

9-26-2004

Ex. 277-US-444

R. Nawa  
*Oregon Department of Fish and Wildlife*

C. Huntington  
*Oregon Department of Fish and Wildlife*

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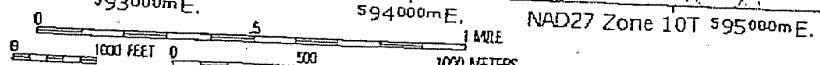
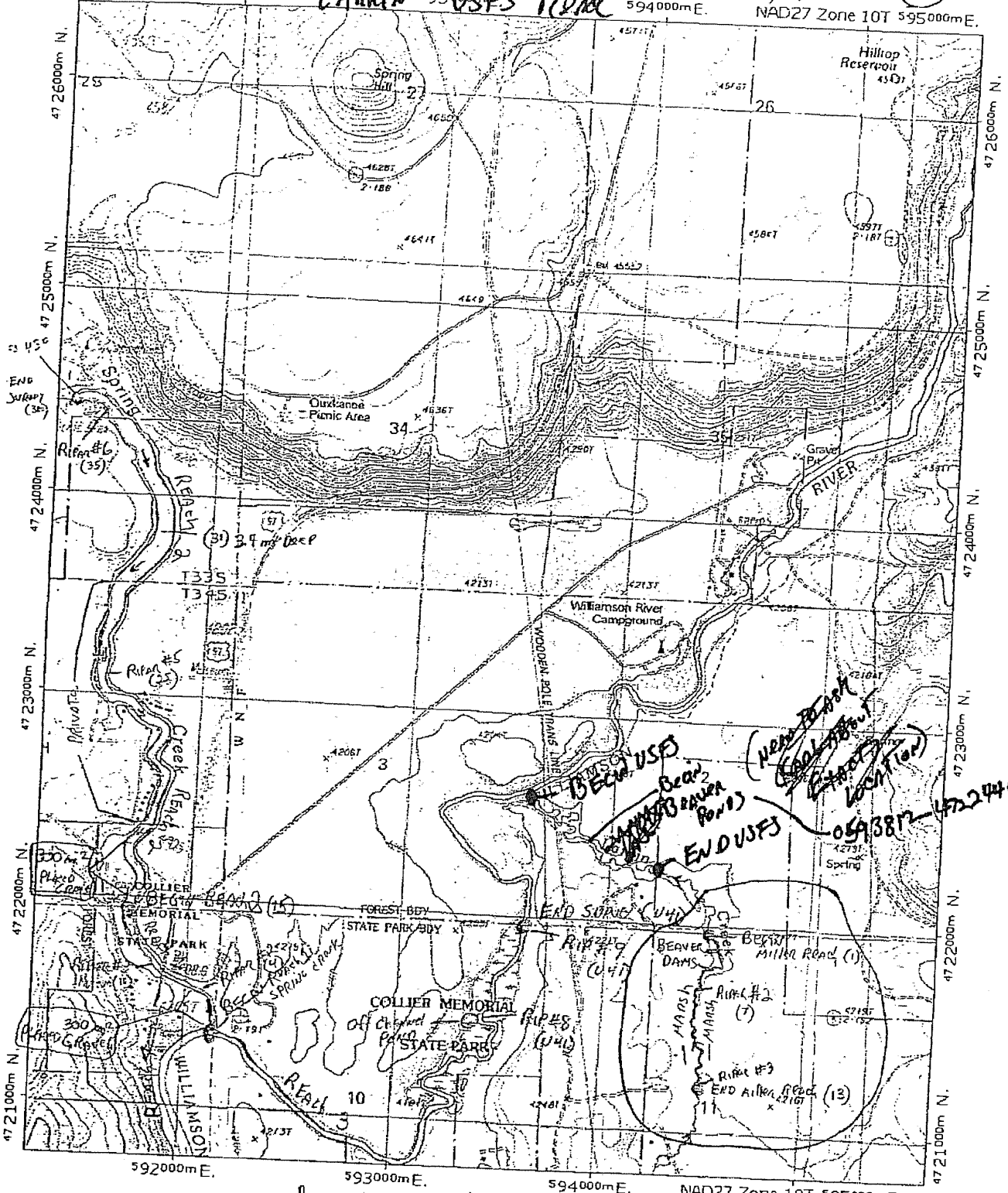
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Stream: Larkin Creek  
Tributary to: Williamson River  
Survey Type: Spawning Gravel  
Access: Foot  
Reach: USFS (upstream from mouth)  
Start: T34S-R7-S11NE ~~350~~ 356  
Quad: Soloman Butte  
Date: 31 August 04  
Surveyor: K. Hartzell  
Report: R. Nawa, C. Huntington  
Distance: 1,094 m

