APPENDIX A:
VEGETATION TREATMENT SUMMARY

APPENDIX A – SUPPLEMENTAL EIS VEGETATION TREATMENT SUMMARY

Note: 1) Existing and estimated retained crown closure is **weighted values** for unit overall. 2) For unit specific fuels treatment acres see project file SSW-39C. 3) Includes pre-commercial thinning, see Appendix A page 9.

Alternative B

GB=ground base; C-S = cable/skyline; H = helicopter;
BB = broadcast burn; GP = grapple pile; HP = hand pile; LP = Lopping; JP = jackpot burn

1	39	1	Blair Creek Merry Creek	Shelterwood seed cut; retaining a basal area (BA) of approx. 25-30 sq.ft./ac.	75	20	C-S/GB	GP/BB
2	29	4	W.Fork St. Maries St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. There will be a 100' "no treat" buffer between highway and east end of unit.	70	45-50	C-S	JP
3	35	4	St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings will be restricted to ≤ 1 acre in size.	75	45-50	C-S/GB	LP/HP
4	25	4	St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings will be restricted to ≤ 1 acre in size.	70-75	45-50	C-S/GB	LP
5	22	4	St. Maries River	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	65	45-50	C-S/GB	GP/HP/LP
6	16	4	St. Maries River	Shelterwood Removal Cut; retaining a BA of approx. 35-40 sq.ft./ac., or approx. 35-45 overstory trees/ac.	75	35-40	C-S/GB	LP
7	20	1	Cedar Creek	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac	75-80	60	C-S/GB	GP/LP
8	22	1	Cedar Creek	Irregular shelterwood cut; generally CT but will have variable BA retention and openings of up to 1.5-2 tree lengths in size in disease centers.	75-80	60	C-S/GB	GP/LP
9	50	4	Cedar Creek	Irregular shelterwood cut; generally CT but will have variable BA retention (average of 140 sq.ft./ac.) and openings of 3-5 ac. in size in root rot & other disease centers.	70-80	50	C-S/GB	GP
10	32	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. B	75-85	45	H	GP
11	8	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA.	75-85	45-50	H	GP
12	10	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 100 sq.ft./ac.	70-75	45-50	H	GP
13	36	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	65-70	45-50	H	GP
14	15	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	80-85	45-50	C-S	GP
15	29	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85-90	60	C-S/GB	GP/LP
16	109	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	85-90	60	C-S/GB	GP/LP

Unit	Acre	MA	Drainage	Alternative B Treatment Description Summary	Existing % Crown Closure	Estimated % Retained Crown Closure	Logging Method	Fuels Treatment
17	120	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	60	C-S/GB	GP/LP
18	28	1	St. Maries River	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	50-55	C-S/GB	GP/LP
19	15	4	Cedar Creek	Commercial Thinning; retaining a BA of approx.120 sq.ft./ac.	70-75	50-55	C-S/GB	GP
20	14	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
21	6	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
22	15	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	80-85	5	C-S/GB	BB
23	9	4	Cedar Creek St. Maries R. (<1%)	Clearcut w/reserves; removing approx. 90-95% of existing BA.	80	5	C-S	BB
24	12	1	W.Fork St. Maries	Clearcut w/reserves; removing approx. 90-95% of existing BA.	70-75	5	C-S	BB
25	16	1	W.Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 100-120 sq.ft./ac.	65	50	H	LP
26	23	1	W.Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	45-50	H	LP
27	19	1	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings restricted to ≤ 1.5 acres in size.	75-80	50	C-S/GB	GP/LP
28	31	4	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre in size	80-85	50	C-S	LP
29	9	1 & 4	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1.5 acre in size	80	50	H	LP
30	130	1 & 4	W. Fk St. Maries (50%) Mazie Creek (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./acre and feathering 2 tree lengths width along north and west boundary.	70-75	50-55	GB/C-S/H	GP/LP
31	15	1	W. Fork St. Maries Mazie Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	70	50-55	GB/C-S	GP
32	11	1	Mazie Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA	65	5	GB/C-S	BB
33	9	4	Hidden Creek	Shelterwood Preparatory Cut; retaining a Basal area of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre in size	80-85	50-55	C-S	JP
34	18	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 90-100 w/ ave. spacing of 20-21 ft, openings restricted to ≤ 1 acres and feathering 100' strip along southern boundary.	70-75	50-55	C-S/GB	GP/LP
35	17	4	Hidden Creek Wood Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of ≤ 3 acres in size AND feather edges for 50' to soften edge appearance; remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	65-70	45	H	LP
36	8	4	Wood Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	70-75	50-55	C-S/GB	GP
37	21	4	Hdden Creek Wood Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	80-85	50-55	H	GP
38	41	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 110-120 sq.ft./ac., openings restricted to ≤ 1 acre in size, feather approx. 100 ' along southern boundary.	75	50	GB/C-S	GP/LP
39	22	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	75-80	50-55	H	LP

Unit	Acre	MA	Drainage	Alternative B Treatment Description Summary	Existing % Crown Closure	Estimated % Retained Crown Closure	Logging Method	Fuels Treatment
40	7	4	W. Fk St. Maries	Commercial Thinning; retaining a BA of approx. 140 sq.ft./acr., openings restricted to ≤ 2 acres in size, irregular density.	80-85	50	H	GP
41	46	4	Hidden Creek (50%) W Fk St. Maries R (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., irregular density, 200' no treat buffer along southern edge next to highway, 50-75 foot feathering along no treat buffer.	80	50-55	H	LP/GP/HP
42	5	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac., 200' no treat buffer along southern & eastern edge next to highway, 50-75 foot feathering along the no treat buffer.	85-90	50-55	H	HP
43	12	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	45-50	H	GP/LP
44	18	4	Hidden Creek W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac., 200' no treat area along highway at northwest bdy. and 50-75' feathering along this unit edge.	75	50-55	H	GP/LP
45	13	4	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., 50-75' feathering along the northern boundary.	75-80	50-55	H/C-S	LP
46	20	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	65-70	5	C-S	BB
47	38	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	75	5	C-S	BB
48	17	4	W. Fork St. Maries	Clearcut w/reserves; removing approx. 90-95% of current BA.	75-80	5	GB	BB
49	68	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	50	C-S/GB	GP/LP
52	18	1	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., variable density. Openings restricted to ≤ 1 acre in size.	70-75	45	C-S/GB	GP/LP

Alternative C - Vegetation Treatment Summary

GB=ground base; C-S = cable/skyline; H = helicopter;
BB = broadcast burn; GP = grapple pile; HP = hand pile; LP = Lopping; JP = jackpot burn

1	39	1	Blair Creek, Merry Creek	Shelterwood seed cut; retaining a basal area (BA) of approx. 25-30 sq.ft./ac.	75	20	GB/C-S	GP/BB
2	29	4	West Fk. St. Maries St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. There will be a 100' "no treat" buffer between highway and east end of unit.	70	45-50	C-S	JP
3	35	4	St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings will be restricted to ≤ 1 acre in size.	75	45-50	H	LP
4	25	4	St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings will be restricted to ≤ 1 acre in size.	70-75	45-50	H	LP
5	22	4	St. Maries River	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	65	45-50	H/S	GP/LP/HP
6	16	4	St. Maries River	Shelterwood Removal Cut; retaining a BA of approx. 35-40 sq.ft./ac., or approx. 35-45 overstory trees/ac.	75	35-40	H	LP
7	20	1	Cedar Creek	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	60	H/C-S/GB	GP/LP
8	22	1	Cedar Creek	Irregular shelterwood cut; generally CT but will have variable BA retention and openings of up to 1.5-2 tree lengths in size in disease centers.	75-80	60	H	LP
9	50	4	Cedar Creek	Irregular shelterwood cut; generally CT but will have variable BA retention (average of 140 sq.ft./ac.) and openings of 3-5 ac. in size in root rot & other disease centers.	70-80	50	H	BB
10	32	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	75-85	45	H	GP
11	8	4	Cedar creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA.	75-85	45-50	H	GP
12	10	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 100 sq.ft./ac.	70-75	45-50	H	GP
13	36	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	65-70	45-50	H	GP
14	15	4	Cedar creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	80-85	45-50	C-S/ H	GP
15	29	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85-90	60	H /C-S	GP/LP
16	109	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	85-90	60	H	GP/LP
17	120	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	60	H	GP/LP
18	28	1	St. Maries River	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	50-55	H /C-S/GB	GP/LP
19	15	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	70-75	50-55	H	GP
20	14	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
21	6	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
22	15	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	80-85	5	H	BB
23	9	4	Cedar Creek St. Maries R.4 (<1%)	Clearcut w/reserves; removing approx. 90-95% of existing BA.	80	5	H	BB
24	12	1	West Fk. St. Maries	Clearcut w/reserves; removing approx. 90-95% of existing BA.	70-75	5	C-S	BB
25	16	1	West Fk. St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 100-120 sq.ft./ac.	65	50	H	LP
26	23	1	West Fk. St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	45-50	H	LP
27	19	1	West Fk. St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings restricted to ≤ 1.5 acres in size.	75-80	50	C-S/GB	GP/LP
28	31	4	West Fk. St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings	80-85	50	C-S	LP

Unit	Acres	MA	Drainage	Alternative C Treatment Description Summary	Existing % Crown Closure	Estimated % Retained Crown Closure	Logging Method	Fuel Treatment
				restricted to ≤ 1 acre in size				
29	9	1 & 4	West Fk. St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1.5 acres in size.	80	50	H	LP
30	130	1 & 4	West Fk. St. Maries River (50%) Mazie Creek (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./acre and feathering 2 tree lengths width along north and west boundary.	70-75	50-55	H	LP
31	15	1	West Fk. St. Maries Mazie Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	70	50-55	H	LP
32	11	1	Mazie Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA	65	5	H	BB
33	9	4	Hidden Creek	Shelterwood Preparatory Cut; retaining a Basal area of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre in size	80-85	50-55	H	BB
34	18	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 90-100 w/ ave. spacing of 20-21 ft, openings restricted to ≤ 1 acres and feathering 100' strip along southern boundary.	70-75	50-55	H	LP
35	17	4	Hidden Creek Wood Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of ≤ 3 acres in size AND feather edges to soften edge appearance; remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	65-70	45	H/GB	LP
36	8	4	Wood Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	70-75	50-55	GB/H	GP
37	21	4	Hidden Creek Wood Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	80-85	50-55	H	GP
38	41	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 110-120 sq.ft./ac., openings restricted to ≤ 1 acre in size, feather approx. 100 ' along southern boundary.	75	50	H	LP
39	22	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	75-80	50-55	H	LP
40	7	4	West Fk. St. Maries	Commercial Thinning; retaining a BA of approx. 140 sq.ft./acr., openings restricted to ≤ 2 acres in size, irregular density.	80-85	50	H	GP
41	46	4	Hidden Creek (50%) West Fk. St. Maries (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., irregular density, 200' no treat buffer along southern edge next to highway, 50-75 foot feathering along no treat buffer.	80	50-55	H	LP/GP/HP
42	5	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac., 200' no treat buffer along southern & eastern edge next to highway, 50-75 foot feathering along the no treat buffer.	85-90	50-55	H	HP
43	12	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	45-50	H	GP/LP
44	18	4	Hidden Creek West Fk. St. Maries	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac., 200' no treat area along highway at northwest bdy. and 50-75' feathering along this unit edge.	75	50-55	H	GP/LP
45	13	4	West Fk. St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., 50-75' feathering along the northern boundary.	75-80	50-55	H/C-S	LP
46	20	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	65-70	5	C-S	BB
47	38	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	75	5	H/C-S	BB
48	17	4	West Fk. St. Maries	Clearcut w/reserves; removing approx. 90-95% of current BA.	75-80	5	GB	BB
49	68	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	50	H	LP
50	10	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq,ft,/ac .	80-85	50-55	H	LP
51	15	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85	50-55	H	LP
52	18	1	West Fk. St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., variable density. Openings restricted to ≤ 1 acre in size.	70-75	45	C-S/GB	GP/LP

Alternative D - Vegetation Treatment Summary

GB=ground base; C-S = cable/skyline; H = helicopter;
BB = broadcast burn; GP = grapple pile; HP = hand pile; LP = Lopping; JP = jackpot burn

2	29	4	West Fk St. Maries St. Maries River	Shelterwood preparatory cut; retaining a basal area (BA) of approx. 120-140 sq.ft./ac. There will be a 100' "no treat" buffer between highway and east end of unit.	70	45-50	C-S	JP
10	32	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	75-85	45	H	GP
11	8	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA.	75-85	45-50	H	GP
12	10	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 100 sq.ft./ac.	70-75	45-50	H	GP
13	36	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	65-70	45-50	H	GP
14	15	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	80-85	45-50	C-S/H	GP
15	29	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85-90	60	H / C-S	GP/LP
20	14	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
21	6	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
22	15	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	80-85	5	H	BB
24	12	1	West Fk St. Maries	Clearcut w/reserves; removing approx. 90-95% of existing BA.	70-75	5	C-S	BB
26	23	1	West Fk St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	45-50	H	BB
27	19	1	West Fk St. Maries	Shelterwood Prep Cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings restricted to ≤ 1.5 acres.	75-80	50	C-S/GB	LP
28	31	4	West Fk St. Maries	Shelterwood Prep Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre.	80-85	50	C-S	LP
29	9	1 & 4	West Fk St. Maries	Shelterwood Prep Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1.5 acre.	80	50	H	LP
33	9	4	Hidden Creek	Shelterwood Prep Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre.	80-85	50-55	H	LP
39	22	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	75-80	50-55	H	LP
40	7	4	West Fk St. Maries	Commercial Thinning; retaining a BA of approx. 140 sq.ft./acr., openings restricted to ≤ 2 acres in size, irregular density.	80-85	50	H	GP
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42	5	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac., 200' no treat buffer along southern & eastern edge next to highway, 50-75 foot feathering along the no treat buffer.	85-90	50-55	H	HP
43	12	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	45-50	H	GP/LP
44	18	4	Hidden Creek West Fk St. Maries	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac., 200' no treat area along highway at northwest bdy. and 50-75' feathering along this unit edge.	75	50-55	H	GP/LP
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49	68	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	50	H	LP
50	10	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq,ft,/ac.	80-85	50-55	H	LP
51	15	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85	50-55	H	LP
52	18	1	West Fk St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., variable density. Openings restricted to ≤ 1 acre in size.	70-75	45	C-S/GB	GP/LP

Alternative F - Vegetation Treatment Summary

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4	25	4	St. Maries River	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings will be restricted to ≤ 1 acre in size.	70-75	45-50	C-S/GB	LP
5	22	4	St. Maries River	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	65	45-50	C-S/GB	GP/LP/HP
6	16	4	St. Maries River	Shelterwood Removal Cut; retaining a BA of approx. 35-40 sq.ft./ac., or approx. 35-45 overstory trees/ac.	75	35-40	C-S/GB	LP
7	20	1	Cedar Creek	Shelterwood preparatory cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	60	C-S/GB	GP/LP
8	22	1	Cedar Creek	Irregular shelterwood cut; generally CT but will have variable BA retention and openings of up to 1.5-2 tree lengths in size in disease centers.	75-80	60	C-S/GB	GP/LP
10	32	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	75-85	45	H	GP
11	8	4	Cedar Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of 3-5 acres in size, and remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA.	75-85	45-50	H	GP
12	10	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 100 sq.ft./ac.	70-75	45-50	H	GP
13	36	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	65-70	45-50	H	GP
14	15	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	80-85	45-50	C-S/H	GP
15	29	4	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	85-90	60	H	GP/LP
16	109	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	85-90	60	C-S/GB	GPLP
17	120	1	Cedar Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	60	C-S/GB	GP/LP
18	28	1	St. Maries River	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	50-55	C-S/GB	GP/LP
20	14	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
21	6	4	Cedar Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA.	65-70	5	H	BB
24	12	1	W.Fork St. Maries	Clearcut w/reserves; removing approx. 90-95% of existing BA.	70-75	5	C-S	BB
25	16	1	W.Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 100-120 sq.ft./ac.	65	50	H	LP
26	23	1	W.Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac.	75-80	45-50	H	LP
27	19	1	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. Openings restricted to ≤ 1.5 acres in size.	75-80	50	C-S/GB	GP/LP
28	31	4	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre in size	80-85	50	C-S	LP
29	9	1 & 4	W. Fork St. Maries	Shelterwood Preparatory Cut; retaining a BA of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1.5 acre in size	80	50	H	LP
30	130	1 & 4	West Fk St. Maries 50%) Mazie Creek (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./acre and feathering 2 tree lengths width along north and west boundary.	70-75	50-55	GB/C-S/H	GP/LP
31	15	1	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	70	50-55	GB/C-S	GP

Unit	Acre	MA	Drainage	Alternative F Treatment Description Summary	Existing % Crown Closure	Estimated % Retained Crown Closure	Logging Method	Fuels Treatment
			Mazie Creek					
32	11	1	Mazie Creek	Clearcut w/reserves; removing approx. 90-95% of existing BA	65	5	GB/C-S	BB
33	9	4	Hidden Creek	Shelterwood Preparatory Cut; retaining a Basal area of approx. 120-140 sq.ft./ac. and openings restricted to ≤ 1 acre in size	80-85	50-55	C-S/GB	JP
34	18	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 90-100 w/ ave. spacing of 20-21 ft, openings restricted to ≤ 1 acres and feathering 100' strip along southern boundary.	70-75	50-55	C-S/GB	GP/LP
35	17	4	Hidden Creek Wood Creek	Group Shelterwood Harvest; approx. 1/3 to ½ of stand would be in openings of ≤ 3 acres in size AND feather edges for 50' to soften edge appearance; remainder of stand would be CT retaining approx. 120-140 sq.ft./ac. BA	65-70	45	H/GB	LP
36	8	4	Wood Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	70-75	50-55	C-S/GB	GP
37	21	4	Hdden Creek Wood Creek	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac.	80-85	50-55	H	GP
38	41	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 110-120 sq.ft./ac., openings restricted to ≤ 1 acre in size, feather approx. 100 ' along southern boundary.	75	50	GB/C-S	GP/LP
39	22	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac.	75-80	50-55	H	LP
40	7	4	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 140 sq.ft./acr., openings restricted to ≤ 2 acres in size, irregular density.	80-85	50	H	GP
41	46	4	Hidden Creek (50%) West Fk St. Maries (50%)	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., irregular density, 200' no treat buffer along southern edge next to highway, 50-75 foot feathering along no treat buffer.	80	50-55	H	LP/GP/HP
42	5	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 140 sq.ft./ac., 200' no treat buffer along southern & eastern edge next to highway, 50-75 foot feathering along the no treat buffer.	85-90	50-55	H	HP
43	12	4	Hidden Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	45-50	H	GP/LP
44	18	4	Hidden Creek W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120 sq.ft./ac., 200' no treat area along highway at northwest bdy. and 50-75' feathering along this unit edge.	75	50-55	H	GP/LP
45	13	4	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., 50-75' feathering along the northern boundary.	75-80	50-55	H/C-S	LP
46	20	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	65-70	5	C-S	BB
47	38	4	Hidden Creek	Clearcut w/reserves; removing approx. 90-95% of current BA.	75	5	C-S/GB	BB
48	17	4	W. Fork St. Maries	Clearcut w/reserves; removing approx. 90-95% of current BA.	75-80	5	GB	BB
49	68	1	Keeler Creek	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac.	80	50	C-S/GB	GP/LP
50	10	1	Keeler Creek	Commercial Thinning, retaining a basal Area of aprox. 120- 140 sq.ft./ac.	80-85	50-55	H	LP
51	15	1	Keeler Creek	Commercial Thinning, retaining a basal Area of aprox. 120- 140 sq.ft./ac	85	50-55	H	LP
52	18	1	W. Fork St. Maries	Commercial Thinning; retaining a BA of approx. 120-140 sq.ft./ac., variable density. Openings restricted to ≤ 1 acre in size.	70-75	45	C-S/GB	GP/LP

All Action Alternatives – Alternatives B, C, D, E and F

Pre-commercial Thinning

Unit		
A	29	St. Maries River 4
B	83	“
C	77	“
D	15	“
E	8	Bechtel
G	31	W. Fork St. Maries
H	7	Bechtel/W. Fork St. Maries

I	15	Wood
J	16	Wood
K	14	Mazie
L	13	Mazie
M	16	Mazie
Total	324	

APPENDIX C:
ROAD DEFINITIONS

APPENDIX C – ROAD DEFINITIONS

Road. A motor vehicle travel-way over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified or temporary.

