

Counts of spawners in all stocks used in the extinction risk analysis. Due to data quality issues, some stocks were not included in the Total ESU counts. (* indicates stocks used for esu level analysis)

ESU		Stream	Raw Spawner Counts								
			1980	1981	1982	1983	1984	1985	1986	1987	1988
LCR Chinook	Bear Creek				746	1100	962	352	389	661	452
	Big Creek*	439	743	3366	1838	2159	4055	2474	2327	2404	1953
	Clatskanie*	46	29	92	29	2	15	29	68	39	56
	Cowlitz Tule*	2418	3991	3024	3654	2577	4300	3388	5930	7700	7220
	Elochoman*	64	138	317	1016	292	407	558	2392	1356	120
	Germany*		80	257	548	93	347	15	351	1113	357
	Gnat*	85	43	170	32	31	36	70	513	296	168
	Grays Tule*	185	246	422	927	242	812	901	1093	1003	805
	Kalama Spring*	298	721	2712	1009	133	0	165	471	475	572
	Kalama R*	5675	1840	4570	2681	2955	1055	2227	9632	24279	20413
	Klaskanine*	99	37	5	51	32	3	3	11	19	51
	Lewis R, Bright*	13839	19297	8370	13540	7132	7491	11983	12935	12052	21199
	Lewis Spring*	992	324	986	732	1565	512	1875	6850	5267	3483
	Lewis, EF Tule*	311	397	240	305	192	540	389	135	427	591
	Lewis and Clark*	101	182	168	293	236	189	274	1088	670	253
	Mill Fall					3	2	7	1867	808	1490
	Plympton*	99	403	3749	1477	604	1768	357	4758	3155	1618
	Sandy Late					800	503	685	2205	1675	2060
	Skamokawa*	183	376	1035	1611	1744	5512	506	349	1055	973
	Youngs*	46	19	11	2	20	5	22	153	284	87
UCR Spr Chinook	Entiat*	334	296	334	334	265	359	327	200	209	115
	Methow*	438	467	558	861	929	1232	909	1496	1641	1144
	Wenatchee*	1519	1595	1819	3286	2341	4529	2674	1878	1692	1349
SR Sp/Su Chinook	Snake R. LGD	8149	16441	16577	13412	11940	30145	37730	34726	35640	16124
	Bear Creek	42	151	83	171	137	295	224	456	1109	91
	Imnaha River	183	453	590	435	557	699	479	448	606	203
	Johnson Creek	55	102	93	152	36	178	129	175	332	103
	Marsh Creek	16	115	71	60	100	196	171	268	395	80
	Minam River	43	50	104	103	101	625	357	569	493	197
	Poverty Creek	163	187	192	337	220	341	233	554	844	261
	Sulphur Creek	12	43	17	49	0	62	385	67	607	43
SR Fall Chinook	Snake R. LGD	515	878	1209	909	717	1080	1403	1064	702	815
UWIll Chinook	Willamette Falls	15913	17864	27268	17519	22995	19315	22151	30722	36894	29058
	Leaburg Dam	1980	1078	2241	1561	1000	825	2061	3455	6753	3976
CR Chum											
	Grays R. WF*	7	3	6	3	12	3	79	42	27	16
	Grays R.*	52	359	663	89	325	449	245	711	342	176
	Crazy Johnson Ck.*	52	11	87	34	35	0	193	2	289	120
	Hardy Ck.*	131	7	210	112	76	67	58	193	436	9
	Hamilton Ck.*	44	35	161	37	47	78	160	65	109	15
LCR Steelhead	Hamilton Springs*	18	18	84	13	7	46	74	27	31	10
	Clackamas (S)*	5803	4714	4138	1948	11062	5549	7422	4444	7739	3951
	Clackamas (W)*	1693	1798	1153	1031	987	1027	1194	1139	1773	963
	Green River (W)						775	589	402	310	128
	Kalama (S)*	2647	11524	13686	5274	1155	1567	2897	5132	3047	3184
MC Steelhead	Kalama (W)*	1347	2770	1108	874	2007	1067	2532	1794	2134	709
	Sandy (W)*	3015	4078	2689	2449	2232	2841	2752	3675	3440	2993
	Toutle (W)					838	1807	1595	1650	2222	1371
	Deschutes (S)*	10100	11900	11340	23671	19491	21730	24565	22990	9882	10782
	Eightmile Ck (W)						64	111	102	18	41
UC Steelhead	Fifteen Mile Ck (W)					24	29	64	76	28	33
	Mill Ck (S)			13	2	9	16	30	5	6	11
	Ramsey Ck (W)						3	31	47	23	12
	Shitike Ck (S)	40	47	64	15	39	53	42	54	52	12
	Umatilla River (S)*				2314	3197	2885	3444	2482	2475	1668
	Warm Springs NFH (S)*	240	397	569	255	431	577	373	822	522	385
	Yakima River (S)*	79	263	288	358	688	1380	1840	2198	856	613
	Upper Columbia	1538	1610	2218	6620	6342	9173	7105	5994	3649	1912
SR Steelhead	LGD	36461	40457	70204	83704	1103529	114068	126906	67021	84085	128607
	SR A-Run	27024	30121	51202	63053	73608	80588	89717	53980	61612	82481
	SR B-Run	10972	12299	21182	26245	30788	35746	40266	17300	25525	48939
UWIll Steelhead	Willamette Falls	16064	9025	6921	4702	10732	16042	12782	8201	15007	5360
	Calapoia	360	167	348	216	344	596	440	372	744	108
	Mollala	4115	2301	1746	906	2199	3364	3108	1684	4676	1202
	N. Santiam	7670	4440	3008	2456	4524	7792	5730	3993	4988	2991
	S. Santiam	3919	2117	1819	1124	3665	4290	3504	2152	4599	1059

Table C-1
continued

										Reference
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
138	247	2	5	8	0	343	161			15: 500008
1496	911	845	1746	2202	1897	1190	809			15: 50000
15	2	0	0	12	17	19	14			15: 50001
2698	2567	2489	2218	2512	2231	1602	2710			15: 105030
136	178	190	274	688	144	508	1875			15: 103050
106	109	33	266	706	230	59	103			15: 104300
129	63	71	17	26	65	73	58			15: 50007
287	188	4	40	47	29	351	12			15: 100020
34	32	168	98	407	376	254	39			15: 111100
2054	5085	3593	1941	2020	3044	10630	3539			15: 110050
7	22	0	0	1	0	0	53			15: 50002
17506	9066	6307	7025	9939	9718	14166	8670			15: 113030
1345	1607	1254	1412	475	270	493	410			15: 114030
342	230	202	156	395	200	167	307			15: 113040
133	34	0	0	0	0	1				15: 50004
150	22	27	274	218	402	67	8			15: 104250
549	383	1312	457	2922	1924	682	1001			15: 50005
500	708	1008	1380	950	1055	510	2032			15: 50198
451	267	202	134	316	172	39	262			15: 102150
17	19	0	0	19	0	0	25			15: 50006
259	100	131	312	75	18	25	62	47		5
1104	550	1630	1357	293	33	0	298	0		5
927	552	1080	1179	275	51	179	307	155		5
22408	10432	24405	28924	3915	1799	6814	44564	14209	6556	15: 19
185	181	173	709	33	16	56	225	372	72	1
173	251	363	1178	115	97	219	474	159	282	1
141	151	180	357	50	20	49	236	119	49	1
101	72	114	216	9	0	18	110	164	0	1
331	189	102	267	22	45	233	140	122	96	1
572	538	578	866	209	81	135	363	396	153	1
170	213	21	263	0	4	23	43	140	0	1
273	767	674	883	448	226	964				13
27536	19025	15433	7210	11333	7329	4935	10609	16357		9
7115	4359	3816	3617	1526	1622	1445	1176	1874		9
0	13	289	39	18	0	160	55	214		18
166	93	1269	704	41	66	415	79	154		18
100	204	320	78	90	413	396	485	145		18
116	125	635	324	137	130	140	105	443	157	18
45	15	125	16	18	4	5	31	43		18
16	11	8	4	22	16	81	114	237	165	18
4284	2222	5956	2186	3215	1012	293	1073			15: 50316
953	482	1430	1155	1169	913	208	278			3
86	108	44	84	128	174	251				15: 180120
1655	1738	2663	7188	3838	3043	1764	2993			3
754	1288	2846	1153	916	1315	1606				3
3065	1995	2918	1636	1567	1680	536	1398			15: 50188
752	904	1290	1242	632	396	150				15: 180179
8529	16721	6992	6963	6608	14490	31874				15: 50176, 50173
0	1	1	0	1	26	50	24			15: 50071
38	16	19	7	23	27	31	14			15: 50073
18	19	36	25	14	1	2	13			15: 54592
3	0	0	11	23	25	27	20			15: 50072
17	19	36	11	32	18	8	17			15: 54590
1112	2769	1913	1290	1531	2081	2477				15: 50515, 57508
339	165	280	83	92						15: 61224
756	2075	1021	507	1107						15: 180071, 180005
2089	1811	3956	1171	2258	2018	2064				5
54426	97671	125803	56618	44932	77836	81545	86863	72908		4
28496	85661	96572	42043	37144	70417	68818	74150			4
28369	13391	31693	17725	10158	8710	14446	12296			4
9232	2722	3679	2725	4275	2703	1323	3924			
321	101	55	21	88	56	34	236			15: 66658
2298	478	902	327	1301	479	264	574			15: 50076
4266	1291	1490	1549	1664	1061	590	2214			15: 66840
2347	852	1232	828	1222	1107	435	900			15: 66898

Table C-2. Age structure of ESUs and individual stocks.

