

APPENDIX W: Summary Tables of Site-Specific Herbicide Effects for Various Aquatic Species

Tables prepared by Gary Asbridge, Fish Biologist, February 2006; updated, August 2006.

Table W-1. Toxicity indices for fish used in the effects analysis for the EIS. For each herbicide if more than one study or data set for a given fish species or life stage was available, the smallest dose was used to ensure that potential effects to all species and life stages would be addressed. Thus, for some species and life stages the dose is conservative. Likewise, if the chronic value was less than the acute value it was used in the effects analysis.

Herbicide	Duration	Endpoint	Dose	Species
Chlorsulfuron	Acute	NOEC	2 mg/l*	Brown trout
Clopyralid	Acute	NOEC	5 mg/l*	Rainbow trout
AQ Glyphosate	Acute	NOEC	0.5 mg/l*	Rainbow trout
Glyphosate	Acute	NOEC	0.065 mg/l*	Rainbow trout
Imazapic	Acute	NOEC	100 mg/l	All fish
Imazapyr	Acute	NOEC	5 mg/l*	Trout, catfish, bluegill
Metsulfuron methyl	Chronic	NOEC	4.5 mg/l	Rainbow trout
Picloram	Acute	NOEC	0.04 mg/l*	Cutthroat trout
Sethoxydim	Acute	NOEC	0.06 mg/l*	Rainbow trout
Sulfometuron methyl	Chronic	NOEC	1.17 mg/l	Fathead minnow
AQ Triclopyr (TEA)	Acute	NOEC	0.26 mg/l*	Chum salmon
Triclopyr (BEE)	Acute	NOEC	0.012 mg/l	Bluegill, sunfish

* 1/20th of the LC₅₀

Table W-2. Toxicity concentrations for aquatic macroinvertebrates, aquatic macrophytes and algae that were used in the effects analysis for this EIS. Toxicity values are the same as those used by the USDA Forest Service in the Invasive Plant FEIS (2005a). Toxicity values were not available (NA) for some herbicides and/or organisms.

Herbicide	Toxicity Concentration (mg/l)		
	Aquatic Macroinvertebrates	Aquatic Macrophytes	Algae
Chlorsulfuron	10.00	0.000047	0.01
Clopyralid	21.40	NA	0.69
AQ Glyphosate	78.00	NA	NA
Glyphosate	1.10	3.00	0.89
Imazapic	100.00	0.00127	0.05
Imazapyr	100.00	0.013	0.02
Metsulfuron methyl	17.00	0.00016	0.01
Picloram	2.68	0.10	0.23
Sethoxydim	0.26	0.25	0.25
Sulfometuron methyl	6.10	0.00021	0.0025
AQ Triclopyr (TEA)	13.90	0.42	0.42
Triclopyr (BEE)	0.855	0.007	0.007

Table W-3. Proposed herbicide treatment sites within the Mt. Hood National Forest located outside riparian reserves. There are no sites wholly outside riparian reserves proposed in the Columbia River Gorge National Scenic Area. Proposed invasive plant treatments at these sites would have no effect on any aquatic species.

Treatment Site ID	Ranger District	6 th Field HUC	6 th Field Watershed Name	Acres
61-020	Barlow	170703060902	Jordan Creek	0.5
61-022	Barlow	170703061007	Threemile Creek	11.3
61-027	Barlow	170703061005	Rock Creek	26.8
61-030	Barlow	170703061004	Gate Creek	6.0
61-036	Barlow	170703061004	Gate Creek	9.4
		170703061005	Rock Creek	16.4
61-045	Barlow	170703061001	Clear Creek	27.1
		170703061006	Middle White River	6.1
61-050	Barlow	170703060706	Wapinitia Creek	94.0
		170703061006	Middle White River	17.8
61-051	Barlow	170703061006	Middle White River	0.4
61-055	Barlow	170703060503	Middle Beaver Creek	6.9
61-057	Barlow	170703060503	Middle Beaver Creek	0.6
61-058	Barlow	170703060706	Wapinitia Creek	9.9
61-059	Barlow	170703060706	Wapinitia Creek	22.8
61-066	Barlow	170703060706	Wapinitia Creek	8.3
61-074	Barlow	170703061001	Clear Creek	43.7
		170703061006	Middle White River	2.0
61-077	Barlow	170703061006	Middle White River	44.7
61-081	Barlow	170703060706	Wapinitia Creek	3.5
61-084	Barlow	170703061003	Upper White River	32.4
61-085	Barlow	170703060706	Wapinitia Creek	15.9
61-092	Barlow			6.0
61-093	Barlow	170703060503	Middle Beaver Creek	13.7
		170703061001	Clear Creek	5.4
65-007	Clackamas River	170900110601	Upper Clear Creek	3.4
65-011	Clackamas River	170900110306	Cot Creek	1.1
65-014	Clackamas River	170900110204	Last Creek	4.5
65-016	Clackamas River	170900110204	Last Creek	4.0
65-018	Clackamas River	170900110306	Cot Creek	1.1
65-022	Clackamas River	170900110401	Three Lynx Creek	5.2
65-026	Clackamas River	170900110107	Lower Collawash River Tributaries	4.7
65-035	Clackamas River	170900110303	Stone Creek	5.3
65-045	Clackamas River			0.1
66-001	Hood River	170703061001	Clear Creek	18.8
		170703061003	Upper White River	1.9
66-011	Hood River	170701050601	Upper East Fork Hood River	3.0
66-012	Hood River	170701050702	Divers Creek	0.7
66-030	Hood River	170701050604	Pinnacle Creek	0.3
66-033	Hood River	170701050401	North Fork Mill Creek	17.3

Site-Specific Invasive Plant Treatments

Treatment Site ID	Ranger District	6 th Field HUC	6 th Field Watershed Name	Acres
66-035	Hood River	170701050606	Lower East Fork Hood River	5.5
		170701050801	Neal Creek	1.4
66-040	Hood River	170701050701	Camp Creek	1.1
66-041	Hood River	170701050602	Middle East Fork Hood River	1.0
66-042	Hood River	170701050401	North Fork Mill Creek	2.7
		170701050603	Dog River	0.1
66-043	Hood River	170701050602	Middle East Fork Hood River	1.4
66-046	Hood River	170701050801	Neal Creek	1.8
66-047	Hood River	170701050605	Middle Fork Hood River	7.1
66-048	Hood River	170701050701	Camp Creek	3.6
66-049	Hood River	170701050703	Dead Point Creek	3.7
66-083	Hood River	170701050701	Camp Creek	27.7
69-002	Zigzag			0.01
69-004	Zigzag			24.1
69-006	Zigzag			0.1
69-007	Zigzag	170800010801	Gordon Creek	0.5
69-011	Zigzag			0.01
69-025	Zigzag			3.3
69-026	Zigzag	170703061001	Clear Creek	1.1
69-030	Zigzag	170800010202	Zigzag Canyon	3.1
TOTAL ACRES OUTSIDE RIPARIAN RESERVES				592.1

Table W-4. Treatment sites with portions located within riparian reserves, but not close or adjacent to fish bearing streams, lakes, or ponds. Treatment sites are sorted by aquatic influence zone acres. Site ID numbers in **bold** are proposed for treatment in both Alternatives 2 and 3.