Classified road. Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access, including state roads, county roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service.

Road Classifications in Current Use

Functional Class	Traffic Service Level	Maintenance Level
Arterial: Provides service to large land areas. Connects with other arterials or public highways. Collector: Serves smaller land areas than arterials. Connects arterials to local roads or terminal facilities. Local: Single purpose road. Connects terminal facilities with collectors or arterials.	A: Free flowing, mixed traffic; stable, smooth surface; provides safe service to all traffic. B: Congested during heavy traffic, slower speeds and periodic dust; accommodates any legal-size load or vehicle. C: Interrupted traffic flow, limited passing facilities, may not accommodate some vehicles. Low design speeds. Unstable surface under certain traffic or weather. D: Traffic flow is slow and may be blocked by activities. Two-way traffic is difficult, may require backing. Rough and irregular surface. Accommodates high clearance vehicles. Single purpose facility.	Level 1: Closed more than 1 year. Level 2: High-clearance vehicles. Level: Passenger vehicles—surface not smooth. Level 4: Passenger vehicles–smooth surface. Level 5: Passenger vehicles–dust free; possibly paved.

Public road. Any road or street under the jurisdiction of, and maintained by, a public authority and open to public travel (23 U.S.C. 101(a)).

Private road. A road under private ownership authorized by an easement to a private party, or a road that provides access pursuant to a reserved or private right.

National Forest System road. A classified forest road under the jurisdiction of the Forest Service. The term "National Forest System roads" **(NFSR)** is synonymous with the term "forest development roads" as used in 23 U.S.C. 205.

Unclassified road. Roads on NFS lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon termination of the authorization (36 CFR 212.1).

Temporary road. Roads authorized by contract, permit, lease, other written authorization, or emergency operation, not intended to be a part of the forest transportation system and not necessary for long-term resource management.

New road construction. Activity that results in the addition of forest classified or temporary road miles (36 CFR 212,1)

Road decommissioning. Activities that result in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1), (FSM 7703).

Road maintenance. The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective (FSM 7712.3).

Road reconstruction. Activity that results in improvement or realignment of an existing classified road as defined below:

Road improvement. Activity that results in an increase of an existing road's traffic service level, expansion of its capacity, or a change in its original design function.

Road realignment. Activity that results in a new location of an existing road or portions of an existing road and treatment of the old roadway (36 CFR 212.1).

Road Management Objectives are to:

- Establish the specific intended purpose of a road based on management needs as determined through land and resource management planning;
- Contain operation and maintenance criteria for existing roads; and

Road Management Prescriptions:

Open Road Management. Unrestricted classified roads available for public use, generally maintained at level 3-5, but could include some level 2 roads whose condition may limit vehicle use.

Road Management A. Classified roads for administrative and contractual use, generally maintained in a passable condition at level 2. Traffic is usually controlled with a gate.

Road Management B. Classified roads for administrative and contractual use, generally maintained at level 1, meeting the minimum requirements for an inactive road as defined by the Idaho Forest Practices Act (Title 38, Ch 13, Idaho Code, Rule 040 (04, d)). Traffic is usually controlled with a static physical barrier to eliminate over 50-inch wide vehicle use. Road condition or restrictions may limit under 50-inch wide motor vehicle use.

Road Management C. Classified roads put into long-term storage. The intent is to put classified roads in a hydrologically stable condition for maintenance in non-use periods and eliminate motor vehicle use.

Road Management D. Roads decommissioned using a variety of methods including completely re-contouring segments or partially re-contouring entire road prism or segments of the prism, leaving segments intact, or a combination of these. The intent is to eliminate use as a road, stabilize slopes, restore site productivity, and re-establish natural water infiltration and drainage patterns.

Road Management E. Decommission and fully re-contour roads to restore slopes and drainages to near pre-road conditions.

APPENDIX D:
ACCESS MANAGEMENT PLAN DURING IMPLEMENTATION

APPENDIX D – ACCESS MANAGEMENT PLAN

HIDDEN CEDAR FINAL SUPPLEMENTAL EIS

*Map Index	Rd #	Location	Action To Take	Timing	Reason For Action	Alt
1	504A	@ Jct. w/ Road 504	Lock existing gate open	Start of harvest operations	Harvest	B, C, D, F
			Gate locked shut on weekends & evenings	During harvest operations	Big game security, water and soil concerns	
2	498	Gate @ milepost 2.8	Open existing gate.	Start of harvest operations	Harvest	B, C, D, F
			Gate will be locked shut on weekends and evening	During harvest operations	Big game security, water and soil concerns	
3	3380	@ Jct. w/ S Hwy 3	Open existing gate.	Start of harvest operations	Harvest	B, C, D, F
			Lock shut on weekends and evenings.	During harvest operations	Big game security, water and soil concerns	
4	3557	@ Jct. w/ Road 447	Open existing gate	Start of harvest operations	Harvest	B, C, D, F
			Locks shut on weekends and evenings.	During harvest operations	Big game security, water and soil concerns	
5	3335	@ road from Clarkia workcenter	Open existing gate.	Start of harvest operations	Harvest	B, C, D, F
			Locks shut on weekends and evenings.	During harvest operations	Big game security, water and soil concerns	
6	3327J	@ Jct. w/ Road 3327G	Open existing gate	Start of harvest operations	Harvest	B, C, D, F
			Lock shut on weekends and evenings.	During harvest operations	Big game security, water and soil concerns	
7	New road	Off Road 765 going to Units 30, 31, 32	Install gate (coordinate w/ ID Dept. of Lands)	Start of road construction	Big game security, water and soil concerns	B, C, D, F
			Lock shut on weekends and evenings.	During harvest operations	Big game security, water and soil concerns	
			Lock existing gate shut (coordinate w/ ID Dept. of Lands)	After harvest operations are complete.	Big game security, water and soil concerns	
8	New road	Off Road 361C to Units 27, 28	Install gate (Coordinate with State)	Start of road construction	Big game security, water and soil concerns	B, C, D, F
			Lock gate shut	After harvest operations complete	Big game security, water and soil concerns	

***Map Index Numbers are identified on Maps M-6, M-8, M-10, and M-15**

1

Hidden Cedar Draft Supplement

Message Subject: IPNF WEB COMMENTS -NO SUBJECT

Message Contents:

there is no e mail address so that comments on the federal register proposals can go. i have a comment for peter ratcliffe on today's federal register vol 71 #116. fed reg doc e6 9460.

1-1

i oppose all prescribed burning, logging, new roads, snowmobile and atv use, hunting, trapping, in this nationally owned forest. remember national taxpayers own this forest. b. sachau 15 elm st florham park nj 07932

==========
The following information may only be used to monitor for SPAM and/or abuse posts
using this automated response system. It may not be used for any other purpose.
IP Address: 63.211.66.39
Browser-O/S: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0)
==========
End Transmission

original with file.

Peter Ratcliffe/R1/USDAFS
06/19/2006 12:57 PM

To Cornie Hudson/R1/USDAFS@FSNOTES
cc
bcc
Subject Fw: [WebEmail] IPNF WEB COMMENTS -NO SUBJECT

Must be the first comment for Hidden Cedar draft.

Peter Ratcliffe
St. Joe R.D. IPNF
Team Leader - Planning, Design & Implementation
(208) 245-6071
—— Forwarded by Peter Ratcliffe/R1/USDAFS on 06/19/2006 12:55 PM ——

Tracy L Bohon/R1/USDAFS
06/19/2006 09:11 AM

To jeanpublic@yahoo.com, Peter Ratcliffe/R1/USDAFS@FSNOTES
cc
Subject Re: [WebEmail] IPNF WEB COMMENTS -NO SUBJECT

Thank you for your inquiry. I will forward your message on to Peter Ratcliffe.

Tracy L.. Bohon
Information Receptionist
Support Services
(208) 765-7233
jeanpublic@yahoo.com

jeanpublic@yahoo.com
06/16/2006 11:30 AM

To tbohon@fs.fed.us
cc
Subject [WebEmail] IPNF WEB COMMENTS -NO SUBJECT

```
##  Begin Transmission  ##
USDA Forest Service - National Web Site Email Response Form.
==========================================================================
======

Posted on Friday, June 16, 2006 at 14:30 Hours (Server time).

From: b sachau
Email: jeanpublic@yahoo.com

Telephone Number:

Street Address:
```

John M Macy/R1/USDAFS
07/06/2006 08:01 AM

To Lynette A Myhre/R1/USDAFS@FSNOTES, Cornie Hudson/R1/USDAFS@FSNOTES
cc
bcc
Subject Fw: Hidden Cedar preliminary comments

Let the scrutiny begin.....

fyi

John M. Macy
Hydrologist
St. Joe Ranger District
208-245-6049

—— Forwarded by John M Macy/R1/USDAFS on 07/06/2006 08:00 AM ——

<June.Bergquist@deq.idaho.gov>
06/29/2006 11:56 AM

To <jmmacy@fs.fed.us>
cc <Robert.Steed@deq.idaho.gov>, <Jenna.Borovansky@deq.idaho.gov>, <Ed.Tulloch@deq.idaho.gov>, <June.Bergquist@deq.idaho.gov>, <Douglas.Conde@deq.idaho.gov>
Subject Hidden Cedar preliminary comments

Hi John,
I started out with one comment and then it grew so I will send these to you and probably follow with a letter. If you see anything that I misunderstood please let me know. If you want to meet give me a call.
Thanks.
June

A. I was looking at the DEIS and the below copied text found on page 277:

Page 277 Hidden Cedar DEIS:

Idaho Water Quality Standards

The action alternatives would meet Idaho Water Quality Law, with the reasoning stated above for the Clean Water Act. Overall for the Hidden Cedar area there is an estimated reduction of sediment from all action alternatives due to road decommissioning and long-term storage. The short-term sediment generated during road recontouring and stream crossing rehabilitation is not of sufficient quantity to cause beneficial use impairment and these activities are consistent with meeting the TMDL allocation for sediment reduction and they are also consistent with IDAPA 58.01.02.080.02 Short Term Activity Exemption in that, 1) the activity is essential to the promotion of public interest; 2) it is a soil stabilization measure; and 3) it is activities which result in overall enhancement or maintenance of beneficial uses.

Original main file

There are two things about this paragraph that are not quite right:

1. The sediment generated due to road re-contouring sometimes is sufficient to cause impairment depending on the project. Even in the case where no impairment is anticipated, you must use knowledgeable and reasonable effort to implement BMPs that protect water quality (IDAPA 58.01.02.350). Your statement gives the impression that one can add pollutants so long as fish don't die or some other catastrophic degradation doesn't occur. Along that same line, your statement may give the impression that added sediment that is temporary in nature doesn't need to be accounted for in a listed or TMDL water. As you know, to be consistent with IDAPA 58.01.02.054, the sediment budget must have an offsetting amount for sediment added to the stream, even if its temporary in nature. You displayed this correctly in Table 3-73. The message of the above paragraph might be better conveyed using the following concepts:

2-1 *" Best management practices will be utilized during road re-contouring and stream crossing rehabilitation consistent with IDAPA 58.01.02.350. The short-term sediment generated during this work was included in the sediment budget. The sediment budget shows a net decrease of sediment in the impaired watershed which is consistent with the TMDL for sediment reduction. The net reduction will be experienced within 3-5 years [need actual estimate] of the project start date. "*

2. The page 277 paragraph also mentions Short Term Activity Exemptions. An Exemption allows a violation of the Standards and can only be authorized by the Board or DEQ. It is not appropriate to apply it to any project unless this authorization has been obtained. In the CdA Region, we have not found it necessary or desirable to allow a standards violation when doing stream restoration or road work. Compliance with the standards are achievable when conducting these activities by utilizing BMPs (IDAPA 58.01.02.350). The reference to Short Term Activity Exemptions incorrectly leads the reader to believe that rules violations are acceptable under certain circumstances without agency approval. All reference to 58.01.02.080.02 should be removed from the EIS.

2-2

B. My next comment regarding the Hidden Cedar DEIS, concerns the estimate of 1-2 years of sediment delivery for temporary roads. You cite a personal communication with Steve Nelson (project file SWW-17) on page 263. The West Gold EIS cites Hickenbottom (2001), the USDA Forest Service (2001) and Redente et al (1994) that indicate a three to five year recovery period following the decommissioning of roads. Since you have to construct a road, use it during logging, decommission it and then re-vegetate it, a period of one to two years seems to be very short. Below is text from page 8 of the DEIS:

2-3 *"Any resulting timber sales would be offered for sale in 2006 and 2007, and timber harvest is expected to be completed by 2012. Slash disposal, site preparation and reforestation are expected to be completed by 2014."*

Did your sediment increase account for potentially seven years of the new roads/re-opened roads on the landscape?

2-4

C. Below is text from Page 5 under the heading of ***"The Purpose and Need for a Changed Condition in the Project Area "***

"2. There is a need to address the management of the transportation system (roads in the analysis area) for protection of lands and resources.

More specifically:

a) There is a need to improve water quality and reduce long-term sedimentation to streams caused by existing roads. The State of Idaho listed the West Fork St. Maries River and the main stem of the St. Maries River below Clarkia under Section 303(d) of the Clean Water Act as water quality impaired. The pollutants of concern are temperature and sediment for the West Fork and nutrients, habitat alteration, and sediment for the main stem."

Since the DEIS identified a purpose and need for this project to improve water quality, we support that

goal and look to the alternative that provides the greatest reduction in pollutants as the preferable choice. The alternatives that fulfill this goal appear to be either D or E. 2-5

D. Table 3-80 contains a row for short term sediment decrease. Its footnote says that this sediment **decrease** factors in sediment increases from new construction, temporary roads and non-stocked stands This table also contains a row for sediment increases due to road construction. How can constructing new roads and temporary roads decrease sediment? What is the difference between these two rows? 2-6

E. Table 2-8 shows miles of road to be constructed or reconstructed for Alt B. Table 2-27 shows new roads and temporary roads but omits the reconstructed roads. Similarly, Table 3-79 shows sediment increase for 11.1 miles of new roads for Alt B but no sediment increase for reconstructed roads. Why is this? Do decommissioned roads (the roads now in need of reconstruction) produce more or the same amount of sediment as reconstructed roads? 2-7

F. We have also improved our sediment model used for TMDL development. Since the EIS doesn't contain enough detail to determine how sediment increases/reductions were calculated, we would be happy to meet with you and compare what we have to your method. If you relied solely on Appendix C of the St. Maries TMDL for calculating sediment increases you may be missing significant sediment sources, although you may have accounted for them in other ways. To figure all this out I guess we need to compare notes. 2-8

Thanks John, talk to you soon.
June

June Bergquist
Regional Water Quality Compliance Officer
Coeur d'Alene Regional Office
phone (208) 769-1422
fax (208) 769-1404
new e-mail: june.bergquist@deq.idaho.gov
new direct dial telephone number (208) 666-4605

The information contained in this email may be privileged, confidential or otherwise protected from disclosure. All persons are advised that they may face penalties under state and federal law for sharing this information with unauthorized individuals. If you received this email in error, please reply to the sender that you have received this information in error. Also, please delete this email after replying to the sender.

Jonathan Oppenheimer
<joppenheimer@wildidaho.org>
07/13/2006 10:23 AM

To <pratcliffe@fs.fed.us>, Chuck Mark <cmark@fs.fed.us>, Comments <comments-northern-idpanhandle-stjoe@fs.fed.us>
cc
bcc
Subject Idaho Conservation League comments on the Hidden Cedar Project DSEIS

Pete and Chuck-
Attached, pasted below and sent via fax are our comments. If you have any difficulty opening the attachment, or if you have any questions with regards to these comments, please don't hesitate to contact me or Brad.
Thanks,
jonathan

Jonathan Oppenheimer
Conservation Associate
Idaho Conservation League
P.O. Box 844
Boise, ID 83701

Ph: (208) 345-6942 Ext. 26
Fax: (208) 344-0344
joppenheimer@wildidaho.org

For thirty years, the Idaho Conservation League has worked to preserve Idaho¹s clean water, wilderness and quality of life.

Pete Ratcliffe
Hidden Cedar Project Team Leader
222 S. 7th St, Suite 1
St. Maries, Idaho 83861

July 13, 2006

RE: Idaho Conservation League Comments on the Hidden Cedar DSEIS

Dear Pete,

Thank you for considering our comments on the Hidden Cedar DSEIS. For thirty years, the Idaho Conservation League has worked to protect Idaho¹s clean water, wilderness, and quality of life through citizen action, public education, and professional advocacy. For more information or to become a member, visit www.wildidaho.org <http://www.wildidaho.org/> . As Idaho's largest state-based conservation organization we represent over 9,000 members, many of whom have a deep personal interest in ensuring that logging projects are consistent with protecting our water, wildlands, and wildlife.