Approximately 356 m<sup>2</sup> of gravel suitable for spawning was found on Forest Service lands from the mouth upstream for 500 m (map). Some stream areas in riffles had high densities of mussels. The upper 500 m was dominated by beaver dam complexes with no spawning gravel. Stream temperature at the mouth of the stream was 20°C on 29 July 2004 (1600 PDT). *Section*

Photo 301.  
Patches of suitable spawning gravel were found in riffles for about the first 500 m of stream.

592000mE. **Larkin USES ROAD** (Larkin Road) ~~OPEN~~ (2/6) 594000mE. NAD27 Zone 10T 595000mE.



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

SPAWNING HABITAT FORM

Stream Larkin USFS Reach USFS Date 9/6/04  
 Surveyor(s) KH

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	Comments
12	G	100	100	Near Mouth
3	G	100	20	
8	G	100	20	
8	G	100	90	
15	G	100	90	
12	G	100	100	
2	G	100	100	
18	G/C	100	20	
6	G	100	50	
6	G	100	100	
20	G	100	70	
10	G	100	80	
8	G	100	60	
24	G	100	60	
28	G	100	80	
10	G	100	100	
16	G/C	100	100	
8	G	100	20	
6	G	100	100	
10	G	100	20	
18	G	100	70	
28	G	100	70	
26	G	100	40	
22	G	100	100	
16	G	100	80	
10	G/C	100	100	
6	G	100	100	End of Ripple Habitat
				Start of Beaver Dam/Pool
				Complex - Continues to
				USFS Prop. Line

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.



PHOTO RECORD

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

STREAM: Larkin and Crooked Cr. Headwaters SURVEY TYPE: \_\_\_\_\_ OR. PLAN:  BASIN:  MIXED:

BASIN OR GCG: Williamson FILM: \_\_\_\_\_ DIGITAL:  SLIDE:  PRINTS:

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

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: B 103		9/16/04	1043	North of Larkin Cr.
2: 300 104	5		1053	DS View of Channel
3: 301 105	5		1053	US View of Spawning Gravel
4: 302 106			1120	US View of Installed Log Step
5: 303 107			1130	Mussel Bed
6: 304 108			1135	First Beaver Dam: 0593912, 4722446
7: 305 109			1150	Fourth and Largest BD: 0593939, 4722849
8: 306 110			FS Fencing at Bank View	
9: B 111			1205	US View of Private Land
10:				
11:				
12:				
13: B 112 308	5	9/16/04	1235	Crooked Creek, DS View into Private Land
14: B 113 309	5		1336	Typical Pumice / Sand Substrate in Headwaters
15: B 114 310	5		1340	Headwater Glide of Crooked Cr. Temp. 48°F
16:				
17:				
18:				
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39:				
40:				

SPAWNING HABITAT FORM

Stream Larkin (USFS) Reach USFS Date 9/6/04  
 Surveyor(s) KH

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	Comments
12	G	100	100	Near Mouth
3	G	100	20	
8	G	100	20	
8	G	100	90	
15	G	100	90	
12	G	100	100	
2	G	100	100	
18	GC	100	20	
6	G	100	50	
6	G	100	100	
20	G	100	70	
10	G	100	80	
9	G	100	60	
24	G	100	60	
28	G	100	20	
10	G	100	100	
16	GC	100	100	
8	G	100	20	
6	G	100	100	
10	G	100	20	
18	G	100	70	
28	G	100	70	
26	G	100	40	
22	G	100	100	
16	G	100	80	
10	GC	100	100	
6	G	100	100	End of Ripple Habitat Start of Beaver Dam/Pool Complex - Continues to USFS Prop. Line