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Acres	Percent of Site in Aquatic Influence Zone
61-005	Barlow	72.2	0.9	1.2%	0.0	0.0%
61-034	Barlow	58.5	0.3	0.5%	0.0	0.0%
61-062	Barlow	3.8	0.1	2.6%	0.0	0.0%
61-080	Barlow	18.0	0.3	1.7%	0.0	0.0%
65-010	Clackamas River	13.0	0.8	6.2%	0.0	0.0%
65-024	Clackamas River	4.6	0.6	13.0%	0.0	0.0%
65-032	Clackamas River	2.7	0.1	3.7%	0.0	0.0%
65-034	Clackamas River	5.2	0.5	9.6%	0.0	0.0%
66-003	Hood River	42.8	0.3	0.7%	0.0	0.0%
66-028	Hood River	0.8	0.0	1.3%	0.0	0.0%
66-029	Hood River	0.7	0.7	100.0%	0.0	0.0%
66-044	Hood River	0.4	0.2	50.0%	0.0	0.0%
66-058	Hood River	14.9	0.2	1.3%	0.0	0.0%
SUB-TOTAL		237.6	5.0	2.1%	0.0	0.0%
22-05	Scenic Area	89.6	16.0	17.9%	6.4	7.1%
22-08	Scenic Area	23.5	1.1	4.7%	0.4	1.7%
22-11	Scenic Area	109.9	18.9	17.2%	8.8	8.0%
22-12	Scenic Area	81.9	28.6	34.9%	14.0	17.1%
22-17	Scenic Area	139.1	9.8	7.0%	4.6	3.3%
61-009	Barlow	43.2	6.2	14.4%	4.4	10.2%
61-018	Barlow	48.2	0.1	0.2%	0.0	0.0%
61-025	Barlow	54.1	9.8	18.1%	6.9	12.8%
61-028	Barlow	51.6	5.9	11.4%	4.5	8.7%
61-029	Barlow	40.2	0.7	1.7%	0.5	1.2%
61-039	Barlow	75.9	15.2	20.0%	12.2	16.1%
61-040	Barlow	10.4	0.7	6.7%	0.6	5.8%
61-042	Barlow	52.1	5.8	11.1%	4.3	8.3%
61-044	Barlow	20.2	3.6	17.8%	1.1	5.4%
61-048	Barlow	38.8	0.7	1.8%	0.0	0.0%
61-053	Barlow	3.7	3.1	83.8%	2.1	56.8%
61-064	Barlow	0.4	0.4	100.0%	0.3	75.0%
61-065	Barlow	18.9	11.3	59.8%	5.2	27.5%
61-071	Barlow	40.8	5.5	13.5%	3.4	8.3%
61-075	Barlow	12.5	2.6	20.8%	2.1	16.5%
61-076	Barlow	15.4	1.5	9.9%	2.3	14.7%
61-078	Barlow	22.4	0.6	2.8%	0.5	2.1%
61-079	Barlow	37.2	9.3	24.9%	7.0	18.8%
61-083	Barlow	18.9	8.2	43.6%	5.6	29.7%
61-087	Barlow	30.2	2.3	7.5%	1.7	5.6%
61-088	Barlow	59.7	0.7	1.2%	0.2	0.4%
61-090	Barlow	0.5	0.5	102.0%	0.3	64.0%

Site-Specific Invasive Plant Treatments

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Acres	Percent of Site in Aquatic Influence Zone
61-091	Barlow	3.7	2.6	70.7%	1.3	34.2%
65-002	Clackamas River	61.6	10.1	16.4%	1.6	2.6%
65-003	Clackamas River	64.8	4.6	7.0%	2.7	4.1%
65-005	Clackamas River	0.1	0.1	60.0%	0.0	10.0%
65-009	Clackamas River	1.0	1.0	103.0%	0.6	58.0%
65-021	Clackamas River	3.2	2.0	62.2%	0.6	19.4%
65-027	Clackamas River	0.7	0.7	100.0%	0.7	94.5%
65-030	Clackamas River	11.4	3.0	26.1%	1.8	15.9%
65-037	Clackamas River	0.4	0.4	97.5%	0.3	80.0%
65-038	Clackamas River	1.1	1.0	89.1%	0.6	50.0%
65-039	Clackamas River	0.3	0.3	93.3%	0.3	93.3%
65-040	Clackamas River	1.7	1.4	81.8%	0.0	0.6%
65-042	Clackamas River	9.6	3.7	38.8%	2.0	21.3%
65-043	Clackamas River	18.5	3.2	17.2%	1.0	5.6%
65-044	Clackamas River	23.0	4.7	20.4%	2.2	9.5%
65-046	Clackamas River	8.3	1.1	13.4%	0.7	8.7%
66-004	Hood River	18.9	5.5	29.3%	4.2	22.2%
66-005	Hood River	43.7	4.0	9.1%	3.9	8.9%
66-009	Hood River	9.3	0.7	7.6%	0.6	6.0%
66-010	Hood River	10.0	4.9	48.8%	4.0	39.6%
66-013	Hood River	10.8	1.0	9.5%	0.1	1.1%
66-017	Hood River	66.6	10.7	16.0%	4.7	7.1%
66-026	Hood River	0.1	0.1	70.0%	0.1	70.0%
66-051	Hood River	5.7	0.9	15.1%	0.1	0.9%
66-059	Hood River	39.7	2.0	5.1%	1.2	3.0%
66-067	Hood River	133.5	13.5	10.1%	7.9	5.9%
66-069	Hood River	50.5	9.2	18.3%	5.2	10.2%
69-013	Zigzag	0.1	0.1	70.0%	0.1	50.0%
69-014	Zigzag	0.0	0.0	100.0%	0.0	100.0%
SUB-TOTAL		1737.6	261.4	15.0%	147.6	8.5%
GRAND TOTAL		1975.2	266.5	13.5%	147.6	7.5%

Table W-5. Treatment sites located wholly or partially within riparian reserves adjacent to fish bearing streams, lakes, or ponds. Treatment sites are grouped by the listing status (threatened, endangered, or USDA Forest Service, Pacific Northwest Region sensitive – TES) of one or more fish species residing in the water body nearest the treatment site. Site ID numbers in bold are proposed for treatment in both Alternatives 2 and 3. The zero acres associated with some sites are due to rounding to the first decimal place, many sites are quite small. *Note:* A table key is located at the end.

