9-2-2004

Ex. 277-US-460

R. Nawa
Oregon Department of Fish and Wildlife

C. Huntington
Oregon Department of Fish and Wildlife

Stream: Spring Creek
Tributary to: Williamson River
Survey Type: ODFW Stream Habitat
Access: Foot
Reach: 1
Start: T33S-R7E-S27SE
Quad: Fort Klamath
Date Surveyed: 2 September 04
Surveyors: R. Nawa, K. Hartzell
Report: R. Nawa, C. Huntington
Distance Surveyed: 0.7 km

Valley and stream channel geometry
The stream is in a forested valley about 2 km wide. High terraces slope abruptly to form narrow floodplains that border the 23 m wide creek. Field measured stream gradient averaged 1.3 percent. The relatively straight channel had low sinuosity (1.1).

Substrate
The streambed was 22 percent sand and organics, 5 percent gravel, 12 percent cobble, 6 percent small boulder and 54 percent bedrock.

Spawning Gravel
Excellent spawning gravel patches are found in Spring Creek from its mouth to about 200 m upstream of the Highway 97 bridge. Surveyors recorded a total of 474 m^2 of gravel (677 m^2 km) which appears to have been artificially placed on shallow bedrock riffles (map). A channel spanning gabion at beginning of reach 1 helps retain the placed gravel from being washed out (Photos 242, 244). This short reach has relatively high stream gradient (1-3 percent) which creates excellent intergravel flow for egg incubation.

The amount of spawning gravel present is far below potential because at least 50 percent of the riffle habitat is bedrock. Spawning gravel could be increased by placing additional gravel on the existing 4,000 m^2 of bedrock riffle. Additional artificial gravel placement could increase the spawning area in reach 1 by a factor of ten.

Riparian Vegetation
Riparian zones are a mixture of pine, sagebrush and grass. The reach averaged 20 conifers >20" dbh per 1000 ft of stream. Shade averaged 46 percent and streambank erosion was only 1 percent. Existing vegetation is adequate to protect streambanks.

Wood
Wood averaged 2.2 pieces/100m of stream. Wood was mostly single pieces. Prospects for future wood recruitment are good but development of debris jams that would store sediment is unlikely due to low densities of trees and lack of erosion.

Rearing and Adult Holding Habitat
About 30 percent of the stream was glide habitat and 17 percent pool habitat. Two scour

pools in bedrock averaged 3.4 m deep. Glides averaged 0.9 m deep. Wood was not a pool forming factor. An estimated 30 percent of the streambanks were undercut. Undercut streambanks and deep pools provide abundant cover for juvenile and adult fish.

Stream Temperature

High flows from Spring Creek (7°C) cooled the Williamson River from 18°C to 9°C (8 August 2004)

Photo 242 Unit 1
A channel spanning gabion weir near the mouth of Spring Creek retains artificially placed spawning gravel

Photo 244 Unit1
Artificially
placed spawning
gravel above
gabion wier.

Stream: Spring Creek
Tributary to: Williamson River
Survey Type: ODFW Stream Habitat
Access: Canoe
Reach: 2
Start: T33S-R7E-S27SE
Quad: Fort Klamath
Date: 2 September 04
Surveyors: R. Nawa, K. Hartzell
Report: R. Nawa, C. Huntington
Distance Surveyed: 3.3 km

Valley and Stream Channel Geometry

Reach 2 has the appearance of a 3.3 km spring fed pond (Photo 256) with reach 1 functioning as an outlet channel. The reach is in a forested valley about 2 km wide. High terraces slope abruptly to form narrow floodplains that border the 65 m wide creek. Near the middle of the reach the creek was 118 m wide. Sinuosity was low (1.1) and stream gradient was near 0.

Substrate

The streambed was 85 percent sand/organics and 14 percent gravel.

Spawning Gravel

Gravel in reach 2 does not appear to be suitable for spawning. Gravel is mostly pumice rock less than 10 cm diameter. The stream lacks velocity necessary for egg incubation, however, some gravel areas could be used by spawning fish where upwelling occurs at the upper end of the reach where source springs bubble through the substrate. The amount of gravel that could be used to incubate eggs with upwelling at the source springs is unknown, but is not believed to be large.

Riparian Vegetation

Riparian zones are a mixture of pine, sagebrush, and grass. Conifers were mostly less than 20 inches in diameter. Shade averaged 30 percent and no streambanks were eroding.

Wood

Wood averaged 3.8 pieces/100m of stream. Wood was mostly single pieces that remain in place along the shoreline. Prospects for future recruitment are good but development of debris jams is unlikely due to the width and depth of the channel.

Rearing and Adult Holding Habitat

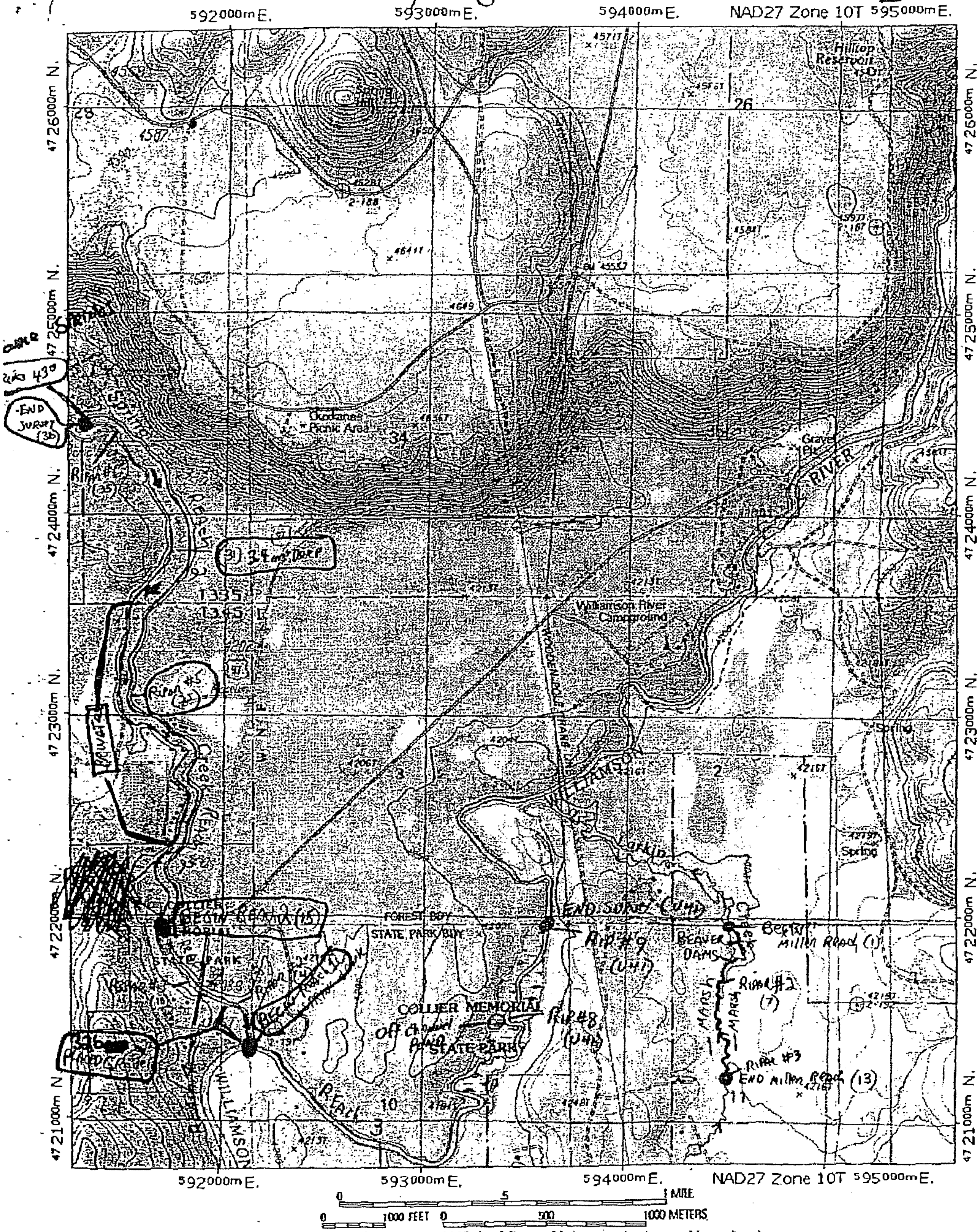
The reach is a continuous 3.3 km long glide with a maximum depth of 3.4 m and average depth of 1.7 m. This glide provides unlimited holding capacity for adult and juvenile fish, but probably has low potential for food production (no riffles and 7° C). An estimated 51 percent of the streambanks were undercut.

