer Hardwood
31	RT	3	HS	12	40	60	60							Conifer Hardwood
40	LF	1	FP	5	0	0	60							Conifer Hardwood
40	LF	2	FP	0	0	0	80							Conifer Hardwood
40	LF	3	FP	0	0	0	80							Conifer Hardwood
40	RT	1	FP	5	0	0	60							Conifer Hardwood
40	RT	2	LT	0	0	0	80							Conifer Hardwood
40	RT	3	LT	0	0	0	80							Conifer Hardwood
50	LF	1	LT	5	0	0	80							Conifer Hardwood
50	LF	2	LT	0	0	0	80							Conifer Hardwood
50	LF	3	LT	0	0	0	80							Conifer Hardwood
50	RT	1	LT	5	0	0	60							Conifer Hardwood
50	RT	2	LT	0	0	0	80							Conifer Hardwood
50	RT	3	LT	0	0	0	80							Conifer Hardwood
70	LF	1	LT	5	0	0	80							Conifer Hardwood

70	LF	2	LT	0	0	0	80	Conifer
								Hardwood
70	LF	3	LT	0	0	0	80	Conifer
								Hardwood
70	RT	1	LT	5	0	0	80	Conifer
								Hardwood
70	RT	2	LT	0	0	0	80	Conifer
								Hardwood
70	RT	3	LT	0	0	0	80	Conifer
								Hardwood

WHISKEY CREEK

REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	1	RI	00	8		START @ N-S FENCELINE	<1" GRAVEL
1	4	SR	00	31		DROP: 0.05M	.05M DROP
1	5	GL	00	45	CS		
1	8	LP	00	149			MEANDER POOL
1	10	LP	00	174			MEANDER POOL
1	11	GL	00	232			23C AT 1200
1	12	GL	11		SS	LB SPRING TRIB	
1	18	SP	00	282			23.5C AT 1220
1	19	GL	00	364			INCISED CHANNEL
1	23	RI	00	452		CHANNEL ALMOST DRY	ALMOST INTERMITTENT FLOW
1	25	RI	00	493			ALMOST INTERMITTENT FLOW
1	30	GL	00	571			UTM: 635111, 4701654
3	31	BP	00	751	BV	START @ N-S FENCELINE	4 ACRE BEAVER POND
3	32	BP	01	1071	BV		
3	33	BP	02		BV		
3	34	BP	00	1161	BV		
3	35	BP	01	1271	BV		
3	36	LP	02				24.5C AT 1330
3	39	GL	11		SS	LB SPRING	14.5C AT 1400
3	45	RI	11			RB TRIB A	29C AT 1500
3	46	GL	01	2202			CLAM SHELLS ABUNDANT
3	47	RI	00	2225			<1" GRAVEL
3	50	GL	01	2421			29C AT 1610
3	51	RI	11			RB TRIB B	29C AT 1610: IRRIGATION RETURN
3	54	RI	11			RB TRIB C	31C AT 1615
3	56	RI	00	2496			BOULDER DAM ACROSS CHANNEL
3	62	LP	00	2756			MEANDER POOL
3	65	SP	11			FORMER MAIN CHANNEL	TRIB
3	67	RI	00	3155			COBBLE CHECK DAM-WASHED OUT
3	70	GL	00	3218		END AT N-S FENCELINE	END AT FENCELINE