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Treatment Acres	Percent of Site in Aquatic Influence Zone	Special Status Species	Fish Species Present
THREATENED, ENDANGERED OR R6 SENSITIVE SPECIES PRESENT								
22-01	Scenic Area	1573.1	1402.4	89.1%	425.8	27.1%	T&E	ONMY1, ONMY4, ONTS, ONKI, SACO, ONNE1 (E), ONTS2 (E), ONMY5 (E), ONTS3, ONMY6, ONKE
22-07	Scenic Area	21.2	21.2	100.0%	21.2	100.0%	T&E	ONMY1, ONMY4, ONTS, ONKI, SACO, ONNE1 (E), ONTS2 (E), ONMY5 (E), ONTS3, ONMY6, ONKE
61-003	Barlow	55.0	27.6	50.1%	12.9	23.5%	T	ONMY3, ONMY4, ONCL1
61-017	Barlow	96.1	11.8	12.3%	8.3	8.6%	T	ONMY3, ONMY4
65-017	Clackamas River	4.1	4.1	100.0%	2.3	56.6%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
65-019	Clackamas River	5.0	5.0	100.0%	4.7	93.6%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
65-020	Clackamas River	414.4	400.0	96.5%	214.0	51.6%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
65-023	Clackamas River	416.4	232.4	55.8%	100.5	24.1%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
65-028	Clackamas River	0.8	0.8	100.0%	0.0	0.0%	T	ONTS, ONMY1, ONMY2, ONCL1
65-029	Clackamas River	11.6	11.1	95.7%	2.6	22.1%	T	ONTS, ONMY1, ONMY2, ONCL1
65-041	Clackamas River	4.2	4.2	100.0%	0.1	2.4%	T	ONTS, ONMY1, ONMY2, ONCL1
66-007	Hood River	448.8	206.7	46.1%	127.5	28.4%	T	ONTS, ONMY1, ONMY2

Site-Specific Invasive Plant Treatments

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Treatment Acres	Percent of Site in Aquatic Influence Zone	Special Status Species	Fish Species Present
66-008	Hood River	509.3	216.6	42.5%	103.1	20.2%	T	ONKI, ONMY1, ONMY2, ONMY3, ONCL1
66-016	Hood River	78.8	25.0	31.7%	13.3	16.9%	T	ONTS, ONMY1, ONMY2
66-023	Hood River	350.9	129.6	36.9%	49.0	14.0%	T	ONMY1, ONMY2
66-025	Hood River	1.6	1.6	100.0%	0.1	6.3%	T	SACO, ONCL1, ONMY2
66-027	Hood River	4.0	4.0	100.0%	0.6	15.0%	T	SACO, ONCL1, ONMY1, ONMY2
66-053	Hood River	4.2	2.7	64.3%	0.6	13.1%	T	ONMY1 (suspected), ONMY2, ONCL1
66-060	Hood River	105.2	51.1	48.6%	19.3	18.4%	T	ONTS, ONMY1, ONMY2
66-062	Hood River	145.8	58.7	40.3%	19.7	13.5%	T	SACO, ONMY1, ONMY2, ONCL1
66-063	Hood River	630.9	115.5	18.3%	40.3	6.4%	T	SACO, ONMY1, ONMY2, ONCL1
66-082	Hood River	93.1	31.4	33.7%	12.3	13.2%	T	ONMY1 (suspected), ONMY2, ONCL1
66-084	Hood River	73.2	19.6	26.8%	7.7	10.5%	T	ONMY1 (suspected), ONMY2, ONCL1
69-008	Zigzag	1056.2	506.4	47.9%	210.4	19.9%	T	ONKI, ONMY1, ONMY2, ONCL1
69-010	Zigzag	0.0	0.0	100.0%	0.0	100.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-012	Zigzag	0.2	0.2	100.0%	0.2	100.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-015	Zigzag	0.0	0.0	100.0%	0.0	100.0%	T	ONKI, ONMY1, ONMY2, ONCL1
69-016	Zigzag	444.6	209.5	47.1%	96.8	21.8%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-017	Zigzag	0.9	0.9	100.0%	0.0	0.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-018	Zigzag	1.1	1.1	100.0%	1.0	86.4%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1

Final Environmental Impact Statement

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Treatment Acres	Percent of Site in Aquatic Influence Zone	Special Status Species	Fish Species Present
69-019	Zigzag	0.7	0.7	100.0%	0.4	57.1%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-020	Zigzag	0.4	0.4	100.0%	0.2	50.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-021	Zigzag	1.4	1.4	100.0%	0.5	35.7%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-022	Zigzag	0.8	0.8	100.0%	0.3	37.5%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-023	Zigzag	0.6	0.6	100.0%	0.3	50.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-024	Zigzag	0.2	0.2	100.0%	0.1	50.0%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-027	Zigzag	216.7	177.8	82.0%	78.5	36.2%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
69-029	Zigzag	0.4	0.4	100.0%	0.4	87.5%	T	ONTS, ONKI, ONMY1, ONMY2, ONCL1
SUB-TOTAL		6772.0	3883.5	57.3%	1574.9	23.3%		

Treatment Site ID	Ranger District	Site Acres	Riparian Reserve Acres	Percent of Site in Riparian Reserve	Aquatic Influence Zone Treatment Acres	Percent of Site in Aquatic Influence Zone	Special Status Species	Fish Species Present
R6 SENSITIVE SPECIES PRESENT								
61-002	Barlow	119.4	13.8	11.6%	3.9	3.3%	S	ONMY3, ONCL1
61-006	Barlow	92.2	10.3	11.2%	6.4	6.9%	S	ONMY3
61-019	Barlow	264.5	56.8	21.5%	23.0	8.7%	S	ONMY3
61-021	Barlow	46.3	0.1	0.3%	0.0	0.0%	S	ONMY3
61-023	Barlow	10.9	6.8	62.4%	2.5	22.5%	S	ONMY3
61-024	Barlow	30.1	1.2	4.0%	0.1	0.3%	S	ONMY3
61-026	Barlow	34.7	3.0	8.6%	1.2	3.5%	S	ONMY3
61-041	Barlow	59.2	11.2	19.0%	4.2	7.1%	S	ONMY3
61-043	Barlow	15.7	15.7	100.0%	12.5	79.6%	S	ONMY3
61-046	Barlow	2.9	2.8	96.6%	0.7	23.8%	S	ONMY3
61-047	Barlow	1.5	0.7	46.7%	1.3	86.7%	S	ONMY3
61-049	Barlow	19.6	9.2	46.9%	1.8	9.2%	S	ONMY3
61-073	Barlow	31.1	22.5	72.3%	8.9	28.6%	S	ONMY3
61-082	Barlow	0.3	0.3	100.0%	0.2	66.7%	S	ONMY3
61-086	Barlow	64.2	4.9	7.6%	2.8	4.4%	S	ONMY3
61-089	Barlow	88.6	5.8	6.5%	1.7	1.9%	S	ONMY3
61-095	Barlow	104.0	6.2	6.0%	2.1	2.0%	S	ONMY3
66-037	Hood River	9.6	9.6	100.0%	8.6	89.1%	S	ONMY3
66-039	Hood River	3.5	2.8	80.0%	0.5	14.3%	S	ONMY3
66-052	Hood River	8.8	6.6	74.8%	1.1	12.5%	S	ONMY3 (suspected)
66-057	Hood River	80.3	30.2	37.6%	12.6	15.7%	S	ONMY3, SAFO (suspected)
66-085	Hood River	148.1	30.6	20.7%	13.7	9.3%	S	ONMY3
66-086	Hood River	296.4	104.9	35.4%	51.0	17.2%	S	ONMY3
66-087	Hood River	68.0	23.9	35.1%	15.2	22.4%	S	ONMY3
66-091	Hood River	120.2	26.2	21.8%	12.7	10.6%	S	ONMY3
SUB-TOTAL		1720.1	406.2	23.6%	188.6	11.0%		
NON-SPECIAL STATUS SPECIES PRESENT								
61-007	Barlow	5.4	0.0	0.4%	0.0	0.0%		ONCL1