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

PHOTO RECORD

PAGE: 1 OF: 1

STREAM: Larkin and Crooked Cr. Headwaters

SURVEY TYPE: OR. PLAN

BASIN

MIXED

BASIN OR GCG: Williamson

FILM: DIGITAL

SLIDE

PRINTS

SURVEY CREW: KH

ROLL #:

MAILER #:

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: B 9/03	U.S. LARKIN	9/16/04	1043	Mouth of Larkin Cr.
2300/04			1053	DS View of Channel
3301/05			1053	US View of Spawning Gravel
4302/06			1120	US View of Installed Log Step
5303/07			1130	Mussel Bed
6304/08			1135	First Beaver Dam: 0593912, 4722446
7305/09			1150	Fourth and Largest BD: 0593939, 4722349
8306/10			1200	ES Fording, RT Bank View Bank
9: B 11/307			1205	US View of Private Land
10:				
11:				
12:				
13: B 11/2/309	U.S. 2	9/19/04	1235	Crooked Creek, DS View into Private Land
14: B 11/3/309	U.S. 3		1236	Typical Pumice/Sand Substrate in Headwaters
15: B 11/4/310	U.S. 4		1240	Headwater Glide of Crooked Cr. Temp. 49°F
16:				
17:				
18:				
19:				
20:				
21:				
22:				
23:				
24:				
25:				
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34:				
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36:				
37:				
38:				
39:				
40:				



Stream: Larkin Creek  
Tributary to: Williamson River  
Survey Type: ODFW Stream Habitat  
Access: Foot  
Reach: Miller Reach (upper portion of creek)  
Start: T34S-R7-S11NE  
Quad: Solomon Butte  
Date: 31 August 04  
Surveyors: R. Nawa, K. Hartzell  
Report: R. Nawa, C. Huntington  
Distance: 1,094 m

#### Land Use

Land use was young forest trees and rural residential.

#### Valley and stream channel geometry

Two beaver dams at the beginning of the reach created pools that averaged 34 m wide (map). Above the beaver dams, the 2-5 m wide stream meandered in a marsh. Low map measured stream gradient (0.1%) was accompanied by moderate sinuosity (1.4).

#### Substrate

The streambed was 100 percent sand and organics with no gravel.

#### Spawning Gravel

No gravel was found in the streambed.

#### Riparian Vegetation

The stream is mostly in a marsh bordered by grasses and sedges. Patches of willows occurred sporadically on floodplains above flooded marsh areas. The stream averaged 142 willows per 1000 ft of stream and 3 percent shade. None of the streambanks were eroding. Existing grasses, sedges and willow growth is adequate to protect streambanks.

#### Wood

No wood was found in the stream because no trees grow anywhere near the stream.

#### Rearing and Adult Holding Habitat

Two beaver ponds at the beginning of the reach provided a total of 8,320 m<sup>2</sup> of pool habitat (map). Above the beaver ponds the stream was a continuous glide for about 600 m. Beaver ponds were about a meter deep while glides averaged 0.7 m.

#### Stream Temperature

At the beginning of the reach (below the beaver dams) maximum spot stream temperature was 18°C. Upstream of the beaver dams at the end of the reach the stream was 15.6°C.

197-101

Photo 197 Unit 1  
The stream was  
mostly a continuous  
2-5 m wide glide in  
a marsh.

Photo 201 Unit 2/3  
A 0.6 m high beaver  
dam created a 0.4 ha  
1 m deep pond.



REACH: \_\_\_\_\_

STREAM: Lowkin (Miller)

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

CREW: RN, KH

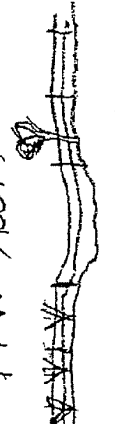
BASIN: \_\_\_\_\_

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

DATE	REACH #	UNIT NUMBER	CHIANL FORM	VALLEY FORM	VVI	VEG CLASS		LAND USE		WATER TEMP	STRM FLOW	LOCATION TWP-RNG-SEC-1/4	PHOTO #	REACH NOTE
						DOM.	SUB-DOM.	DOM.	SUB-DOM.					
8/3/04	2		US	WF	20	P	S	RR	YT	60	LF	34E, 7E, 11, NE1/1344		E-W Fens