ESU	Stream	Age structure							Reference
		1	2	3	4	5	6	7	
LCR Chinook	Bear Creek	0.000	0.090	0.600	0.240	0.070	0.000	0.000	8
	Big Creek	0.000	0.000	0.140	0.760	0.100	0.000	0.000	8
	Clatskanie	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Cowlitz Tule	0.000	0.140	0.280	0.460	0.120	0.000	0.000	8
	Elochoman	0.000	0.020	0.470	0.500	0.010	0.000	0.000	8
	Germany	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Gnat	0.000	0.090	0.200	0.590	0.120	0.000	0.000	8
	Grays Tule	0.000	0.050	0.390	0.540	0.020	0.000	0.000	8
	Kalama Spring	0.000	0.000	0.340	0.550	0.110	0.000	0.000	8
	Kalama R	0.000	0.000	0.340	0.550	0.110	0.000	0.000	8
	Klaskanine	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Lewis R. Bright	0.000	0.140	0.160	0.420	0.280	0.000	0.000	8
	Lewis Spring	0.000	0.140	0.160	0.420	0.280	0.000	0.000	8
	Lewis, EF Tule	0.000	0.140	0.160	0.420	0.280	0.000	0.000	8
	Lewis and Clark								
	Mill Fall	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Plympton	0.000	0.000	0.190	0.790	0.020	0.000	0.000	8
	Sandy Late	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Skamokawa	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
	Youngs	0.000	0.075	0.250	0.600	0.075	0.000	0.000	8
UCR Spr Chinook	Entiat	0.000	0.000	0.090	0.610	0.300	0.000	0.000	5
	Methow	0.000	0.000	0.110	0.530	0.360	0.000	0.000	5
	Wenatchee	0.000	0.000	0.089	0.487	0.423	0.001	0.000	5
SR Sp/Su Chinook	LGD	0.000	0.000	0.045	0.588	0.362	0.000	0.000	
	Bear Creek	0.000	0.000	0.028	0.215	0.757	0.000	0.000	1
	Imnaha River	0.000	0.000	0.048	0.419	0.533	0.000	0.000	1
	Johnson Creek	0.000	0.000	0.143	0.364	0.493	0.000	0.000	1
	Marsh Creek	0.000	0.000	0.030	0.254	0.716	0.000	0.000	1
	Minam River	0.000	0.000	0.087	0.648	0.265	0.000	0.000	1
	Poverty Creek	0.000	0.000	0.211	0.357	0.432	0.000	0.000	1
	Sulphur Creek	0.000	0.000	0.069	0.251	0.680	0.000	0.000	1
SR Fall Chinook	Snake R. LGD	0.000	0.000	0.464	0.415	0.112	0.009	0.000	13
UWill Chinook	Total ESU	0.000	0.000	0.030	0.470	0.480	0.010	0.000	9
	Leaburg Dam	0.000	0.000	0.030	0.470	0.480	0.010	0.000	9
CR Chum	Grays R. WF	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
	Grays R.	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
	Crazy Johnson Ck.	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
	Hardy Ck.	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
	Hamilton Ck.	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
	Hamilton Springs	0.000	0.000	0.410	0.570	0.020	0.000	0.000	14
LCR Steelhead	Clackamas (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	2, 3, 6
	Clackamas (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	2, 3, 6
	Green River (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	2, 3, 6
	Kalama (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	2, 3, 6
	Kalama (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	2, 3, 6
	Sandy (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	2, 3, 6
	Toutle (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	2, 3, 6
MC Steelhead	Deschutes (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	no direct data, assumed from: 2, 3, 6
	Eightmile Ck (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	ibid
	Fifteen Mile Ck (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	ibid
	Mill Ck (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	ibid
	Ramsey Ck (W)	0.000	0.000	0.026	0.527	0.399	0.048	0.000	ibid
	Shitike Ck (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	ibid
	Umatilla River (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	ibid
	Warm Springs NFH (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	ibid
	Yakima River (S)	0.000	0.000	0.000	0.092	0.665	0.225	0.018	ibid
	Upper Columbia	0.000	0.010	0.370	0.457	0.152	0.011	0.000	5
SR Steelhead	LGD	0.000	0.000	0.012	0.202	0.446	0.286	0.054	2
	SR A-Run	0.000	0.000	0.000	0.050	0.860	0.090	0.000	2
	SR B-Run	0.000	0.000	0.000	0.000	0.062	0.386	0.552	2
UWill Steelhead	Willamette Falls	0.000	0.000	0.000	0.920	0.080	0.000	0.000	
	Calapooia	0.000	0.000	0.000	0.920	0.080	0.000	0.000	2
	Mollala	0.000	0.000	0.000	0.920	0.080	0.000	0.000	2
	N. Santiam	0.000	0.000	0.000	0.920	0.080	0.000	0.000	2
	S. Santiam	0.000	0.000	0.000	0.920	0.080	0.000	0.000	2

Table C-3. Fraction of Spawners in ESU or stock that are of wild origin.

ESU	Stream	Fraction of Spawners that are Wild											
		Pt Est.	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
LCR Chinook	Total ESU						0.668	0.672	0.652	0.647	0.640	0.641	0.646
	Bear Creek	0.500											
	Big Creek	0.500											
	Clatskanie	0.500											
	Cowlitz Tule	0.500											
	Elochoman	0.500											
	Germany	0.500											
	Gnat	0.500											
	Grays Tule	0.500											
	Kalama Spring	0.500											
	Kalama R	0.500											
	Klaskanine	0.500											
	Lewis R, Bright	0.920											
	Lewis Spring	0.500											
	Lewis, EF Tule	1.000											
	Lewis and Clark	0.500											
	Mill Fall	0.500											
	Plympton	0.500											
	Sandy Late	0.970											
	Skamokawa	0.500											
Youngs	0.500												
UCR Spr Chinook	Total ESU					0.941	0.928	0.916	0.911	0.894	0.891	0.900	0.901
	Entiat		0.909	0.917	0.926	0.799	0.695	0.746	0.704	0.542	0.670	0.420	0.775
	Methow		0.911	0.786	0.731	0.781	0.863	0.756	0.770	0.901	0.798	0.957	0.973
	Wenatchee		0.978	0.982	0.982	0.989	0.980	0.981	0.965	0.960	0.961	0.960	0.950
SR Sp/Su Chinook	Total ESU		0.757	0.685	0.642	0.702	0.620	0.280	0.287	0.297	0.304	0.334	0.294
	Bear Creek	1.000											
	Imnaha River		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.927	1.000	0.600
	Johnson Creek	1.000											
	Marsh Creek	1.000											
	Minam River		1.000	1.000	1.000	1.000	1.000	1.000	0.500	0.600	0.620	1.000	0.440
SR Fall Chinook	Poverty Creek		1.000	1.000	1.000	1.000	1.000	0.907	0.907	0.907	0.907	0.907	0.907
	Sulphur Creek	1.000											
SR Fall Chinook	Snake R. LGD		1.000	1.000	1.000	0.926	0.769	0.820	0.760	0.434	0.705	0.512	0.232
UWill Chinook	Total ESU		0.12443	0.06034	0.08218	0.0891	0.04349	0.04271	0.09304	0.11246	0.18304	0.13683	0.25839
	Leaburg Dam		0.520	0.520	0.520	0.520	0.520	0.520	0.520	0.520	0.520	0.520	0.520
CR Chum	Total ESU	1.000											
	Grays R. WF	1.000											
	Grays R.	1.000											
	Crazy Johnson Ck.	1.000											
	Hardy Ck.	1.000											
	Hamilton Ck.	1.000											
	Hamilton Springs	1.000											
LCR Steelhead	Total ESU							0.311	0.327	0.344	0.345	0.349	0.362
	Clackamas (S)	0.300											
	Clackamas (W)	0.300											
	Green River (W)	1.000											
	Kalama (S)		0.271	0.254	0.101	0.165	0.214	0.294	0.163	0.087	0.278	0.155	0.442
	Kalama (W)		0.761	0.776	0.784	0.609	0.470	0.592	0.363	0.547	0.505	0.697	0.471
	Sandy (W)		0.620	0.539	0.595	0.543	0.581	0.581	0.622	0.572	0.556	0.565	0.569
	Toutle (W)	1.000											
MC Steelhead	Total ESU										0.449	0.389	0.380
	Deschutes (S)		0.406	0.580	0.579	0.348	0.396	0.443	0.253	0.233	0.359	0.397	0.428
	Eightmile Ck (W)	no data											
	Fifteen Mile Ck (W)	no data											
	Mill Ck (S)	no data											
	Ramsey Ck (W)	no data											
	Shitike Ck (S)	no data											
	Umatilla River (S)					1.000	1.000	1.000	1.000	0.933	0.850	0.853	0.652
	Warm Springs NFH (S)	1.000											
	Yakima River (S)		0.797	0.798	0.799	0.799	0.799	0.800	0.800	1.000	1.000	1.000	0.881
UC Steelhead	Upper Columbia		0.205	0.240	0.264	0.131	0.166	0.199	0.201	0.424	0.351	0.616	0.321
SR Steelhead	Total ESU		0.540	0.487	0.332	0.300	0.237	0.234	0.173	0.380	0.250	0.194	0.170
	SR A-Run		0.526	0.472	0.329	0.287	0.240	0.221	0.196	0.405	0.283	0.193	0.103
	SR B-Run		0.500	0.446	0.305	0.266	0.221	0.248	0.109	0.209	0.141	0.185	0.223
UWill Steelhead	Total ESU		0.799	0.799	0.702	0.744	0.607	0.650	0.648	0.680	0.680	0.759	0.798
	Calapooia		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	Mollala		0.540	0.540	0.540	0.540	0.540	0.540	0.540	0.540	0.540	0.540	0.540
	N. Santiam		0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.831	0.830
	S. Santiam		1.000	1.000	0.586	0.670	0.337	0.361	0.402	0.458	0.608	0.782	0.965