Final Environmental Impact Statement

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65-001	Clackamas River	33.3	15.7	47.1%	6.7	20.1%		ONNE, ONMY2, ONCL1
65-006	Clackamas River	0.2	0.2	100.0%	0.2	100.0%		ONMY2, ONCL1 (suspected)
65-008	Clackamas River	0.2	0.2	100.0%	0.2	100.0%		ONMY2, ONCL1
65-012	Clackamas River	12.4	9.1	73.4%	2.6	21.0%		ONCL1
65-013	Clackamas River	46.8	10.5	22.4%	3.4	7.3%		ONCL1
65-015	Clackamas River	18.7	12.9	69.0%	3.3	17.6%		ONMY2, ONCL1
65-025	Clackamas River	2.8	2.4	85.7%	0.0	0.0%		ONCL1
65-031	Clackamas River	14.3	7.1	49.7%	1.6	11.2%		ONCL1
65-033	Clackamas River	9.6	7.1	74.2%	1.5	15.6%		COTTU
65-036	Clackamas River	3.6	1.0	27.8%	1.6	44.4%		ONMY2, ONCL1
66-006	Hood River	58.6	17.7	30.2%	17.0	29.0%		ONMY2
66-018	Hood River	51.2	10.0	19.5%	3.6	7.0%		ONCL1
66-020	Hood River	1014.3	197.0	19.4%	101.0	10.0%		SAFO
66-038	Hood River	261.5	41.4	15.8%	23.5	9.0%		ONCL1
66-055	Hood River	41.2	13.8	33.4%	1.5	3.6%		ONCL1
66-071	Hood River	64.7	28.0	43.2%	12.1	18.7%		ONMY2
66-074	Hood River	109.1	32.3	29.6%	10.7	9.8%		ONCL1
66-081	Hood River	22.2	2.1	9.5%	0.1	0.5%		ONCL1
66-089	Hood River	154.4	56.0	36.3%	17.5	11.3%		SAFO
69-001	Zigzag	7.5	4.0	53.3%	1.2	16.0%		ONMY2, ONCL1 (suspected)
69-003	Zigzag	43.6	25.6	58.7%	7.0	16.0%		ONCL1 (suspected)
69-005	Zigzag	42.7	17.7	41.5%	7.8	18.3%		ONCL1 (suspected)
69-028	Zigzag	3.7	1.6	43.2%	0.8	21.6%		ONCL1
SUB-TOTAL		2022.0	513.4	25.4%	224.8	11.1%		
GRAND TOTAL		10514.1	4803.0	45.7%	1988.3	18.9%		

Table Key:

Special Status Species	Forest Fish Species Present
T - Fish listed as threatened are present or nearby	ONMY1 – Lower Columbia River steelhead trout <i>Oncorhynchus mykiss</i> . Listed as threatened.
E - Fish listed as endangered are present or nearby	ONMY2 – Resident coastal rainbow trout <i>O. mykiss</i> .
S – USDA Forest Service USDA Forest Service, Pacific Northwest Region sensitive fish species present or nearby	ONMY3 – Resident inland rainbow trout <i>O. mykiss</i> . USDA Forest Service, Pacific Northwest sensitive species.
Blank - Fish present or nearby but not PETS	ONMY4 – Middle Columbia River steelhead trout <i>O. mykiss</i> . Listed as threatened.
	ONCL1 – Resident coastal cutthroat trout <i>O. clarki</i> .
	ONTS – Chinook salmon <i>O. tshawytscha</i> (all races and ESUs). <i>Note</i> : Spring Chinook in the Hood River Basin are not listed as threatened, unlike other populations within the Forest.
	ONKI – Lower Columbia River coho salmon <i>O. kisutch</i> . Listed as threatened
	ONNE – Resident kokanee salmon <i>O. nerka</i> .
	SACO – Columbia River bull trout <i>Salvelinus confluentus</i> . Listed as threatened.
	SAFO – Resident (non-native) brook trout <i>S. fontinalis</i> .
	COTTU – Sculpin (various species) <i>Cottus spp.</i>
	Scenic Area Fish Species Present
	ONNE1 – Snake River sockeye salmon <i>O. nerka</i> (E).
	ONTS2 – Upper Columbia River spring Chinook salmon (E).
	ONMY5 – Upper Columbia River steelhead trout (T).
	ONTS3 – Snake River spring, summer, and fall Chinook salmon (T).
	ONMY6 – Snake River steelhead trout (T).
ONKE – Columbia River chum salmon <i>O. keta</i> (T).	

Tables W-6 – W-9 display predicted hazard quotient values for algae, aquatic plants, aquatic invertebrates, and fish. Hazard quotients (HQ) were calculated for all sites wholly or partially within riparian reserves for the first three organism groups. For fish, hazard quotients were only calculated for those sites within riparian reserves adjacent to fish bearing streams (regardless of species present). Herbicide toxicity concentrations used to calculate the following HQ values were those displayed in Tables W-1 and W-2, above, which were taken directly from the Invasive Plant FEIS (2005a). Some concentrations were not available for algae and aquatic plants.

It is extremely important to note that the predicted HQ values are based solely on the GLEAMS model and they do not reflect site condition differences or the application of PDC as proposed in this EIS. These values were used as part of a screening process to identify sites with the greatest risk to contribute enough herbicide to a water body where biological effects could be relevant. The HQ value trigger for **potential** biological relevance was one. HQ values less than one indicate a concentration less than the “No Observable Effect Concentration” for the organism group and thus the effect of the herbicide would be discountable. There would be no mortality of any aquatic organism.

The values are displayed below primarily to illustrate the fact that the toxicity of most herbicides at most sites is extremely low even before PDC and site specific conditions were applied.

Table W-6. Predicted hazard quotient (HQ) values for algae at sites proposed for treatment with herbicides located within riparian reserves. These values reflect GLEAMS model predictions **before** application of PDC. Not all herbicides are proposed for use at all sites. A “P” following the treatment site ID indicates a pond. Toxicity concentrations for AQ Glyphosate were not available.

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
22-01	0.0147	0.0107	0.1741	0.0000			0.0004			0.0008	0.4016
22-05		0.0132	0.2972				0.0004			0.0008	0.5289
22-07		0.0091	0.1273								0.1304
22-08 P		0.0168	0.0338	0.0001				0.0488			0.0784
22-11	0.0024	0.0036	0.0631	0.0000	0.0001	0.0001	0.0002	0.0176		0.0000	
22-12 P		0.0006		0.0000				0.0021			
22-17		0.0107	0.1741						0.3672		0.4016
61-002		0.0107						0.0250			
61-003		0.0036						0.0176			
61-005		0.0036						0.0176			
61-006		0.0036						0.0176			
61-007 P											
61-009		0.0036						0.0176			
61-017		0.0036						0.0176			