We are concerned that the Hidden Cedar Project overemphasizes logging and underemphasizes much needed restoration in the project area. Although forest plan direction highlights logging in the project area, the current state of the St. Maries Watershed is at odds with the beneficial uses listed in the TMDLs for the St. Maries and West Fork St. Maries Rivers. In fact the Forest

original in main file.

Plan requires the St. Joe Ranger District to ³Maintain concentrations of total sediment or chemical constituents within State standards.² Yet the action alternatives with the comparatively most restoration emphasis will leave the project area with a road density of > 4.1 mi/mi2 and will not achieve the reductions in sediment delivery in the project area required by the TMDLs. We think there is a need for further restoration emphasis in the Hidden Cedar Project. Further detail and additional considerations can be found in the attached comments.

Once again we thank you for the opportunity to submit comments on the Hidden Cedar DSEIS. Please send us any subsequent documents for this project. We look forward to continuing to work with the St. Joe Ranger District on this project and others in the future.

Sincerely,

/s/ Bradley Smith

Bradley Smith
Conservation Assistant

Idaho Conservation League Comments on the Hidden Cedar Project DSEIS

Roads

3-1 Although the St. Joe Ranger District is proposing to decommission roads in all of the action alternatives under the Hidden Cedar DSEIS, the road density in the project area will remain excessively high at > 4.1 mi/mi2 (DSEIS, p. 49). Such a high road density necessitates restoration activities to bring the St. Maries Watershed into a properly functioning condition. Following implementation of the Hidden Cedar Project, many of the streams in the project area will remain ³functioning at risk² or ³functioning at unacceptable risk.² Therefore, we are concerned that the current project proposal does not go far enough to address the current impaired situation in the St. Maries River Watershed. Recognizing that there are many private and state lands in the watershed, a significant portion still lies within the jurisdiction of the Forest Service, and thus the agency has the highest potential to improve upon the existing conditions.

3-2 First and foremost, the high road density in the project analysis area for the Hidden Cedar Project is concerning because of the impacts on fisheries including endangered bull trout and westslope cutthroat. Assuming the Forest Service approves an alternative that will reduce the road density in the project area to 4.1 mi/mi2, this density remains in the ³high² road density category.[1] <#_ftn1> Non-anadromous salmonids are less likely to be found in watersheds with moderate to high road densities or are less likely to exist as strong populations.[2] <#_ftn2> The Forest Service¹s own analysis indicates that bull trout historically occupied the project area, bull trout occasionally migrate up the St. Maries River from the St. Joe River, and westslope cutthroat exist at ³suppressed levels² (DSEIS, pp. 92, 93). This implies that watershed restoration should be an extremely high priority, including road decommissioning, in order to improve stream conditions, and thus fisheries.

In relation to the fisheries concerns in the project area, the beneficial uses in the water quality limited segments of the St. Maries and West Fork St. Maries TMDLs are not being met for temperature and sediment (DSEIS, p. 252). We appreciate the reduction in tons of sediment per year by the Forest

Service in an effort to bring the St. Maries and West Fork St. Maries Watersheds into compliance with the TMDLs and the Clean Water Act, but we believe there are additional opportunities that should be included in the Hidden Cedar Project to make greater strides toward meeting the beneficial uses in these TMDLs. 3-3

For example, the St. Joe Ranger District has chosen to delineate RHCAs as 50 feet from the edge of seasonal streams in non-priority watersheds (DSEIS, p. 23). However, the INFISH standards for delineating RHCA widths from the edge of seasonal streams is 50 ft or one-half site potential tree, whichever is greatest (category 4, subpart e). Many of the tree species in the Hidden Cedar Project Area exhibit the potential to grow more than 100 ft in height. Western larch can grow to be 140-180 ft in height; western white pine, 150-180 ft; and Rocky Mountain Douglas-fir, more than 130 ft.[3] <#_ftn3> Therefore, in order to comply with INFISH direction and the existing Forest Plan, the St. Joe Ranger District should utilize the one-half site potential tree delineation method for seasonal streams according to the species with the highest growth height potential in the project area. Although seasonal streams in the project area may or may not support fish populations, high flows in seasonal streams may deliver sediment from these streams into perennial and fish-bearing streams. As such, the one-half site potential standard would afford a smaller potential for sediment delivery. 3-4

On the same topic, INFISH also requires the Forest Service to delineate RHCAs for landslide and landslide-prone areas. However, the Forest Service is proposing new road construction under both the proposed action (Alternative B) and the preferred alternative (Alternative F) within areas of high mass-failure potential (DSEIS, pp. 212, 213). The Forest Service should delineate RHCAs around areas with high mass-failure potential of one-half site potential tree and avoid constructing new or temporary roads within these RHCAs. 3-5

Another potential consideration includes the proposed storage of roads within RHCAs. In all action alternatives, there will be roads not fully decommissioned but placed into long-term storage instead (DSEIS, p. 50). In light of the pollutants listed in the aforementioned TMDLs including sediment, significant reductions in sediment delivery could be obtained by decommissioning roads or relocating all roads out of the RHCAs. In fact, 18.8 miles of the 58 miles of road within RHCAs in the project area are located on Forest Service land (DSEIS, p. 216). Luce (1997) found that ripping roads located in the Idaho Batholith and metamorphic belt series-derived soils increased hydraulic conductivities modestly enough to prevent runoff and erosion from most erosion and snowmelt events. He also suggested that amended organic matter could enhance the short-term effectiveness of gains in porosity and infiltration capacity, accelerating the restoration process.[4] <#_ftn4> While there might be a short-term increase in sediment associated with this practice, actively ripping, recontouring, and revegetating roads in RHCAs will lead to drastic reductions in sediment delivery in the project area over the long-term. 3-6

We appreciate the fact that the Forest Service is proposing to decommission part of Road 498 within the Hidden Creek RHCA under alternatives D, E, or F (DSEIS, p. 115). However, the proposed segment of Road 498 to be

decommissioned is contingent upon the agency finding an alternate access route for the other road segments in the upper locations of Hidden Creek. Due to this technicality there is no guarantee that this problematic segment
3-7 of road 498 will be decommissioned if the Hidden Cedar FSEIS and ROD are issued. The Forest Service should guarantee this restoration effort by identifying and analyzing an alternate route as part of the FSEIS.

In general, the Forest Service should avoid new or temporary road construction unless it is to relocate problematic roads or roads within
3-8 RHCAs that absolutely must exist for the purpose of management. We are troubled by the proposal to construct new permanent roads in a drainage that is already seriously impacted by significant road densities, high levels of sedimentation and poor stream function.

OHVs

High road densities in this area have the real potential to encourage irresponsible OHV and motorcycle use. Spur roads lead OHV users to dead-end locations where they are more likely to pioneer new unauthorized or illegal
3-9 routes. Gated roads such as those proposed in Mazie Creek (DSEIS, p. 121) also have the effect of encouraging OHV users to go around gates to find out what the agency is trying to prevent them from accessing.

OHVs also increase the potential for the spread of noxious weeds and
3-10 invasive plants. Although the Forest Service exercises BMPs to inspect and clean equipment before entering the field, the agency cannot reasonably expect users to inspect and clean their own equipment voluntarily.

Lastly, OHVs increase the threat of human-related fire starts. Most off-road vehicles do not have spark arresters. The fact that OHVs lead to soils disturbances, heighten the potential for the spread of noxious weeds, and
3-11 increase the potential for fires indicates the clear need for a reduction in road densities in the Hidden Cedar Project area.

In relation to what designated routes should remain in the project area, the Forest Service should not attempt to designate routes in the project area through the Hidden Cedar SEIS. Instead, OHV route designation should be
3-12 addressed during consideration of the travel plan, as required by the OHV rule.

Proposed Logging and Yarding Methods

Given the high road density in the Hidden Cedar Project area, new or temporary road construction should be avoided in order access any of the proposed logging units that cannot already be accessed with the current road system. Helicopter logging should be employed to the maximum extent
3-13 practicable to avoid the need to construct any new or temporary roads. Helicopter logging also results in less soil disturbance than cable-skyline yarding, and even much less so than ground-based yarding. The Forest Service

should also consider winter logging on sufficient snow pack to reduce soil disturbance.

There are also a number of logging units proposed in high sensitivity land types. These units include 13, 47, 49, 50, and 51 (DSEIS, p. 213). We are concerned that the proposed logging in units with high sensitivity land types is setting the Forest Service up for failure in terms of complying with the TMDLs for the St. Maries and West Fork St. Maries Rivers. Logging these units is contrary to the required reduction in sediment pursuant to these TMDLs. By logging these units, the potential for erosion, mass-failure, landslides, and sediment delivery into the watersheds is heightened due to the reduction in root biomass to stabilize the soil and the reduction in above-ground biomass that intercepts precipitation. The total logging area proposed in these landtypes is 11.1 acres, these areas could easily be eliminated from the logging units to reduce the unacceptable impacts without a noticeable change in the economics or feasibility of the timber sale. 3-14

Not only is logging in these units contrary to the direction in the TMDLs, but the proposed logging is also contrary to forest plan direction. Although the forest plan emphasizes commercial logging in the project area, the forest plan also contains the following forest-wide standards (DSEIS, p. 245): 3-15

1. Management activities on forest lands would not significantly impair the long-term productivity of the water resource and would ensure that state water quality standards are met or exceeded. (emphasis added).

2. Maintain concentrations of total sediment or chemical constituents within State standards.

Considering that sediment and temperature are listed as pollutants under the two TMDLs in the Hidden Cedar Project area, and the Forest Service has not yet met the State water quality standards pursuant to the TMDLs and the forest plan, logging in high sensitivity land types should be avoided. More restoration, by way of reducing the road density and sediment delivery in the project area, is necessary to comply with the TMDLs and the forest plan. 3-16

Along similar lines, five of the proposed logging units would be left with more than 10% detrimental disturbance (units 1, 30, 34, and 38), and one unit would be left with more than 16% detrimental disturbance (Unit 36). (DSEIS, pp. 222, 223). The regional soil standard (Supplement 2500-99-1) requires detrimental disturbance below 15% of an activity area. Specifically, "the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 15 percent." Further, where existing conditions are below the 15% threshold, "the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 15 percent." Therefore, the proposed activity in Unit 36 would appear to violate the standard. As such, the proposal must be amended in order to comply. This could potentially be accomplished by eliminating the proposed temporary road, and/or by reducing 3-17

the logged acreage, or by conducting a different kind of logging. The DSEIS does not appear to provide the yarding method by unit, which should have
3-18 been included, or at a minimum discussed with regard to the aforementioned units where detrimental disturbance will exceed 10%.

The DSEIS is unclear when it discusses detrimental condition in Tables 3-51 and 3-52. It appears that the forests[1] interpretation of the Regional Soil Standard excludes roads from an activity area. This is not the case and is clearly described in the standard where it says, [3]All temporary roads, skid trails, and landings are considered to be part of an activity area.[2] The DSEIS further confuses the issue where it says there would be [3]no impacts to the activity area of Unit 36[2] (DSEIS, pp. 227). This, even though Table 3-51
3-19 (which does not appear to include road impacts) indicates cumulative detriment condition of 6.5%.

Even if up to 20% detrimental condition were authorized, units left in this condition (or even approaching this conditon) in the project area would be contrary to existing TMDLs and the forest plan water quality standards in the Hidden Cedar Project area. The units where we have most concern include
3-20 only 5 of the 52 logging units, therefore, we encourage avoid these units, or at a minimum alter the prescriptions to reduce the impacts to levels compliant with regional soil standards, existing TMDLs and forest plan water quality standards.

TES Plants

According to the DSEIS (p. 183), several of the proposed units including 7, 16, 24, 30, and 35 may contain deerfern or green bug-on-a-stick moss. These units should be surveyed and analyzed prior to the issuance of the FSEIS and
3-21 the ROD. In the instance that occurrences of TES plants are verified in any of the proposed logging units, these units should be dropped from the sale. At the very least, any populations should be appropriately buffered, and such units should be helicopter logged to limit soil disturbances and impacts to TES plants.

Grazing & Riparian Area Management

We support the proposed riparian plantings on 15 acres of the St. Maries River to reduce stream bank erosion and to provide increased shade. However, we also think that there are further opportunities to improve upon the existing conditions in the riparian areas that would reduce sediment and temperature.

As part of the riparian plantings on the St. Maries River, the St. Joe Ranger District should consider the placement of exclosure fencing to allow for sufficient growth and establishment of the plantings. Other riparian
3-22 habitats in the Hidden Cedar Project area should also be fenced to enhance and conserve existing vegetation or promote the establishment of new riparian shrubs and trees. Riparian exclosure fencing should be placed to enhance and conserve RCHAs as delineated by INFISH standards.

3-22 CONT.

One such area is in the Cat Spur allotment, which has been identified in the forest plan as a high-value stream for fisheries resources (DSEIS, p. 96). The presence of cattle in and around Cat Spur Creek has not only prevented the western red cedars that once shaded the creek from re-establishing, but cattle defecation has created an algal bloom in the creek. Exclosure fencing should be employed to improve water quality, allow for the re-establishment of western red cedar, and work toward compliance with the TMDL. The St. Joe Ranger District should also consider planting western red cedar to facilitate a faster recovery.

Other species that should be considered for planting include cottonwood, alder, willow, and hawthorne. This diverse array of species will provide numerous benefits to many wildlife species, while simultaneously reducing sediment and temperature in the project area.

Lastly, changes in grazing management may be warranted including rest rotation. Although the excuse is likely to be that grazing has already been authorized in the project area through the St. Maries River Grazing EA, part of adaptive management for the benefit of the ecosystem is making necessary adjustments to protect the resources and comply with applicable standards. While the authorized grazing in the project area might be in compliance with the forest plan (DSEIS, p. 188), grazing is contributing to the lack of compliance with the St. Maries and West Fork St. Maries TMDLs. 3-23

Equivalent Clearcut Area

In the FSEIS for the Hidden Cedar Project, the Forest Service should disclose and analyze the equivalent clearcut area (ECA) in the entire project are both before and after project implementation. ECA provides a landscape-level indicator of the overall watershed condition. In addition, ECA gives us some idea of the response of the snow pack and timing and volume of peak flows to management activities. Although the Forest Service analysis indicated that peak flows in the project area might be low enough not to change the morphological characteristics of stream channels in the project area (DSEIS, p. 105), increases in ECA will result in a change in both the timing and volume of peak flows in the St. Maries River and the tributaries in the project area. 3-24

If peak flows occur earlier, at a higher volume, and over a shorter duration in time, the associated increase in ECA will result in a trend away from the temperature standards for fisheries in the TMDLs. Therefore an analysis of ECA would be useful when analyzing the environmental effects pursuant to NEPA. 3-25

Noxious Weeds

We appreciate the fact that the Forest Service has described and decided to use BMPs that will help prevent the spread of noxious weeds and invasive plants. This potential can be further reduced be decommissioning roads and 3-26

employing yarding methods that limit soil disturbances, which create a seedbed for these plants.

Wildlife

The Forest Service sould reconsider the proposed logging units that would affect big game travel corridors (DSEIS, p. 299). These logging units should
3-27 either be dropped or the logging contract should specify that the timing of logging does not interfere with use by big game species. Additionally, there are 49.2 miles of road in the project area that affect elk use and security (DSEIS, p. 306). These roads should also be a high priority for decommissioning. This consideration would also reduce the high trapping
3-28 vulnerability associated with road densities > 1 mi/mi2 (DSEIS, p.316).

We appreciate the fact that the Forest Service will use the goshawk
3-29 management guidelines found in Reynolds et al. (1992), and will comply with the Region 1 snag protocol.

The Forest Service might also consider modifying the Hidden Cedar Project to provide some benefits to woodpeckers, including black-backed woodpeckers. The policy of fire suppression is not conducive to the creation of new
3-30 black-backed woodpecker habitat (DSEIS, p. 325). Since black-backed woodpecker has been found in the project area, the Forest Service should consider broadcast burning in some of the proposed units to create fire-killed snags for the benefit of woodpeckers.

Model Shortcomings

The DSEIS did not adequately discuss the shortcomings of various models, their assumptions, and the potential margin of error. These shortcomings are especially pertinent with regards to the findings associated with models that estimate sediment production and water quality improvements. These
3-31 potential inaccuracies could easily underestimate the potential sediment production resulting from the project, and therefore misreport compliance with TMDLs and water quality standards.

[1] <#_ftnref1> Quigley, T.M., Haynes, R.W., and R.T. Graham. 1996. Integrated scientific assessment for ecosystem management in the interior Columbia Basin and portions of the Klamath and Great Basins. GTR. PNW-GTR-382. Portland, OR. USDA, Forest Service. Pacific Northwest Research Station.

[2] <#_ftnref2> Lee, D.C., Sedell, J.R., Rieman, B.E., Thurow, R.F., and J.E. Williams. 1997. Broadscale assessment of aquatic species and habitats. In T.M. Quigley and S.J. Arbelbide. Eds. An assessment of ecosystem components in the interior Columbia Basin and portions of the Klamath and Great Basins. GTR. PNW-GTR-382. Portland, OR. USDA, Forest Service. Pacific Northwest Research Station.

[3] <#_ftnref3> Hardin, J.W., Leopold, D.J., and F.M. White. 2001. Harlow & Harrar¹s textbook of dendrology. 9th ed. New York, NY: McGraw-Hill.

4

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ST. JOE RANGER DISTRICT

July 13, 2006

Pete Ratcliffe
Hidden Cedar Project Team Leader
U.S. Forest Service, St. Joe Ranger District
222 South 7th Street, Suite 1
St. Maries, Idaho 83861

Dear Mr. Ratcliffe:

The Coeur d'Alene Tribe (Tribe) is providing comment for the Hidden Cedar Draft Supplemental Environmental Impact Statement (SEIS). The Tribe strongly prefers alternative D. The preference to this alternative is based upon conservation of environmental and natural resources; justification is provided below. 4-1

The balance between forest health issues and fish and wildlife concerns is stronger with Alternative D than other alternatives. For example, Alternative D would result in approximately half of the reduction in stand density compared to the preferred action (Alternative B), while improving the growing conditions for overstocked stands as much as the preferred action. In addition, Alternative D allows for the highest reduction in stream crossings by reducing 34 crossings compared to Alternative B, which only reduces 20 crossings. Alternative B actually increases stream crossings by adding 33 crossings while only reducing 20, which leads to a net increase of 13 crossings with associated impacts to water quality and fishery resources. Conversely, Alternative D reduces 34 crossings while adding only 21, leading to a net decrease of 13 crossings resulting in water quality and fishery resource benefits.

