Appendix 4 - Fisheries Habitat Data and Tables

Table 1 - Summary of Habitat Percentages for Major Streams - Wolf Creek Watershed A-20
Table 2 - Pool Depth/Width Ratio Percentages by Major Streams - Wolf Creek Watershed A-21
Table 3 - Summary of Pool Surface Areas for Major Tributaries - Wolf Creek Watershed A-22
Table 4 - Summary of Pool Types by Major Tributary - Wolf Creek Watershed A-23
Table 5 - Summary of Pool Cause by Major Streams - Wolf Creek Watershed A-24
Table 6 - Stream Habitat Dimension Summary for Major Streams - Wolf Creek Watershed A-25
Table 7 - Substrate Composition Summary for Major Streams - Wolf Creek Watershed A-26
Table 8 - Summary of Cover Type Percentages for Major Streams - Wolf Creek Watershed A-27
Table 9 - Summary of Channel Conditions by Major Stream - Wolf creek Watershed A-28
Table 10 - Summary of Riparian Overstory Species by Major Streams- Wolf Creek Watershed . . A-29
Table 11 - Summary of Riparian Understory Species by Major Streams - Wolf Creek A-30
Table 12 - Summary of Riparian Ground Species Vegetation by Major Streams - Wolf Creek . . . A-31
Table 13 - Habitat Restoration Projects by Major Stream - Wolf Creek A-32

Table 1 - Summary of Habitat Percentages for Major Streams - Wolf Creek Watershed

Stream	Pool	Glide	Riffle	Rapid	Cascade	Falls	Run
Bill Lewis	86	4.1	9.9	0	0	0	0
Eames	49.5	13	33	4.2	0.1	0	0
Gall	69.8	3.1	27.6	0.03	0.45	0.02	0
Grenshaw	54	10.8	34	0.02	0	0.03	0
Pittenger	41	32.3	26.6	0.2	0	0	0
Saleratus	20.7	12.5	54.5	6.4	0.63	0	4.4
Salmon	18.9	0	41	10.5	0	0	0
Swamp	78.3	0	21.7	0	0	0	0
Wolf Swamp	66.8	7.5	21.2	0	0	0	0.19
Swing Log	87.2	6.5	6.2	0	0.11	0	0
Wolf A	70.8	15	12.7	1.1	0.37	0	0
Wolf B	61.5	2.6	13	8	0	0.2	14.8
Wolf C	17.7	31.7	48.8	0	0	0	0

Basin Summary	60	10	21.2	3.3	0.2	0.01	4.9

Table 2 - Pool Depth/Width Ratio Percentages by Major Streams - Wolf Creek Watershed

Stream	Depth/Width Ratios (percent of pools in ratio range)						
	0-5%	6-10%	9-15%	16-20%	21-25%	26-30%	> 30%
Bill Lewis	12	18	32	15	13	1	3
Eames	2	42	34	18	2	0	0
Gall	3	18	25	26	15	5	3
Grenshaw	1	16	21	27	19	4	6
Pittenger	0	18	24	33	18	6	0
Saleratus	9	30	23	23	0	15	0
Swamp	14	28	57	0	0	0	0
Wolf Swamp	4	19	34	24	8	4	3
Swing Log	9	20	24	20	9	10	5
Van Curen	0	34	25	21	8	4	6
Wolf 1985	17	44	29	5	0	0	3
Wolf 1986	11	58	14	12	1	0	< 1
Wolf 1993	12	41	30	12	2	0	0
Basin Summary	7	27	24	21	10	3	5

Table 3 - Summary of Pool Surface Areas for Major Tributaries - Wolf Creek Watershed

Stream	Pool Surface Area in square feet (percent of pools in surface area range)									
	0-100	200	300	400	500	600	800	1,000	5,000	10,000+
Bill Lewis	63	15	3	5	1	0	1	0	3	1
Eames	5	7	13	2	7	2	14	4	29	4
Gall	45	14	14	4	7	2	1	< 1	3	2
Grenshaw	56	16	9	5	2	< 1	2	0	4	< 1
Pittenger	33	42	12	3	0	3	0	0	6	0
Saleratus	0	7	23	0	7	0	7	14	35	7
Swamp	33	0	0	8	8	0	0	8	16	24
Wolf Swamp	30	18	9	9	8	2	5	2	10	2
Swing Log	28	16	13	1	1	5	9	1	10	5
Van Curen	91	8	0	0	0	0	0	0	0	0
Wolf 1985	1	3	5	2	5	5	6	1	40	30
Wolf 1986	16	8	4	4	8	4	7	1	27	19
Wolf 1993	12	17	20	15	12	0	5	8	10	0
Wolf Creek Summary	37	13	9	5	5	2	5	2	13	6