Table C-3
continued[illegible]

Table C-4. Weighted running sum of spawner counts for all stocks and ESUs.

Weighted running sum of spawner counts for all stocks used in the extinction risk analysis. Due to data quality issues, some stocks were not included in the Total ESU counts. (* indicates stocks used for esu level analysis)

ESU	Stream	Weighted Running Sums									
		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
LCR Chinook	ESU			97355.3	95612.5	121522.0	161852.0	190323.0	174754.0	144441.0	104026.0
	Bear Creek					2009.6	1745.5	1643.2	1336.5	1028.2	560.9
	Big Creek*		8045.9	11021.1	10605.3	10896.5	10908.2	9217.1	8101.6	6660.1	5172.0
	Clatskanie*		139.1	108.1	72.3	114.4	144.1	178.6	155.2	100.2	56.6
	Cowlitz Tule*		11436.6	12252.3	12386.4	14949.1	19346.9	22500.8	20386.0	16651.8	12487.9
	Elochoman*		1689.7	1857.7	1772.5	3507.9	4505.3	4108.8	2810.4	1147.1	576.0
	Germany*			1126.4	837.2	790.9	1719.1	1830.8	1730.6	1322.8	564.5
	Gnat*		258.4	222.0	177.3	641.6	902.0	984.9	939.0	616.6	406.2
	Grays Tule*		1711.4	2175.9	2470.5	2919.5	3411.5	3367.2	2675.0	1823.3	935.5
	Kalama Spring*		4362.6	3011.2	1262.3	834.8	1125.6	1626.9	1410.0	1003.3	663.8
	Kalama R*		12044.7	9909.6	8509.2	15159.2	37159.4	55909.9	53348.1	44635.7	26875.3
	Klaskanine*		120.0	88.3	70.4	50.2	77.2	77.8	89.2	64.3	28.9
	Lewis R. Bright*		45253.0	37529.6	37429.1	40143.9	42533.0	54860.7	61479.5	56861.3	48642.0
	Lewis Spring*		3649.5	3487.4	4521.4	10465.8	14526.1	16096.9	14677.6	11552.3	7930.6
	Lewis, EF Tule*		1068.4	1273.5	1374.8	1208.2	1328.3	1557.6	1503.6	1417.0	1259.4
	Lewis and Clark*			805.6	810.3	876.3	1697.0	2140.4	2116.7	1721.8	859.6
	Mill Fall						2683.1	4029.9	3648.2	2235.7	1254.1
	Plympton*		6158.4	6893.8	4000.4	7401.8	9714.2	9855.5	9183.1	5200.7	3617.7
	Sandy Late						4913.2	6274.7	5649.1	4409.5	3694.6
	Skamokawa*			4579.9	9473.0	8796.3	7251.6	5723.5	3105.8	2673.4	2356.3
	Youngs*				43.1	48.3	324.3	396.2	381.9	309.8	114.8
UCR Spr Chinook	ESU		16713.9	18346.6	18000.3	17365.5	15895.3	13279.0	11578.6	10028.2	9780.0
	Entiat*		1301.7	1349.4	1354.4	1226.5	1141.4	929.1	862.7	723.8	657.1
	Methow*		2921.0	3686.3	4037.2	4773.7	5477.2	5534.1	5548.5	4797.6	4893.6
	Wenatchee*			12491.3	13310.9	12608.6	11365.3	9276.7	6815.8	5167.4	4506.9
SR Sp/Su Chinook	ESU		60620.8	77361.9	98707.2	118926	141266	133585	121182	95744.6	85723.3
	Bear Creek		569.2	797.3	884.5	1237.4	2179.7	2097.6	1998.7	1880.7	1467.1
	Imnaha River		2110.6	2494.2	2463.8	2388.3	2495.5	2086.1	1663.9	1442.9	1304.0
	Johnson Creek		395.8	496.0	518.6	587.5	805.5	807.4	788.6	764.9	723.4
	Marsh Creek		353.5	506.9	576.5	775.8	1096.1	1049.4	958.7	827.5	647.3
	Minam River		365.0	936.5	1203.7	1670.0	2016.2	1750.4	1635.3	1318.0	932.4
	Poverty Creek		966.1	1129.7	1142.8	1447.0	1995.0	1990.5	2214.5	2276.0	2258.5
	Sulphur Creek		114.7	156.0	503.8	546.7	1115.5	1116.6	1143.2	1035.9	856.4
	Snake R. LGD		3463.9	3840.3	4051.2	3841.8	3469.0	2538.2	2370.8	2243.8	2574.4
	Willamette Falls			95177.0	95069.5	103380.0	119993.0	127886.0	134331.0	126691.0	108657.0
	Leaburg Dam				6513.8	8105.4	13578.8	16593.6	22208.1	23702.0	22508.3
CR Chum	ESU		2262.7	2156.2	2148.1	2793.9	3472.4	3110.2	2652.8	1998.9	3778.8
	Grays R. WF*		22.9	21.6	95.9	131.1	150.0	131.7	69.4	45.8	312.0
	Grays R.*		1290.0	1261.4	1084.8	1598.5	1569.4	1382.5	1108.4	651.0	1638.7
	Crazy Johnson Ck.*		163.5	120.6	249.8	216.3	484.7	524.9	514.0	594.6	700.6
	Hardy Ck.*		404.8	379.0	271.3	365.1	728.1	673.6	676.0	511.1	890.0
	Hamilton Ck.*		266.5	257.7	310.1	331.5	381.0	285.0	210.6	140.6	196.0
	Hamilton Springs*		115.0	115.9	136.4	151.4	159.3	112.6	74.4	55.8	41.5
	ESU				80663.6	75704.1	78750.5	74762.4	71107.5	62773.3	61835.4
LCR Steelhead	Clackamas (S)*				30988.3	31336.2	35746.1	31317.6	28704.7	24134.6	24653.5
	Clackamas (W)*			5053.0	4813.9	4837.5	5597.0	5544.4	5381.4	4691.4	4650.2
	Green River (W)								1215.8	831.9	520.5
	Kalama (S)*				26167.9	19072.9	15219.7	16058.4	16050.0	15016.0	13305.9
	Kalama (W)*			6330.0	7085.5	7791.7	8438.3	7676.5	6527.4	5753.0	6618.6
	Sandy (W)*			12108.7	11608.1	12665.7	13749.4	14165.5	14444.0	13178.4	12607.3
	Toutle (W)							7644.5	6751.8	6005.3	5353.8
MC Steelhead	ESU							116334.0	124862.0	113987.0	103487.0
	Deschutes (S)*				102827.0	113239.0	102821.0	93112.2	80119.2	73149.4	58025.6
	Eightmile Ck (W)								211.0	110.5	54.9
	Fifteen Mile Ck (W)								202.9	151.2	121.1
	Mill Ck (S)						65.9	68.8	71.3	66.1	91.2
	Ramsey Ck (W)								97.8	59.9	27.2
	Shitike Ck (S)				219.3	218.0	241.2	217.9	186.7	160.2	145.1
	Umatilla River (S)*							13507.1	11622.8	11166.5	10374.4
	Warm Springs NFH (S)*				2253.4	2580.0	2757.6	2735.2	2554.7	2258.4	1849.4
	Yakima River (S)*				4592.8	6505.8	6990.9	6933.7	6441.4	6767.7	5809.5
UC Steelhead	Upper Columbia		23722.9	27039.9	27215.8	23470.5	17465.1	12588.7	9110.6	9681.1	
	LGD		498107.0	502127.0	504335.0	534473.0	477457.0	465766.0	500695.0	467158.0	
SR Steelhead	A-Run		299497.0	358318.0	362401.0	361499.0	370973.0	319053.0	317606.0	356600.0	
	B-Run			171820.0	177003.0	185935.0	211142.0	210923.0	191025.0	186371.0	
	ESU										
UWill Steelhead	Willamette Falls		32665.1	39119.0	44811.7	48133.2	52890.6	42633.4	38822.6	32977.1	22193.6
	Calapooia		1103.8	1517.4	1623.8	1769.3	2179.5	1711.7	1580.2	1303.8	644.5
	Mollala		7481.2	8399.1	9716.7	10427.5	13007.9	10939.1	10108.6	8788.7	5254.1
	N. Santiam		15041.6	18135.2	20742.6	22235.5	22864.9	18325.4	16696.4	13855.4	10437.0
	S. Santiam		9038.5	11067.4	12728.5	13700.9	14838.2	11657.2	10437.3	9029.2	5857.9
	ESU										
	Willamette Falls										