Stream Temperature

Photo 256 Unit 35
Reach 2 is a continuous 3.3 km glide with very low stream velocity.

Photo 257 Unit 35
A unique algae called "mares eggs" forms globules that resembles gravel cobble susbstrate.

Spring Creek (5/6)



Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

PHOTO RECORD

PAGE: 1 OF:

STREAM: [illegible] SURVEY TYPE: OR. PLAN ☐ BASIN ☒ MIXED ☐

BASIN OR GCG: Wood FILM: DIGITAL ☑ SLIDE ☐ PRINTS ☐

SURVEY CREW: KH ROLL #: MAILER #:

	PHOTO # OR DIGITAL ID	UNIT #:	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:	B 115	130	9/7/11	1140	US Shot of New Bear Dam
2:	116				
3:	117				DS View
4:	118				LB Rip
5:	119				RB Rip
6:	120	141		1322	US View
7:	121				DS View
8:	122				RB Rip
9:	123				LB Rip
10:	124	150		1448	US View
11:	125				DS View
12:	126				RB Rip
13:	127				LB Rip
14:	128	154		1620	DS View of Cut Channel
15:	129	154		1620	US View of Same
16:	130	160		1758	US View of Log Sill
17:	131	170		1840	US View of Main Channel
18:	132				DS View of Cut Channel
19:	133				LB Rip
20:	B 134				RB Rip
21:	135	176	9/8/11	1300	US View of Box Culvert
22:	136	180		1350	US View
23:	137	190		1350	DS View
24:	138	186		1505	DS View of Clustered Boulders
25:	139	186		1535	US, LB View of Active Erosion Error
26:	140	197		1550	RB View of Exposed Bank w/ Gravel
27:	141	196		1635	US View
28:	142	190		1635	LB View
29:	143	200		1750	US View
30:	B 144	200		1750	LB View
31:					
32:					
33:					
34:					
35:					
36:					
37:					
38:					
39:					
40:					

OREGON DEPARTMENT OF FISH AND WILDLIF — SPRING CREEK

HABITAT INVENTORY — Report Date: 9/26/2004 — Survey Date 9/3/2004 (W. Tributary)

REACH 1 (0.45mi) T34S-R07E-S09NE 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	100%	Wide Floodplain	0%

Valley Width Index ~~2.8~~ 4 VWI Range: ~~2.8~~ 1.5 - 12

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 (m2)	Dry Units
Primary	728	17,250	0
Secondary	46	460	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 3	First Terrace n = 3
Width: 22.6	Width: 16.8	34.3 (25 - 40)	53.3 (48 - 56)
~~Depth: 1.00~~	~~Height~~ 1.0	1.9 (1.6 - 2.6)	4.5 (4 - 5)

W:D ratio: 17.0
Stream Flow Type: MF
Average Unit Gradient 1.3%
Water temperature (°C) 6.0 - 6.0

Entrenchment (ACW:FPW ratio): 4.5
Habitat Units/100m (total channel length): 1.8
Habitat Units/100m (primary channel length) 1.9

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	1%	Reach avg: 46%
Undercut Banks:	30%	Range: 17 - 68

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	16	2.2
Volume (m^3):	10	1.3
Key pieces (>=12m x 0.60m):	1	0.1

OREGON DEPARTMENT OF FISH AND WILDLIF **SPRING CREEK**

HABITAT INVENTORY Report Date: 9/26/2004 Survey Date: 9/3/2004

REACH 1 **T34S-R07E-S09NE** **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
GLIDE	3	234	18.3	0.92	5,380	0		38	0	3	12	7	40
POOL-STRAIGHT SCOUR	2	146	21.0	3.40	3,078	0		0	13	5	10	18	55
RAPID/BEDROCK	3	117	16.3	0.63	1,914	0		0	0	0	8	12	80
RIFFLE	3	170	30.3	0.57	5,028	0		8	12	10	10	0	60
RIFFLE W/ POCKETS	2	106	21.5	0.75	2,274	0		0	18	3	20	15	45
STEP/STRUCTURE	1	1	36.0	0.20	36	0		0	0	50	50	0	0
Total:	14	774	22.6	1.06	17,710	0	**Avg**	10	7	8	14	9	53

HABITAT SUMMARY

Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m^2)	Percent	Large Boulders Number	(# / $100m^2$)
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	2	146	21.0	3.40	3,078	17.38%	0	0.0
Glides	3	234	18.3	0.92	5,380	30.38%	0	0.0
Riffles	5	276	26.8	0.64	7,302	41.23%	0	0.0
Rapids	3	117	16.3	0.63	1,914	10.81%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	1	1	36.0	0.20	36	0.20%	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:	2	2.6	2.7
Pools >=1m deep:	2	2.6	2.7
Complex pools (LWD pieces>=3):	0	0.0	0.0
Pool frequency (channel widths/pool):	23.0		
Residual pool depth (avg):	2.85		

OREGON DEPARTMENT OF FISH AND WILDLIFE — SPRING CREEK

HABITAT INVENTOR — Report Date: 9/26/2004 — Survey Date: 9/3/2004

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1 — REACH 1

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

Total hardwoods/1000	0
Total conifers/1000 ft	61
Total conifers >20" dbh/1000 f	20
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	0.0	0.0	0.0	0.0	0.3	0.0	0.3	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	0.3	0.0	0.3	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	0.3	0.0	0.3	0.0
Total/100m2	0.0	0.0	0.0	0.0	1.0	0.0	0.3	0.0

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	13	30	37
Shrub cover	37	37	33
Grass/forb cover	40	13	3

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	17	17	17
High terrace	17	83	83
Low terrace	0	0	0
Floodplain	67	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	14	10	5