Alternative B constructs 9.5 miles of permanent new roads and 1.6 miles of temporary roads while Alternative D constructs only 2.0 miles of permanent new roads and no temporary roads. Accordingly, road construction with Alternative B delivers increased tons of sediment per year from road construction compared to Alternative D. Due to road storage and decommissioning Alternative B does provide a net decrease of 8.2 tons of sediment per year. However, when compared to the net decrease of 28.4 tons of sediment per year that Alternative D provides, a substantial reduction of over 3 times is illustrated. This reduction in sediment provides numerous benefits to water quality and fishery resources.

Alternative D also provides the highest miles of appropriately functioning fish habitat, and an increase in fishery condition trend in six streams. Further, it would provide over twice the amount of acres of wildlife security as the preferred action, 2,240 acres (Alt. D) compared to 1,009 acres (Alt. B). The fact that Alternative D would still allow for an

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additional 602 acres of timber harvest is significant. The Tribe feels this amount of timber harvest, if applied properly, could still significantly improve forest health.

If Alternative B is pursued or selected, the Tribe would like the following information:

- Evidence and illustration of tangible benefits gained from Alternative B, as compared to Alternative D, regarding stand density and growing conditions
- Evidence and illustration of tangible benefits gained from Alternative B, as compared to Alternative D, regarding water quality
- Evidence and illustration of tangible benefits gained from Alternative B, as compared to Alternative D, regarding stream crossings
- Evidence and illustration of tangible benefits gained from Alternative B, as compared to Alternative D, regarding wildlife security
- Evidence and illustration of tangible benefits to overall forest health gained from selecting Alternative B instead of Alternative D

The Tribe understands the need to manage vegetative conditions that, in the long term, encourage more resilient and sustainable forest conditions. This type of management often requires timber harvest, road construction and re-construction. The Tribe also understands the need to improve water quality by reducing sedimentation caused by existing roads, the need to improve fish habitat by reducing barriers, and the need to increase wildlife security by reducing the open road density. While Alternative B (preferred alternative) would certainly encourage more resilient and sustainable forest conditions, it would do little to benefit fish and wildlife species in the project area, which are some of the major needs identified in the Draft Supplemental EIS. Therefore, the Tribe encourages pursuing Alternative D.

The Coeur d'Alene Tribe appreciates the opportunity to comment on the Hidden Cedar project and looks forward to continued coordination with the St. Joe Ranger District, both on and off the Coeur d'Alene Reservation. Please contact Ms. Tiffany Allgood, Tribal Environmental Action Plan Coordinator, at (208) 686-8802 if you have any questions or would like additional information.

Sincerely,

Tiffany Allgood

Tiffany Allgood
Environmental Action Plan Coordinator

Pete Ratcliffe, Project Team Leader
St. Joe Ranger District
222 7th Street, Suite 1,
St. Maries, ID 83861

July 24, 2006

Dear Mr. Ratcliffe:

The following comments concern the Hidden Cedar Draft SEIS. The proposed action, Alternative B would log 1,368 acres, construct 9.1 miles of system roads, and reconstruct 7.3 miles of roads. Alternative F would log 1,304 acres, construct 6.1 miles of system roads, and reconstruct 6.7 miles of roads. Alternative F is described as the preferred Alternative, Chapter 2 at page 44.

Fisheries:

The DSEIS Summary at page nine, Table S-2, describes the no action Alternative A as containing zero (0) miles of appropriately functioning fish habitat. It appears this finding applied to the entire project area. Alternatives B and C would also result in zero (0) miles of appropriately functioning fish habitat. Alternatives D and E would result in the 6.2 miles of appropriately functioning fisheries habitat, pages S-9 and S-10. Alternatives D and E would also result in the largest increase in fisheries conditions, pages S-9 and S-10. 5-1

In Chapter 1, page five at 2b) describes fish barriers that exist in the project area and the following statement is found in the paragraph. "Forest Plan standards are to provide fish passage to suitable habitat by design of road crossings of streams to allow fish passage or remove in-stream migration barriers and pursue fish habitat improvement projects." The fisheries discussion on page five does not mention the Idaho Forest Practices Act (FPA) regulation that concerns culvert installations and fish passage. IDAPA at 20.02.01.040.02e.i contains the following language. " Culvert installations on fish bearing streams must provide for fish passage."[Emphasis added] 5-2

The Final SEIS needs to provide high quality information that will indicate whether any culverts installed on NFS lands in the Hidden Cedar analysis area in the last 7 years are classified as fish barriers. 5-3

Idaho Fish & Game submitted a number of comments regarding the fisheries conditions in the Hidden Cedar analysis area in their March 31, 2000 letter to the District Ranger. On page one of their letter it was stated "The upper St. Maries River watershed has been and continues to be heavily impacted by land management activities, including logging, mining, grazing, and road construction. Bull trout, which were historically present, are now virtually absent, and westslope cutthroat trout populations are severely depressed in much of the drainage." 5-4

In the section titled Fisheries/Watershed on pages one and two, the following sentences are found. "Our fish population data indicates westslope cutthroat trout populations are doing poorly. Habitat alterations, sediment, and temperature are the most frequently cited pollutants on the 303d list, and we believe these conditions are largely due to activities such as those proposed. We further believe these conditions are responsible for the

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5-4 CONT.

depressed cutthroat trout populations." On page two of the Fish & Game letter it was stated "We are particularly concerned with the proposals to construct nearly 10 miles of new road, and to create large canopy openings in the rain on snow zone. It is very difficult to prevent sediment delivery to streams from disturbed lakebed soils in the St. Maries watershed. Large openings in the forest canopy can result in increased peak flows on tributary watersheds, aggravating sediment delivery, particularly if the receiving stream is already in poor condition from past logging or riparian roads." The following comment is also found on page two. "Given the USFS mission and mandate for multiple use, we believe it is important that the USFS take a lead role in providing quality fish habitat and watershed in a mixed ownership watershed such as the St. Maries."

The findings in the Fish section of the DSEIS confirm the statements that were made by Idaho Fish and Game in 2000. Not one of the watersheds listed on page 100 is in a properly functioning condition. The Dutch Cat E.A. released by the St. Joe District included a fisheries discussion of Cat Spur Creek, which is located in the Hidden Cedar analysis area. On page 16 of Chapter III of the EA it was indicated Cat Spur was identified in the Forest Plan as a high valued stream for fisheries resources. On page 18 of Chapter III of the EA the following statements were made concerning the Creek. "Sediment input is one factor that continues to degrade the quality of aquatic habitat in Cat Spur Creek. Cat Spur Creek is particularly sensitive to sediment production due to the energy poor hydrologic conditions inherent to its channel morphology." It was also stated on page 18 "Pool habitat is under-developed as pool depths and volumes are relatively low for the size of Cat Spur Creek" and "Current stresses from recent and on-going activity are complicating the ability of the stream to fully recover."

The Fisheries analysis on pages 92 through 100 describes each Creek in the analysis area. On page 92 the Bull Trout discussion describes the historic range of bull trout as including the Hidden Cedar area. Westslope cutthroat trout are found in streams in the project area, spawning and rearing habitat is at suppressed levels, pages 92 and 93. Table 3-20 on page 100 lists 42.1 miles of streams that are classified as Functioning at Risk (FAR).

Also included in the Fisheries analysis is a description of the 8.1 miles of the Lower St. Maries River and 9.5 miles of the West Fork of the St. Maries River, both which are classified as Functioning at Unacceptable Risk. A description of Functioning at Unacceptable Risk is given on page 91.

The West Fork St. Maries River and the main stem St. Maries River are listed by the State of Idaho as being on the 303(d) list as water quality limited for cold water biota. Sediment and temperature are the primary pollutants for the West Fork and nutrients, habitat alteration and sediment for the Main Stem of the River.

5-5 The fisheries section, page 87, mentions the St. Joe Geographic Assessment. In the original DEIS there were over four pages of Fisheries analysis that included a detailed discussion of fisheries and aquatics findings presented in the St. Joe Geographic Assessment (GA). The following sentences were found on pages 3-62, 3-63, and 3-64 of the DEIS. "The GA considered the stream system in the Hidden Cedar area to currently be operating outside of dynamic equilibrium."

5-5 CONT.

"The high percentage of small substrate particles limits spawning habitat for salmonid species."

"The Hidden Cedar analysis area has a hydrograph dominated by snow-melt and is particularly susceptible to influences of hydrologic openings due to its elevational range. "Existing fish habitat conditions within the cumulative effects area are generally below desired levels and at future risk due to the existing watershed condition and trend (Soils and Water Resources report)."

On page 134 of the DSEIS the NFMA discussion contains the following statement. "All action alternatives would meet NFMA requirements by maintaining and improving habitat of management indicator species." The Table 3-22 on page 103 describes the trends of fishery conditions with Alternatives A thru F. Table 3-22 shows the poor fisheries conditions in all the streams would continue with Alternative B, one stream is shown as improving with Alt C, Keeler, and two streams, Keeler and Hidden, are shown as improving with Alt F. 5-6

NEPA requires expert agency comments, 40 CFR 1500.1(b) and 40 CFR 1500.2(a) requires federal agencies to interpret and administer the regulations and public laws of the United States. The fisheries analysis in the FSEIS is required to cite each specific NFMA regulation that allow for maintaining the current degradation of fisheries habitat for MIS in the Hidden Cedar project area if Alternatives B, C, D, and F were implemented. The fisheries analysis in the FSEIS also needs to proved expert agency comments with high quality information that would confirm the action Alternatives are in full compliance with CWA regulations that require the protection and propagation of fish. 5-7 5-8

Fisheries and Idaho FPA:

The following statement is made on page 269 of the DSEIS. "If non-Forest Service land activities are meeting the Idaho Forest Practices Act, no increase in stream temperature is expected." There is no supporting scientific data in the DSEIS that supports the statement made on page 269. Class I stream protection zones are only 75 feet on either side of a stream and Class II stream zones are only 35 feet on either side of a stream. There are also Class II zones that only 5 feet on either side of the stream and no standing trees are required by the FPA, IDAPA 20.02.01.030.07e.iv. The FPA allows logging in both Class I stream protection zones and Class II stream protection zones. For a class I stream, where the stream width is between 10' and 20', and there are trees between 3" and 19.9" in the zone, the regulations do not require any trees with a dbh 20" or greater to be protected from logging, 20.02.01.030.07e.iv. The requirements for a Class II stream are practically nonexistent as shown in 20.02.02.030.07e.iv. 5-9

The FSEIS needs to provide high quality information that has been acquired by the FS that would substantiate the claim FPA regulations have prevented increases in stream temperatures on Class I and Class II streams located on IDL lands in the Hidden Cedar cumulative effects analysis area. 5-10

Best Management Practices (BMPs):

On page six of Chapter 1 it is stated that BMPs would be implemented on project activities in all watersheds in order "To move current conditions toward desired conditions and protection of resources.....".

On page 27 of Chapter 2 there is a discussion of BMPs and Seyedbagheri 1996 is cited. On page 27 the following statements are made. "Best Management Practices (BMPs) would be used to achieve water quality standards" and "The Forest Service Handbook 2509.22 (Soil and Water Conservation Handbook) outlines BMPs that meet the intent of the water quality protection elements of the Idaho Forest Practices Act, and through a memorandum of understanding with the State of Idaho (9/19/88) replaces the Forest Plan Appendix S – Best Management Practices."

The report by Ms. Seyedbagheri on page three includes the following information. "Fewer than 100 references that actually give quantitative effectiveness data on specific
5-11 BMPs were found; the majority of these were based on Intermountain Research Station data. Many BMPs have not been researched at all in Idaho. Many studies had important implications for various BMPs, but did not provide quantitative effectiveness data." It appears from the report it is more accurate to state research has evaluated the effectiveness of only a limited number of BMPs listed in Idaho FPA regulations.

Also concerning BMP regulations and protection of water quality, there does not appear to be any requirement for a landowner to notify Idaho DEQ when it has been determined that one or more BMPs did not protect water quality in one or more water bodies. The
5-12 FSEIS should provide expert agency comments that will indicate whether the FS is required to notify Idaho DEQ when monitoring has determined that one or more BMPs did not prevent degradation to a water body where logging operations had been conducted.

Old Growth/vegetation:
On page 13 of Chapter 2 the old growth analysis states that no activities are proposed within allocated old growth and there would be no effects to existing allocated old growth from any action Alternative. The Old Growth section in Chapter 3 consists of pages 169 through 173. The following statement is found on page 170. "This new data validated the original analysis which disclosed that the stands proposed for treatment did not meet criteria for allocated old growth."
On page 171 the following statement is also made. "No treatment is proposed in stands that are known to meet the minimum criteria for Old Growth." On page 170 it is indicated that a 33-acre stand that was previously allocated as old growth does not now meet minimum criteria and has been removed from the old growth allocation.

The vegetation section in Chapter 3 includes pages 135 through 156. On page 141 the following sentence is found. "Stand ages in this area are almost entirely less than 120 years of age." The Table 3-30 on page 147 is described as a comparison of vegetation components on NFS lands by Alternative. In Table 3-30 it is not clear as to how many
5-13 acres in the category pole-small-medium would be logged with each Action Alternative. The Table 3-30 also is not clear as to how many acres would be logged in the mature-large category with each action alternative. The information presented in the finances section, page 73, described the average diameter of the trees to be logged with Alternatives B and C as 13 inches, 12.9 inches with Alternative F, and 12.5 inches with

Alternative D. It appears the majority of the trees that would be logged with the Action Alternatives would be in the medium and mature-large category. 5-14

The FSEIS needs to provide high quality information that lists the number of acres that would be logged in the categories medium and mature-large with each Action Alternative. 5-15

There is no information presented in the vegetation section regarding the maximum size in dbh of the trees that would be logged with each Action Alternative. 5-16

The FSEIS needs to provide high quality information regarding the maximum size in dbh of the trees that would be logged with each Action Alternative. The FSEIS also needs to provide high quality information the will indicate whether any logging is proposed in the 33-acre stand that was previously allocated as old growth but does not now meet minimum criteria for old growth. Concerning proposed logging of trees that are classified as Mature-large, expert agency comments are needed in the FSEIS that would confirm logging of Mature-large trees is in compliance with the United States Court of Appeals for the Ninth Circuit ruling in Ecology Center v. Austin, No. 03-35995 D.C. No. CV-03-00018-DWM, December 8, 2005. The Ruling addressed NFMA issues relating to thinning in old growth stands, and also addressed NEPA issues that in scientific uncertainty. 5-17

There also needs to be high quality information in the FSEIS that indicates whether there is any incomplete or unavailable FS-VEG data concerning trees in the project area that are classified as Mature-large. 5-18

Road access/road construction activities:

The National Forest Roads and Trails Act (FRTA) is mentioned in the DSEIS, including on page 15 of Chapter 2.

The FSEIS should include the pertinent sections of FRTA that applies to the granting of easements across NFS lands. 5-19

Road construction is proposed on non-forest Service lands in Cat Spur Creek on 370 feet of high potential mass failure landtypes, page 227, and on page 235 the roads information describes 6.5 miles of new roads that would be constructed on Potlatch lands and State of Idaho lands. Alternative B would construct 7.5 miles of new NFS roads and another 3.0 miles of temporary roads would also be constructed, pages 236 and 237 of the DSEIS. Alternatives C and D would construct 2.0 miles of new NFS roads associated with the access requests, pages 238 and 239. Alternative F would construct 4.0 miles of new NFS roads, page 241. 5-20

The literature associated with the roads analysis does not include the following USDA Forest Service publications. *Forest Roads: A Synthesis of Scientific Information,* Gucinski, Herman, et al, Pacific Northwest Research Station, General Technical Report PNW-GTR-509, 103 p. May 2001 and *Road Analysis: Informing Decisions About Managing the National Forest Transportation System, Miscellaneous Report FS-643*, Washington, D.C., 222 p., August 1999. 5-21

5-22 The FSEIS needs to provide a list of the USDA Forest Service transportation/roads documents that were used as part of the roads analysis. There should also be information in the FSEIS that will state whether copies of the road easements, agreements or MOU's
5-23 cited on page 229 are included as part of the project files. The FSEIS should include information indicating whether any of the following regulations do not apply to the
5-24 access requests associated with the Hidden Cedar project; 36 CFR 251.54, 251.57, 251.60, 251.113, and 251.114.

Roads and Clean Water Act (CWA) issues:
Under the CWA it is unlawful to discharge any pollutant into "waters of the U.S. from a point source without a permit. The CWA regulates forest roads as a non-point source and Section 404 of the CWA concerns water and road issues. 33 CFR 323.4 regulations describe discharges that do not require permits. 323.4 regulations at (a)(6) concern construction or maintenance of forest roads, including roads on NFS lands. There are a number of baseline provisions that are listed in (a)(6) including the following.
"All roads, temporary or permanent, shall be located sufficiently far from streams or other water bodies (except for portions of such roads which must cross water bodies) to minimize discharges of dredged or fill material into waters of the U.S."

"The road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows"

""In designing, constructing, and maintaining roads, vegetative disturbance in the waters of the U.S. shall be kept to a minimum"

""The design, construction, and maintenance of the road crossing shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body"

"The discharge shall not take, or jeopardize the continued existence of, a threatened or endangered species as defined under the Endangered Species Act, or adversely modify or destroy the critical habitat of such species"

The 33 CFR 323.4 regulations also contain that following statement. "Any discharge of dredged or fill material into waters of the United States incidental to any of the activities identified in paragraphs (a) (1) through (6) of this section must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced." [Emphasis added]
Has there been any discharge of fill material into waters of the United States from
5-25 activities on NFS lands in the Hidden Cedar project area in the last 10 years? If there were one or more discharges of fill material into the waters of the United States, was of flow or circulation of waters impaired or the reach of such waters reduced?

Concerning the proposed new road construction and road reconstruction with Alternatives B, C, D, and F, there needs to be expert agency comments in the FSEIS with
5-26 high quality information that would confirm all road construction and reconstruction

activities would be in full compliance with Title 33 Part 323 regulations, including 323.4 regulations.

Total Maximum Daily Load (TMDL) issues:
On page 246 the WQLS section describes the status of the West Fork St. Maries River and the main stem St. Maries River below Clarkia. The TMDL discussions on page 246 describe the sediment reductions that are needed from NFS lands, and the temperature requirements associated with the temperature TMDL.
Idaho Code at 39-3603 states, "The existing instream beneficial uses of each water body and the level of water quality necessary to protect those uses shall be maintained and protected."
Idaho Water Quality Standards at IDAPA 58.01.02.003.40 defines existing beneficial use or uses with the following language. "Those beneficial uses actually attained in waters on or after November 28, 1975, whether or not they are designated for those waters in Idaho Department of Environmental Quality Rules, IDAPA 58.01.02, "Water Quality Standards and Wastewater Treatment Requirements"."

IDAPA at 58.01.02.003.70 defines non point source activities and included in the list of non point activities are 70iii, Silviculture, and 70g, runoff from storms or other weather related events.