Table C-4
continued

									Comment
1992	1993	1994	1995	1996	1997	1998	1999	2000	
79072.2	71770.6	77296.8							sum of index counts
306.2	101.1	30.5	352.0	506.8					
4983.9	5726.1	6662.8	6875.1	5964.3					
16.2	14.5	29.2	47.1	56.8					
9345.9	8683.2	8402.1	7578.4	7953.8					
709.0	1240.3	1199.2	1467.9	2877.7					
498.2	1084.1	1212.5	1124.1	871.3					
257.1	167.8	164.4	182.3	210.7					
399.4	201.8	120.0	447.1	417.7					
383.4	697.9	995.4	1120.2	948.4					
14220.1	11136.0	9935.7	17370.3	18759.7					
16.4	2.7	0.9	53.7						
39318.7	33635.9	32651.9	39115.0	40117.8					
5964.8	4466.9	3287.1	2511.0	1863.1					
960.7	981.5	935.0	872.5	966.2					
123.1	24.8	0.7	1.0						
534.4	543.1	893.3	857.6	614.6					
2629.1	5012.2	6373.4	5924.4	5983.0					
3534.9	3777.8	4015.0	3450.9	4262.6					
960.4	850.9	768.3	608.9	683.5					
33.1	20.4	17.6	37.8						
9176.6	7577.1	5922.7	3848.8	2151.5					total esu
812.5	685.9	553.2	440.3	266.5	172.5				
4932.4	4167.3	3331.9	2120.6	1080.4	433.0				
4229.4	3431.8	2723.9	2037.6	1288.0	804.7				
91078.1	75430.3	61773.3	49107.1	67530.9	68741.9	72496.6			total esu
1311.5	1230.5	1062.4	924.7	865.8	693.8	735.8			
2065.3	1987.7	1870.2	1746.8	1527.8	1006.0	1175.0			
859.3	785.8	655.9	514.0	524.3	446.6	456.8			
558.1	482.0	387.7	318.5	291.3	297.8	290.7			
912.9	652.1	477.9	571.1	509.2	541.5	582.2			
2546.2	2324.5	1843.9	1357.6	1118.0	1048.8	1054.7			
684.4	597.6	431.3	285.7	248.5	209.2	206.6			
2455.8	2012.9	2198.7							total esu
83064.6	66308.1	50511.2	38418.3	37566.3	44665.9				total esu
20708.5	16732.4	12690.5	10024.2	7550.6	6859.4				
4540.3	4417.9	3690.4	2892.3	2910.6	3679.6				sum of peak counts
341.3	353.7	227.8	206.8	226.4	429.4				
2167.5	2072.2	1561.6	962.7	598.3	687.8				
663.4	610.4	773.9	951.4	1348.7	1271.5				
1152.6	1172.1	968.2	610.9	462.3	767.4	790.2			
182.9	168.8	112.1	38.9	50.9	81.7				
32.6	40.8	46.9	121.5	224.1	441.9	564.1			
59152.8	57140.7	54691.2	48582.1						sum of index counts
20196.1	18568.3	15498.7	12731.1	9065.2					
4510.8	4695.7	4891.0	4077.3	3122.5					
391.9	405.8	481.3	659.7						
16967.9	17758.3	18769.6	18703.1	18843.1					
6440.8	6540.6	6767.9	6294.0						
11037.3	9577.9	8764.0	6776.6	6011.6					
4887.9	4446.5	3966.6	3007.7						
89363.9	82111.9	67655.1	61619.1						sum of index counts
51810.2	47826.2	52502.3	70500.5						
21.2	4.9	27.9	77.0	100.5					
95.0	83.1	84.3	96.9	98.3					
109.4	113.0	97.7	79.5	61.7					
20.4	35.9	59.0	85.6	99.2					
107.5	117.3	118.6	106.6	94.1					
9244.6	8962.6	9629.5	9808.9						
1358.2	1030.8								
5163.2	5560.8								
8567.2	8829.7	8205.8	7707.8						total esu
414898.0	405898.0	395280.0	383186.0	379578.0					total esu
336674.0	295914.0	330119.0	317875.0	299161.0					
173609.0	161331.0	135301.0	110952.0	100455.0					
18786.8	14139.6	13599.8	11320.3	12443.0					total esu
506.6	290.7	228.1	203.4	415.7					
4101.2	3191.8	3047.2	2443.2	2644.2					
8835.3	6335.3	5867.3	4983.2	5652.9					
5343.7	4321.8	4457.2	3690.6	3730.2					

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Table C-6. Habitat analysis variables.

INDEX STOCK*		INDEPENDENT VARIABLES**									
Name	Pct Urban	Pct AgRan	Pct Forest	Pct Graz	Mine dens	EPA dens	MWSI	Dist rec	Eros	Num dams	Total Area
Bear Valley/Elk	0.08	10.20	89.45	0.00	0.07	0.25	56.58	88.85	0.20	8	397.16
Big Sheep/Lick	0.04	1.92	97.90	99.99	0.05	0.27	109.46	58.02	1.11	8	121.28
Catherine	0.46	7.87	91.64	74.64	0.01	0.32	115.59	51.57	1.22	8	294.16
Entiat	0.00	9.10	90.87	0.00	0.05	0.02	100.76	95.94	0.77	8	179.71
Grande Ronde	0.08	3.63	96.27	65.64	0.08	0.28	121.08	47.65	1.02	8	254.58
Imnaha	0.00	0.00	99.03	100.00	0.06	0.39	118.45	56.20	6.57	8	125.89
John Day Mainstem	0.06	35.57	64.37	100.00	0.01	0.39	95.49	53.38	0.41	3	214.46
Johnson	0.00	1.79	97.23	0.00	0.05	0.26	89.60	85.88	0.36	8	97.77
Klickitat	0.00	0.21	99.79	0.00	0.00	0.00	85.18	80.49	1.39	1	396.76
Lookingglass	0.61	0.50	98.66	77.99	0.00	0.45	115.60	55.47	1.85	8	101.91
Lostine	0.36	18.97	73.27	64.99	0.05	0.13	111.72	68.64	1.54	8	277.18
Marsh	0.00	7.57	90.15	0.00	0.04	0.00	90.81	67.11	0.32	8	266.69
Methow	0.12	2.55	94.44	0.00	0.03	0.18	100.23	93.95	0.78	9	579.45
Middle Fork John Day	0.01	2.10	97.89	99.95	0.15	0.38	109.82	57.38	0.00	3	230.72
Minam	0.00	0.88	97.30	99.27	0.03	0.00	123.96	69.27	2.62	8	333.18
North Fork John Day	0.05	2.95	97.00	47.18	0.21	0.23	120.94	55.81	0.88	3	486.31
Poverty Flat	0.00	4.17	95.83	0.00	0.03	0.20	98.64	83.09	0.29	8	177.57
Sulphur	0.00	3.51	96.49	0.00	0.03	0.00	88.82	83.78	0.38	8	72.70
Warm Springs	0.17	21.38	78.34	0.14	0.01	0.00	82.80	49.33	0.49	2	516.68
Wenaha	0.00	0.00	100.00	0.88	0.00	0.00	144.61	52.90	9.47	8	58.40
Wenatchee	0.63	4.19	91.35	0.00	0.09	0.18	95.77	90.60	2.77	7	712.73
Wind	0.16	0.25	99.28	0.00	0.00	0.00	ND	ND	ND	1	299.01