OREGON DEPARTMENT OF FISH AND WILDLIF **SPRING CREEK**

HABITAT INVENTORY Report Date: 9/26/2004 Survey Date 9/3/2004

REACH 2 (2.07mi) T34S-R07E-S04SE 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 8.5 VWI Range: 1.5 - 12

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 (m2)	Dry Units
Primary	3,330	214,320	0
Secondary	0	0	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 3	First Terrace n = 3
Width: 64.6	Width: 61.0	136.7 (65 - 250)	186.7 (110 - 300)
Depth: 1.69	Height: 1.2	2.5 (1.6 - 3.6)	4.0 (3 - 5)

W:D ratio: 54.4
Stream Flow Type: MF
Average Unit Gradient 0.5%
Water temperature (°C) 7.0 - 7.0

Entrenchment (ACW:FPW ratio): 2.5
Habitat Units/100m (total channel length): 0.7
Habitat Units/100m (primary channel length) 0.7

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:		Reach avg: 30%
Undercut Banks:	51%	Range: 18 - 53

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	127	3.8
Volume (m^3):	86	2.6
Key pieces (>=12m x 0.60m):	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE — SPRING CREEK

HABITAT INVENTOR — Report Date: 9/26/2004 — Survey Date: 9/3/2004

RIPARIAN ZONE VEGETATION SUMMARY

REACH 2 — **REACH 2**

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

Total hardwoods/1000	0
Total conifers/1000 ft	345
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	1.7	0.0	1.3	0.0	3.0	0.0
15-30cm	0.3	0.0	0.3	0.0	1.7	0.0	2.3	0.0
30-50cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	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	0.3	0.0	2.0	0.0	3.3	0.0	1.9	0.0

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	27	30	33
Shrub cover	20	30	17
Grass/forb cover	67	47	23

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	33	33	33
High terrace	17	50	50
Low terrace	0	17	17
Floodplain	50	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	16	9	5

OREGON DEPARTMENT OF FISH AND WILDLIFE **SPRING CREEK**

HABITAT INVENTORY - RIPARIAN SURVEY 9/3/2004

Summary of Riparian Zone (0-30m) for all reaches **6 transects**

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

Total hardwoods/1000	0
Total conifers/1000 ft	203
Total conifers >20" dbh/1000 f	10
Total conifers >35" dbh/1000 f	10

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3 0-30 meters Conifer	Hardwood
3-15cm	1.7	0.0
15-30cm	1.2	0.0
30-50cm	0.3	0.0
50-90cm	0.0	0.0
>90cm	0.2	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE SPRING CREEK

HABITAT INVENTORY Report Date: 9/26/2004 Survey Date: 9/3/2004

RIPARIAN ZONE VEGETATION

Reach 1 Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent) Canopy	Shrub	Grass		Diameter class (cm) 3-15	15-30	30-50	50-90	>90	Notes
1	LF	1	HT	20	0	40	20	Conifer						
								Hardwood						
1	LF	2	HT	8	20	20	0	Conifer						
								Hardwood						
1	LF	3	HT	4	60	20	0	Conifer						
								Hardwood						
1	RT	1	FP	10	0	20	100	Conifer						
								Hardwood						
1	RT	2	HT	10	0	40	20	Conifer						PONDEROSA PINE
								Hardwood						
1	RT	3	HT	4	0	40	20	Conifer						
								Hardwood						
4	LF	1	FP	8	0	40	60	Conifer						
								Hardwood						
4	LF	2	HT	2	20	60	20	Conifer						
								Hardwood						
4	LF	3	HT	4	40	60	0	Conifer						
								Hardwood						
4	RT	1	HS	20	20	60	0	Conifer						
								Hardwood						
4	RT	2	HS	8	60	20	0	Conifer						
								Hardwood						
4	RT	3	HS	5	80	0	0	Conifer	1		1			
								Hardwood						
10	LF	1	FP	8	20	0	40	Conifer						
								Hardwood						
10	LF	2	HT	10	20	60	40	Conifer						
								Hardwood						
10	LF	3	HT	4	20	0	0	Conifer					1	PONDEROSA PINE
								Hardwood						
10	RT	1	FP	20	40	60	20	Conifer						
								Hardwood						
10	RT	2	HT	20	60	20	0	Conifer						
								Hardwood						
10	RT	3	HT	10	20	80	0	Conifer						
								Hardwood						

OREGON DEPARTMENT OF FISH AND WILDLIFE SPRING CREEK

HABITAT INVENTORY Report Date: 9/26/2004 Survey Date: 9/3/2004

RIPARIAN ZONE VEGETATION

Reach 2 Reach 2

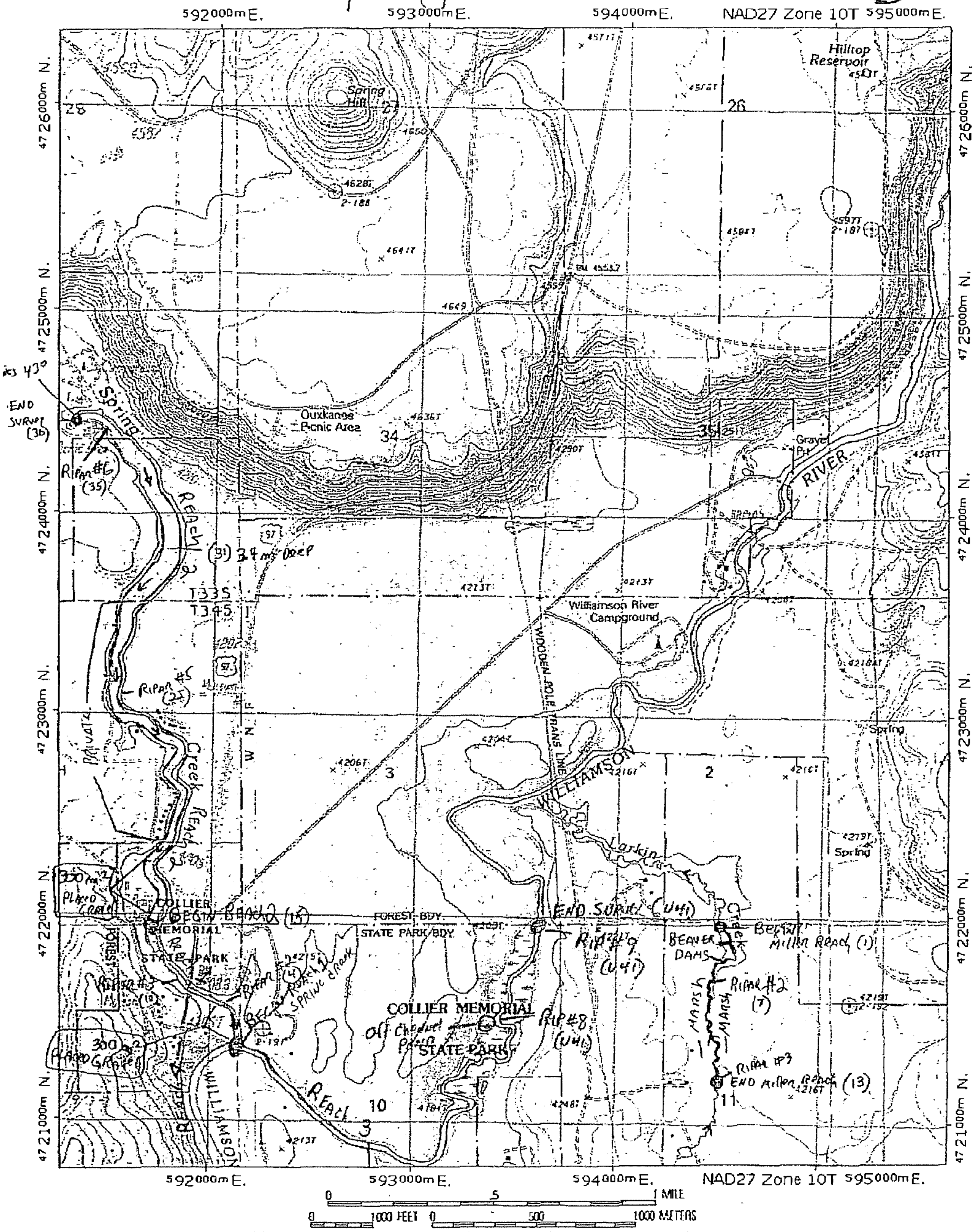
Unit	Side	Zone	Surface	Slope	Cover (percent) Canopy	Shrub	Grass		Diameter class (cm) 3-15	15-30	30-50	50-90	>90	Notes
15	LF	1	FP	4	20	0	40	Conifer						
								Hardwood						
15	LF	2	LT	4	20	60	20	Conifer						
								Hardwood						
15	LF	3	LT	0	0	40	0	Conifer						
								Hardwood						
15	RT	1	FP	15	20	60	20	Conifer						
								Hardwood						
15	RT	2	HT	4	20	40	20	Conifer						
								Hardwood						
15	RT	3	HT	0	40	40	0	Conifer						
								Hardwood						
25	LF	1	HT	10	0	20	80	Conifer						
								Hardwood						
25	LF	2	HT	0	0	20	60	Conifer						
								Hardwood						
25	LF	3	HT	0	0	20	60	Conifer						
								Hardwood						
25	RT	1	FP	6	40	0	80	Conifer		1				
								Hardwood						
25	RT	2	HT	4	40	0	20	Conifer	2					
								Hardwood						
25	RT	3	HT	0	40	0	40	Conifer		1				
								Hardwood						
35	LF	1	HS	20	20	40	80	Conifer						
								Hardwood						
35	LF	2	HS	20	20	40	80	Conifer	3	1				
								Hardwood						
35	LF	3	HS	15	40	0	40	Conifer	4	1				
								Hardwood						
35	RT	1	HS	40	60	0	100	Conifer						
								Hardwood						
35	RT	2	HS	20	80	20	80	Conifer						
								Hardwood						
35	RT	3	HS	15	80	0	0	Conifer		3	1			
								Hardwood						