IDAPA at 58.01.02.050.02b states, "In all cases, existing beneficial uses of the waters of the state will be protected."

The Antidegradation Policy for the State of Idaho is found at IDAPA at 58.01.02.051.01. "The existing in stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

IDAPA at 58.01.02.054 addresses water quality limited waters and TMDLs. It is stated at 04 of 054 regarding high priority provisions, until a TMDL process has been completed for a high priority water quality limited water body, the total load must remain constant or decrease until the process is completed. The sediment and temperature TMDL process in the St. Maries River Basin is not completed. 5-27

It is a violation of Idaho Water Quality Standards to discharge a pollutant from a single source or in combination with pollutants discharged from other sources in concentrations or in manner that will or can be expected to result in violation of the water quality standards applicable to a receiving water body or downstream waters, or which will injure designated beneficial uses, IDAPA at 58.01.02.080.01a and 01b. 5-28

In the Hidden Cedar FEIS dated June 2002, page 3-75 included Table 3-29 labeled *Estimated Sediment Yields (WATSED) (First year or largest increase from activities and recovery by the year 2006.)* The information in Table 3-29 described very high sediment yields in Cedar Creek (102%), Maize Creek (35%), Hidden Creek (40%), and West Fork St. Maries River (39%) associated with Alt B. The sediment yields associated with Alternative F are similar to Alt B due to the similar level of logging. In the DSEIS water section, there is no table and data presented for estimated sediment yields. The sediment 5-29

5-29 CONT. yield discussions on page 263 concern sediment reductions only. NEPA at 40 CFR 1500.1(b) requires accurate scientific analysis, high quality information with expert agency comments. The lack of sediment yield data does not substantiate the claim made on pages 276 and 277 that the actions alternatives are in compliance with the CWA and Idaho Water Quality Standards.
The FSEIS is required to provide high quality information that will display the Estimated Sediment Yields for each of the first three years in each of the 10 watersheds that would result with each Action Alternative. The 10 watersheds were listed in Table 3-29 of the June 2002 Hidden Cedar Project FEIS.

Sediment Yield/Reduction analysis:
NEPA at 40 CFR 1502.24 requires the professional and scientific integrity of discussions and analyses in EIS's.
NEPA at 40 CFR 1502.21 concerns incorporation by reference. "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment."

On page 263 the following statements are made regarding a DEQ TMDL model and spreadsheet model. "The following tables identify sediment reductions based on the use of the Idaho DEQ TMDL and subbasin assessment spreadsheet model (project file: SSW-1). The use of this model is consistent with the St. Maries River TMDL." Appendix C of the DEQ August 2002 St. Maries River Subbasin Assessment and TMDLs concerns Sediment Model Assumptions and Documentation. The model operation is described as an Excel workbook composed of four spreadsheets, page 146 of DEQ document. All 5-30 materials associated with the DEQ TMDL model and spreadsheets model need to be included as part of the project files that are available for inspection by the public. If one or more of the references that are found on page 150 of the DEQ Subbasin Assessment were used as part of the sediment reduction analysis, the references also need to be included in the project files.

Concerning sediment reduction analysis, on page 251 of Chapter 3 the following statements are made. "There is no sediment monitoring data for the St. Maries River to 5-31 indicate current vs natural loading and transport rates. Sediment levels are estimated using the DEQ TMDL model (project file: SSW-1)."
On page 252 of Chapter 3 the following statement is made. "Cumulatively there has been an estimated sediment reduction of over 100 t/y in the St. Maries basin with the project area, based on road recontouring and stream crossing removals not identified in the DEQ TMDL assessment or that occurred since the assessment."

The water section of the DSEIS includes statements concerning sediment reductions that are associated with removal of stream crossing such as culverts [also known as corrugated metal pipes]. These statements on found on pages 251, 255, 256, 263, 264, 267, 268, 271, 273, and 275. For example, on page 256 the following statement is made. "Culverts would be removed at stream crossings and the risk of mass failure at these site eliminated."

The USDA Forest Service document *Methods for Inventory and Environmental Risk Assessment of Road Drainage Crossings* (Flanagan et al. 1998)", San Dimas Technology and Development Center, 9877 1809 – SDTDC contains information directly related to the sediment reduction analysis in the SDEIS.The Flanagan et al document includes a discussion regarding calculating hydraulic capacity, page 19. The following information is found on page 19.
"If hydrologic data are collected for each site, flows for various recurrence intervals can be used to construct a flood frequency curve. This can be used to express culvert hydraulic capacity as an exceedence probability or a recurrence interval (T) (figures 4 and 5). This method is not applicable to cross drains or small drainages where the drainage area cannot be accurately delineated. For relatively large culverts in small drainages, calculation and extrapolation may produce unreasonably large recurrence intervals (or, improbably small exceedence probabilities. For convention, hydraulic capacity has a maximum value of T = 250 years (p = 0.004)."

The sediment risk discussions in Chapter 3 of the DSEIS do not include information relating to the flood frequency curve that applies to sites in the Hidden Cedar watershed where the culverts are proposed for removal.

There is no information in Chapter 3 that discusses the hydraulic capacity of the culverts that are described as having sediment problems associated with each of the culverts.

The sediment risk analysis in the FSEIS is required to provide high quality information concerning one or more flood frequency curves that have been established as part of the sediment risk analysis for this project. 5-32

The FSEIS is required to provide high quality information listing the hydraulic capacity for each of the culverts that are listed in Tables 3-73 and 3-74, page 263 of the DSEIS. 5-33

The FSEIS needs to display figures similar to Figure 4 shown on page 20 of the Flanagan et al document. The Figure 4 concerns T, Flood Recurrence Interval (years). The figures in the FSEIS need to include data showing the discharge necessary to overtop each of the roads that are associated with the culverts that would be removed, and the recurrence interval (T) in years for each of the roads. 5-34

Also concerning sediment risk and culverts, the following information is found on pages 21 and 22 of the Flanagan et al document. "In general, culverts are efficient conveyors of sediment because of their narrow and relatively smooth, uniform cross section. Fluvially transported sediments generally present little hazard to stream crossing installations" and "In designing and assessing culverts, thought must be given to the maximum particle sizes potentially mobilized during peak flows and ensuring sufficient diameter and slope to pass the load."
The FSEIS needs to include information relating to the estimated maximum particle sizes that potentially would be mobilized during peak flows in the Hidden Cedar watershed. 5-35

On page 29 of the Flanagan et al document there is a section titled Failed Crossing Assessments. The following sentences are found in this section. "Crossing failures provide a unique opportunity to assess design and installation procedures. Following large storm events, storm damage reports are often generated to assess the magnitude and extent of damage. Such efforts should provide the opportunity for adaptive design."

The FSEIS needs to provide expert agency comments with high quality information regarding St. Joe Ranger District storm damage reports of crossing failures/culvert
5-36 failures in the Hidden Cedar watershed following large storm events after the year 1996. If one or more storm damage reports were written, a copy of the report(s) should be included in the project files.

WATSED computer model:
The Water section of the DSEIS consists of pages 244 through 277. The WATSED
5-37 model is mentioned numerous times in Chapter 3, starting with page 247. The analysis associated with the model discussions does not address the significant limitations associated with the model that were described in several Court cases in the past 5 years. There is also no indication the WATSED model is associated with the WATBAL Technical User Guide 1989.
The WATBAL Technical User Guide has been updated twice since February 1989, most recently February 3, 2005. On page six of the most recent version of the Technical User Guide the following statement is made regarding sediment routing. "WATBAL uses a primitive equation based upon the slope of the channel and watershed size to route sediment through the main stem of the watershed. It is recognized that this lack of accurate stream routing, including insufficient recognition of stream dynamics, habitat responses, and beneficial uses, is the weakest part of the WATBAL model." [Emphasis added]

The statement cited from the Technical User Guide is also made in the paper, "Uses and Limitations of the WATBAL Model", dated October 20, 2005, by the Forest Hydrologist for the Clearwater National Forest, Richard M. Jones.

In the October 20, 2005 paper the following statement is made regarding WATBAL and WATSED. "This same R1/R4 model, known as WATSED, is currently available to other forests in Region 1. Region 1 took the WATBAL model and "opened" it so that different forest users could add their locally derived watershed characteristics and coefficients to run the model in areas outside the Clearwater National Forest."

There is no discussion in the DSEIS of the WATSED model's inability to accurately account for routing of sediment through streams, and the model's insufficient recognition of stream dynamics, habitat responses, and beneficial uses.
The FSEIS needs to provide expert agency comments with high quality information that indicates how the model accounts for routing of sediment through streams, and how the model accounts for stream dynamics, and impacts to habitat responses, and beneficial uses.

Also, the WATSED discussions in the SDEIS do not mention the model and the ECA procedure. John G. King in his 1989 paper "Streamflow Responses to Road Building and Harvesting: a Comparison with the Equivalent Clearcut Area Procedure" examined the veracity of a model for changes in peakflow as a function of Equivalent Clearcut Area, (ECA), which is a parameter input for WATSED use. [USDA Forest Service Intermountain Research Station, Research Paper INT-401. 13 p.] 5-38

He found that the ECA model consistently underestimated measured increases in flow caused by roads and logging. The following statement is found on page 12 of the King paper. "The increase in average annual streamflow following harvesting and road building was much larger that predicted in the ECA procedure."

The ECA model outputs are also inadequate to disclose the effects of the alternatives and cumulative effects on peakflows and resultant impacts on aquatic resources, because the model estimates changes in <u>average monthly</u> peakflow caused by logging and roads. King on page 12 clearly noted that estimates of average monthly peakflows triggered by logging and roads are not adequate for estimating likely changes in channel conditions and sediment transport caused by logging and roads:

> ...the largest 7 or 8 days of streamflow account for the majority of the bedload movement...Average monthly streamflows are usually not a good index of bedload transport, and 'changes in average annual monthly peakflows have no meaningful effect on sediment transport' (Megahan, 1979) and are thus poor indicators of changes in channel-forming flows.

In his research in northern Idaho, King also stated on pages 8 and 9:

> Thus, it is the relatively few **high flow days** that have the potential for shaping the channel. Increases in **short duration high flows** following harvesting and road building are more important in terms of potential channel erosion and bedload transport than increases in longer duration high flows such as the **maximum mean monthly streamflow** or the channel impact period (emphasis added).
>
> Therefore, increases in short-duration highflows are more important than longer duration highflows in shaping the channel, and any procedure to estimate streamflow responses and set limits on harvesting should focus on these shorter duration highflows.

The FSEIS needs to provide high quality information with expert agency comments that will indicate there are significant limitations of the ECA component associated with the WATSED model. 5-39

In the water section of the DSEIS, the DEQ TMDL model is mentioned on several pages, including page 251. The FSEIS needs to describe each portion of the WATSED model that is included as part of the DEQ TMDL model. 5-40

<u>Cumulative Effects Analysis</u>:
The information presented on page 59 of the SDEIS describes continued logging, road construction and reconstruction on Potlatch Corporation timberlands. The logging of

428 acres of Potlatch Corporation lands is listed on page 59. Logging activities on 769 acres of State of Idaho forest lands as shown on page 59. On page 91 the description of the term *functioning at unacceptable risk* includes the following statement. "Therefore, if a stream is functioning at unacceptable risk, the ability of the Forest Service to alter this determination is dependent on the amount of federally managed land in the drainage."
The fisheries information on pages 94 through 100 shows a number of watersheds that have extremely high road densities on lands other than NFS lands. Table 3-24 on page 105 lists ongoing logging activities on non federal lands that result in direct/indirect effects and the effects are "Related to road construction, and increased water yields, etc."
The Effects Analysis by Drainage, pages 105 through 133 describes ongoing logging activities on lands other than NFS lands, and the continued degradation to fisheries and fisheries habitat as a result of the continued logging activities.

In the Water section, on pages 254 and 255 the following statements are found. "Current levels of sediment yield and water yield would remain or slightly increase from the activities. Water yield may increase due to timber harvest on non-Forest Service land and sediment may increase due to road construction. Without full disclosure of spatial and temporal data associated with planned private and state activities, quantification of future cumulative effects is not possible."

The sediment discussions on pages 266 and 267 mention a DEQ TMDL model and on page 267 the following statement is made. "If there is more road construction and road-stream crossings, sediment levels will cumulatively increase."

5-41 The cumulative effects analysis on pages 274 and 275 does not include expert agency comments pointing out there is a significant amount of incomplete or unavailable information regarding historic levels of peak flow and bedload movement data, as well as incomplete or unavailable information concerning future logging and road building activities on State of Idaho lands and private industrial lands. There is no information presented in the DSEIS that indicates any stream flow gauges have been installed in the streams located on State of Idaho lands and Potlatch Corporation lands, and no information that indicates IDL or Potlatch Corporation has any accurate long-term stream flow data for the streams that are located on IDL and Potlatch lands.

The cumulative effects analysis in the FSEIS needs to clearly describe the incomplete or unavailable information, NEPA at 40 CFR 1502.22, that concerns peak flow and bedload movement issues associated with past logging activities on State of Idaho lands and Potlatch Corporation lands. The FSEIS also needs to clear describe the incomplete or unavailable information that is associated with reasonably foreseeable logging and road construction activities on State of Idaho lands and private industrial lands in the Hidden Cedar cumulative effects analysis area.

Table 3-80, described as *Cumulative Effects Estimated Combined FS and Non-Forest Service Activities*, includes a parameter labeled *Other pollutant increase.* The FSEIS should indicate whether other pollutants include habitat alteration and flow alteration. 5-42

Soils:
On page 213 of the DSEIS it is indicated there are a total of 11.2 acres of high sensitive landtypes associated with the proposed logging units, these units are 13, 47, 49, 50 and 51. It is stated on page 214 that the proposed logging units shown in Table 3-47 were field verified and there were also random walk-throughs conducted to determine soil disturbance class. On page 218 the information presented for Alternatives B and F describes logging activities as consisting of approximately 30% helicopter. The remaining 70% of the proposed logging would be combinations of ground or cable/skyline on over 900 acres.

On page 214 it is stated that none of stands proposed for logging, except unit 5, were identified in the TSMRS as having past logging activities, and on page 219 it is stated Table 3-52 identified estimated soil impacts based on proposed logging and the existing condition. Table 3-52 is found on pages 222 and 223 and units 1 through 52 are described.
Unit 36, Alt B cumulative detrimental condition is listed as 16.3%.
Unit 38, Alt B cumulative detrimental condition is listed as 12.5%, and for unit 30, Alt B cumulative detrimental condition is listed as 11.6%. There are also an additional four units that have a detrimental condition greater than 10% with Alt B.

In contrast to the information presented in Table 3-52, the following statements are made on page 221. "When roads are included the level of soil disturbance is Unit 39 at 9.2% and Unit 48 at 7.2% (Table 3-52). All other units are well below these levels." It is not clear how all other proposed units with Alt B are lower than 9.2% when Appendix A lists unit 36 as a proposed 8 acre logging unit. Unit 38 is also shown as a proposed 41-acre logging unit in Appendix A. Regarding the units that have a detrimental disturbance of 10% and greater, all units are proposed for logging, including unit 30, 130 acres in size, with Alt B according to the information in Appendix A. 5-43

The soils analysis FSEIS needs to provide high quality information with expert agency comments that clarify whether the proposed logging with Alt B would result in logging units with greater than a 10% detrimental condition. The analysis needs to state whether logging in unit 36 would result in a 16.3% detrimental condition as is shown at the top of page 223 in the DSEIS.

Appendix A shows 50 logging units associated with Alt B. The Table 3-47 on page 216 lists 20 units that were field verified for past logging activities. A District silivcultural forester, as noted on page 214, visited an additional six units. The soils analysis in the FSEIS also needs to provide high quality information that will clarify whether all 50 proposed logging units were field verified by soil scientists or soil specialists. 5-44

Literature citation:
On page 2 of the Literature citations section there is a citation that beings Burroughs, Edward R. Jr., D.F. Haber, F.J. Watts, and T.L. Kadoch. 1983, etc. The surface erosion paper does not appear to be included in the DSEIS.

5-45 The FSEIS needs to clarify whether the Burroughs, et al citation is being used as part of the water and sediment analysis for the Hidden Cedar project.

We wish to remain on the mailing list for this project. The comments are also being submitted on behalf of the following organizations. Friends of the Clearwater, Gary MacFarlane, P.O. Box 9241, Moscow, ID 83843, The Lands Council, Mike Petersen, 423 W. First Avenue, Spokane, WA 99201, and WildWest Institute, Jeff Juel, P.O. Box 7998, Missoula, MT 59802.

Sincerely,
/S/
Mike Mihelich Forest Watch Coordinator
Kootenai Environmental Alliance P.O. Box 1598
Coeur d'Alene, ID 83816-1598
208-667-9093

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July 25, 2006

Pete Ratcliffe, Hidden Cedar Project Team Leader
St. Joe Ranger District
222 S. 7th St., Suite 1
St. Maries, Idaho 83861

Mr. Ratcliffe:

These are comments on the Hidden Cedar Project Draft Supplemented Environmental Impact Statement (DSEIS), on behalf of the WildWest Institute, Friends of the Clearwater, Kootenai Environmental Alliance, and The Lands Council.

The IPNF continues to propose this massive logging scheme, implementing a Forest Plan that is out-of-date legally and scientifically. Rather than pursuing this ecologically damaging project, the IPNF should be prioritizing the Revision of its Forest Plan in accordance with the laws and regulations, and in recognition of the legal and ecological inadequacies of the old Plan. 6-1

We incorporate our previous comments and appeals of the original Hidden Cedar Project, as comments on this DSEIS. Many of our organizations' concerns, as expressed in those previous appeals and comments, were ignored or wrongly dismissed by the IPNF. We do not feel the need to re-state them again and urge you to read and consider them now, in the context of the Hidden Cedar DSEIS. 6-2

We also offer these additional comments:

Baker and Ehle, 2001 present theory and empirical results that suggest that fire-history data have uncertainties and biases when used to estimate the population mean fire interval or other parameters of the fire regime. From their Abstract:

> Present understanding of fire ecology in forests subject to surface fires is based on fire-scar evidence. We present theory and empirical results that suggest that fire-history data have uncertainties and biases when used to estimate the population mean fire interval (FI) or other parameters of the fire regime. First, the population mean FI is difficult to estimate precisely because of unrecorded fires and can only be shown to lie in a broad range. Second, the interval between tree origin and first fire scar estimates a real fire-free interval that warrants inclusion in mean-FI calculations. Finally, inadequate sampling and targeting of multiple-scarred trees and high scar densities bias mean FIs toward shorter intervals. In ponderosa pine

original in main file

(*Pinus ponderosa* Dougl. ex P. & C. Laws.) forests of the western United States, these uncertainties and biases suggest that reported mean FIs of 2–25 years significantly underestimate population mean FIs, which instead may be between 22 and 308 years. We suggest that uncertainty be explicitly stated in fire-history results by bracketing the range of possible population mean FIs. Research and improved methods may narrow the range, but there is no statistical or other method that can eliminate all uncertainty. Longer mean FIs in ponderosa pine forests suggest that (*i*) surface fire is still important, but less so in maintaining forest structure, and (*ii*) some dense patches of trees may have occurred in the pre-Euro-American landscape. Creation of low-density forest structure across all parts of ponderosa pine landscapes, particularly in valuable parks and reserves, is not supported by these results.