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

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

UTM: 0594494  
4721998  
 ACW = 24m  
 AC H = 1.0m  
 FPW = > 100m  


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

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

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

REACH

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

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

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

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

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

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

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

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

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

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

UNIT - 1

PAGE: 1 OF 1

STREAM: LARKIN CR. (Milba Sect)

DATE: 3/18/04

ESTIMATOR: R NAWA

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL HT.	ACTIVE CHANNEL WIDTH	FLOOD PRONE		TERRACE		VWI	NOTE
								LEFT	RIGHT			HT.	WIDTH	HT.	WIDTH		
Z	1	GL	00	100	104	3.5	0	2	3	1.0	24	2.0	100			20	North Edge of Property
	2	SD	00	100	1.5	3.6	100	2	3								0.60 High DAM
	3	BP	00	100	150	2.8	0	2	3								
	4	GL	00	100	108	1.8	0	2	2								
	5	SD	00	100	1.5	5.0	80	3	3								
	6	BP	00	100	94	4.0	0	3	3								
	7	GL	00	100	150	5.0	0	3	2	.9	26	1.8	150			19	RIVER # 2
	8	AL	00	100	14	6	0	3	2								
	9	GL	00	100	150	4	0	3	3								
	10	GL	00	100	150	4	0	3	2								
	11	AI	00	100	23	12	0	2	2								
	12	GL	00	100	150	3.5	0	2	2								
	13	GL	00	100	35	2.1	0	2	3	.5	20	1.0	150			24	MARSH 60' E 1614

Beaver Dam

\* 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

STREAM: Larkin (Miller) DATE: 8/31/04 NUMERATOR: Hartzell

UNIT #	UNIT TYPE	DEPTH*	DEPTH**	PTC	VERIFIED LENGTH	WIDTH	S/O	SND	PERCENT SUBSTRATE	BLDR	BLDR	BLDR	BLDR	BLDR	COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT	NOTE
1	GL	0.9					100												Started E.U. fence
2	SP	0.2					100												Depth = Deep
3	BP	1.2					100												
4	GL	0.5					100												
5	SP	0.5					100												
6	BP	1.0					100												Depth = Deep
7	GL	0.9					100												
8	AL	0.7					100												
9	GL	0.9					100												
10	GL	0.9					100												
11	AL	0.9					60	40											
12	GL	0.6					30	70											END OF FENCE
13	GL	0.5																	
V																			

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

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





**PHOTO RECORD**

PAGE: 1 OF:       

STREAM: Larkin SURVEY TYPE: OR. PLAN  BASIN  MIXED   
 BASIN OR GCG: Williamson FILM: DIGITAL  SLIDE  PRINTS   
 SURVEY CREW: RH, KH ROLL #: \_\_\_\_\_ MAILER #: \_\_\_\_\_

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: 197B	1	9/3/04	1349	US View from E-W Fence line
2: 198	2			DS View
3: 199	3			LB View
4: 200	4			RB View
5: 201	5	23	1415	LB View of BP
6: 202	6	3	1415	DS View of BP
7: 203	7	3	1430	DS View of BP
8: 204	8	6, 6	1450	US View of BD + BP
9: 205	9	11	1530	RB View Including A/Cave
10: 206	10	13	1614	US View from E-W Fence line
11: 207	11	13		DS View
12: 208	12	13		LB View
13: 209	13			RB View
14:				
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101 Cover A



**RIPARIAN**

PAGE: 2 OF 2  
 NAME: R. NAVA

DATE: 3 Aug 04

STREAM: Lark Creek (Miller Road)

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+
13	LEFT	1	FP	0	0	0	100	CONIFER						
		2	FP	0	0	0	100	HARDWOOD						
		3	FP	0	0	0	100	CONIFER						
13	RIGHT	1	FP	0	0	0	100	HARDWOOD						
		2	FP	0	0	40	100	CONIFER						
		3	FP	0	20	20	100	HARDWOOD						
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
	RIGHT	1						HARDWOOD						
		2						CONIFER						
		3						HARDWOOD						
594511-472/208 UNIT # 13 (unit) AC = 20 													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.