Site-Specific Invasive Plant Treatments

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
61-018		0.0036						0.0176			
61-019		0.0036						0.0176			
61-021		0.0036						0.0176			
61-023		0.0091						0.0734			
61-024		0.0036						0.0176			
61-025		0.0107						0.0250			
61-026		0.0036						0.0176			
61-028		0.0036						0.0176			
61-029		0.0036						0.0176			
61-034		0.0036						0.0176			
61-039		0.0036		0.0000			0.0002	0.0176			0.2238
61-040				0.0000			0.0002				
61-041		0.0036		0.0000			0.0002	0.0176			0.2238
61-042		0.0036		0.0000			0.0002	0.0176			
61-043		0.0036					0.0002	0.0176			
61-044		0.0036		0.0000			0.0002	0.0176			
61-046		0.0036		0.0000			0.0002	0.0176			
61-047		0.0054		0.0000			0.0036	0.0543			
61-048		0.0036		0.0000			0.0002	0.0176			
61-049		0.0036		0.0000			0.0002	0.0176			
61-053		0.0036		0.0000			0.0002	0.0176			
61-062		0.0036		0.0000			0.0002	0.0176			
61-064		0.0036		0.0000			0.0002	0.0176			
61-065		0.0036		0.0000			0.0002	0.0176			
61-071		0.0036		0.0000			0.0002	0.0176			0.2238
61-073		0.0036		0.0000			0.0002	0.0176			
61-075		0.0036		0.0000			0.0002	0.0176			
61-076		0.0036		0.0000			0.0002	0.0176			
61-078		0.0036		0.0000			0.0002	0.0176			
61-079		0.0036		0.0000			0.0002	0.0176			
61-080		0.0036		0.0000			0.0002	0.0176			
61-082		0.0036		0.0000			0.0002	0.0176			
61-083		0.0036		0.0000			0.0002	0.0176			
61-086		0.0036		0.0000			0.0002	0.0176			
61-087		0.0036		0.0000			0.0002	0.0176			
61-088		0.0036						0.0176			
61-089		0.0036						0.0176			
61-090		0.0107					0.0004	0.0250			
61-091		0.0226		0.0000			0.0015	0.1034			
61-092		0.0036		0.0000			0.0002	0.0176			
61-095		0.0132					0.0004	0.0272			
65-001		0.0226						0.1034			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
65-002		0.0315						0.1109			
65-003		0.0107						0.0250			
65-005			0.1186								0.2985
65-006 P						0.0323					0.5812
65-008 P			0.0072			0.0323					0.5812
65-009			0.1186			0.0451					0.5812
65-010		0.0226						0.1034			
65-012		0.0139						0.0268			
65-013		0.0141						0.0268			
65-015										0.0295	
65-017		0.0226						0.1034			
65-019			0.5103			0.0135					0.2727
65-020		0.0296						0.1134			0.2727
65-021			0.1186			0.0451					0.5812
65-023		0.0132									
65-024		0.0053						0.2800			0.5812
65-025		0.0035						0.0339			0.0771
65-027		0.0053									
65-028		0.0053						0.2800			
65-029		0.0051						0.2848			
65-030		0.0051						0.2848			
65-031		0.0051						0.2848			
65-032		0.0132						0.0272			
65-033		0.0132						0.0272			
65-034		0.0226						0.1034			
65-036		0.0139						0.0268			
65-037		0.0107						0.0250			
65-038		0.0226						0.1034			
65-039		0.0107						0.0250			
65-040		0.0296						0.1134			
65-041		0.0051						0.2848			
65-042		0.0107						0.0250			
65-043		0.0296						0.1134			
65-044		0.0296						0.1134			
65-045		0.0226						0.1034			
65-046		0.0296						0.1134			
66-003		0.0141						0.0268			
66-004		0.0315						0.1109			
66-005		0.0315						0.1109			
66-006		0.0141						0.0268			
66-007		0.0141						0.0268			
66-008		0.0315					0.0019	0.1109			0.2727

Site-Specific Invasive Plant Treatments

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
66-009		0.0139						0.0268			
66-010		0.0342						0.1150			
66-013		0.0141						0.0268			
66-016		0.0141					0.0004	0.0268			
66-017		0.0141					0.0004	0.0268			
66-018		0.0132					0.0004	0.0272			
66-020		0.0132					0.0004	0.0272			
66-023		0.0141					0.0004	0.0268			
66-025		0.0315						0.1109			
66-026		0.0342						0.1150			
66-027		0.0296						0.1134			
66-028		0.0296						0.1134			
66-029		0.0132						0.0272			
66-037		0.0107						0.0250			
66-038		0.0107						0.0250			
66-039		0.0296					0.0018	0.1134			
66-044		0.0296						0.1134			
66-051		0.0226						0.1034			
66-052		0.0315						0.1109			
66-053		0.0296		0.0117			0.0018	0.1134			
66-055		0.0132		0.0000			0.0004	0.0272			
66-057		0.0132					0.0004	0.0272			
66-058		0.0132					0.0004	0.0272			
66-059		0.0132		0.0000			0.0004	0.0272			
66-060		0.0141					0.0004	0.0268			
66-062		0.0141					0.0004	0.0268			
66-063		0.0141					0.0004	0.0268			
66-067		0.0141					0.0004	0.0268			0.6385
66-069		0.0107					0.0004	0.0250			
66-071		0.0139					0.0004	0.0268			0.7350
66-074		0.0132					0.0004	0.0272			
66-081				0.0000			0.0004				
66-082				0.0000			0.0004				
66-084				0.0117			0.0018				
66-085		0.0132					0.0004	0.0272			
66-086		0.0296					0.0018	0.1134			
66-087		0.0226					0.0015	0.1034			
66-089		0.0107					0.0004	0.0250			
66-091		0.0315					0.0019	0.1109			
69-001		0.0132						0.0272			
69-002			0.5103								0.2727
69-003		0.0141						0.0268			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
69-004		0.0107						0.0250			
69-005		0.0141						0.0268			
69-006		0.0107						0.0250			
69-008		0.0315						0.1109			0.2727
69-010						0.0135					0.2727
69-011			0.5103								0.2727
69-012			0.5103			0.0135					0.2727
69-013			0.5103								0.2727
69-014						0.0135					0.2727
69-015						0.0135					0.2727
69-016		0.0296						0.1134			0.2727
69-017											0.2727
69-018											0.2727
69-019											0.2727
69-020											0.2727
69-021											0.2727
69-022											0.2727
69-023											0.2727
69-024											0.2727
69-025		0.0296						0.1134			
69-027		0.0296						0.1134			0.2727
69-028		0.0315						0.1109			
69-029			0.5103			0.0135					0.2727

Table W-7. Predicted hazard quotient (HQ) values for aquatic plants at sites proposed for treatment with herbicides located within riparian reserves. These values reflect GLEAMS model predictions **before** application of PDC. Not all herbicides are proposed for use at all sites. A “P” following the treatment site ID indicates a pond. The “NTV” stands for no toxicity value as toxic Clopyralid and AQ Glyphosate concentrations were not available for aquatic plants.