In response to these scientific concerns, we ask that the Forest Service (FS) disclose what fire
6-3 history methodology it uses, acknowledge the limitations of the fire history methodology, and disclose what project-area data it's relying upon.

Hayward, 1994 states:

> Despite increased interest in historical ecology, scientific understanding of the historic abundance and distribution of montane conifer forests in the western United States is not sufficient to indicate how current patterns compare to the past. In particular, knowledge of patterns in distribution and abundance of older age classes of these forests in not available. ...Current efforts to put management impacts into a historic context seem to focus almost exclusively on what amounts to a snapshot of vegetation history—a documentation of forest conditions near the time when European settlers first began to impact forest structure. ...The value of the historic information lies in the perspective it can provide on the potential variation... I do not believe that historical ecology, emphasizing static conditions in recent times, say 100 years ago, will provide the complete picture needed to place present conditions in a proper historic context. Conditions immediately prior to industrial development may have been extraordinary compared to the past 1,000 years or more. Using forest conditions in the 1800s as a baseline, then, could provide a false impression if the baseline is considered a goal to strove toward.

Furthermore, Tiedemann et al., 2000 challenge the concept of "historic range of conditions" by calling into question the whole notion that we can, or even should, try to replicate such conditions:

> Nearly 100 years of fire exclusion, possible climate changes, and past management practices may have caused these communities to cross thresholds and to reside now in different steady states.

Thus, Hayward, 1994 and Tiedemann et al., 2000 fundamentally question the entire mechanical manipulation regime as represented by the Hidden Cedar Project. The project area and IPNF have
6-4 been fundamentally changed by fire suppression, logging, and roadbuilding, so the FS must consider how much native forest it has fundamentally altered compared to historic conditions forestwide before pursuing "treatments" here. As stated above, the Forest Plan is out of date and

you need to put that fact in perspective. Essentially, this means considering new scientific information on all kinds of changes away from "historic conditions"—and in the forestwide context of Forest Plan Revision—not on a project-level basis prior to revision. 6-5

The IPNF assumes that the implementation of BMPs will sufficiently mitigate any water quality problems that would result. The FS assumes the BMPs will protect the aquatic systems in the watersheds. This assumption is flawed as is attested by the degraded fisheries conditions that already exist. Consequently, this assumption by the FS is flawed and violates the CWA, Idaho Code, and IDAPA. 6-6

The entire issue of BMPs has been repeatedly clouded by the FS. The Lolo NF and Regional Office have admitted that during projects such as this, not all problem sites are restored up to BMP standards (Lolo BMP Memo).

It is erroneous to assume that BMPs will assure water quality will be maintained, if present conditions are in many locations already in violation of the standards. The failure of BMPs is seriously implicated in the scientific literature. Beschta et al. (2004) state:

> It is perhaps widely accepted that "best management practices" (BMPs) can reduce damage to aquatic environments from roads. Time trends in aquatic habitat indicators indicate, however, that BMPs fail to protect salmonid habitats from cumulative degradation by roads and logging (Espinosa et al. 1997.) Ziemer and Lisle (1993) note a lack of reliable data showing that BMPs are cumulatively effective in protecting aquatic resources from damage.

Additionally, a 1999 USDA Office of the Inspector General Report concluded that reliance of speculative mitigation measures in order to reach a FONSI significantly compromised environmental quality. "Office of the Inspector General, U.S. Department of Agriculture., Evaluation Report No. 08801-10-At: Forest Service Timber Sale Environmental Analysis Requirements "(1999). The OIG conclude that: "Applicable mitigation measures contained in 10 of 12 decision notices and referenced environmental assessments reviewed, were not always implemented. 6-7

It is not clear that all the watershed restoration actions proposed will in fact be carried out, or if they might happen subject to uncertain funding. This makes the effects analyses for various resources difficult to fathom. Is there some priority ranking for actions that are subject to uncertain funding? 6-8

The FS must not misplace the threats to clean water onto vegetative conditions instead of correctly identifying the true threats to watershed health. The Western Montana Level I Bull Trout Team (Riggers et al., 2001) state:

> (T)he real risk to fisheries is not the direct effects of fire itself, but rather the existing condition of our watersheds, fish communities, and stream networks, and the impacts we impart as a result of fighting fires. Therefore, attempting to reduce fire risk as a way to reduce risks to native fish populations is really subverting the issue. If we are sincere about wanting to reduce risks to fisheries associated with future fires, we ought to be removing barriers, reducing road densities, reducing

exotic fish populations, and re-assessing how we fight fires. At the same time, we should recognize the vital role that fires play in stream systems, and attempt to get to a point where we can let fire play a more natural role in these ecosystems.

The biologists emphasize, "the importance of wildfire, including large-scale, intense wildfire, in creating and maintaining stream systems and stream habitat." The biologists continue "in most cases, proposed projects that involve large-scale thinning, construction of large fuel breaks, or salvage logging as tools to reduce fuel loading with the intent of reducing negative effects to watersheds and the aquatic system are largely unsubstantiated." The biologists point out that logging, thinning and fire suppression can have harmful effects on watersheds (Id.). We ask that
6-9 the FS explicitly consider Riggers et al., 2001 in the subsequent NEPA analysis.

The DSEIS states that "a determination was made through an interdisciplinary process that there is no foreseeable use for these roads (project file, Roads Analysis Process)" (DSEIS at 21) and "the minimum road system needed and roads not needed" (p. 230). We are not opposed to road decommissioning, but the fact that the decision-making process was not a part of the NEPA process is troubling. Please disclose what criteria were used to determine "foreseeable use for"
6-10 the remaining roads, including those designated for long-term storage and any other inventory status.

The Fry Emergence Standards were designed into the Forest Plan to address cumulative effects of management activities such as logging, roadbuilding, etc. The Forest Plan amendment to remove the Fry Emergence Standards does not result in a sound methodology to determine or
6-11 consider those cumulative effects. The DSEIS thus lacks adequate analysis of cumulative effects on fish habitat.

The DSEIS refers to the use of the modeling procedures, even vaguely mentioning their limitations, yet fails to disclose the amount of error inherent in the use of the various models for the purposes for which they are being used. The models have not been verfied on the ground
6-12 here, and therefore it's reasonable, scientifically, for commenters and the public to expect the IPNF to be far more cautious about using such models.

"Wildfire suppression statistics of the western United States indicate that large, lethal fire occcurrence has greatly increasd th last 20 years." (DSEIS at 79.) What is meant by "lethal?"
6-13 What statistics, specifically, are you citing?

6-14 Regarding the wildlife analysis, the Size Class table (p. 291) makes no sense.

Regarding soil productivity, it is not clear at all from reading the DSEIS that the IPNF actually made proper estimates of existing detrimental disturbance based on scientifically sound
6-15 methodology, using experts adequately qualified to assess the complexities of soil qualities and cumulative impacts, which could accurately reflect existing soil productivity limitations and damage. Whether or not the shovel tests used have been calibrated or validated properly is an open question.

The DSEIS does not disclose how the "temporary road" segments to be created will be attributed, as per the R-1 Soil Quality Standards, to some activity area for the purposes of determining compliance with the areal extent standard. 6-16

The DSEIS fails to include a map showing the boundaries of all previously established "activity areas" as the R-1 Soil Quality Standards define "activity areas", and present all available data on levels of existing detrimental disturbance within those activity areas, in either a tablular or map form. 6-17

Then, based on that data the IPNF will be in a better position to analyze the water yield and other hydrological implications of the various amounts of hydrologically dysfunctioning soils, within each project area watershed and subwatershed, and disclose them to the public. This is also in the R-1 Soil Quality Standards. The models the DSEIS uses do not consider compacted soils, for example, for cumulative effects watershed analyses. 6-18

In a logging project EIS, the Bitterroot National Forest admitted that subwatersheds that have high levels of existing soil damage could indicate a potential for hydrologic and silviculture concerns. (USDA Forest Service, 2005b, p. 3.5-11, 12.) The DSEIS ignores such a potential. On this subject, Booth and Jackson (1997) state: 6-19

> A variety of physical data from lowland streams in western Washington display the onset of readily observable aquatic-system degradation at a remarkably consistent level of development, typically about ten percent effective impervious area in a watershed. Even lower levels of urban development cause significant degradation in sensitive water bodies and a reduced, but less well quantified, level of function throughout the system as a whole.
>
> ...The net effect of *upland changes*, occurring across the land surface of the contributing headwater catchments, is at least as important in determining overall stream function, degradation, and rehabilitation potential (National Research Council, 1992).
>
> ...Correlations between development and aquatic-system conditions have been investigated for nearly two decades with remarkably consistent results. Klein (1979) published the first such study, where he reported a rapid decline in biotic diversity where watershed imperviousness much exceeded 10 percent.
>
> ...The observations here show that observed instability is all-but ubiquitous where the contributing effective impervious area percentage exceeds a rather low level: a value of about 10 percent discriminates between observed stable and unstable reaches almost perfectly. ...We emphasize that the good relationship between "instability" and "imperviousness" is not a simple causal relationship, because we recognize that EIA is but an *index* of the variety of hydrologic changes imposed by urban development. However, it is clearly a robust and easily estimated one.
>
> ...These results show remarkably clear and consistent trends in aquatic-system degradation. In western Washington, and likely in other humid regions as well,

approximately 10 percent effective impervious area in a watershed typically yields demonstrable, and probably irreversible, loss of aquatic system function. Even lower levels of urban development cause significant degradation in sensitive water bodies and a reduced, but less well quantified, degree of loss throughout the system as a whole. These results do not indicate a "threshold" *per se*: degradation begins at very low levels of urban development and continues well beyond the range of imperviousness emphasized in this study. But we find a noteworthy accumulation of physical and biological effects, particularly those that can be consistently observed and measured by even rather crude (but also rapid and so inexpensive) methods, once EIA's reach about 10 percent. The *changes* imposed on the natural system are a continuum, and so defining a strict "threshold" in this context would be naive; but our *perception of* and our *tolerance for* those changes appears to undergo a far more abrupt transition, one which suggests a basis for discrete levels of both impact evaluation and management response.

Booth, 1991 states:

Drainage systems consist of all of the elements of the landscape through which or over which water travels. These elements include the soil and the vegetation that grows on it, the geologic materials underlying that soil, the stream channels that carry water on the surface, and the zones where water is held in the soil and moves beneath the surface. Also included are any constructed elements including pipes and culverts, cleared and compacted land surfaces, and pavement and other impervious surfaces that are not able to absorb water at all.

...The collection, movement, and storage of water through drainage basins characterize the hydrology of a region. Related systems, particularly the ever-changing shape of stream channels and the viability of plants and animals that live in those channels, can be very sensitive to the hydrologic processes occurring over these basins. Typically, these systems have evolved over hundreds of thousands of years under the prevailing hydrologic conditions; in turn, their stability often depends on the continued stability of those hydrologic conditions.

Alteration of a natural drainage basin, either by the impact of forestry, agriculture, or urbanization, can impose dramatic changes in the movement and storage of water. ...Flooding, channel erosion, landsliding, and destruction of aquatic habitat are some of the unanticipated changes that ...result from these alterations.

...Human activities accompanying development can have irreversible effects on drainage-basin hydrology, particularly where subsurface flow once predominated. Vegetation is cleared and the soil is stripped and compacted. Roads are installed, collecting surface and shallow subsurface water in continuous channels. ...These changes produce measurable effects in the hydrologic response of a drainage basin.

6-20 How difficult would it be for the FS to provide estimates of current detrimental disturbance (DD) in previously established activity areas, based upon monitoring performed on the Forest? The

DSEIS fails to disclose the level of non-consistency of old activity areas with the SQS 15% DD standard or the Forest Plan's 20% DD standard. 6-20 CONT.

Another reason why it's important to disclose such information is that previous noncompliance or exceeding of the percent DD standard may be obscured by using new activity area boundaries that dilute the total percentages of existing DD within an activity area. This problem arises specifically because the SFEIS does not disclose the percent of existing DD within previously established activity area boundaries.

The DSEIS doesn't adequately explain why areas of "slight soil disturbance" (p. 211) don't qualify as detrimentally disturbed. 6-21

Regarding the potassium-limited soils issue, the IPNF's recent Mission Brush SFEIS states that until minimum thresholds are developed through research, the IPNF is using management recommendations from the IFTNC as a guideline for maintaining sufficient potassium on a site. This begs the question that if the FS does not know what constitutes sufficient potassium, then how can the agency assert that removal of potassium on already potassium-limited sites will ensure sufficient potassium will remain on that site? 6-22

Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of most regulatory mechanisms to adequately address the soils issue. From the Abstract:

> Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients. While there are dozens of federal environmental laws protecting and addressing a wide range of natural resources and issues of environmental quality, there is a significant gap in the protection of the soil resource. Despite the critical importance of maintaining healthy and sustaining soils, conservation of the soil resource on public lands is generally relegated to a diminished land management priority. Countless activities, including livestock grazing, recreation, road building, logging, and mining, degrade soils on public lands. This article examines the roots of soil law in the United States and the handful of soil-related provisions buried in various public land and natural resource laws, finding that the lack of a public lands soil law leaves the soil resource underprotected and exposed to significant harm. To remedy this regulatory gap, this article sketches the framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, an holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

The article goes on:

> Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary

guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.

The rise of an "ecosystem approach" in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a

> fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.[1]

As federal agencies focus increasingly on addressing environmental protection from an holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. **Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources.** Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to protect the natural world at a meaningful and effective ecosystem level.

> ... This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

(Emphasis added.) The problems Lacy (2001) identifies of regulatory mechanisms certainly
6-23 exists in Regional and Forest-level standards and other guidance applicable for the Hidden Cedar Project.

We object to the FS's assumption that use of BMPs will result in meeting soil quality standards
6-24 and maintaining soil productivity, since no BMP monitoring has ever occurred on the IPNF to validate such assumptions.

The DSEIS does not adequately demonstrate the effectiveness of the soil mitigation measures
6-25 proposed. There are good reasons to include a more thorough discussion of their effectiveness. For example, "Monitoring of winter-logging soil effects conducted by the Forest Soil Scientist on the Bitterroot National Forest over the past 14 years has shown that 58% of the ground-based, winter-logged units failed to meet Region 1 Soil Quality Standards. Winter-logging resulted in an average of 16% detrimentally damaged soil." (USDA Forest Service, 2005b, p. 3.5-21.)

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[1]Michael M. Wenig, How "Total" Are "Total Maximum Daily Loads"?—Legal Issues Regarding the Scope of Watershed-Based Pollution Control Under the Clean Water Act, 12 TUL. ENVTL. L.J. 87, 89 (1998). There are, however, major questions to ask of what exactly is the focus of "ecosystem management" in some agency plans—the ecosystem or the management? See, e.g. Michael C. Blumm, Sacrificing The Salmon: A Legal And Policy History Of The Decline Of Columbia Basin Salmon (2000) (forthcoming) (manuscript at 359–63, on file with author).

The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173:

> Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (*Centaurea biebersteinii D.C.*) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

The IPNF must disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades. 6-26

The meaning of "soil productivity" in the terminology of NFMA is largely ignored. In the SQS the FS claims "Soil quality is maintained when erosion, compaction, displacement, rutting, burning, and loss of organic matter are maintained within defined soil quality standards." But even if the FS were to meet the 15% Standard in all Activity Areas forestwide, and even if the soil conditions of land outside proposed activity areas could reasonably be ignored, the FS still cannot assume that there has been no "significant or permanent impairment of the productivity of the land" as NFMA requires. For example, the IPNF fails to consider the soil productivity implications of any level of road density in project area watersheds. And the implications of "sustained yield" in the context of soils damaged at **any** level of percent detrimental disturbance has never been a part of the IPNF's dialogue. It is reasonable to expect that in order for the FS to assure that soil productivity is not or has not been significantly impaired, to assure that the forest is producing a sustained yield of timber, for one example, tree growth must not be significantly reduced by soil-disturbing management activities. 6-27

Page-Dumroese et al., 2000 emphasize the importance of validating soil quality standards using the results of monitoring:

> Research information from short- or long-term research studies supporting the applicability of disturbance criteria is often lacking, or is available from a limited number of sites which have relative narrow climatic and soil ranges.
> ...Application of selected USDA Forest Service standards indicate that blanket threshold variables applied over disparate soils do not adequately account for nutrient distribution within the profile or forest floor depth. These types of guidelines should be continually refined to reflect pre-disturbance conditions and site-specific information. (Abstract.)

6-28

Restoration of soil functioning ought to be a high priority in areas such as the Hidden Cedar Project area, where a lot of industrial logging has taken place already. The Bitterroot National Forest reports, "It is acknowledged that the effectiveness of soil restoration treatments may be low, often less than 50 percent." (USDA Forest Service, 2005b at p.3.5-20.) What data does the IPNF have on the efficacy of its soil restoratin efforts? 6-29

6-30 The DSEIS does not adequately consider the fine ecological balance existing site-specifically in soils, nor the implications for ecological health. Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake.

(Internal citations omitted.)

Regarding an IPNF Sensitive species, the black-backed woodpecker, Forest Service biologist Cherry (1997) states:

> The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

6-31 The Region 1 black-backed woodpecker assessment (Hillis et al., 2002) notes that the black-backed woodpecker depends upon the very forest that the premises of this project abhor:

> Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests. (Internal citations omitted.)
>
> ...Black-backed woodpeckers also occur in unburned landscapes Bull et al.1986, Goggans et al.1987, Bate 1995, Hoffman 1997, Weinhagen 1998, Steeger and Dulisse in press, Taylor unpublished data). Taylor's observations of black-backed woodpeckers in unburned forests in northern Idaho suggest that they may occur at substantially lower densities in unburned forests, but no rigorous comparisons between black-backed woodpecker densities in burned and unburned forests have been done. Hutto (1995) hypothesized that black-backed woodpeckers reproduce at

source reproductive levels in burns, but may drop to *sink* reproductive levels in the intervening periods between large burns.