Milka  
REACH  
2

REACH 1 T34S-R07E-S11NE 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 <del>14</del> <b>24</b>		WVI Range: <del>8-10</del> <b>19-28</b>	

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 (m <sup>2</sup> )	Dry Units
Primary	1,094	12,298	0
Secondary	37	360	0

Channel Dimensions (m)

Wetted	Active	Floodprone	n =	First Terrace	n =
Width: 15.9	Width: 23.3	133.3 ( 100 - 150 )	3	( - )	0
Depth: 0.78	Height: 0.8	1.6 ( 1 - 2 )		( - )	

W:D ratio: - 31.0 Entrenchment (ACW:FPW ratio): 5.8  
 Stream Flow Type: LF Habitat Units/100m (total channel length): 1.1  
 Average Unit Gradient 0.2% Habitat Units/100m (primary channel length) 1.2  
 Water temperature (°C) 18.0 - 18.0

**Riparian, Bank, and Wood Summary**

	Primary	Secondary
Land Use:	RR	YT
Riparian Vegetation:	P	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	0%	Reach avg: 3%
Undercut Banks:	0%	Range: 2 - 4

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	LARKIN HAD NO WOOD DATA SHEET	
Volume (m <sup>3</sup> ):		
Key pieces (>=12m x 0.60m):		

Checked 10-31  
CWH

OREGON DEPARTMENT OF FISH AND WILDLIF

LARKIN CREEK

HABITAT INVENTORY

Report Date: 9/26/2004

Survey Date:

8/31/2004

REACH 1		T34S-R07E-S11NE					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
GLIDE	7	847	4.9	0.74	4,209	0	84	16	0	0	0	0
POOL-ALCOVE	2	37	9.0	0.80	360	0	100	0	0	0	0	0
POOL-BEAVER DAM	2	244	34.0	1.10	7,960	0	100	0	0	0	0	0
STEP/BEAVER DAM	2	3	43.0	0.55	129	0	100	0	0	0	0	0
<b>Total:</b>	<b>13</b>	<b>1,131</b>	<b>15.9</b>	<b>0.78</b>	<b>12,658</b>	<b>0</b>	<b>Avg 92</b>	<b>8</b>	<b>0</b>	<b>0</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	4	281	21.5	0.95	8,320	65.73%	0	0.0	
Scour Pools	0	0			0	0.00%	0	0.0	
Glides	7	847	4.9	0.74	4,209	33.25%	0	0.0	
Riffles	0	0			0	0.00%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	2	3	43.0	0.55	129	1.02%	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:	4	3.5	3.7
Pools >=1m deep:	2	1.8	1.8
Complex pools (LWD pieces>=3):	0	0.0	0.0
Pool frequency (channel widths/pool):	12.1		
Residual pool depth (avg):	0.55		

**STREAM SUMMARY**

**LARKIN 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	Grvl	Cbl	Bldr	Bdrk	
13	1,131	15.9	0.78	12,658	92	8	0	0	0	0	0

Habitat Group	Wetted Area	
	(m <sup>2</sup> )	Percent
Dammed & BW Pools	8,320	65.73%
Scour Pools	0	0.00%
Glides	4,209	33.25%
Riffles	0	0.00%
Rapids	0	0.00%
Cascades	0	0.00%
Step/Falls	129	1.02%
Dry	0	0.00%
Culverts	0	0.00%

OREGON DEPARTMENT OF FISH AND WILDLIFE

LARKIN CREEK

HABITAT INVENTOR

Report Date: 9/26/2004

Survey Date: 8/31/2004

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

REACH 1

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

Total hardwoods/1000	142
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		Zone 2		Zone 3		Zones 1-3	
	0-10 meters		10 - 20 meters		20 - 30 meters		0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	0.7	0.0	0.0	0.0	1.7	0.0	2.3
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	0.7	0.0	0.0	0.0	1.7	0.0	0.8

Canopy closure and ground cover

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	0		0		10	
Shrub cover	3		7		13	
Grass/forb cover	100		100		87	