* See "6HUC clusters" worksheet for listing of subwatersheds associated with each index stock

** See "Metadata" worksheet for information about each of these model variables

Table C-6 continued

DEPENDENT VARIABLES**															
Max S	Mean S	Min S	Max R	Mean R	Min R	Max R/S	Mean R/S	Min R/S	Var R/S	Max InR/S	Mean InR/S	Min InR/S	Max2 R/S	MeanTop2 R/S	GMean R/S
1109.34	267.63	41.82	2216.52	584.37	33.53	12.97	3.91	0.18	1.69	2.56	0.68	-1.71	10.79	11.88	1.98
126.37	50.71	0.00	156.01	51.10	0.21	7.82	1.75	0.00	3.17	2.06	-0.57	-3.15	6.82	7.32	.
655.69	323.52	118.40	380.89	181.95	16.27	2.87	0.72	0.03	1.75	1.06	-0.92	-3.57	1.93	2.40	0.40
351.00	264.53	112.21	690.78	371.26	98.94	2.60	1.44	0.39	0.41	0.96	0.20	-0.94	2.47	2.54	1.22
516.25	213.46	3.01	563.30	152.48	5.36	11.38	1.89	0.01	3.60	2.43	-0.65	-4.26	7.29	9.34	0.52
720.55	446.30	169.48	1585.90	722.12	125.33	5.52	1.83	0.46	0.64	1.71	0.31	-0.78	4.52	5.02	1.36
822.96	360.30	50.12	1021.52	620.13	276.02	7.64	2.65	0.34	0.74	2.03	0.68	-1.09	5.26	6.45	1.98
331.54	135.88	35.60	863.95	298.67	26.99	5.83	2.60	0.19	1.18	1.76	0.64	-1.65	5.67	5.75	1.89
1108.02	249.66	63.00	1391.67	599.19	49.17	21.62	5.57	0.22	0.59	3.07	0.98	-1.52	13.64	17.63	2.67
166.27	54.46	0.00	55.83	26.21	14.37	2.66	0.95	0.17	0.94	0.98	-0.51	-1.80	0.93	1.80	0.60
348.24	149.02	26.22	396.18	175.79	26.46	13.59	2.54	0.21	1.95	2.61	0.05	-1.56	6.71	10.15	1.05
394.55	143.05	16.36	879.38	280.25	5.51	18.94	4.35	0.05	1.19	2.94	0.42	-2.91	14.66	16.80	1.52
1587.65	937.29	348.19	5120.23	2923.89	158.67	9.71	3.92	0.15	1.66	2.27	0.98	-1.93	7.75	8.73	2.67
1908.33	582.58	147.20	2937.31	962.64	285.30	11.59	2.80	0.15	2.84	2.45	0.57	-1.90	3.36	7.47	1.77
641.85	277.88	43.38	911.57	380.77	29.73	17.91	4.10	0.09	1.33	2.89	0.32	-2.44	9.39	13.65	1.37
2302.92	1172.48	428.70	3725.29	2161.42	738.01	6.71	2.38	0.47	2.98	1.90	0.61	-0.76	4.50	5.61	1.83
843.89	354.84	162.74	2593.48	857.35	117.46	7.71	2.82	0.21	0.87	2.04	0.74	-1.58	5.67	6.69	2.09
606.58	132.21	0.00	1135.01	322.49	8.83	22.99	6.56	0.05	3.43	3.14	0.86	-2.96	15.84	19.41	2.36
939.75	668.13	188.89	3527.41	2201.22	501.82	7.57	3.89	0.57	0.68	2.02	1.12	-0.57	7.23	7.40	3.08
533.33	267.15	54.21	678.59	248.98	49.21	4.62	1.41	0.18	1.27	1.53	-0.17	-1.74	3.27	3.95	0.84
4471.74	2208.5	1020.91	5279.87	2317.76	42.16	3.24	1.14	0.04	1.37	1.18	-0.32	-3.19	2.71	2.98	0.72
800.92	209.06	79.00	1216.49	274.31	60.99	7.42	1.80	0.25	0.84	2.00	0.20	-1.37	2.12	4.77	1.23

Table C-7. Habitat analysis variables.

Independent Variable	Description	Source sheet	Data provider	Original data source	Date(s)
Pct_Urban	% of index HUC area classified as "urban" or "built-up"	LandUse	StreamNet	USGS Land Use and Land Cover	1981-1992
Pct_AgRan	% of index HUC area classified as agriculture or rangeland	LandUse	StreamNet	USGS Land Use and Land Cover	1981-1992
Pct_Forest	% of index HUC area classified as forested	LandUse	StreamNet	USGS Land Use and Land Cover	1981-1992
Pct_Graz	% of index HUC linked to grazing allotments	Grazing	ICBEMP	Multiple sources	1995
Mine_dens	Density of mines [#mines/(total index area sqkm)]	Mining	ICBEMP	US Bureau of Mines/USGS	1995
EPA_dens	Density of streams [km/(total index km)] listed under 303(d)	303(d)	StreamNet	EPA	
MSWI	Master Watershed Sensitivity Index: rating calculated by USFS	Watershed	ICBEMP	USFS - Region 1	1998
Dist_rec	Disturbance recovery potential: rating calculated by USFS	Watershed	ICBEMP	USFS - Region 1	1998
Eros	Erosion potential: rating calculated by USFS	Watershed	ICBEMP	USFS - Region 1	1998
N_dams	Number of dams separating index area from the Pacific Ocean	-	-	-	-
Tot_area	Total land area (sqkm) within HUC area	-	-	-	-

Dependent Variables	Calculations based on est. returns, 1980-1990
Min_S	Single-year minimum number of spawners (S)
Mean_S	Arithmetic mean number of spawners (S)
Max_S	Single-year maximum number of spawners (S)
Min_R	Single-year minimum number of recruits (R)
Mean_R	Arithmetic mean number of recruits (R)
Max_R	Single-year maximum number of recruits (R)
Min_R/S	Single-year minimum R/S
Mean_R/S	Arithmetic mean R/S
Max_R/S	Single-year maximum recruits per spawner (R/S)
Max2_R/S	Second highest single-year R/S
MnTop2_R/S	Arithmetic mean of top two single-year R/S values
GMean_R/S	Geometric mean R/S
Var_R/S	Annual variance of R/S
Max_InR/S	Single-year maximum natural log of R/S
Mean_InR/S	Arithmetic mean natural log of R/S
Min_InR/S	Single-year minimum natural log of R/S

Table C-8. Habitat analysis watersheds.

Listing of subwatersheds (identified by 6th-field Hydrologic Unit Codes) associated with each of the 22 index stocks. The methodology used to determine these "best-fit subwatershed clusters" can be found at [sitename].

Index Stock	6HUCs
Bear Valley/Elk	170602050802
	170602050803
	170602050805
	170602050807
	170602050808
Big Sheep/Lick	170601021005
	170601021004
Catherine	170601040803
	170601040804
	170601040801
	170601040802
Entiat	170200101201
	170200101202
Grande Ronde	170601041101
	170601041102
	170601041201
Imnaha	170601020703
	170601020801
Johnson	170602080501
Klickitat	170701060401
	170701060402
	170701060501
	170701060601
	170701060603
	170701060801
Lookingglass	170601042401
John Day Mainstem	170702011901
	170702011906
Lostine	170601050601
	170601050602
	170601050603
Marsh	170602050608
	170602050602
	170602050607
Methow	170200081101
	170200081601
	170200081903
	170200080601
	170200080503
	170200081802
	170200081803
	170200081803

Index Stock	6HUCs
Middle Fork John Day	170702030501
	170702030502
	170702030503
Minam	170601051001
	170601051002
	170601051101
North Fork John Day	170601051102
	170702022204
	170702022201
	170702022203
	170702021801
	170702021802
	170702022001
Poverty Flat	170702022002
	170602081004
	170602081002
Sulphur	170602081202
	170602081201
Warm Springs	170602050901
	170703062201
	170703062301
	170703061803
	170703061701
	170703062101
	170703061801
Wenaha	170703062104
	170601062101
Wenatchee	170200111701
	170200111003
	170200111001
	170200111301
	170200111102
	170200110401
	170200110702
	170200110901
Wind	170701050501
	170701050601
	170701050602

Table C-9. Habitat analysis land characteristics.