SPRING CREEK

REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	1	RI	00	24		START @ WILLIAMSON RIVER	PLACED GRAVEL 3/4 - 1 1/2"
1	2	SS	00	25		GABION STEP; 0.4M HIGH	CHANNEL SPAWNING GABIONS 0.4M
1	3	GL	00	165	GS		PLACED GRAVEL; GAUGE = 4.96
1	6	SP	00	311	SD		PUMP LB
1	8	GL	00	405	BC	BC - RT. 97	HWY 97
1	11	RP	00	594	BC	BC - PED. BRIDGE	FOOT BRIDGE
2	15	GL	00	878	GS	RT TERRACE HT ONLY	STAFF GAUGE = 2.0; 7C @ 1220
2	18	GL	00	1328			PRIVATE LAND; GRAVEL <1/2"
2	19	GL	00	1478			PUMICE GRAVEL <1/2"
2	20	GL	00	1628			PUMICE GRAVEL <1/2"
2	21	GL	00	1778			PUMICE GRAVEL <1/2"
2	22	GL	00	1928			PUMICE GRAVEL <1/2"
2	23	GL	00	2078			PUMICE GRAVEL <1/2"
2	25	GL	00	2378		LEFT TERR. HT ONLY	
2	28	GL	00	2828			USFS BOUNDARY
2	31	GL	00	3278			7C @ 1530; 591763-4723839
2	32	GL	00	3428			PUMICE GRAVEL <1/2"
2	33	GL	00	3578			PUMICE GRAVEL <1/2"
2	34	GL	00	3728			PUMICE GRAVEL <1/2"
2	35	GL	00	3878	SS		NUMEROUS SPRINGS LB
2	36	GL	00	4058	SS	END @ SPRING HW	NUMEROUS SPRINGS LB+RB 6C@1650

Spring Creek

(5/6)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593000mE.
594000mE.
NAD27 Zone 10T
595000mE.
4726000m N.
4725000m N.
4724000m N.
4723000m N.
4722000m N.
4721000m N.
Hilltop Reservoir
Spring Hill
28
27
26
34
35
3
2
10
11
Ouxkanee Picnic Area
Gravel Pit
RIVER
WILLIAMSON
Williamson River Campground
WOODEN POLE TRANS LINE
Larkin
Spring
Spring Creek
Reach 2
Creek Reach 2
Reach 3
END SURVEY (36)
Ripar #6 (35)
(31) 3.4 m deep
T33S
T34S
Ripar #5 (21)
PRIVATE
COLLIER MEMORIAL STATE PARK
FOREST BDY.
STATE PARK BDY.
Begin Reach 2 (15)
END SURV. (U41)
Begin Millon Reach (1)
BEAVER DAMS
Ripar #2 (7)
MARSH
Ripar #3
END Millon Reach (13)
Rip #9 (U41)
Rip #8 (U41)
Begin Reach 1 SPRING CREEK
0 .5 1 MILE
0 1000 FEET 0 500 1000 METERS

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REACH

PAGE: 1 OF:

STREAM: Spring Cr.

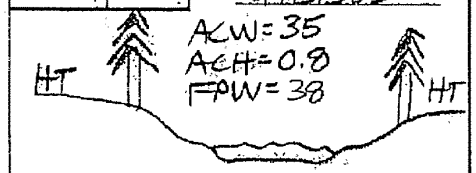
CREW: RN, KH

BASIN: Williamson

USGS-7.5' MAP NAMES:

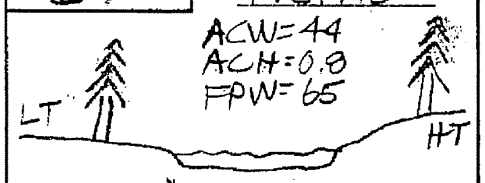
DATE	REACH #	UNIT NUMBER	CHANL FORM	VALLEY FORM	VWI	VEG CLASS DOM.	VEG CLASS SUB-DOM.	LAND USE DOM.	LAND USE SUB-DOM.	WATER TEMP	STRM FLOW	LOCATION TWN-RNG-SEC-1/4	PHOTO # /TIME	REACH NOTE
9/3/04	1	1	CH	OV	2	C30	S	LT	GN	43°F	MF	34S, 7E, 9, NE	46/1020	Conf. w/ Will.
9/3/04	2	16	CT	CT	5	C30	S	LT	NU	45°F	MF	34S, 7E, 4, SE	53/1226	Start of long glide

1 UTM: 0592110 4721393



Confluence w/ Williamson

2 UTM: 0591667 4721945



UTM:

UTM:

UTM:

UTM:

REACH

PAGE:_____OF:_____

STREAM:_____

CREW:_____

BASIN:_____

USGS 7.5' MAP NAMES:_____

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

UTM:_____

UTM:_____

UTM:_____

UTM:_____

UTM:_____

UTM:_____

UNIT - 1

PAGE: 1 OF: 2

STREAM: Spring Cr. DATE: 9/23/04 ESTIMATOR: Hartzell

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90) LEFT	SHADE (0-90) RIGHT	ACTIVE CHANNEL HT.*	ACTIVE CHANNEL WIDTH	FLOOD PRONE HT.	FLOOD PRONE WIDTH	TERRACE HT.	TERRACE WIDTH	VWI	NOTE
1	1	RI	CO	100	24	34	1.0	35	40								Start @ Cnt of Spring W.I
	2	SS	CO	100	40	36	4.0	20	3								Gabion Step 0.4m
	3	GL	CO	100	40	30	0.5	41	47								
	4	RP	CO	100	40	22	1.0	42	36	0.9	22	1.6	25	5.0	40	2	
	5	RR	CO	100	27	16	5.0	44	37								
	6	SP	CO	100	31	18	3.0	50	52								
	7	RR	CO	100	46	15	4.0	30	50								
	8	GL	CO	100	40	15	1.0	63	60								
	9	RI	CO	100	56	27	1.0	40	40								BC - Rt. 97
	10	SP	CO	100	75	24	0	42	50	1.3	26	2.6	40	45	56	2	
	11	RP	CO	100	59	21	1.0	32	36								
	12	RR	CO	100	44	18	5.0	20	30								BC - Ped Bridge
	13	GL	02	10	46	10	0.5	95	2								
V	14	RI	01	90	90	30	1.0	39	30								
2	15	GL	CO	100	150	44	0.5	40	36	0.8	44	1.6	65	3.0	>120	15	Rt. Terr Hill only
	16	GL	CO	100	150	40	0.5	30	52								
	17	GL	CO	100	150	40	0.5	44	40								
	18	GL	CO	100	150	42	0.5	36	45								
	19	GL	CO	100	150	45	0.5	31	35								
	20	GL	CO	100	150	50	0.5	23	42								
	21	GL	CO	100	150	40	0.5	0	36								
	22	GL	CO	100	150	46	0.5	0	40								
	23	GL	CO	100	150	40	0.5	0	30								
	24	GL	CO	100	150	50	0.5	0	36								
	25	GL	CO	100	150	50	0.5	0	32	1.9	51	3.6	>200	4.1	>240	12	Left Terr Hill only
	26	GL	CO	100	150	52	0.5	40	36								
	27	GL	CO	100	150	75	0.5	15	22								
	28	GL	CO	100	150	92	0.5	19	21								
	29	GL	CO	100	150	91	0.5	22	25								
V	30	GL	CO	100	150	118	0.5	10	10								

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

Note: Units 15 thru 32, in hindsight could be considered one long pool with a PTC depth of 1.0m and a max depth = 3.4m

UNIT - 1

PAGE: 2 OF: 2

STREAM: Spring Cr. DATE: 9/3/04 ESTIMATOR: Hartzell

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE - %	SHADE (0-90) LEFT	SHADE (0-90) RIGHT	ACTIVE CHANNEL HT.*	ACTIVE CHANNEL WIDTH	FLOOD PRONE HT.	FLOOD PRONE WIDTH	TERRACE HT.	TERRACE WIDTH	NOTE VWI	NOTE
2	31	GL	.00	100	150	106	0.5	22	18								
	32	GL	00	100	150	90	0.5	22	22								
	33	GL	00	100	150	95	0.5	18	27								
	34	GL	00	100	150	87	0.5	20	19								
	35	GL	00	100	150	86	0.5	25	21	lvl	88	22	95	5.0	110	1.5	
↓	36	GL	00	100	180	34	0.5	45	50								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: 2

STREAM: SPRING CREEK DATE: 7 Sept 04 NUMERATOR: R. Nowa

UNIT #	UNIT TYPE	DEPTH*	DEPTH** PTC	VERIFIED LENGTH	VERIFIED WIDTH	PERCENT SUBSTRATE S/O	SND	GRVL	CBLE	BLDR	BDRCK	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
1	RI	0.60					35	25	20		20		5	30		PLACID GRAVEL 3/4-1 1/2"
2	SS							50	50							CHANNEL SPANNING GABIONS 0.4 HIGH
3	GL	0.80				20		10	10		60		5	40	GS	PLACID GRAVEL; GAUGE = 4.96
4	RP	0.80					20		20	10	50			20		
5	RR	0.60							10	10	80			30		
6	SP	2.8	0.6				5	5	5	5	80			30	SO	PUMP LB
7	RR	0.8							10	20	70			10		
8	GL	1.5							80	20	60			30	BC	HWY 97
9	RI	0.6						5	5		90			20		
V 10	SP	4.0	0.5				20	5	15	30	30			30		
11	RP	0.7					15	5	20	20	40			20	BC	FOOT BRIDGE
12	RR	0.5							5	5	90					
13	GL	0.45				95			5					40		
14	RF	0.50				25			5		70			50		
15	GL	1.00				90		10				8		50	GS	STAFF GAUGE = 2:0 45° @ 1220
16	GL	1.20				90		5	5					60		
17	GL	1.10				95		5						60		
18	GL	1.10				85		15						60		PRIVATE LAND - GL < 1/2"
19	GL	1.00				85		15						60		PUMICE GRAVEL < 1/2"
V 20	GL	1.60				70		25	5					50		PUMICE GRAVEL < 1/2"
21	GL	1.50				90		10						40		PUMICE GRAVEL < 1/2"
22	GL	1.50				90		10						60		PUMICE GRAVEL < 1/2"
23	GL	1.60				90		10						40		PUMICE GRAVEL < 1/2"
24	GL	1.6				95		5						60		
25	GL	1.6				85		15						60		
26	GL	1.7				85		15						50		
27	GL	1.9				75		25						50		
28	GL	2.0				75		25						40		USES BOUNDARY
29	GL	2.5				90		10						40		
V 30	GL	3.0				90		10						40		

Road 1

Road 2

PRIVATE

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

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

UNIT-2

PAGE: 2 OF: 2

STREAM: Spanish Creek DATE: 3 Sept 04 NUMERATOR: R. Nauss

UNIT #	UNIT TYPE	DEPTH*	DEPTH** PTC	VERIFIED LENGTH	VERIFIED WIDTH	PERCENT SUBSTRATE S/O	SND	GRVL	CBLE	BLDR	BDRCK	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
31	GL	3.4				95		5						50		45° @ 1530 0891263-472 3839
32	GL	3.0				80		20						60		PUMICE < 1/2"
33	GL	2.8				80		20						60		PUMICE < 1/2"
34	GL	0.8				70		30						60		PUMICE < 1/2"
35	GL	0.6				80		20						50	SS	NUMEROUS SPRINGS LB
36	GL	0.5				95		5				4		30	SS	NUMEROUS SPRINGS LB+RB
																43° @ 1650
V																
V																
V																