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
22-01	3.1183	NTV	0.0516	NTV	0.0072			0.0220			0.0093	0.4016
22-05		NTV	0.0882	NTV				0.0264			0.0100	0.5289
22-07		NTV	0.0378	NTV								0.1304
22-08 P		NTV	0.0100	NTV	0.0219				0.1121			0.0784
22-11	0.5125	NTV	0.0187	NTV	0.0005	0.0002	0.0002	0.0102	0.0405		0.0002	
22-12 P		NTV		NTV	0.0000				0.0049			
22-17		NTV	0.0516	NTV						0.3672		0.4016
61-002		NTV		NTV					0.0576			
61-003		NTV		NTV					0.0405			
61-005		NTV							0.0405			
61-006		NTV		NTV					0.0405			
61-007 P												
61-009		NTV		NTV					0.0405			
61-017		NTV		NTV					0.0405			
61-018		NTV							0.0405			
61-019		NTV		NTV					0.0405			
61-021		NTV							0.0405			
61-023		NTV		NTV					0.1688			
61-024		NTV							0.0405			
61-025		NTV		NTV					0.0576			
61-026		NTV		NTV					0.0405			
61-028		NTV		NTV					0.0405			
61-029		NTV		NTV					0.0405			
61-034		NTV							0.0405			
61-039		NTV		NTV	0.0005			0.0102	0.0405			0.2238
61-040				NTV	0.0005			0.0102				
61-041		NTV		NTV	0.0005			0.0102	0.0405			0.2238
61-042		NTV		NTV	0.0005			0.0102	0.0405			
61-043		NTV		NTV				0.0102	0.0405			
61-044		NTV		NTV	0.0005			0.0102	0.0405			
61-046		NTV		NTV	0.0005			0.0102	0.0405			
61-047		NTV		NTV	0.0125			0.2243	0.1248			
61-048		NTV			0.0005			0.0102	0.0405			
61-049		NTV		NTV	0.0005			0.0102	0.0405			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
61-053		NTV		NTV	0.0005			0.0102	0.0405			
61-062		NTV			0.0005			0.0102	0.0405			
61-064		NTV		NTV	0.0005			0.0102	0.0405			
61-065		NTV		NTV	0.0005			0.0102	0.0405			
61-071		NTV		NTV	0.0005			0.0102	0.0405			0.2238
61-073		NTV		NTV	0.0005			0.0102	0.0405			
61-075		NTV		NTV	0.0005			0.0102	0.0405			
61-076		NTV		NTV	0.0005			0.0102	0.0405			
61-078		NTV		NTV	0.0005			0.0102	0.0405			
61-079		NTV		NTV	0.0005			0.0102	0.0405			
61-080		NTV			0.0005			0.0102	0.0405			
61-082		NTV		NTV	0.0005			0.0102	0.0405			
61-083		NTV		NTV	0.0005			0.0102	0.0405			
61-086		NTV		NTV	0.0005			0.0102	0.0405			
61-087		NTV		NTV	0.0005			0.0102	0.0405			
61-088		NTV							0.0405			
61-089		NTV		NTV					0.0405			
61-090		NTV		NTV				0.0220	0.0576			
61-091		NTV		NTV	0.0072			0.0961	0.2379			
61-092		NTV			0.0005			0.0102	0.0405			
61-095		NTV		NTV				0.0264	0.0625			
65-001		NTV		NTV					0.2379			
65-002		NTV		NTV					0.2550			
65-003		NTV		NTV					0.0576			
65-005			0.0352									0.2985
65-006 P				NTV			0.0323					0.5812
65-008 P			0.0021	NTV			0.0323					0.5812
65-009			0.0352	NTV			0.0451					0.5812
65-010		NTV							0.2379			
65-012		NTV		NTV					0.0617			
65-013		NTV		NTV					0.0617			
65-015				NTV							0.3506	
65-017		NTV		NTV					0.2379			
65-019			0.1514	NTV			0.0135					0.2727
65-020		NTV		NTV					0.2609			0.2727
65-021			0.0352	NTV			0.0451					0.5812
65-023		NTV		NTV								
65-024		NTV							0.6441			0.5812
65-025		NTV							0.0780			0.0771
65-027		NTV		NTV								
65-028		NTV							0.6441			
65-029		NTV		NTV					0.6550			

Site-Specific Invasive Plant Treatments

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
65-030		NTV		NTV					0.6550			
65-031		NTV		NTV					0.6550			
65-032		NTV							0.0625			
65-033		NTV		NTV					0.0625			
65-034		NTV							0.2379			
65-036		NTV		NTV					0.0617			
65-037		NTV		NTV					0.0576			
65-038		NTV		NTV					0.2379			
65-039		NTV		NTV					0.0576			
65-040		NTV							0.2609			
65-041		NTV		NTV					0.6550			
65-042		NTV		NTV					0.0576			
65-043		NTV		NTV					0.2609			
65-044		NTV		NTV					0.2609			
65-045		NTV							0.2379			
65-046		NTV		NTV					0.2609			
66-003		NTV							0.0617			
66-004		NTV		NTV					0.2550			
66-005		NTV		NTV					0.2550			
66-006		NTV		NTV					0.0617			
66-007		NTV		NTV					0.0617			
66-008		NTV		NTV				0.1186	0.2550			0.2727
66-009		NTV		NTV					0.0617			
66-010		NTV		NTV					0.2645			
66-013		NTV							0.0617			
66-016		NTV		NTV				0.0277	0.0617			
66-017		NTV		NTV				0.0277	0.0617			
66-018		NTV		NTV				0.0264	0.0625			
66-020		NTV		NTV				0.0264	0.0625			
66-023		NTV		NTV				0.0277	0.0617			
66-025		NTV							0.2550			
66-026		NTV		NTV					0.2645			
66-027		NTV		NTV					0.2609			
66-028		NTV							0.2609			
66-029		NTV							0.0625			
66-037		NTV		NTV					0.0576			
66-038		NTV		NTV					0.0576			
66-039		NTV		NTV				0.1129	0.2609			
66-044		NTV							0.2609			
66-051		NTV							0.2379			
66-052		NTV		NTV					0.2550			
66-053		NTV		NTV	4.5983			0.1129	0.2609			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
66-055		NTV		NTV	0.0097			0.0264	0.0625			
66-057		NTV		NTV				0.0264	0.0625			
66-058		NTV						0.0264	0.0625			
66-059		NTV		NTV	0.0097			0.0264	0.0625			
66-060		NTV		NTV				0.0277	0.0617			
66-062		NTV		NTV				0.0277	0.0617			
66-063		NTV		NTV				0.0277	0.0617			
66-067		NTV		NTV				0.0277	0.0617			0.6385
66-069		NTV		NTV				0.0220	0.0576			
66-071		NTV		NTV				0.0274	0.0617			0.7350
66-074		NTV		NTV				0.0264	0.0625			
66-081				NTV	0.0097			0.0264				
66-082				NTV	0.0099			0.0277				
66-084				NTV	4.5983			0.1129				
66-085		NTV		NTV				0.0264	0.0625			
66-086		NTV		NTV				0.1129	0.2609			
66-087		NTV		NTV				0.0961	0.2379			
66-089		NTV		NTV				0.0220	0.0576			
66-091		NTV		NTV				0.1186	0.2550			
69-001		NTV		NTV					0.0625			
69-002		NTV	0.1514									0.2727
69-003		NTV		NTV					0.0617			
69-004		NTV							0.0576			
69-005		NTV		NTV					0.0617			
69-006		NTV							0.0576			
69-008		NTV		NTV					0.2550			0.2727
69-010				NTV			0.0135					0.2727
69-011			0.1514									0.2727
69-012			0.1514	NTV			0.0135					0.2727
69-013			0.1514									0.2727
69-014				NTV			0.0135					0.2727
69-015				NTV			0.0135					0.2727
69-016		NTV		NTV					0.2609			0.2727
69-017												0.2727
69-018				NTV								0.2727
69-019				NTV								0.2727
69-020				NTV								0.2727
69-021				NTV								0.2727
69-022				NTV								0.2727
69-023				NTV								0.2727
69-024				NTV								0.2727
69-025		NTV							0.2609			

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
69-027		NTV		NTV					0.2609			0.2727
69-028		NTV		NTV					0.2550			
69-029			0.1514	NTV			0.0135					0.2727

Table W-8. Predicted hazard quotient (HQ) values for aquatic invertebrates at sites proposed for treatment with herbicides located within riparian reserves. These values reflect GLEAMS model predictions **before** application of PDC. Not all herbicides are proposed for use at all sites. A “P” following the treatment site ID indicates a pond.