Predominant landform in each zone

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		0		0	
High terrace	0		0		0	
Low terrace	0		17		17	
Floodplain	100		83		83	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	0		1		1	



**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	0	0	0	100								
								Conifer							
								Hardwood							
1	LF	2	FP	0	0	0	100	Conifer							
								Hardwood							
1	LF	3	FP	0	0	0	100	Conifer							
								Hardwood							
1	RT	1	FP	0	0	0	100	Conifer							
								Hardwood							
1	RT	2	LT	5	0	0	100	Conifer							
								Hardwood							
1	RT	3	LT	5	0	20	20	Conifer							
								Hardwood							
7	LF	1	FP	0	0	20	100	Conifer							WILLOW
								Hardwood	2						
7	LF	2	FP	0	0	0	100	Conifer							
								Hardwood							
7	LF	3	FP	0	0	0	100	Conifer							
								Hardwood							
7	RT	1	FP	0	0	0	100	Conifer							
								Hardwood							
7	RT	2	FP	0	0	0	100	Conifer							
								Hardwood							
7	RT	3	FP	0	40	40	100	Conifer							WILLOW
								Hardwood	5						
13	LF	1	FP	0	0	0	100	Conifer							
								Hardwood							
13	LF	2	FP	0	0	0	100	Conifer							
								Hardwood							
13	LF	3	FP	0	0	0	100	Conifer							
								Hardwood							
13	RT	1	FP	0	0	0	100	Conifer							
								Hardwood							
13	RT	2	FP	0	0	40	100	Conifer							
								Hardwood							
13	RT	3	FP	0	20	20	100	Conifer							
								Hardwood							

OREGON DEPARTMENT OF FISH AND WILDLIFE  
HABITAT INVENTORY - RIPARIAN SURVEY

LARKIN CREEK

8/31/2004

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

3 transects

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

Total hardwoods/1000	142
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	2.3
15-30cm	0.0	0.0
30-50cm	0.0	0.0
50-90cm	0.0	0.0
>90cm	0.0	0.0

## LARKIN CREEK

REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	1	GL	00	104		NORTH EDGE OF PROPERTY	START AT E-W FENCE
1	2	SD	00	106	BD	0.6M HIGH DAM	DEPTH = DROP
1	3	BP	00	256	BV		
1	5	SD	00	365	BD	0.5M HIGH DAM	DEPTH = DROP
1	6	BP	00	459	BV		
1	7	GL	00	609		RIPARIAN #2	
1	13	GL	00	1094		MARSH 15.5C AT 1615	END AT E-W FENCE

REACH # \_\_\_\_\_ PAGE: 1 OF \_\_\_\_\_

STREAM: Larkin (Miller) CREW: RN, KH

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

DATE	REACH #	UNIT NUMBER	CHANL FORM	VALLEY FORM	YVI	VEG CLASS DOM.	VEG CLASS SUB-DOM.	LAND USE DOM.	LAND USE SUB-DOM.	WATER TEMP	STRM FLOW	LOCATION TWR-RNG-SEC-1/4	PHOTO # / TIME	REACH NOTE
9/3/04	Miller	1	US	WF	12	P	S	RR	YIT	60°	LF	345, TE11, NE1	1348	BEAN FENCE

Miller  
 UTM: 0594494  
 4721998  
 ACW = 24m  
 AC H = 1.0m  
 FRW = > 100m

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

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

PHOTO RECORD

PAGE: 1 OF: 1

STREAM: Larkin SURVEY TYPE: OR. PLAN  BASIN  MIXED

BASIN OR GCS: Williamson FILM: DIGITAL  SLIDE  PRINTS

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

PHOTO #	OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: 197B	1		9/31/04	1348	US View from E-W Fence line
2: 198	2				DS View
3: 199	3				LB View
4: 200	4				RB View
5: 201	5	23		1415	LB View of BP
6: 202	6	13		1415	US View of BP
7: 203	7	3		1430	DS View of BP
8: 204	8	5,6		1450	US View of BD & BP
9: 205B	9	11		1530	RB View Including Alcas
10: 206	10	13		1614	US View from E-W Fence line
11: 207	11	13			DS View
12: 208	12	13			LB View
13: 209	13	13			RB View
14: 209A					
15:					
16:					
17:					
18:					
19:					
20:					
21:					
22:					
23:					
24:					
25:					
26:					
27:					
28:					
29:					
30:					
31:					
32:					
33:					
34:					
35:					
36:					
37:					
38:					
39:					
40:					