Index stock characteristics		Land Use areas (sqkm)									
Name	Index Area (sqkm)	Agric	Forest	Range	Rock Mine	Snow Ice	Tundra Bare	Unkwn	Urban Built	Water	WetInd
Bear Valley/Elk	397.16	0.00	355.27	40.51	0.95	0.00	0.00	0.00	0.30	0.12	0.00
Big Sheep/Lick	121.28	0.00	118.74	2.33	0.17	0.00	0.00	0.00	0.04	0.00	0.00
Catherine	294.16	4.86	269.58	18.28	0.00	0.00	0.09	0.00	1.35	0.00	0.00
Entiat	179.71	0.84	163.30	15.51	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Grande Ronde	254.58	0.10	245.08	9.15	0.00	0.00	0.00	0.00	0.20	0.05	0.00
Imnaha	125.89	0.00	124.67	0.00	0.00	0.00	0.00	0.00	0.00	0.09	1.13
John Day Mainstem	214.46	14.75	138.05	61.54	0.00	0.00	0.00	0.00	0.12	0.00	0.00
Johnson	97.77	0.00	95.06	1.75	0.96	0.00	0.00	0.00	0.00	0.00	0.00
Klickitat	396.76	0.00	395.92	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lookingglass	101.91	0.00	100.55	0.51	0.00	0.00	0.00	0.01	0.62	0.22	0.00
Lostine	277.18	41.19	203.08	11.38	0.00	0.00	16.50	0.00	1.01	0.84	3.17
Marsh	266.69	0.00	240.42	20.19	3.73	0.00	2.06	0.00	0.00	0.00	0.29
Methow	579.45	6.10	547.25	8.65	0.00	0.31	7.02	0.00	0.70	0.41	9.02
Middle Fork John Day	230.72	1.61	225.86	3.23	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Minam	333.18	0.62	324.18	2.32	0.00	0.00	5.41	0.00	0.00	0.64	0.00
North Fork John Day	486.31	0.00	471.72	14.36	0.00	0.00	0.00	0.00	0.22	0.00	0.00
Poverty Flat	177.57	0.00	170.17	7.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulphur	72.70	0.00	70.15	2.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Warm Springs	516.68	6.24	404.75	104.24	0.17	0.00	0.00	0.18	0.86	0.25	0.00
Wenaha	58.40	0.00	58.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wenatchee	712.73	9.85	651.11	20.03	0.27	4.18	0.18	0.00	4.48	2.86	19.78
Wind	299.01	0.24	296.85	0.51	0.10	0.00	0.00	0.00	0.49	0.07	0.76
TOTALS:	6194.29	86.39	5670.16	345.31	6.35	4.49	31.25	0.19	10.40	5.60	34.14

Index stock characteristics		Land ownership areas (sqkm)									
Name	Index Area (sqkm)	Tot Area	BLM	USFS	NPS	NOT ATT	PRIVATE	STATE	TRIBAL	USFWS	WATER
Bear Valley/Elk	397.16	400.73	0.00	393.70	0.00	3.46	3.52	0.00	0.00	0.00	0.05
Big Sheep/Lick	121.28	121.28	0.00	121.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Catherine	294.16	294.16	3.17	198.04	0.00	0.00	92.29	0.66	0.00	0.00	0.00
Entiat	179.71	179.71	0.00	166.48	0.00	0.00	13.23	0.00	0.00	0.00	0.00
Grande Ronde	254.58	254.58	0.12	227.62	0.00	0.00	26.83	0.00	0.00	0.00	0.00
Imnaha	125.89	125.89	0.00	125.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
John Day Mainstem	214.46	214.46	0.71	72.09	0.00	0.00	141.66	0.00	0.00	0.00	0.00
Johnson	97.77	101.13	0.00	94.41	0.00	3.36	1.99	1.38	0.00	0.00	0.00
Klickitat	396.76	396.76	0.00	0.05	0.00	0.00	25.34	41.68	329.70	0.00	0.00
Lookingglass	101.91	101.91	0.00	76.43	0.00	0.00	25.48	0.00	0.00	0.00	0.00
Lostine	277.18	277.18	1.76	178.75	0.00	0.00	93.70	2.97	0.00	0.00	0.00
Marsh	266.69	266.69	0.00	265.23	0.00	0.00	1.39	0.00	0.00	0.00	0.07
Methow	579.45	579.45	0.17	533.66	1.28	0.00	39.76	4.58	0.00	0.00	0.00
Middle Fork John Day	230.72	230.72	0.00	222.67	0.00	0.00	8.05	0.00	0.00	0.00	0.00
Minam	333.18	333.18	0.00	330.17	0.00	0.00	3.01	0.00	0.00	0.00	0.00
North Fork John Day	486.31	486.31	0.91	435.86	0.00	0.00	49.53	0.00	0.00	0.00	0.00
Poverty Flat	177.57	178.09	0.00	177.03	0.00	0.54	0.53	0.00	0.00	0.00	0.00
Sulphur	72.70	72.70	0.00	70.42	0.00	0.00	1.03	1.25	0.00	0.00	0.00
Warm Springs	516.68	516.68	0.00	0.68	0.00	0.00	138.36	0.00	377.64	0.00	0.00
Wenaha	58.40	58.40	0.00	58.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wenatchee	712.73	712.73	0.00	548.92	0.00	0.00	158.40	4.47	0.00	0.95	0.00
Wind	299.01	299.01	0.00	267.92	0.00	0.00	19.44	11.03	0.00	0.61	0.00
TOTALS:	6194.29	6201.75	6.85	4565.69	1.28	7.36	843.52	68.01	707.34	1.56	0.12

Table C-9 continued

Land ownership proportions										
Agric	Forest	Range	Rock Mine	Snow Ice	Tundra Bare	Unkwn	Urban Built	Water	Wetlnd	Ag+ Range
0.00	0.89	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
0.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
0.02	0.92	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
0.00	0.91	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
0.00	0.96	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
0.07	0.64	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
0.00	0.97	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.99	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
0.15	0.73	0.04	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.19
0.00	0.90	0.08	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.08
0.01	0.94	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.03
0.01	0.98	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
0.00	0.97	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01
0.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
0.00	0.96	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
0.00	0.96	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
0.01	0.78	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.91	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.03	0.04
0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.92	0.06	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.07

Land ownership percentages									
Tot Area	BLM	USFS	NPS	NOT ATT	PRIVATE	STATE	TRIBAL	USFWS	WATER
100.0	0.0	98.2	0.0	0.9	0.9	0.0	0.0	0.0	0.0
100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0	1.1	67.3	0.0	0.0	31.4	0.2	0.0	0.0	0.0
100.0	0.0	92.6	0.0	0.0	7.4	0.0	0.0	0.0	0.0
100.0	0.0	89.4	0.0	0.0	10.5	0.0	0.0	0.0	0.0
100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0	0.3	33.6	0.0	0.0	66.1	0.0	0.0	0.0	0.0
100.0	0.0	93.3	0.0	3.3	2.0	1.4	0.0	0.0	0.0
100.0	0.0	0.0	0.0	0.0	6.4	10.5	83.1	0.0	0.0
100.0	0.0	75.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0
100.0	0.6	64.5	0.0	0.0	33.8	1.1	0.0	0.0	0.0
100.0	0.0	99.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0
100.0	0.0	92.1	0.2	0.0	6.9	0.8	0.0	0.0	0.0
100.0	0.0	96.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
100.0	0.0	99.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0
100.0	0.2	89.6	0.0	0.0	10.2	0.0	0.0	0.0	0.0
100.0	0.0	99.4	0.0	0.3	0.3	0.0	0.0	0.0	0.0
100.0	0.0	96.9	0.0	0.0	1.4	1.7	0.0	0.0	0.0
100.0	0.0	0.1	0.0	0.0	26.8	0.0	73.1	0.0	0.0
100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0	0.0	77.0	0.0	0.0	22.2	0.6	0.0	0.1	0.0
100.0	0.0	89.6	0.0	0.0	6.5	3.7	0.0	0.2	0.0
100.0	0.1	73.6	0.0	0.1	13.6	1.1	11.4	0.0	0.0

Table C-10. Habitat analysis stock characteristics.