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
22-01	0.0542	0.0003	0.1409	0.0020	0.0000			0.0000			0.0000	0.0121
22-05		0.0004	0.2405	0.0034				0.0000			0.0000	0.0160
22-07		0.0003	0.1030	0.0015								0.0039
22-08 P		0.0005	0.0274	0.0004	0.0000				0.0042			0.0024
22-11	0.0277	0.0001	0.0510	0.0007	0.0000	0.0000	0.0000	0.0000	0.0015		0.0000	
22-12 P		0.0000		0.0002	0.0000				0.0002			
22-17		0.0003	0.1409	0.0020						0.3531		0.0121
61-002		0.0003		0.0020					0.0021			
61-003		0.0001		0.0007					0.0015			
61-005		0.0001							0.0015			
61-006		0.0001		0.0007					0.0015			
61-007 P												
61-009		0.0001		0.0007					0.0015			
61-017		0.0001		0.0007					0.0015			
61-018		0.0001							0.0015			
61-019		0.0001		0.0007					0.0015			
61-021		0.0001							0.0015			
61-023		0.0003		0.0015					0.0063			
61-024		0.0001							0.0015			
61-025		0.0003		0.0020					0.0021			
61-026		0.0001		0.0007					0.0015			
61-028		0.0001		0.0007					0.0015			
61-029		0.0001		0.0007					0.0015			
61-034		0.0001							0.0015			
61-039		0.0001		0.0007	0.0000			0.0000	0.0015			0.0068

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
61-040				0.0007	0.0000			0.0000				
61-041		0.0001		0.0007	0.0000			0.0000	0.0015			0.0068
61-042		0.0001		0.0007	0.0000			0.0000	0.0015			
61-043		0.0001		0.0007				0.0000	0.0015			
61-044		0.0001		0.0007	0.0000			0.0000	0.0015			
61-046		0.0001		0.0007	0.0000			0.0000	0.0015			
61-047		0.0002		0.0005	0.0000			0.0000	0.0047			
61-048		0.0001			0.0000			0.0000	0.0015			
61-049		0.0001		0.0007	0.0000			0.0000	0.0015			
61-053		0.0001		0.0007	0.0000			0.0000	0.0015			
61-062		0.0001			0.0000			0.0000	0.0015			
61-064		0.0001		0.0007	0.0000			0.0000	0.0015			
61-065		0.0001		0.0007	0.0000			0.0000	0.0015			
61-071		0.0001		0.0007	0.0000			0.0000	0.0015			0.0068
61-073		0.0001		0.0007	0.0000			0.0000	0.0015			
61-075		0.0001		0.0007	0.0000			0.0000	0.0015			
61-076		0.0001		0.0007	0.0000			0.0000	0.0015			
61-078		0.0001		0.0007	0.0000			0.0000	0.0015			
61-079		0.0001		0.0007	0.0000			0.0000	0.0015			
61-080		0.0001			0.0000			0.0000	0.0015			
61-082		0.0001		0.0007	0.0000			0.0000	0.0015			
61-083		0.0001		0.0007	0.0000			0.0000	0.0015			
61-086		0.0001		0.0007	0.0000			0.0000	0.0015			
61-087		0.0001		0.0007	0.0000			0.0000	0.0015			
61-088		0.0001							0.0015			
61-089		0.0001		0.0007					0.0015			
61-090		0.0003		0.0020				0.0000	0.0021			
61-091		0.0007		0.0036	0.0000			0.0000	0.0089			
61-092		0.0001			0.0000			0.0000	0.0015			
61-095		0.0004		0.0034				0.0000	0.0023			
65-001		0.0007		0.0036					0.0089			
65-002		0.0010		0.0081					0.0095			
65-003		0.0003		0.0020					0.0021			
65-005			0.0960									0.0090
65-006 P				0.0001			0.0000					0.0176
65-008 P			0.0058	0.0001			0.0000					0.0176
65-009			0.0960	0.0014			0.0000					0.0176
65-010		0.0007							0.0089			
65-012		0.0004		0.0064					0.0023			
65-013		0.0005		0.0049					0.0023			
65-015				0.0014							0.0000	
65-017		0.0007		0.0036					0.0089			

Site-Specific Invasive Plant Treatments

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
65-019			0.4129	0.0058			0.0000					0.0082
65-020		0.0010		0.0058					0.0097			0.0082
65-021			0.0960	0.0014			0.0000					0.0176
65-023		0.0004		0.0034								
65-024		0.0002							0.0240			0.0176
65-025		0.0001							0.0029			0.0023
65-027		0.0002		0.0014								
65-028		0.0002							0.0240			
65-029		0.0002		0.0024					0.0244			
65-030		0.0002		0.0024					0.0244			
65-031		0.0002		0.0024					0.0244			
65-032		0.0004							0.0023			
65-033		0.0004		0.0034					0.0023			
65-034		0.0007							0.0089			
65-036		0.0004		0.0064					0.0023			
65-037		0.0003		0.0020					0.0021			
65-038		0.0007		0.0036					0.0089			
65-039		0.0003		0.0020					0.0021			
65-040		0.0010							0.0097			
65-041		0.0002		0.0024					0.0244			
65-042		0.0003		0.0020					0.0021			
65-043		0.0010		0.0058					0.0097			
65-044		0.0010		0.0058					0.0097			
65-045		0.0007							0.0089			
65-046		0.0010		0.0058					0.0097			
66-003		0.0005							0.0023			
66-004		0.0010		0.0081					0.0095			
66-005		0.0010		0.0081					0.0095			
66-006		0.0005		0.0049					0.0023			
66-007		0.0005		0.0049					0.0023			
66-008		0.0010		0.0081				0.0000	0.0095			0.0082
66-009		0.0004		0.0064					0.0023			
66-010		0.0011		0.0103					0.0099			
66-013		0.0005							0.0023			
66-016		0.0005		0.0049				0.0000	0.0023			
66-017		0.0005		0.0049				0.0000	0.0023			
66-018		0.0004		0.0034				0.0000	0.0023			
66-020		0.0004		0.0034				0.0000	0.0023			
66-023		0.0005		0.0049				0.0000	0.0023			
66-025		0.0010							0.0095			
66-026		0.0011		0.0103					0.0099			
66-027		0.0010		0.0058					0.0097			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
66-028		0.0010							0.0097			
66-029		0.0004							0.0023			
66-037		0.0003		0.0020					0.0021			
66-038		0.0003		0.0020					0.0021			
66-039		0.0010		0.0058				0.0000	0.0097			
66-044		0.0010							0.0097			
66-051		0.0007							0.0089			
66-052		0.0010		0.0081					0.0095			
66-053		0.0010		0.0058	0.0001			0.0000	0.0097			
66-055		0.0004		0.0034	0.0000			0.0000	0.0023			
66-057		0.0004		0.0034				0.0000	0.0023			
66-058		0.0004						0.0000	0.0023			
66-059		0.0004		0.0034	0.0000			0.0000	0.0023			
66-060		0.0005		0.0049				0.0000	0.0023			
66-062		0.0005		0.0049				0.0000	0.0023			
66-063		0.0005		0.0049				0.0000	0.0023			
66-067		0.0005		0.0049				0.0000	0.0023			0.0193
66-069		0.0003		0.0020				0.0000	0.0021			
66-071		0.0004		0.0064				0.0000	0.0023			0.0222
66-074		0.0004		0.0034				0.0000	0.0023			
66-081				0.0034	0.0000			0.0000				
66-082				0.0049	0.0000			0.0000				
66-084				0.0058	0.0001			0.0000				
66-085		0.0004		0.0034				0.0000	0.0023			
66-086		0.0010		0.0058				0.0000	0.0097			
66-087		0.0007		0.0036				0.0000	0.0089			
66-089		0.0003		0.0020				0.0000	0.0021			
66-091		0.0010		0.0081				0.0000	0.0095			
69-001		0.0004		0.0034					0.0023			
69-002			0.4129									0.0082
69-003		0.0005		0.0049					0.0023			
69-004		0.0003							0.0021			
69-005		0.0005		0.0049					0.0023			
69-006		0.0003							0.0021			
69-008		0.0010		0.0081					0.0095			0.0082
69-010				0.0058			0.0000					0.0082
69-011			0.4129									0.0082
69-012			0.4129	0.0058			0.0000					0.0082
69-013			0.4129									0.0082
69-014				0.0058			0.0000					0.0082
69-015				0.0058			0.0000					0.0082
69-016		0.0010		0.0058					0.0097			0.0082