**UNIT - 1**

PAGE: 1 OF: 1

ESTIMATOR: R. NAUJA

DATE: 3/19/04

STREAM: LARKIN CR. (MIDDLE FORK)

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	
1	1	GL	00	100	104	3.5	0	2	3	1.0	24	20	100			NEAR EDGE of Laboratory 0.60 High DAM
1	2	SD	00	100	13	3.6	100	2	3							
1	3	BP	00	100	150	2.8	0	2	3							
1	4	GL	00	100	108	1.9	0	2	2							
1	5	SR	00	100	1.5	50	80	3	3							0.50 High DAM
1	6	BP	00	100	94	4.0	0	3	3							
1	7	GL	00	100	150	3.0	0	2	2	1.9	26	1.8	150			RICA # 2
1	8	RL	00	100	14	6	0	2	2							
1	9	GL	00	100	150	4	0	3	3							
1	10	GL	00	100	150	4	0	3	2							
1	11	AI	00	100	23	1.2	0	2	2							
1	12	GL	00	100	150	3.5	0	2	2							
1	13	GL	00	100	35	2.1	0	2	3	1.5	20	1.0	150			MAASH 60' 1614

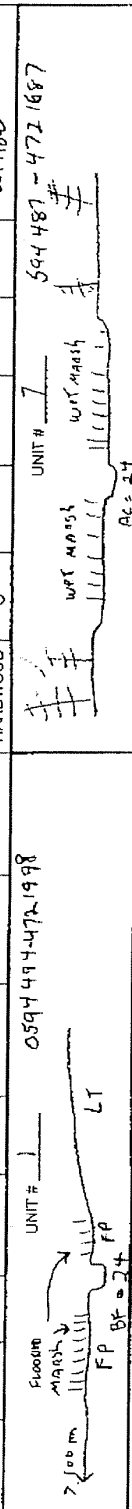
\* MEASURE FROM THE STREAMBED TO THE TOP OF THIS ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.



**RIPARIAN**

STREAM: Lankiw Cr. (Milla Ranch) DATE: 31 AUG 04 NAME: R NAWA PAGE: 1 OF: 2

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GLASS/FOUR % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE	
								3-15	15-30	30-50	50-90	90+		
1	LEFT	1	FP	0	0	0	100	CONIFER						
		2	FP	0	0	0	100	HARDWOOD						
		3	FP	0	0	0	100	CONIFER						
1	RIGHT	1	FP	0	0	0	100	HARDWOOD						
		2	LT	5	0	0	100	CONIFER						
		3	LT	5	0	20	20	CONIFER						
7	LEFT	1	FP	0	0	20	100	HARDWOOD						
		2	FP	0	0	0	100	CONIFER						
		3	FP	0	0	0	100	HARDWOOD						Willow
7	RIGHT	1	FP	0	0	0	100	HARDWOOD						
		2	FP	0	0	0	100	CONIFER						
		3	FP	0	0	0	100	HARDWOOD						
		1	FP	0	40	40	100	HARDWOOD						
		2	FP	0	0	0	100	CONIFER						
		3	FP	0	0	0	100	HARDWOOD						Willow





**RIPARIAN**

PAGE: 2 OF 2  
 NAME: R. NAVA

DATE: 21 Aug 04

STREAM: Lark Creek (Miller Road)

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+
13	LEFT	1	FP	0	0	0	100	CONIFER						
		2	FP	0	0	0	100	HARDWOOD						
		3	FP	0	0	0	100	CONIFER						
13	RIGHT	1	FP	0	0	0	100	HARDWOOD						
		2	FP	0	0	40	100	CONIFER						
		3	FP	0	20	20	100	HARDWOOD						
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
	RIGHT	1						HARDWOOD						
		2						CONIFER						
		3						HARDWOOD						
594511-4721208 (unit) AC = 20 UNIT # 13 UNIT # _____ west marsh 20 marsh LT														

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.