6-32

This project is part of the IPNF's fire suppression policy. Hutto, 1995 states: "Fires are clearly beneficial to numerous bird species, *and are apparently necessary for some.*" (p. 1052, emphasis added.) Hutto, 1995 whose study keyed on forests burned in the supposedly disastrous 1988 season, noted:

> Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number of species in forests that had undergone stand-replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two-year-old burned forests in the Olympic Mountains, Washington, *were as great as adjacent old-growth forests...*
>
> ...Several bird species seem to be relatively *restricted* in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-backed Woodpecker is to early [first 6 years] post-fire conditions. (Emphasis added).

Regarding the "U.S. Forest Service Region One Black-Backed woodpecker Assessment" (Hillis et al., 2002) we point out the following salient points:

1. "The relatively minor decline in existing habitat compared to the mean HRV for the entire 1940 to 2000 time period... simplistically interpreted, might suggest that black-backed woodpeckers are at no risk." **"That conclusion is likely grossly understated..."** (p. 13. emphasis added).
2. "Burned habitats lost to timber salvage have not been considered... (Ibid.)
3. "Policy-makers also may need to reevaluate the priorities for salvage logging burned areas... Even in 'high burn' periods... adverse impacts on black-backed woodpeckers can result from relatively modest amounts of salvage logging." (Ibid. p. 14.)
4. *Managers should recognize the need for decadence in unburned forests.* For black-backed woodpeckers, this is especially important in trees that are otherwise healthy, dying, or recently dead." (Ibid. p. 15.)

We now refer to the very first management recommendation at the end of Hillis et al., (2002):

> Considering both the departure from historically available habitat and the increased interval between large fires, **these findings suggest the black-backed woodpecker may be at substantial risk in USFS Region One**. This conclusion suggests that *Region One policy-makers should recognize the need for retaining moderate and high severity fires on substantial acreages at normal intervals when land use and fire suppression decisions are made.* (Italicized in orig., p. 14.)

This recommendation is significant in that it recognizes that there is still substantial risk to the viability of black-backed woodpeckers <u>following recent large wildland fires in this region.</u> In subsequent years, there have been fires in the Northern Rockies but not as substantial as in 2000; 6-33

and in any case the FS has yet to consider the viability of the black-backed woodpecker in the context of this landscape scale.

Dolan (1998a,b) states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:

> It seems that we have a huge cumulative effects problem here, and that each salvage sale removes habitat that is already very limited. We are having trouble avoiding a "trend to federal listing" call for the BBWO in salvaging burns, unless comparable acres of fire-killed dead are being created through prescribed burns.

6-34 The comments by other biologists attached to Dolan (1998a,b) reveal that the FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. Fire suppression, insect and disease suppression, and "salvage" logging policies of the FS are the biggest threat to black-backed woodpecker population viability on the Forest, unfortunately in failing to create a conservation strategy the cumulative impacts of the IPNF's ongoing fire suppression policy will remain unexamined.

6-35 The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. The cumulative impacts of the IPNF's ongoing fire suppression policy are also not adequately considered.

Spiering and Knight (2005) examined the relationship between cavity-nesting birds and snag density in managed ponderosa pine stands and examined if cavity-nesting bird use of snags as nest sites was related to the following snag characteristics: (DBH, snag height, state of decay, percent bark cover, and the presence of broken top), and if evidence of foraging on snags was related to the following snag characteristics: tree species, DBH, and state of decay. The authors state:

> Many species of birds are dependent on snags for nest sites, including 85 species of cavity-nesting birds in North America (Scott et al. 1977). Therefore, information of how many and what types of snags are required by cavity-nesting bird species is critical for wildlife biologists, silviculturists, and forest managers.
>
> Researchers across many forest types have found that cavity-nesting birds utilize snags with large DBH and tall height for nest trees (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).

Spiering and Knight (2005) found the following.

> Larger DBH and greater snag height were positively associated with the presence of a cavity, and advanced stages of decay and the presence of a broken top were negatively associated with the presence of a cavity. Snags in larger DBH size classes had more evidence of foraging than expected based on abundance.
>
> Percent bark cover had little influence on the presence of a cavity. Therefore, larger and taller snags that are not heavily decayed are the most likely locations for cavity-nesting birds to excavate cavities.

> The association of larger DBH and greater height of snags with cavities is consistent with other studies (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).

The authors state:

> ...lack of large snags for use as nest sites may be the main reason for the low densities of cavity-nesting birds found in managed stands on the Black Hills National Forest.
>
> The increased proportion of snags with evidence of foraging as DBH size class increased and the significant goodness-of-fit test indicate that large snags are the most important for foraging.

A recent look at European forests (whose management model is one on which the U.S.'s is largely based) reveals what researchers here in the U.S. are discovering, but which policy makers and decisionmakers here resist acknowledging. Dudley & Vallauri, 2004 state: 6-36

> Up to a third of European forest species depend on veteran trees and deadwood for their survival. Deadwood is providing habitat, shelter and food source for birds, bats and other mammals and is particularly important for the less visible majority of forest dwelling species: insects, especially beetles, fungi and lichens. Deadwood and its biodiversity also play a key role for sustaining forest productivity and environmental services such as stabilising forests and storing carbon.
>
> Despite its enormous importance, deadwood is now at a critically low level in many European countries, mainly due to inappropriate management practices in commercial forests and even in protected areas. Average forests in Europe have less than 5 per cent of the deadwood expected in natural conditions. The removal of decaying timber from the forest is one of the main threats to the survival of nearly a third of forest dwelling species and is directly connected to the long red list of endangered species. Increasing the amounts of deadwood in managed forests and allowing natural dynamics in forest protected areas would be major contributions in sustaining Europe's biodiversity.
>
> For generations, people have looked on deadwood as something to be removed from forests, either to use as fuel, or simply as a necessary part of "correct" forest management. Dead trees are supposed to harbour disease and even veteran trees are often regarded as a sign that a forest is being poorly managed. Breaking up these myths will be essential to preserve healthy forest ecosystems and the environmental services they provide.
>
> In international and European political processes, deadwood is increasingly being accepted as a key indicator of naturalness in forest ecosystems. Governments which have recognised the need to preserve the range of forest values and are committed to these processes can help reverse the current decline in forest biodiversity. This can be done by including deadwood in national biodiversity and forest strategies, monitoring deadwood, removing perverse subsidies that pay for its undifferentiated removal, introducing supportive legislation and raising awareness.

Castello et al. (1995) state:

> Pathogens help decompose and release elements sequestered within trees, facilitate succession, and maintain genetic, species and age diversity. Intensive control measures, such as thinning, salvage, selective logging, and buffer clearcuts around affected trees remove crucial structural features. Such activities also remove commercially valuable, disease-resistant trees, thereby contributing to reduced genetic vigor of populations.

6-37 There is considerable scientific controversy over the adequacies of the IPNF's snag standards and guidelines, recognized by the IPNF itself. The IPNF (USDA Forest Service, 2000c) recently called for updated snag guidelines: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (p. 39). The Northern Region Snag protocol has not been subject to independent scientific peer review and validation from post-implementation monitoring. Nor has it been the subject of a contextually proper NEPA and NFMA review as a forest plan amendment.

6-38 The Forest Plan's reliance on Thomas et al., 1979 was severely criticized in Bull et al. 1997. The FS has not responded to this new scientific information that seriously calls into question its snag standards and guidelines. Harris (1999) and ICBEMP DSEIS Appendix 12 also present scientific information that contrasts greatly with the IPNF on this topic. And McClelland (undated) states:

> The snags per acre approach is not a long-term answer because it concentrates on the products of ecosystem processes rather than the processes themselves. It does not address the most critical issue--long-term perpetuation of diverse forest habitats, a mosaic pattern which includes stands of old-growth larch. **The processes that produce suitable habitat must be retained or reinstated by managers. Snags are the result of these processes (fire, insects, disease, flooding, lightning, etc.)**. (Emphasis added.)

And Hutto, 1995 addresses the *processes* topic, talking about fire in that case:

> Fire is such an important creator of the ecological variety in Rocky Mountain landscapes that the conservation of biological diversity [required by NFMA] is likely to be accomplished only through the conservation of fire *as a process*...Efforts to meet legal mandates to maintain biodiversity should, therefore, be directed toward maintaining processes like fire, which create the variety of vegetative cover types upon which the great variety of wildlife species depend. (Emphasis added.)

6-39 The DSEIS fails to substantiate the reasons for not analyzing impacts on lynx The lynx's historic range includes the land in the project area, so omitting cumulative effects analyses makes no sense biologically.

6-40 The flammulated, boreal owl and the great gray owl are species of concern that are sensitive to logging and other management activities. The IPNF provides inadequate management strategies to insure their viability. See, for example, Hayward and Verner, 1994.

The DSEIS implies that flammulated owls use primarily open, old forests and thus alleges that the flammulated owl would benefit from the proposed logging. However, according to the Grade/Dukes Timber Sale Biological Evaluation, Payette NF, research indicated that flammulated owl nests "occurred in old growth ponderosa pine/Douglas fir exhibiting two canopy levels and averaging 55% canopy closure" (p.3). 6-41

Wright et al. (1997) found that

> There was no significant difference in the amount of understory Douglas fir in occupied and unoccupied plots in the BEMRP study in west-central Montana. However, other researchers have noted the importance of understory thickets to Flammulated Owls. For instance, while stands of dense young trees in New Mexico or Oregon (Bull 1990, McCallum and Gehlback 1988) were not suitable as nest sites, thickets of dense vegetation were present near all nests, and were used for roosting and singing in New Mexico (McCallum and Gehlback 1988). Reynolds and Linkhart (1992) also observed males singing within dense clumps of foliage, and Flammulated Owls in eastern Oregon predominately roosted in dense stands with > 50 percent canopy cover. Mean stem density in roost sites observed by Goggans (1986) was 2, 016 trees/ha (SD=1,378, n=31, range 509-5,346), with mean basal area of 129 sq meter (SD=48/5. N=31, range 21-239). Flammulated Owl use of dense forest thickets was also recorded by Bull and Anderson (1978) and Marcot and Hill (1980). ...
>
> While the elimination of some understory forest would be expected to maintain the grassland openings used by foraging owls, management activities that eliminate all understory Douglas fir may remove thickets important for roosting and singing, for drop-pounce foraging perches, and for predator protection cover. Flammulated Owls rooted an average of 53 m from nests during the nesting period, and < 20 m from nests prior to juvenile fledging; therefore Goggans (1986) suggested that suitable nest-sites may include patches of dense forest for roosting, as well as openings for foraging

The DSEIS does not analyze the existing condition of the proposed cutting units or the effect of the project on these habitat components or their distribution throughout existing flammulated owl habitat. Nor does the DSEIS cite any monitoring that demonstrates such logging will, in fact, result in flammulated owl occupancy. 6-42

The FS does not have adequate forestwide population or population trend data on the flammulated owl or its habitat. Management activities could displace the owl from cutting units and portions of the project area. 6-43

Logging and other disturbance associated with the timber sales and other cumulative impacts could affect northern goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, prey and potential habitat, including areas away from cutting units. Research in the Kaibab National Forest found that goshawk populations decreased dramatically even after partial logging and even when large buffers around nests were provided (Crocker-Bedford, 1990). 6-44

Greenwald et al., 2005 reviewed the current literature on goshawk habitat relationships applicable to the Northern Rockies. Nine of 12 studies demonstrated selection for stands with

higher canopy closure, larger tree size, and greater numbers of large trees than found in random stands. Some notable statements and conclusions include:

> ...Most studies found that goshawks avoided open areas and logged early-seral stands; none of the studies cited in this paper found selection for such features.
>
> ...While some studies suffered from small sample sizes or relatively short sampling periods, the consistency of results demonstrates goshawk selection for late-successional forest structures (e.g., high canopy closure, large trees for forest type, canopy layering, abundant coarse woody debris) when using areas within their studied home ranges. ... This is not to say that goshawks only forage or roost in mature stands, but rather that such stands are disproportionately selected.
>
> ... (R)eviewed studies found goshawks avoided open areas, particularly logged open areas, and none found selection for openings.
>
> ... The 5 studies correlating nest occupancy and productivity with habitat features consistently demonstrated a relationship between closed-canopied forests with large trees and goshawk occupancy. Occupancy rates were reduced by removing forest cover in the home range, which thereby resulted in reduced productivity because there were fewer active breeding territories. (Internal citations omitted.)
>
> Seeking to promote abundant populations of 14 prey species, Reynolds et al. (1992) recommend maintaining 20% of the landscape in grass–forb or seedling–sapling stage forest, 20% in young forest, 20% in mid-aged forest, and 40% in mature and old forests. ... Given the above findings that goshawks generally avoid open areas and early-seral forest, that logging reduces goshawk occupancy and productivity, and a lack of evidence that creating openings or young forest through logging benefits goshawks, these recommendations appear to lack support in research produced since 1992.
>
> Across most of the western United States, mature and old-forests have declined to much less than 40% of the landscape. Given these declines and the lack of information on the amounts of mature and old-forest goshawks require, we recommend protecting existing mature and old-forest characteristics and ensuring that such forests are allowed to develop in proportions similar to presettlement conditions. This can be accomplished by restricting cutting to small trees, and prohibiting large reductions in canopy closure. A similar proposal was recently adopted by Region 5 of the United States Forest Service for the Sierra Nevada. In sum, based on apparent inconsistencies between subsequent research and Reynolds et al. (1992), we recommend adaptation of the management guidelines to incorporate results of numerous studies conducted since 1992. (Internal citations omitted.)

6-45 The DSEIS doesn't even apply Reynolds et al. (1992) correctly.

The DSEIS does not adequately consider cumulative effects on upland habitat for boreal toads. 6-46
This does not make sense, since such small populations that are likely to persist are especially susceptible to fragmentation and extirpation due to isolation of smaller populations.

The preference for large diameter of nesting trees for the pileated woodpecker is notably absent from the DSEIS. McClelland and McClelland (1999) found such results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh. Effectively, the IPNF provides inadequate commitment to leaving specific numbers and sizes of largest trees favored by this MIS. 6-47

B.R. McClelland has extensively studied the pileated woodpecker habitat needs. To quote a March 12, 1985 letter from B.R. McClelland to Flathead NF Supervisor Edgar B. Brannon:

> Co-workers and I now have a record of more than 90 active pileated woodpecker nests and roosts, ...the mean dbh of these trees is 30 inches... A few nests are in trees 20 inches or even smaller, but the minimum cannot be considered suitable in the long-term. Our only 2 samples of pileateds nesting in trees <20 inches dbh ended in nest failure... At the current time there are many 20 inch or smaller larch, yet few pileateds selected them. Pileateds select old/old growth because old/old growth provides habitat with a higher probability of successful nesting and long term survival. They are "programmed" to make that choice after centuries of evolving with old growth.

McClelland (1977), states:

> (The Pileated Woodpecker) is the most sensitive hole nester since it requires old growth larch, ponderosa pine, or black cottonwood for successful nesting. The Pileated can be considered as key to the welfare of most hole-nesting species. If suitable habitat for its perpetuation is provided, most other hole-nesting species will be accommodated.
>
> Pileated Woodpeckers use nest trees with the largest dbh: mean 32.5 inches;
>
> Pileated Woodpeckers use the tallest nest trees: mean 94.6 feet;
>
> The nest tree search image of the Pileated Woodpecker is a western larch, ponderosa pine, or black cottonwood snag with a broken top (status 2), greater than 24 inches dbh, taller than 60 feet (usually much taller), with bark missing on at least the upper half of the snag, heartwood substantially affected by Fomes laracis or Fomes pini decay, and within an old-growth stand with a basal area of at least 100 sq feet/acre, composed of large dbh classes.
>
> A cluster analysis based on a nine-dimensional ordination of nest tree traits and habitat traits revealed close association between Yellow-bellied Sapsuckers, Mountain Chickadees, and Red-breasted Nuthatches. These three species plus the Pileated Woodpecker and Hairy Woodpecker are relatively grouped by coincident occurrence in old growth. Tree Swallows, Black-capped Chickadees, and Common

Flickers are separated from the above five species by their preference for more open areas and their frequent use of small dbh nest trees.

(Most) species found optimum nesting habitat in stands with a major component of old growth, particularly larch. Mean basal area for pileated woodpecker nest sites was 150 square feet per acre. (McClelland. B.R. and others, 1979)

Many large snags are being cut for firewood. Forest managers should limit firewood cutting to snags less than 15 inches in d.b.h. and discourage use of larch, ponderosa pine, and black cottonwood. Closure of logging roads may be necessary to save high-value snags. Logging slash can be made available for wood gatherers.

6-48 In order to meet the requirements of the FS/USFWS Conservation Agreement for Canada lynx, the FS agreed to insure that all project activities are consistent with the Lynx Conservation Assessment and Strategty (LCAS), and that programmatic Standards of the LCAS are met. The DSEIS does not adequately demonstrate consistency.

6-49 There remains much doubt and lack of clarity in the information the IPNF provides regarding old growth in the project area, District-wide, and forestwide. It fails to answer essential, fundamental questions.

6-50 First, the status of old growth in the affected OGMUs. It appears that not all the "allocated" old growth in the affected OGMUs meets the IPNF's own or accepted scientific criteria for old growth. Your new analysis indicates that some previous project area data was in accurate, however it doesn't appear that adequate field surveys were undertaken that would result in an adequately accurate inventory, nor elimination from doubt as to whether the areas proposed for logging meet the criteria.

6-51 It is part of our ongoing concerns about old growth on the IPNF where the IPNF says, essentially, "here's part of the definition of old growth that we're using, but we're not disclosing the full, objective criteria that we're using." The IPNF doesn't disclose all the considerations for old-growth allocation to allow anyone to review the field data and be able to reach agreement with the IPNF. The IPNF's apparent failure to accept numerical minimums of canopy layers, snags, and large down logs as old-growth criteria, they are not considering the best scientific information available on OG wildlife habitat needs.

6-52 Since field reviews are necessary for accuracy of OG inventories, the failure provide information on the accuracy of the IPNF's <u>forestwide</u> inventory leaves compliance with the 10% Forest Plan standard very much in doubt, which is where it has been since before the Douglas-fir Beetle project in the late 1990s.

6-53 Since the IPNF does not recognize the importance of canopy layers, snags, defective trees, and large down logs in terms of objective old-growth criteria, the proposed activities approved for areas that would otherwise develop into old growth are problematic. The amounts of those structures within old growth (Green et al., 1992) could easily be substantially eliminated with the planned activities.