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	Imazapyr	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
69-017												0.0082
69-018				0.0058								0.0082
69-019				0.0058								0.0082
69-020				0.0058								0.0082
69-021				0.0058								0.0082
69-022				0.0058								0.0082
69-023				0.0058								0.0082
69-024				0.0058								0.0082
69-025		0.0010							0.0097			
69-027		0.0010		0.0058					0.0097			0.0082
69-028		0.0010		0.0081					0.0095			
69-029			0.4129	0.0058			0.0000					0.0082

Table W-9. Predicted hazard quotient (HQ) values for fish at sites proposed for treatment with herbicides located within riparian reserves adjacent to fish bearing streams. These values reflect GLEAMS model predictions **before** application of PDC. Not all herbicides are proposed for use at all sites. A “P” following the treatment site ID indicates a pond.

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
22-01	0.0001	0.0015	2.3838	0.3099	0.0000		0.0000			0.0000	0.6488
22-07		0.0013	1.7427	0.2266							0.2106
61-002		0.0015		0.3099				0.1439			
61-003		0.0005		0.1122				0.1012			
61-006		0.0005		0.1122				0.1012			
61-007 P											
61-017		0.0005		0.1122				0.1012			
61-019		0.0005		0.1122				0.1012			
61-021		0.0005						0.1012			
61-023		0.0013		0.2266				0.4221			
61-024		0.0005						0.1012			
61-026		0.0005		0.1122				0.1012			
61-041		0.0005		0.1122	0.0000		0.0000	0.1012			0.3615
61-043		0.0005		0.1122			0.0000	0.1012			
61-046		0.0005		0.1122	0.0000		0.0000	0.1012			
61-047		0.0007		0.0723	0.0000		0.0000	0.3120			

Final Environmental Impact Statement

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
61-049		0.0005		0.1122	0.0000		0.0000	0.1012			
61-073		0.0005		0.1122	0.0000		0.0000	0.1012			
61-082		0.0005		0.1122	0.0000		0.0000	0.1012			
61-086		0.0005		0.1122	0.0000		0.0000	0.1012			
61-089		0.0005		0.1122				0.1012			
61-091		0.0031		0.5618	0.0000		0.0000	0.5948			
61-095		0.0018		0.5291			0.0000	0.1563			
65-001		0.0031		0.5618				0.5948			
65-006 P				0.0128		0.0001					0.9389
65-008 P			0.0987	0.0128		0.0001					0.9389
65-012		0.0019		1.0006				0.1544			
65-013		0.0019		0.7604				0.1544			
65-015				0.2111						0.0001	
65-017		0.0031		0.5618				0.5948			
65-019			6.9868	0.9083		0.0001					0.4405
65-020		0.0041		0.9083				0.6521			0.4405
65-023		0.0018		0.5291							
65-025		0.0005						0.1950			0.1246
65-028		0.0007						1.6102			
65-029		0.0007		0.3698				1.6374			
65-031		0.0007		0.3698				1.6374			
65-033		0.0018		0.5291				0.1563			
65-036		0.0019		1.0006				0.1544			
65-041		0.0007		0.3698				1.6375			
66-006		0.0019		0.7604				0.1544			
66-007		0.0019		0.7604				0.1544			
66-008		0.0043		1.2588			0.0000	0.6376			0.4405
66-016		0.0019		0.7604			0.0000	0.1544			
66-018		0.0018		0.5291			0.0000	0.1563			
66-020		0.0018		0.5291			0.0000	0.1563			
66-023		0.0019		0.7604			0.0000	0.1544			
66-025		0.0043						0.6376			
66-027		0.0041		0.9083				0.6521			
66-037		0.0015		0.3099				0.1439			
66-038		0.0015		0.3099				0.1439			
66-039		0.0041		0.9083			0.0000	0.6521			
66-052		0.0043		1.2588				0.6376			
66-053		0.0041		0.9083	0.0001		0.0000	0.6521			
66-055		0.0018		0.5291	0.0000		0.0000	0.1563			
66-057		0.0018		0.5291			0.0000	0.1563			
66-060		0.0019		0.7604			0.0000	0.1544			
66-062		0.0019		0.7604			0.0000	0.1544			

Site-Specific Invasive Plant Treatments

Treatment Site ID	Chlorsulfuron	Clopyralid	Glyphosate	AQ Glyphosate	Imazapic	AQ Imazapyr	Metsulfuron methyl	Picloram	Sethoxydim	Sulfometuron methyl	AQ Triclopyr
66-063		0.0019		0.7604			0.0000	0.1544			
66-071		0.0019		1.0006			0.0000	0.1544			1.1873
66-074		0.0018		0.5291			0.0000	0.1563			
66-081				0.5291	0.0000		0.0000				
66-082				0.7604	0.0000		0.0000				
66-084				0.9083	0.0001		0.0000				
66-085		0.0018		0.5291			0.0000	0.1563			
66-086		0.0041		0.9083			0.0000	0.6521			
66-087		0.0031		0.5618			0.0000	0.5948			
66-089		0.0015		0.3099			0.0000	0.1439			
66-091		0.0043		1.2588			0.0000	0.6376			
69-001		0.0018		0.5291				0.1563			
69-003		0.0019		0.7604				0.1544			
69-005		0.0019		0.7604				0.1544			
69-008		0.0043		1.2588				0.6376			0.4405
69-010				0.9083		0.0001					0.4405
69-012			6.9868	0.9083		0.0001					0.4405
69-015				0.9083		0.0001					0.4405
69-016		0.0041		0.9083				0.6521			0.4405
69-017											0.4405
69-018				0.9083							0.4405
69-019				0.9083							0.4405
69-020				0.9083							0.4405
69-021				0.9083							0.4405
69-022				0.9083							0.4405
69-023				0.9083							0.4405
69-024				0.9083							0.4405
69-027		0.0041		0.9083				0.6521			0.4405
69-028		0.0043		1.2588				0.6376			
69-029			6.9868	0.9083		0.0001					0.4405