Index stock characteristics				EPA 303(d) data				
Name	Index Area (sqkm)	Str Length (km)	Mn Length (km)	303(d) Length (km)	km/sqkm	km/km	BACT	DO
Bear Valley/Elk	397.16	325.99	68.10	82.04	0.207	0.252	0	0
Big Sheep/Lick	121.28	88.35	24.51	23.65	0.195	0.268	0	0
Catherine	294.16	220.28	48.79	70.15	0.238	0.318	0	2
Entiat	179.71	158.28	19.13	3.83	0.021	0.024	0	0
Grande Ronde	254.58	240.49	43.01	67.03	0.263	0.279	0	0
Imnaha	125.89	77.01	29.78	29.75	0.236	0.386	0	0
John Day Mainstem	214.46	122.49	29.41	47.70	0.222	0.389	6	6
Johnson	97.77	80.91	21.05	20.95	0.214	0.259	0	0
Klickitat	396.76	338.20	76.30	0.00	0.000	0.000	none	none
Lookingglass	101.91	56.79	25.16	25.47	0.250	0.448	1	1
Lostine	277.18	186.34	55.43	23.47	0.085	0.126	8	0
Marsh	266.69	229.05	39.32	0.00	0.000	0.000	none	none
Methow	579.45	499.53	100.52	88.75	0.153	0.178	0	0
Middle Fork John Day	230.72	191.57	17.06	73.16	0.317	0.382	0	0
Minam	333.18	221.66	56.55	0.00	0.000	0.000	none	none
North Fork John Day	486.31	395.27	75.27	90.62	0.186	0.229	0	0
Poverty Flat	177.57	176.52	50.86	35.68	0.201	0.202	23	0
Sulphur	72.70	72.26	16.18	0.00	0.000	0.000	none	none
Warm Springs	516.68	403.84	93.02	0.00	0.000	0.000	none	none
Wenaha	58.40	37.19	9.55	0.00	0.000	0.000	none	none
Wenatchee	712.73	575.50	173.14	104.69	0.147	0.182	1	30
Wind	299.01	163.83	39.83	0.10	0.000	0.001	0	0
TOTALS:	6194.29	4861.36	1111.97	787.03	2.937	3.923	39	39

Index stock characteristics				Grazing allotment				
Name	Index Area (sqkm)	Str Length (km)	Mn Length (km)	Graze Area (sqkm)	% of Index Area	Spring	Summer	Fall
Bear Valley/Elk	397.16	325.99	68.10	0.00	0.00	none	none	none
Big Sheep/Lick	121.28	88.35	24.51	121.27	99.99	11	11	9
Catherine	294.16	220.28	48.79	219.56	74.64	11	11	0
Entiat	179.71	158.28	19.13	0.00	0.00	none	none	none
Grande Ronde	254.58	240.49	43.01	167.09	65.64	7	7	0
Imnaha	125.89	77.01	29.78	125.89	100.00	11	11	3
John Day Mainstem	214.46	122.49	29.41	214.46	100.00	20	19	19
Johnson	97.77	80.91	21.05	0.00	0.00	none	none	none
Klickitat	396.76	338.20	76.30	0.00	0.00	none	none	none
Lookingglass	101.91	56.79	25.16	79.48	77.99	6	6	0
Lostine	277.18	186.34	55.43	180.12	64.99	0	0	0
Marsh	266.69	229.05	39.32	0.00	0.00	none	none	none
Methow	579.45	499.53	100.52	0.00	0.00	none	none	none
Middle Fork John Day	230.72	191.57	17.06	230.60	99.95	36	36	31
Minam	333.18	221.66	56.55	330.76	99.27	5	5	0
North Fork John Day	486.31	395.27	75.27	229.44	47.18	36	35	0
Poverty Flat	177.57	176.52	50.86	0.00	0.00	none	none	none
Sulphur	72.70	72.26	16.18	0.00	0.00	none	none	none
Warm Springs	516.68	403.84	93.02	0.73	0.14	0	1	0
Wenaha	58.40	37.19	9.55	0.52	0.88	1	1	0
Wenatchee	712.73	575.50	173.14	0.00	0.00	none	none	none
Wind	299.01	163.83	39.83	0.00	0.00	none	none	none
TOTALS:	6194.29	4861.36	1111.97	1899.91	30.67	144	143	62

Table C-10 continued

									Mining hazard	
FLOWALT	HABALT	NH3	NUTR	PEST	PH	SED	TEMP	UNKN	# Mines	Mines/sqkm
0	0	0	0	0	0	51	0	0	28	0.55
0	0	0	0	0	0	0	32	0	6	#DIV/0!
2	2	0	2	0	2	20	22	2	3	0.15
7	0	0	0	0	7	0	7	0	9	#DIV/0!
0	40	0	0	0	22	43	37	0	20	0.47
0	0	0	0	0	0	0	12	0	7	#DIV/0!
6	0	0	0	0	0	0	45	0	2	#DIV/0!
0	0	0	0	0	0	20	0	0	5	0.25
none	none	none	none	none	none	none	none	none	1	#VALUE!
1	9	0	1	0	8	10	10	1	0	0.00
19	19	0	0	0	8	19	8	0	14	0.74
none	none	none	none	none	none	none	none	none	12	#VALUE!
106	0	0	0	0	0	0	68	0	18	#DIV/0!
27	0	0	0	0	0	0	47	0	35	#DIV/0!
none	none	none	none	none	none	none	none	none	9	#VALUE!
0	0	0	0	0	0	0	81	0	102	#DIV/0!
0	0	23	23	0	0	43	0	1	5	0.12
none	none	none	none	none	none	none	none	none	2	#VALUE!
none	none	none	none	none	none	none	none	none	3	#VALUE!
none	none	none	none	none	none	none	none	none	0	#VALUE!
41	0	0	0	0	40	0	90	0	63	#DIV/0!
0	0	0	0	0	0	0	1	0	0	#DIV/0!
209	70	23	26	0	80	204	460	4	344	1.69

t data

Winter	Cattle	Sheep	HoMu	Contn	Rest	Def	HiSh	AMP	Goals
none	none	none	none	none	none	none	none	none	none
3	9	2	0	0	0	11	0	9	11
0	13	5	0	8	4	0	0	4	18
none	none	none	none	none	none	none	none	none	none
0	10	11	0	5	0	2	0	6	22
0	9	2	0	1	0	10	0	9	11
0	20	0	0	6	0	14	0	0	16
none	none	none	none	none	none	none	none	none	none
none	none	none	none	none	none	none	none	none	none
0	0	6	0	0	0	6	0	6	6
0	0	8	0	0	0	0	0	0	8
none	none	none	none	none	none	none	none	none	none
none	none	none	none	none	none	none	none	none	none
0	36	0	0	0	5	31	0	5	36
0	5	10	0	5	0	0	0	3	15
0	34	5	0	1	23	12	0	33	38
none	none	none	none	none	none	none	none	none	none
none	none	none	none	none	none	none	none	none	none
0	1	0	0	0	0	1	1	1	1
0	0	1	0	0	0	1	0	1	1
none	none	none	none	none	none	none	none	none	none
none	none	none	none	none	none	none	none	none	none
3	137	50	0	26	32	88	1	77	183

Table C-11. Habitat analysis stock characteristics.

Index stock characteristics				6HUC-meaned (unweighted) Watershed Characteriza						
Name	Index Area (sqkm)	Str Length (km)	Mn Length (km)	CRP INTEG. B	CROAD HAZ. F	ROAD HAZ	ERO	BASE ERO	STE	SED
Bear Valley/Elk	397.16	325.99	68.10	95.03	74.88	0.87	0.20	12.38	21.18	0.11
Big Sheep/Lick	121.28	88.35	24.51	60.74	23.51	0.48	1.11	30.30	22.44	0.69
Catherine	294.16	220.28	48.79	41.85	43.82	0.52	1.22	29.32	23.26	0.72
Entiat	179.71	158.28	19.13	98.75	100.00	1.00	0.77	58.47	54.34	0.76
Grande Ronde	254.58	240.49	43.01	29.66	69.12	0.63	1.02	28.27	25.49	0.70
Imnaha	125.89	77.01	29.78	54.46	16.73	0.44	6.57	36.26	24.26	4.33
John Day Mainstem	214.46	122.49	29.41	40.73	43.53	0.52	0.41	18.71	17.50	0.18
Johnson	97.77	80.91	21.05	94.47	63.02	0.77	0.36	26.04	40.36	0.32
Klickitat	396.76	338.20	76.30	72.40	32.63	0.48	1.39	26.60	24.84	0.80
Lookingglass	101.91	56.79	25.16	43.13	29.28	0.50	1.85	44.88	16.89	0.83
Lostine	277.18	186.34	55.43	75.75	87.45	0.82	1.54	46.72	29.34	0.94
Marsh	266.69	229.05	39.32	61.91	90.14	0.98	0.32	17.22	28.67	0.24
Methow	579.45	499.53	100.52	97.67	83.30	0.83	0.78	52.33	46.87	0.74
Middle Fork John Day	230.72	191.57	17.06	49.03	10.96	0.41	0.00	27.25	25.34	0.00
Minam	333.18	221.66	56.55	80.49	74.90	0.75	2.62	53.51	37.90	2.13
North Fork John Day	486.31	395.27	75.27	54.25	34.21	0.47	0.88	35.48	27.67	0.58
Poverty Flat	177.57	176.52	50.86	93.44	100.00	1.00	0.29	29.70	53.74	0.28
Sulphur	72.70	72.26	16.18	92.34	88.21	0.97	0.38	22.71	42.87	0.35
Warm Springs	516.68	403.84	93.02	37.94	54.33	0.56	0.49	10.31	12.34	0.14
Wenaha	58.40	37.19	9.55	46.25	30.28	0.50	9.47	90.44	26.54	6.49
Wenatchee	712.73	575.50	173.14	94.20	41.49	0.51	2.77	46.15	38.30	2.05
Wind	299.01	163.83	39.83	No data	ND	ND	ND	ND	ND	ND
TOTALS:	6194.29	4861.36	1111.97	67	56.75	0.67	1.64	35.38	30.48	1.11