Table 4 - Summary of Pool Types by Major Tributary - Wolf Creek Watershed

Stream	Pool Type by Percent						
	Scour	Trench	Plunge	Dammed	Eddy	Backwater	Secondary
Bill Lewis	31	29	11	12	1	9	1
Eames	13	28	21	26	5	2	-
Gall	47	17	12	13	2	4	1
Grenshaw	31	29	9	12	1	9	1
Pittenger	42	12	33	9	-	-	-
Saleratus	61	7	7	7	-	7	-
Swamp	33	25	-	41	-	-	-
Wolf Swamp	36	19	4	34	-	2	-
Swing Log	12	20	6	60	-	-	-
Van Curen	42	21	25	-	-	-	-
Wolf 1985	17	51	15	7	-	3	1
Wolf 1986	2	76	2	6	4	4	1
Wolf 1993	41	2	25	30	-	-	-
Basin Summary	30	29	12	18	1	4	11

Table 5 - Summary of Pool Cause by Major Streams - Wolf Creek Watershed

Stream	Pool Cause by Percentage							
	Large Wood	Curve	Beaver Dam	Boulder	Bed Rock	Falls	Project	Debris Torrent
Bill Lewis	38	31	15	6	1	-	-	-
Eames	22	16	20	10	28	4	-	-
Gall	33	33	7	4	12	-	-	< 1
Grenshaw	39	12	12	1	13	1	11	1
Pittenger	47	34	9	-	4	-	2	-
Saleratus	12	43	6	-	6	-	6	-
Swamp	6	26	33	-	20	-	6	6
Wolf Swamp	34	25	12	< 1	8	-	1	9
Swing Log	38	16	36	-	6	1	-	1
Van Curen	50	16	-	16	7	-	-	-
Wolf 1985	5	19	5	17	35	-	-	-
Wolf 1986	4	9	1	2	69	1	-	-
Wolf 1993	41	25	5	1	25	-	-	-
Basin Summary	30	21	11	4	19	< 1	3	2

Table 6 - Stream Habitat Dimension Summary for Major Streams - Wolf Creek Watershed

Stream	Stream Habitat Dimensions in feet						
	Mean Width	Mean Length	Mean Depth	% 2nd Channel	Stream Order	% Grade	Length Inventoried (ft)
Bill Lewis	4.9	21.4	0.43	7	4	< 1.0	2,572
Eames	13.7	47.9	0.83	7	4	1.3	6,760
Gall	7.5	30.8	0.46	1	4	2.5	11,933
Grenshaw	7.7	24.7	0.50	3	4	2.2	14,194
Pittenger	8.3	24.4	0.58	2	3	1.2	2,558
Saleratus	12.5	72.6	0.72	7	4	2.0	4,718
Swamp	23.5	79.7	1.22	3	4	1.0	2,471
Wolf Swamp	8.4	35.8	0.60	3	4	< 1.0	10,131
Swing Log	7.6	52.7	0.52	0	3	< 1.0	7,695
Wolf A	35.4	58.5	1.26	9	5/6	2.0	10,712
Wolf B	21.2	54.8	0.77	14	5/6	2.0	21,112
Wolf C	14.8	50.6	0.45	0	4/5	1.0	7,691
Basin Summary	12.26	38.6	0.66	5	-	1.5	102,507

Table 7 - Substrate Composition Summary for Major Streams - Wolf Creek Watershed

Stream	Substrate Composition Percentage									
	Bed Rock	Large Boulder	Small Boulder	Cobble	Rubble	Gravel	Large Gravel	Sand	Silt	Organic Matter
Bill Lewis	0.62	0.22	0.74	1.04	1.88	4.15	5.22	21.3	47.3	17.5
Eames	51.4	0.46	1.58	5.65	5.15	5.60	4.92	14.8	8.93	1.48
Gall	12.2	0.02	0.14	2.36	4.72	8.53	11.6	14.5	39.4	6.7
Grenshaw	31.7	0.16	0.54	1.71	2.49	7.67	8.02	16.0	29.0	15.9
Pittenger	6.36	0.08	0.09	0.36	1.83	19.6	10.2	0.71	55.6	5.17
Saleratus	47.3	0.07	2.52	16.3	15.6	4.42	0.72	8.9	4.15	0
Swamp	17.2	0.03	0.06	1.32	2.3	3.13	0.84	4.0	56.6	14.6
Wolf Swamp	10.4	0.06	0.32	1.00	1.51	1.89	2.44	20.9	50.8	10.6
Swing Log	13.7	0	0.03	2.22	2.55	1.97	1.73	7.92	47.5	22.4
Wolf A	49.5	0.4	4.0	6.3	7.83	7.53	3.62	2.82	17.4	0.54
Wolf B	35.5	4.0	4.67	7.43	7.27	5.94	4.53	10.3	19.7	0.6
Wolf C	61.9	0.14	0.17	1.42	2.28	2.46	4.88	21	4.42	1.31
Basin Summary	36.7	1.34	2.59	5.09	5.77	6.07	4.92	10.9	23.4	3.16