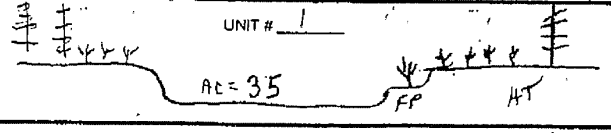
AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

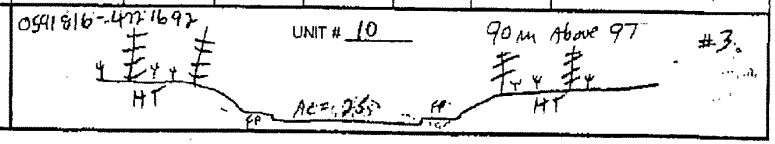
** ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

RIPARIAN

STREAM: SPRING CREEK DATE: 3 SEPT 04 PAGE: 1 OF: 3 NAME: Rich NAWA

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH in CENTIMETERS) 3-15	15-30	30-50	50-90	90+	RIPARIAN NOTE
1	LEFT	1	HT	20	0	40	20	CONIFER						
								HARDWOOD						
		2	HT	8	20	20	0	CONIFER						
								HARDWOOD						
		3	HT	4	60	20	0	CONIFER						
								HARDWOOD						
1	RIGHT	1	FP	10	0	20	100	CONIFER						
								HARDWOOD						
		2	HT	10	0	40	20	CONIFER					1	PON. PONDEROSA
								HARDWOOD						
		3	HT	14	0			CONIFER						
								HARDWOOD						
10	LEFT	1	FP	8	20	0	40	CONIFER						
								HARDWOOD						
		2	HT	10	20	60	40	CONIFER						
								HARDWOOD						
		3	HT	4	20	0	0	CONIFER					1	PONDEROSA
								HARDWOOD						
10	RIGHT	1	FP	20	40	60	20	CONIFER						
								HARDWOOD						
		2	HT	20	60	20	0	CONIFER						
								HARDWOOD						
		3	HT	10	20	80	0	CONIFER						
								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.

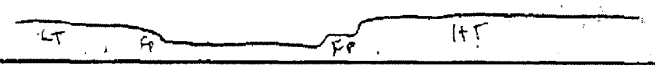
RIPARIAN

PAGE: 2 OF: 3

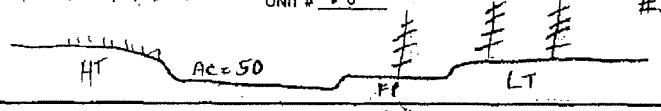
STREAM: SPRING CREEK DATE: 3 SEPT 03 NAME: RICK NAWA

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH in CENTIMETERS) 3-15	15-30	30-50	50-90	90+	RIPARIAN NOTE
15	LEFT	1	FP	4	20	0	40	CONIFER						
								HARDWOOD						
		2	LT	4	20	60	20	CONIFER						
								HARDWOOD						
		3	LT	0	0	40	0	CONIFER						
								HARDWOOD						
15	RIGHT	1	FP	15	20	60	20	CONIFER						
								HARDWOOD						
(cont)		2	HT	4	20	40	20	CONIFER						
								HARDWOOD						
		3	HT	0	40	40	0	CONIFER						
								HARDWOOD						
25	LEFT	1	HT	10	0	20	80	CONIFER						
								HARDWOOD						
		2	HT	0	0	20	60	CONIFER						
								HARDWOOD						
		3	HT	0	0	20	60	CONIFER						
								HARDWOOD						
25	RIGHT	1	FP	6	40	0	80	CONIFER		1				
								HARDWOOD						
		2	HT	4	40	0	20	CONIFER	2					
								HARDWOOD						
		3	HT	0	40	0	40	CONIFER		1				
								HARDWOOD						

#4 UNIT # 15 0591667 – 4721945



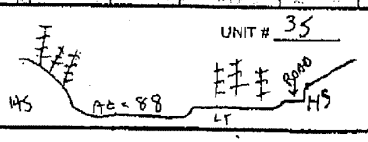
591502 – 4723040 UNIT # 25 #5

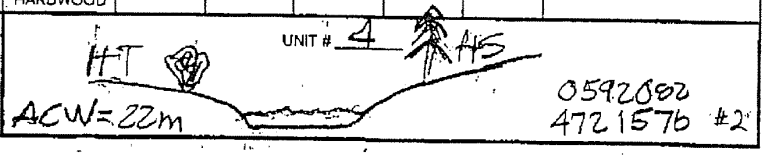


RIPARIAN

STREAM: Spring Creek DATE: 3 Sept 04 NAME: R Wood PAGE: 3 OF: 3

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH in CENTIMETERS) 3-15	15-30	30-50	50-90	90+	RIPARIAN NOTE
35	LEFT	1	HS	20	20	40	80	CONIFER						
								HARDWOOD						
		2	HS	20	20	40	80	CONIFER	3	1				
								HARDWOOD						
		3	HS	15	40	0	40	CONIFER	4	1				
								HARDWOOD						
35	RIGHT	1	HS	40	60	0	100	CONIFER						
								HARDWOOD						
		2	HS	20	80	20	80	CONIFER						
								HARDWOOD						
		3	HS	15	80	0	0	CONIFER		3	1			
								HARDWOOD						
4	LEFT	1	FP	8	0	40	60	CONIFER						
								HARDWOOD						
		2	HT	2	20	60	20	CONIFER						
								HARDWOOD						
		3	HT	4	40	60	0	CONIFER						
								HARDWOOD						
4	RIGHT	1	HS	20	20	60	0	CONIFER						
								HARDWOOD						
		2	HS	8	60	20	0	CONIFER						
								HARDWOOD						
		3	HS	5	80	0	0	CONIFER	1		1			
								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.

RIPARIAN

PAGE:_____ OF:_____

STREAM:_____ DATE:_____ NAME:_____

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH in CENTIMETERS) 3-15	15-30	30-50	50-90	90+	RIPARIAN NOTE
	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 # _____

UNIT # _____

WOOD

PAGE: 1 OF: 1

STREAM: SPRING CREEK DATE: 3 SEPT 04 NAME: R. N

UNIT NUMBER	UNIT TYPE	DEBRIS CONFIG	DEBRIS TYPE	DEBRIS LOCAT	DBH CLASS	LENGTH CLASS (m) RW <3	3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
3	GL	A	N	S	30		2	2										
4	RP	S	N	S	30			1										
5	RA	S	N	S	15		1											
9	RA	S	C	M	30			1										
9	RI	S	N	S	30			1										
11	RP	S	N	M	30			1	1									
12	RA	S	RN	S	60					1								
12	RA	S	C	M	45			1										
14	RI	S	C	S	30			2										
14	RI	S	N	M	30			2										
16	GL	A	RN	S	30			2										
15	GL	A	N	S	30		1	1	2									
16	GL	S	N	S	30		1	2	2	2								
17	GL	A	N	S	30		1	2										
17	GL	S	N	M	30			2										
18	GL	A	N	S	30		1	1	1									
18	GL	A	N	S	45			1	1									
18	GL	S	N	M	30			2										
18	GL	A	N	S	30				1	1	1							
19	GL	S	N	S	30		1	1	1									
19	GL	A	N	S	30		1	2										
20	GL	A	N	S	30			2	1									
20	GL	A	N	S	45				1	1								
21	GL	S	C	S	30			2	1									
21	GL	S	N	S	30			1	1									
22	GL	S	RN	S	30					1								
22	GL	S	N	S	30			2	2									
23	GL	S	N	S	30			2										
23	GL	S	RN	S	30					1								
24	GL	S	N	S	30				1									