Index stock characteristics		Bioregion percentages								
Name	Index Area (sqkm)	Tot Area	%FCW	%FCD	%FHW	%FHD	%HCW	%HCD	%HHW	%HHD
Bear Valley/Elk	397.16	398.31	0.0	90.5	0.0	9.5	0.0	0.0	0.0	0.0
Big Sheep/Lick	121.28	121.09	0.8	47.9	0.0	30.6	18.2	0.0	0.0	2.5
Catherine	294.16	297.23	17.8	3.4	0.0	29.6	17.2	5.4	0.0	16.8
Entiat	179.71	180.14	25.6	21.7	3.9	41.1	0.0	0.0	0.0	0.0
Grande Ronde	254.58	254.20	0.0	26.8	0.0	73.2	0.0	0.0	0.0	0.0
Imnaha	125.89	129.10	0.8	79.8	0.0	15.5	2.3	1.6	0.0	0.0
John Day Mainstem	214.46	216.17	12.0	13.4	0.9	26.4	0.0	0.0	0.0	0.0
Johnson	97.77	101.08	0.0	55.4	0.0	40.6	0.0	2.0	0.0	0.0
Klickitat	396.76	395.31	83.5	4.3	0.0	11.9	0.3	0.0	0.0	0.0
Lookingglass	101.91	103.08	27.2	7.8	0.0	48.5	0.0	0.0	0.0	11.7
Lostine	277.18	277.21	14.8	41.5	1.1	2.5	13.4	0.4	12.3	10.5
Marsh	266.69	266.21	0.4	65.8	0.0	6.8	0.0	0.0	0.0	0.0
Methow	579.45	579.45	18.0	31.8	1.7	44.4	0.0	0.0	0.0	0.0
Middle Fork John Day	230.72	234.18	0.0	15.4	0.0	79.5	0.0	0.0	0.0	0.0
Minam	333.18	335.26	15.2	40.3	0.0	10.1	18.2	4.5	0.0	10.7
North Fork John Day	486.31	482.37	0.0	17.0	0.0	79.3	1.7	1.0	0.0	0.0
Poverty Flat	177.57	177.14	0.0	47.5	0.0	36.7	0.0	0.0	0.0	0.0
Sulphur	72.70	72.06	0.0	79.2	0.0	20.8	0.0	0.0	0.0	0.0
Warm Springs	516.68	516.40	20.3	3.3	0.6	40.7	0.4	0.0	0.0	0.4
Wenaha	58.40	59.05	8.5	6.8	0.0	79.7	0.0	0.0	0.0	5.1
Wenatchee	712.73	705.55	27.5	20.3	3.7	47.7	0.0	0.0	0.0	0.0
Wind	299.01	NO DATA	ND	ND	ND	ND	ND	ND	ND	ND
TOTALS:	6194.29	5900.57	16.7	30.2	0.9	37.2	3.1	0.7	0.6	2.3

Key: Three characters follow the percent sign: First character is either F (forested), H (herbaceous); Second character is either C (cool - 1 or 2 on scale of 1-4) or H (hot - 3 or 4)

Table C-11 continued

tion														
BASE SED	MASS	DEBRIS	IS FLOW	IDS FLOW	DS FLOW	BANK	VEG	RECVRY	MWSI	AUG TEMP	CROP PER	RD SENSITIV	RIP DIST	RIP INTEG
7.05	164.00	53.00	48.22	56.58	6.72	42.44	21.39	88.85	56.58	11.87	0.00	27.93	63.83	181.63
18.23	360.00	60.00	61.13	51.75	18.85	59.10	44.87	58.02	109.46	11.31	0.00	18.47	103.98	127.26
18.41	345.00	51.25	73.98	50.95	27.98	70.36	61.76	51.57	115.59	12.64	5.87	46.03	132.12	93.08
57.59	400.00	75.00	19.37	57.06	6.07	19.37	19.37	95.94	100.76	13.13	0.00	72.82	38.74	194.65
18.89	200.00	25.00	81.12	46.91	32.33	76.36	72.60	47.65	121.08	11.55	0.00	79.15	148.96	72.42
22.89	280.00	42.50	65.87	51.56	23.11	63.47	53.29	56.20	118.45	13.57	0.00	46.49	116.76	112.39
9.91	100.00	25.00	79.69	59.17	42.30	79.35	56.10	53.38	95.49	13.74	14.15	40.17	135.45	92.70
23.62	100.00	25.00	53.12	73.68	6.68	45.75	12.35	85.88	89.60	11.19	0.00	39.91	58.10	181.25
17.66	306.67	48.33	62.02	37.04	24.51	59.48	52.58	80.49	85.18	12.87	0.00	27.68	112.06	142.44
20.08	540.00	60.00	78.20	47.52	31.40	72.98	66.27	55.47	115.60	14.11	0.00	68.55	139.24	90.94
36.60	546.67	128.33	50.00	65.85	14.40	48.15	31.89	68.54	111.72	10.68	13.06	72.09	80.04	146.59
12.78	126.67	36.67	63.85	42.69	19.44	61.20	52.93	67.11	90.81	11.47	0.00	61.07	114.13	127.76
49.81	360.00	68.57	22.19	58.14	6.94	21.91	21.14	93.95	100.23	13.02	0.00	55.15	43.04	191.48
18.40	233.33	25.00	71.07	45.43	26.22	66.64	60.89	57.38	109.82	13.18	0.00	2.01	127.53	105.11
46.07	640.00	153.75	48.23	65.32	13.90	47.18	29.88	69.27	123.96	10.95	0.00	61.05	77.07	154.94
25.24	200.00	25.00	66.56	52.47	23.26	63.72	51.92	55.81	120.94	12.38	0.00	31.54	115.64	113.44
29.01	175.00	62.50	58.40	79.89	6.99	49.93	9.34	83.09	98.64	13.07	0.00	64.28	59.27	177.88
21.18	180.00	60.00	54.91	64.58	10.05	48.43	20.50	83.78	88.82	11.77	0.00	63.52	68.93	174.59
3.41	97.14	9.00	80.49	61.66	48.17	81.46	55.21	49.33	82.80	16.02	6.67	47.05	136.67	86.41
62.03	360.00	60.00	70.84	48.53	26.37	69.06	60.60	52.90	144.61	12.93	0.00	65.76	129.66	97.71
40.04	420.00	89.38	29.46	51.75	13.14	29.46	25.68	90.60	95.77	15.62	4.58	31.18	55.14	183.40
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26.61	292.12	56.35	58.99	55.64	20.42	55.99	41.93	68.82	103.61	12.72	2.11	48.66	97.92	135.62

%SCW	%SCD	%SHW	%SHD
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
6.4	0.0	3.4	0.0
0.0	5.0	2.8	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
6.0	0.0	0.0	41.2
2.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
4.9	0.0	0.0	0.0
3.6	0.0	0.0	0.0
27.1	0.0	0.0	0.0
2.4	1.7	0.0	0.0
5.1	0.0	0.0	0.0
0.9	0.0	0.0	0.0
0.2	0.0	0.8	0.0
15.8	0.0	0.0	0.0
0.0	0.0	0.0	0.0
12.4	0.0	0.0	21.9
0.0	0.0	0.0	0.0
0.0	0.9	0.0	0.0
ND	ND	ND	ND
4.1	0.4	0.3	3.4