Table 8 - Summary of Cover Type Percentages for Major Streams - Wolf Creek Watershed

Stream	Cover Type by Percentage							
	No Cover	Woody Debris	Deep Pool	Large Wood	Boulder	Veg	Turb	Undercut Bank
Bill Lewis	43	23	-	-	6	2	-	11
Eames	41	14	9	8	4	6	6	7
Gall	14	41	5	-	-	7	13	15
Grenshaw	20	36	4	6	1	6	10	13
Pittenger	22	29	11	16	1	3	1	12
Saleratus	25	29	2	2	-	10	5	23
Swamp	2	28	2	13	7	5	12	26
Wolf Swamp	32	34	< 1	5	5	8	1	11
Swing Log	60	15	5	2	-	7	-	8
Wolf A	13	15	12	12	20	8	12	25
Wolf B	43	12	18	3	5	1	10	4
Wolf C	30	23	3	12	5	5	< 1	11
Basin Summary	31	25	6	6	4	5	7	11

Table 9 - Summary of Channel Conditions by Major Stream - Wolf creek Watershed

Stream	Ave [1] Age	Ave Shade	STABILITY RATINGS [2] (%)				EROSION CAUSES (%) [3]				
			Exec	Good	Fair	Poor	Nat	Fire	Man	Road	Timber
Bill Lewis	50	67	2	24	33	41	92	2	-	-	-
Eames	34	77	34	30	22	14	7	-	< 1	< 1	-
Gall	-	77	7	50	30	13	89	-	11	-	-
Grenshaw	-	70	4	54	29	13	94	-	5	-	-
Pittenger	65	80	-	-	8	92	84	6	10	-	-
Saleratus	46	57	21	53	14	12	69	-	-	4	-
Swamp	51	82	5	3	60	32	100	-	-	-	-
Wolf Swamp	59	71	2	6	31	61	100	-	-	-	-
Swing Log	46	77	38	19	23	20	80	-	-	-	-
Wolf 1985	25	66	9	33	53	5	96	< 1	3	-	-
Wolf 1986	54	73	37	34	19	10	98	-	-	-	-
Wolf 1993	60	74	2	85	9	4	100	-	-	-	-
Basin Summary	50	72	12	41	27	20	86	< 1	3	< 1	1

[1] Age is an average for all overstory species at a site.
[2] Percent of stream in condition indicated.
[3] The percentages for erosion cause refer to immediate impacts and do not include historical activities.

Table 10 - Summary of Riparian Overstory Species by Major Streams - Wolf Creek Watershed

Stream	Riparian Overstory Species Composition by Percentage				
	Alder	Big Leaf Maple	Douglas-Fir	Cedar	Hemlock
Bill Lewis	66	19	6	3	< 1
Eames	66	3	26	3	1
Gall	68	19	6	3	3
Grenshaw	38	7	19	11	18
Pittenger	23	28	21	7	18
Saleratus	40	23	25	2	-
Swamp	58	9	5	5	10
Wolf Swamp	45	1	40	2	8
Swing Log	61	< 1	29	-	-
Van Curen	18	34	43	< 1	-
Wolf 1985	40	27	18	9	3
Wolf 1986	40	18	33	5	2
Wolf 1993	40	15	41	1	-
Basin Summary	44	15	25	3	6

Table 11 - Summary of Riparian Understory Species by Major Streams - Wolf Creek

Stream	Understory Species by %										
	VMP	SMB	WLW	NBK	HZL	CSC	HKB	YEW	ELB	DGW	Young Trees
Bil Lewis	59	32	8	-	-	-	-	-	-	-	-
Eames	37	53	7	-	-	-	-	-	1	-	< 1
Gall	36	55	7	-	-	-	-	-	-	1	-
Grenshaw	46	33	2	-	-	-	-	-	-	< 1	< 1
Pittenger	58	18	-	-	-	-	-	-	-	-	-
Saleratus	15	84	-	-	-	-	-	-	-	-	-
Swamp	27	60	9	-	-	-	-	-	-	-	4
Wolf Swamp	43	36	17	-	-	-	-	-	-	-	2
Swing Log	81	7	3	-	-	-	-	-	1	-	-
Wolf 1985	33	30	13	7	4	4	-	1	-	6	-
Wolf 1986	55	34	5	1	-	-	-	-	-	-	1
Wolf 1993	45	1	-	-	3	< 1	4	3	2	-	30
Basin Summary	44	34	6	1	1	< 1	< 1	< 1	< 1	< 1	4