WOOD

PAGE: 2 OF: ____

STREAM: Spring Cr. DATE: 9/3/04 NAME: Hartzell

UNIT NUMBER	UNIT TYPE	DEBRIS CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	LENGTH CLASS (m) RW <3	3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
25	GL	S	N	S	30			1	2									
26	GL	S	N	S	30				2	1								
27	GL	S	N	S	30			1	1	1								
28	GL	S	N	S	30		1	1	1									
29	GL	S	N	S	30		1	2										
30	GL	A	N	S	30		1	2	1									
31	GL	J	N	S	30		1	2	2	1								
31	GL	A	N	S	30			1	2	1								
32	GL	S	N	S	30			1	1	1	2							
33	GL	S	N	S	30			1	1	1								
33	GL	S	N	S	45				1		1							
34	GL	A	N	S	45		1		1									
34	GL	A	N	S	30			1	2	1								
35	GL	A	N	S	30				1	1								
35	GL	S	N	S	30			1	2	2								
35	GL	S	RN	S	30				1	1								
35	GL	S	C	S	30			1	1	1								
36	GL	S	N	S	30			1	3	3								
36	GL	S	N	S	45				2	1								
36	GL	S	N	M	30				1	1								
36	GL	S	RN	S	45					1	1							
36	GL	A	N	S	30				2									

PHOTO RECORD PAGE:____ OF:____

STREAM: Spring Cr. SURVEY TYPE: OR PLAN ☐ BASIN ☒ MIXED ☐

BASIN OR GCG: Williamson FILM: DIGITAL ☒ SLIDE ☐ PRINTS ☐

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

	PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:	B 46	1	9/3/04	1020	US View of Gabion Step
2:	47	1			DS View of Mouth
3:	48	1			View of ODFW Placed Spawning Gravel
4:	49	10		1130	US View of Ped. Bridge
5:	50				DS View of Hwy 97 Bridge
6:	51				LB View
7:	52				RB View
8:	53	15		1228	US View
9:	54				DS View
10:	55				LB Rip
11:	56				RB Rip
12:	57	25		1435	US View
13:	58	25		"	DS View
14:	59	35		1614	US View
15:	60	35		1614	DS View
16:	61	35		1616	Shot of "Mare's Eggs" Algae
17:	62	36		1702	Bad Shot
18:	63	36			US View of Main Spring @ Headwater
19:	64	36			DS View of Channel
20:					
21:					
22:					
23:					
24:					
25:					
26:					
27:					
28:					
29:					
30:					
31:					
32:					
33:					
34:					
35:					
36:					
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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7 :				
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37 :				
38 :				
39 :				
40 :				

SPAWNING HABITAT FORM

Stream Spring Cr. Reach Colliatpark Date 8/8/04

Surveyor(s) KH, RN

Surface area (m^2)	Class (G, GC, C)	Percent wetted	Percent usable	L x W	Embed	Comments
39	G	100	100	26x1.5	40%	Mounded in windows by Sth
34	G	100	100	23x1.5	Sand	"
10	G	100	100	10x1		"
189	G	100	100	27x7		"
40	G	100	100	27x1.5		"
7	G	100	100	7x1		
7	G	100	100	7x1		
16				8x2	Hw	Hwy 97 Bridge
16	G	100	100	8x2	20% Fines	
5	G			5x1		
33	G			22x1.5		
50	G			25x2		
6	G			6x1		
12	G			6x2		→ Fines Absent
6	G			6x1	>10% Fines	
4	G			4x1		
16	G			8x2		
9	G			6x1.5		Velocity Near 1.0 f/s
16	G			4x4		(Too Low)
120	G			12x10		
15	G			15x1		
2	G			2x1		
4	G			4x1		
5	G			5x1		
2	G			2x1		
321						State Park Bdy

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.

SPAWNING HABITAT FORM

Stream_____ Reach_____ Date_____

Surveyor(s)_____

Surface area (m^2)	Class (G, GC, C)	Percent wetted	Percent usable	Comments

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.

Monthly Report
Klamath District
John Fortune
December 1990

FISH INVENTORY

Trout

Klamath River

One belated tag return was received. That angler caught rainbow trout was tagged by BEAK on 9-13-88 in the "Salt Caves Reach", RM 216, at a length of 7.8 inches. The angler caught it from the same reach, RM ?, on 6-9-90 at a length of 14 inches.

Spring Cr.

Figure 1 displays the redd counts made on the gabion area of Spring Cr. up through December 31. This year's total of 90 redds is fewer than in the past four years. At any rate, it is above the average since 1975-76 of 54.

Williamson R.

Twenty-five male rainbow trout were captured and spawned from Williamson R. in the lower Kirk Canyon despite the arrival of the "Artic Express". Air temperature dropped into the low teens, mechanical equipment failed, ice, frozen waders and gloves made life difficult but somehow, along with hatchery and Research personnel, we accomplished our mission to spawn these wild males for use in the Klamath rainbow brood program. The 25 wild males were used in 5x5 matrices with hatchery females resulting in 125 crosses.

HABITAT MANAGEMENT

Habitat protection activities for the month are summarized in Table 1.

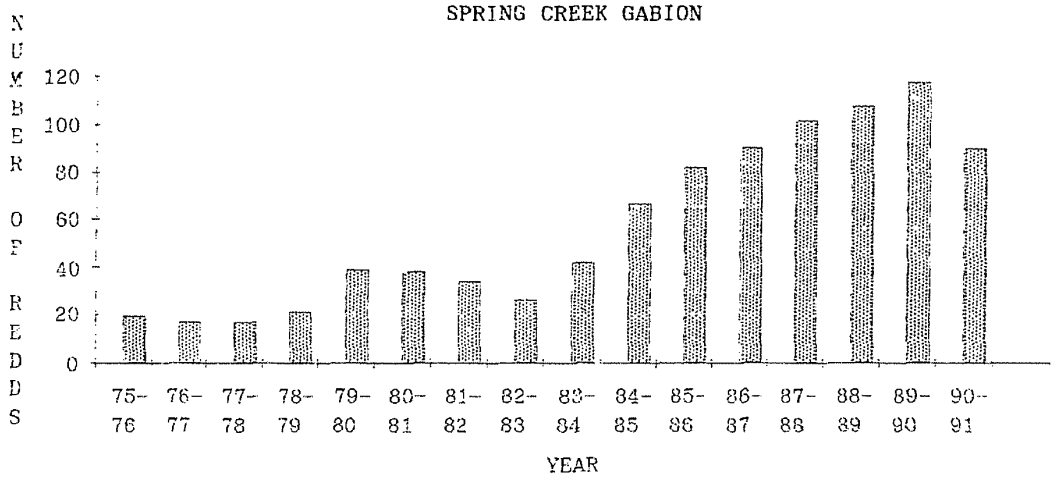

Figure 1. Number of trout redds on the Spring Creek gabion through 31 December 1975 1990.

OREGON Form 2/87

Oregon Department of Fish and Wildlife

Table 1.