VMP = Vine Maple
SMB = Salmonberry
WLW = Willow
NBK = Ninebark
HZL = Hazel
CSC = Cascara
HKB = Huckleberry
YEW = Yew
ELB = Elderberry
DGW = Dogwood

Table 12 - Summary of Riparian Ground Species Vegetation by Major Streams - Wolf Creek

Stream	Ground Species by %													
	SDF	FRN	OXA	GRS	FBS	LDF	CWF	SDG	PGB	HST	NTL	BKF	BDS	OR
Bill Lewis	-	34	-	20	44	-	-	1	-	-	-	-	-	-
Eames	6	68	2	20	1	-	-	-	-	-	-	-	-	<1
Gall	32	-	18	<1	-	12	-	4	-	11	5	4	-	-
Grenshaw	59	-	-	-	-	25	-	1	2	-	1	3	-	-
Pittenger	36	1	45	4	-	6	-	2	-	2	-	-	-	-
Saleratus	-	80	-	-	20	-	-	-	-	-	-	-	-	-
Swamp	-	19	5	16	48	-	-	5	-	-	-	-	-	-
Wolf Swamp	-	31	<1	8	45	-	-	9	-	-	-	-	-	-
Swing Log	-	74	-	17	-	-	-	8	-	-	-	-	-	-
Wolf 1985	-	-	-	-	14	-	-	28	-	-	28	-	-	-
Wolf 1986	-	82	-	10	1	-	-	1	-	-	-	-	-	-
Wolf 1993	15	-	12	12	-	-	14	3	8	1	4	1	3	2
Basin Summary:	21	17	10	8	6	5	4	3	3	2	2	1	1	1

SDF = Sword Fern FRN = Fern spp. OXA = Oxalis GRS = Grass
FBS = Forbes LDF = Lady Fern CWF = Common Wood Fern
SDG = Sedge PGB = Piggyback HST = Horsetail NTL = Nettles
BKF = Bracken Fern BDS = Bedstraw ORG = Oregon Grape

Table 13 - Habitat Restoration Projects by Major Stream - Wolf Creek

Stream	Project Type	By Whom	When	Where	Current Status
Saleratus	Culvert removal	IP	1985	Mile 1	Functioning
Saleratus	Boulder weir	Ikes	1987	Below culvert	Blew out first winter
Saleratus	Boulder weir	IP/BLM / ODFW /IKES	1991	Below culvert	Functioning
Saleratus	2 gabions	BLM	1987	mile 0.6	Functioning
Saleratus	Small log/boulders	BLM	1987	Mile 0.3	Most gone, some functioning
Pittenger	4 log sills	IP/BLM	1994	Culvert	Functioning
Oat	1 gabion	BLM /State	1969+	Mile 1.5	Gone
Oat	Blast Pools	BLM /State	1966+	lower	Functioning
Oat	Boulder/Log sills	Ikes/IP/BLM	1988+	Mile 1.5	One Functioning & one too low
Oat	Log/Boulder	BLM	1994	Mouth	Functioning
Grenshaw	15 Gabions	BLM	1969+	Lower	Broken through
Grenshaw	Spawning channel	BLM	1969+	Mile 0.7	Repaired 1984, Functional, not accessible
Grenshaw	8 Boulder weirs	BLM	1986	Bridge	Functioning ; logs added 1988
Grenshaw	Small log/boulders	BLM	1987/89	Lower	Part functional, Part gone
Eames	7 Gabions	BLM /State	1969+	Lower	Broken through
Eames	Blast pools	BLM /State	1969+	Lower	Functioning
Eames	Log/boulders	BLM	1991/94	Lower	Functioning
Swamp	7 Gabions	Ikes	1984+	Lower & mid	Functioning
Panther	8 Gabions	Ikes	1984+	Lower	Present, not functioning
Swing Log	Logs/boulders	BLM	1994	Lower	Functioning

Stream	Project Type	By Whom	When	Where	Current Status
Wolf Creek	Logs/boulders	BLM	1994	Mid & upper	Functioning

Note: Dates and numbers of structures may not be exact.

Appendix-4: Fisheries Habitat Data