MONTHLY SUMMARY OF HABITAT PROTECTION ACTIVITIES

Period December 19 90 District Klamath

Activity	Number 1/	Man Hrs	Habitat Affected: Type	Habitat Affected: Species Impacted	Habitat Affected: Miles Acres	Estimate of Expected Net Affect: +	−	0
FILL/REMOVAL	1	3	stream	Trout	1/2 mi			✓
Erosion Control								
Channel Change								
Dredge/Removal	1	6	wetland		1/4		✓	
Filling								
Roads/Bridges								
Structures								
CORPS OF ENGINEER PERMITS (not covered under F/R)								
STATE FOREST PRACTICES ACT								
FEDERAL TIMBER SALES								
STATE TIMBER SALES								
BARRIERS 2/								
FISHWAYS								
HYDROELECTRIC FACILITIES								
POLLUTION AND SILTATION								
WATER RIGHTS	1	2	stream	Trout				✓
STATE/LOCAL PLANNING PROJECTS 3/								
FEDERAL PLANNING (BLM, USFS)	2	4	streams			✓		
EIS AND EAR REVIEWS								
CLEARINGHOUSE REVIEWS								
RIPARIAN TAX INCENTIVE PROGRAM (including instream structures)								

1/ Includes follow-up investigations
2/ Includes culverts, logjams, beaver dams, etc.
3/ Includes planning requests for County, City, Port, SWCDs, etc.

Monthly Report
Klamath Watershed District
Roger Smith, Shannon Osbon and William Tinniswood
April 2007

Fish Inventory

Crooked Creek and Tecumseh Springs

Redband trout spawning surveys were conducted at the three gravel augmentation sites Crooked Creek and at Tecumseh Springs spawning channel on the 13 and 30. No redds were observed at highway 62 crossing (Site 1) or just below hatchery (site 2) and one redd was observed at the hatchery (Site 3). No redds were observed at the improved spawning channel at Tecumseh Springs.

The headwaters of North Fork Crooked Creek were surveyed and trout fry were observed.

Fort Creek

Redband trout spawning surveys were conducted on 13 and 30 April. A total of three redds were observed on 13 and zero redds were observed on 30. This was the last survey of the year. Filamentous algae growth in Fort Creek appeared to be much less than previous years.

District staff also walked all of Moss/Squaw Creek which is a tributary to Fort Creek just below rivers of light bridge. The creek has abundant spring flow but is shallow, lacks wood and substrate. Trout fry were observed.

Spring Creek (Williamson River)

Redband trout spawning surveys were conducted on 13 and 30 April. Twenty nine redd and four redband trout were observed at eth gabion on 13 April whereas 14 redds and one adult redband trout was observed at the gabion on 30 April. A total of 26 redband trout were observed from shore at the Picnic area. Many large trout up to 28" were observed.

Klamath River

District staff surveyed the bypass reach for spawning redband trout and redds on April 12. A total of 48 redds and 26 redband trout were observed from gps coordinates 42.08639 -122.05648 to just above the emergency spillway. Most redband trout ranged in size from 6-8" with a range of 5-12". GPS coordinates of all springs and redband trout redds were recorded.

Upper Klamath Lake

In early April Bureau of Reclamation captured 16 age 1 suckers coming through the A-Canal bypass. Sampling is taking place again today and several more suckers were captured in an early set this morning, with sampling ongoing through this evening.

Spencer Creek

All Klamath office staff surveyed Spencer Creek on April 6 to determine the abundance of redds and redband trout spawners that were affected by the off road vehicle damage. District staff surveyed from the 110 road downstream a half a mile. A total of 27 redds and six redband trout were observed. Four redband trout were observed just below the area damaged by the off road vehicles. There appeared to be more silt in Spencer Creek than normal.

Two rough skinned newts were observed.

District staff observed 12 redds and 3 adult spawners (12-16") above the Spencer Creek hookup road culvert up to gps coordinates 42.23040 -122.10212 on April 12. Two small redband trout (5-6") were observed with the larger redband trout

Disease and Parasite Sampling

Salmonids were collected in Fort Creek, Wood River, Spring Creek, Fishhole Creek, Fourmile Creek and Cherry Creek and sent to state pathologist for examination on April 3.

Chewaucan River

Chewaucan Narrows trap was operational from March 13th to April 4th. The trap was removed because it does not appear to be functioning properly, and the peak migration period, established during earlier surveys, had passed. Temperatures increased sharply at the start of the month and were exceeding 55F when the trap was pulled. Sampling design changes will include modifiying the trap before the next season and to begin trapping earlier in 2008.

Ana River

Electroshocked Ana River on April 18th to inventory fish populations and determine size and condition of planted rainbow. A large number of fish in good conditions and of reasonable size were captured from the earthen dam down to the Desert Springs Hatchery outlet.

Thomas Creek

The fish sampling box on Thomas Creek located on Marian Gover's property was sampled on April 30th. No fish were captured.

Angling

Klamath River

District staff performed a creel census of the Klamath River on April 10. One angler was observed in the bypass reach, one angler was observed in the peaking reach and three anglers were observed in the Keno reach.

The angler in the peaking reach was angling at the BLM campground during flows of 1800 cfs at 13:15 and had a catch rate of 15 fish in 20 minutes on spinners. This catch rate is unusual during high flows. Fish appeared to be concentrated in a certain area just above fire pit, large wood in the river and outhouse. The redband trout were likely spawning and some fish could be eating eggs. Three fish were sampled and one redband trout was a ripe male at 172 mm. The two other fish captured were 218 and 205 fork length. The angler also caught another ripe male ca. 150 mm that was not measured.

Agency Lake

Three boat trailers and one bank angler were observed at Henzel Park boat ramp on April 13.

Lake County

Angling continued to improve as did access to lakes and reservoirs in Lake County.

Meetings and Public Outreach

District staff reviewed the Ana Reservoir project funded by R&E with Marty St. Louis on April 4th.

District Staff attended the DSL meeting in Klamath Falls on April 4th.

District staff met with Larry Duckworth in Paisley on April 5th to discuss the Chewaucan Challenge and the concerns of the district with the structure and timing of the tournament.

District staff and regional manager spoke with past Lakeview biologist, Curt Edwards to determine agreements with Bob Squires, Marian Gover, Jon Corbett, and Darryl Anderson concerning the fish ladder and screen on Thomas Creek.

District staff met with the engineers at the Sprague River bridges on April 5th.

District staff met with Goose Lake Watershed Council and Dave Hogan of the USFS to discuss Drews Valley Culver Improvement Grant Application on April 12th.

District staff meet with Alan Maur and Jerry Cordova of USFWS to discuss options other than rock check dams to raise the water table on the Keith Barnhart property.

District staff attended the Klamath Country Flycaster meeting on 17 April.

District staff conducted a lecture and field tour on Chewaucan redband at the Paisley High School April 19th.

District staff met with the USFWS Klamath Refuge manager Carol Damberg on April 19.

District staff met with Brad Foos of Central Point Screen Shop to review O'Keefe screening project and discuss other projects in the district.

District staff and regional manager attended Lake County Commissioner meeting to introduce new folks and talk over local issues on April 24th.

District staff conducted a conference call with Eastern Warm Water biologist Terry Schrader to facilitate coordination and schedule fish sampling events.