Then there is doubt as to the adequacy of the 10% old-growth Standard itself. Lesica (1996) stated that the Northern Region of the FS's general goal of maintaining 10% of forests as old growth may extirpate some species. This is based on his estimate that 20-50% of low and many mid-elevation forests were in old growth condition prior to European settlement. The adjacent Kootenai National Forest has done an analysis (USDA Forest Service, 1999) that shows 10% to be, quite realistically, not within the historical range. The IPNF and KNF are similar enough for USDA Forest Service, 1999 to raise significant doubt about the adequacy of the forestwide old-growth standard. 6-54

The DSEIS does not disclose the historic range of old-growth habitat in this project area. The scientific basis for the IPNF's position, namely that maintaining 10% old-growth on the Forest is plenty to maintain population viability of all species needing old-growth habitat, has never been established. The FS does not cite adequate scientific basis—it is merely an arbitrary figure. 6-55

Since there is no scientific basis for assuming that 10% old growth is enough for species viability, and since there is no scientific basis to support the IPNF's use of its MIS as adequately "indicating" for other species including the Sensitive wolverine, black-backed woodpecker, fisher, flammulated owl, etc., the proof would be in the monitoring. And nothing else shows the FS has completed or is committed to the monitoring that would insure old-growth species' viability. Unfortunately, region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003). 6-56 6-57

Open roads fragment old growth, resulting in firewood cutting that destroys snag habitat and reduces recruitment of down woody debris in old growth. The IPNF does not disclose the significance of the effects on OG wildlife species' populations of habitat degradation of old growth because of firewood cutting and illegal poaching of trees due to unrestricted access. The IPNF did not present an analysis of the impacts of open roads through old growth in the OGMUs. 6-58

The IPNF's recent Twomile EA (Coeur d'Alene River Ranger District) states:

> There have been changes over the last 100 years in the size and distribution of patches across the landscape. The mean patch size has decreased since the early 1900's in the Coeur d'Alene Basin and patches have become more linear, with accompanying increases in edge and decreases in core/interior habitats (Geographic Assessment, p. 42; PF Doc. VEG-R10). (EA at 3-9.)

The DSEIS does not provide a comparison between the natural historic range and current conditions regarding patch size, edge effect, and interior forest of old growth in the OGMUs. 6-59

The IPNF FIA analysis does not assure that habitat quality regarding block size and spatial distribution of old growth is sufficient for maintaining viable populations of wildlife in the IPNF. Nor is it disclosed in the DSEIS if the criteria for OG identification during the FIA inventory is consistent with the Green et al., 1992 criteria to be meaningful for wildlife habitat analyses. 6-60

6-61 The IPNF does not disclose the block sizes considered adequate by the IPNF for old-growth allocation and to meet all OG wildlife species' requirements. The adjacent Kootenai NF's Forest Plan recognizes that 50 acres is the minimum size for old growth to be considered effective habitat, and that even that level won't meet many OG species' needs.

6-62 Since the DSEIS provides inadequate analysis regarding the size, quality, and spatial relation of habitat blocks needed by the old growth associated wildlife species in the affected OGMUs, the analysis completely fails to disclose the quantitative or qualitative significance of cumulative effects due to past logging in the area and across the Forest.

In regards to logging, and its conflicts with old-growth habitat values:

> (T)here is the question of the appropriateness of management manipulation of old-growth stands... Opinions of well-qualified experts vary in this regard. As long term results from active management lie in the future – likely quite far in the future – considering such manipulation as appropriate and relatively certain to yield anticipated results is an informed guess at best and, therefore, encompasses some unknown level of risk. **In other words, producing "old-growth" habitat through active management is an untested hypothesis.**

6-63

(Pfister et al., 2000, pp. 11, 15 emphasis added.)

6-64 In fact, the FS's claim to virtue for logging is not supported by the scientific literature. Veblen (2003) states:

> The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on summary fire statistics such as mean fire interval and rotation period. While fire regime research is vitally important for informing decisions in the areas of wildfire hazard mitigation and ecological restoration, there is much need for improving the way researchers communicate their results to managers and the way managers use this information.

6-65 The IPNF cites absolutely no data collected in the analysis area or interpretation of data done with adequate scientific veracity to show that there is genuinely a problem with forest or tree density, that has been caused by fire suppression, or any that logging will cure.

6-66 Juday (1978) discusses in detail how the protection of old-growth forests greatly sustains the many uses of our national forests, as mandated by the Multiple Use-Sustained Yield Act and the National Forest Management Act. Instead of embracing a positive vision for old-growth forests, as outlined by Juday (1978), the IPNF continues to see the Forest as mainly a source of logs.

The Logan Creek Ecosystem Restoration Project Final EIS (USDA Forest Service, 2004a) states at page 3-199:

> Across the Interior Columbia River Basin (Quigley, et al. 1996), old forests have

declined by 27 to 60 percent over that past 100 years and large residual trees and snags have decreased by 20 percent. Fire exclusion and timber harvest have altered the structure and composition of forests throughout the Basin, resulting in a 60 percent increase in susceptibility to insects, disease, and stand-replacing fires. These changes have contributed to declining habitat conditions for numerous species of wildlife associated with old growth forests.

Although admitting that snags may be cut down for safety reasons during logging operations (due to OSHA regulations), the DSEIS does not consider in any quantitative fashion the level of loss of standing snags, or resultant impacts to wildlife. The IPNF fails to disclose how much snag loss would be expected because of safety concerns and also skyline corridors and other methods of log removal—the loss could be more significant that disclosed, because the IPNF doesn't provide any idea the degree of snag loss due to these concerns. 6-67

The FS has still not sufficiently dealt with the issue of fragmentation, road effects, and past logging on old-growth species' habitat, as discussed above. The DSEIS fails to disclose the degree to which edge effects on old growth species' habitat exist, and how much total edge effect would be increased, by the alternatives. Cumulative effects on old-growth habitat and on old-growth associated species include increased fragmentation, reduced older forest patch sizes, increased high-contrast edge, reduced availability of interior habitat, and decreased forested connectivity. These effects would reduce the ability to provide for the habitat needs of old-growth associated species for decades to come following implementation of the timber sale and other activities in the cumulative effects analysis area. 6-68

The continued fragmentation of the IPNF is a major ongoing concern. It is documented that edge effects occur 10-30 meters into a forest tract (Wilcove et al., 1986). The size of blocks of interior forest that existed historically before management (including fire suppression) was initiated must be compared to the present condition. USDA Forest Service, 2004a states at p. 3-201:

> Forested connections between old growth patches ...(widths) are important because effective corridors should be wide enough to "contain a band of habitat unscathed by edge effects" relevant to species that rarely venture out of their preferred habitats (Lidicker and Koenig 1996 and Exhibit Q-17).

And at p. 3-216:

> Timber harvest patterns across the Interior Columbia River basin of eastern Washington and Oregon, Idaho, and western Montana have caused an increase in fragmentation of forested lands and a loss of connectivity within and between blocks of habitat. This has isolated some wildlife habitats and reduced the ability of some wildlife populations to move across the landscape, resulting in long-term loss of genetic interchange (Lesica 1996, U.S. Forest Service and Bureau of Land Management 1996 and 1997).

USDA Forest Service, 2004a further discusses the fragmentation effects on old-growth habitat, effects that would be exacerbated by the Hidden Cedar Project:

> Harvest or burning in stands immediately adjacent to old growth mostly has negative effects on old growth, but may have some positive effects. Harvesting or burning adjacent to old growth can remove the edge buffer, reducing the effective

6-68 CONT.

size of old growth stands by altering interior habitats (Russell and Jones 2001). Weather-related effects have been found to penetrate over 165 feet into a stand; the invasion of exotic plants and penetration by predators and nest parasites may extend 1500 feet or more (Lidicker and Koenig 1996). On the other hand, adjacent management can accelerate regeneration and sometimes increase the diversity of future buffering canopy.

The occurrence of roads can cause substantial edge effects on forested stands, sometimes more than the harvest areas they access (Reed, et al. 1996; Bate and Wisdom, in prep.). Roads that are open to the public expose many important wildlife habitat features in old growth and other forested stands to loss through firewood gathering and increased fire risk.

Effects of disturbance also vary at the landscape level. Conversion from one stand condition to another can be detrimental to some old growth associated species if amounts of their preferred habitat are at or near threshold levels or dominated by linear patch shapes and limited interconnectedness (Keller and Anderson 1992). Reducing the block sizes of many later-seral/structural stage patches can further fragment existing and future old growth habitat (Richards et al. 2002). Depending on landscape position and extent, harvest or fire can remove forested cover that provides habitat linkages that appear to be "key components in metapopulation functioning" for numerous species (Lidicker and Koenig 1996, Witmer et al. 1998). Harvest or underburning of some late and mid seral/structural stage stands could accelerate the eventual creation of old growth in some areas (Camp, et al. 1996). The benefit of this approach depends on the degree of risk from natural disturbances if left untreated.

Effects on old growth habitat and old growth associated species relate directly to … "Landscape dynamics—Connectivity"; and … "Landscape dynamics—Seral/structural stage patch size and shapes."

(USDA Forest Service, 2004a at 3-196 and 3-197.)

Harrison and Voller, 1998 assert that "connectivity should be maintained at the landscape level." They adopt a definition of landscape connectivity as "the degree to which the landscape facilitates or impedes movement among resource patches." Also:

> "Connectivity objectives should be set for each landscape unit. …Connectivity objectives need to account for all habitat disturbances within the landscape unit. The objectives must consider the duration and extent to which different disturbances will alienate habitats. … In all cases, the objectives must acknowledge that the mechanisms used to maintain connectivity will be required for decades or centuries."

(Id., internal citations omitted.) Harrison and Voller, 1998 further discuss these mechanisms:

> Linkages are mechanisms by which the principles of connectivity can be achieved. Although the definitions of linkages vary, all imply that there are connections or movement among habitat patches. Corridor is another term commonly used to refer

> to a tool for maintaining connectivity. ...the successful functioning of a corridor or linkage should be judged in terms of the connectivity among subpopulations and the maintenance of potential metapopulation processes. (Internal citations omitted.)

Harris, 1984 discusses connectivity and effective interior habitat of old-growth patches:

> Three factors that determine the effective size of an old-growth habitat island are (1) actual size; (2) distance from a similar old-growth island; and (3) degree of habitat difference of the intervening matrix. ...(I)n order to achieve the same effective island size a stand of old-growth habitat that is surrounded by clearcut and regeneration stands should be perhaps ten times as large as an old-growth habitat island surrounded by a buffer zone of mature timber.

Harris, 1984 discusses habitat effectiveness of fragmented old growth:

> (A) 200-acre (80 ha) circular old-growth stand would consist of nearly 75% buffer area and only 25% equilibrium area. ...A circular stand would need to be about 7,000 acres (2,850 ha) in order to reduce the 600-foot buffer strip to 10% of the total area. It is important to note, however, that the surrounding buffer stand does not have to be old growth, but only tall enough and dense enough to prevent wind and light from entering below the canopy of the old-growth stand.

Harris, 1984 believes that "biotic diversity will be maintained on public forest lands only if conservation planning is integrated with development planning; and site-specific protection areas must be designed so they function as an integrated landscape system." Also:

> Because of our lack of knowledge about intricate old-growth ecosystem relations (see Franklin et al. 1981), and the notion that oceanic island never achieve the same level of richness as continental shelf islands, a major commitment must be made to set aside representative old-growth ecosystems. This is further justified because of the lack of sufficient acreage in the 100- to 200-year age class to serve as replacement islands in the immediate future. ...(A) way to moderate both the demands for and the stresses placed upon the old-growth ecosystem, and to enhance each island's effective area is to surround each with a long-rotation management area.

The IPNF ignores the fact that some types of old growth are maintained by low intensity disturbances (Arno, Smith & Krebs 1997; Habeck 1990; Habeck 1988)." The FS's own studies disclose that mixed severity fires are also key to the development of some old-growth types (USDA Forest Service, 1998-1999). Thus, the development of mature forests to old growth is also being retarded by logging and fire suppression. The issue of old-growth mixed conifer—a type that contains a significant component of Western larch—is being ignored. USDA Forest Service (1998-1999) identifies Western larch as a "forest type at risk" with "36% loss" within the Columbia River Basin. Causes listed are "fire exclusion and past harvest." Logically then, the value for old-growth wildlife species is enhanced by fires, but the FS wants to suppress fire via its management. 6-69

Wildlife biologist B.R. McClelland has for many years studied the relationship of cavity nesting birds, particularly the pileated woodpecker, to this very same larch-containing old-growth habitat. See: McClelland and McClelland, 1999; McClelland et al. 1979; and McClelland, 1977.

6-70 If the FS were study the Northern Region Overview, connect the dots and disclosed the obvious conclusions, it would be clear that the proposed logging to prevent the effects of "catastrophic" fire areas is severely detrimental to cavity nesting species, including the pileated woodpecker. This is an indicator for the kind of forest the FS proposes to avoid allowing to develop via prescribed natural fire. From USDA Forest Service, 1998-1999, pp. 25-26, under Western larch:

> Mixed severity fire intervals of 40-90 years followed by lethal fires on a 100-200 year + time frame are within the historical range of disturbance to which the seral species are adapted. In the absence of mixed severity fire or some stand thinning, on moist sites, larch is replaced by more shade tolerant species by 90-140 years. With thinning or mixed severity fire, larch can maintain site dominance for 200+ years.
>
> ...(M)ixed severity fire often served to maintain or even increase the larch dominance in stands. Residual large tree cover (less than 20% canopy cover) after large stand replacing fire was common. This large tree residual structure (emergent structure) occurring singly or in small groups has declined in many areas. In addition, the areal extent of this cover type has decreased significantly. In many areas where a mix severity fire regime helped maintain a more diverse landscape structure with larger trees, the current landscapes are in a more homogenized landscape condition.
>
> ...The loss of mixed-severity fire will result in much less recruitment of the type of mixed seral and climax species old growth type communities found in the past. There is also a risk of continued loss of the areal extent of the type due to the lack of mixed severity fire disturbance in early and mid-seral structural stages and a current lack of canopy openings large enough for successful larch regeneration in the mid and late successional communities.

6-71 The IPNF falls far short of analyzing and disclosing these cumulative effects on OG wildlife species' viability, caused by the current conditions and by the proposed timber sale.

6-72 The DSEIS makes a case for logging as a way to reduce insect and disease damage to timber stands. As far as we are aware, the FS has no empirical evidence to indicate its "treatments" for "forest health" decrease, rather than increase, the incidence of insects and diseases in the forest. Since the FS doesn't cite research that proves otherwise, we can only conclude that "forest health" discussions are unscientific and biased toward logging as a "solution." Please consider the large body of research that indicates logging, roads, and other human caused disturbance <u>promote</u> the spread of tree diseases and insect infestation.

6-73 The DSEIS does not clarify any roadless boundary issues. It is not adequate to merely accept previous, often arbitrary roadless inventories—unroaded areas adjacent to inventoried areas were

often left out. Additionally, there is a lot of public support for adding unroaded areas as small as 1,000 acres in size to the roadless inventory.

The DSEIS does not incorporate the results of past monitoring into the analysis. All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the project area, and any deficiencies of monitoring that have been previously committed to. For that reason, we expect that the following be included in the FSEIS documents or project files:

- A list of all past projects (completed or ongoing) implemented in the proposed project area watersheds.
- The results of all monitoring done in the project area as committed to in the NEPA documents of those past projects.
- The results of all monitoring done in the proposed project area as a part of the Forest Plan monitoring and evaluation effort.
- A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.

Please disclose if the FS has performed all of the monitoring and mitigation required or recommended in any past NEPA documents regarding the project area, and the results of the monitoring. 6-74

The discussion about past and ongoing activities is far too cursory for understanding cumulative effects. We believe that in order to properly assess cumulative effects, as per the Ninth Circuit's *Lands Council v. Powell* decision, the FS must not only quantify the acres and point to locations of past and ongoing actions, but the FS must also state the goals of the projects and if those goals were met, indicate if any assumptions underlying those projects' "purpose and need" statements were correct, and disclose significant monitoring information related to potentially similar impacts from the Hidden Cedar Project proposal. 6-75

Thank you for your attention to these concerns. It is our intention that you include in the record and review all of the literature and other incorporated documents we've cited herein. **Please contact the WildWest Institute if you have problems locating copies of any of them.** Also, please keep each of our groups on the list to receive further mailings on the proposal.

We conclude this comment letter with this passage from Frissell and Bayles (1996):

> Most philosophies and approaches for ecosystem management put forward to date are limited (perhaps doomed) by a failure to acknowledge and rationally address the overriding problems of uncertainty and ignorance about the mechanisms by which complex ecosystems respond to human actions. They lack humility and historical perspective about science and about our past failures in management. They still implicitly subscribe to the scientifically discredited illusion that humans are fully in control of an ecosystemic machine and can foresee and manipulate all the possible consequences of particular actions while deliberately altering the ecosystem to produce only predictable, optimized and socially

desirable outputs. Moreover, despite our well-demonstrated inability to prescribe and forge institutional arrangements capable of successfully implementing the principles and practice of integrated ecosystem management over a sustained time frame an at sufficiently large spatial scales, would-be ecosystem managers have neglected to acknowledge and critically analyze past institutional and policy failures. They say we need ecosystem management because public opinion has changed, neglecting the obvious point that public opinion has been shaped by the glowing promises of past managers and by their clear and spectacular failure to deliver on such promises.

Sincerely,

/s/

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7

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
500 NE Multnomah Street, Suite 356
Portland, Oregon 97232-2036

TAKE PRIDE IN AMERICA

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IN REPLY REFER TO
ER06/601

July 26, 2006

Pete Ratcliffe
Hidden Cedar Project Team Leader
St. Joe Ranger District
222 South 7th Street, Suite 1
St. Maries, Idaho 83861

Dear Mr. Ratcliffe:

7-1

The Department of the Interior has reviewed the Draft Supplemental Environmental Impact Statement for the Hidden Cedar Project, Idaho Panhandle National Forests, Benewah, Latah, and Shoshone Counties, Idaho. The Department does not have any comments to offer.

We appreciate the opportunity to comment.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

Original in main file

8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

July 31, 2006

Reply To
Attn Of: ETPA-088

Ref: 00-030-AFS

Ranotta McNair, Forest Supervisor
Attn: Hidden Cedar Project
USDA Forest Service
Idaho Panhandle National Forest
3815 Schreiber Way
Coeur d'Alene, ID 83815

Dear Ms. McNair:

The U.S. Environmental Protection Agency (EPA) has reviewed the draft Environmental Impact Statement (EIS) for the Hidden Cedar Project, Idaho Panhandle National Forest (CEQ No. 20060236) in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309, independent of NEPA, specifically directs EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Under our policies and procedures, we evaluate the document's adequacy in meeting NEPA requirements.

The draft EIS proposes a no action and five action alternatives that have the following activities in common: pre-commercial tree thinning, road construction, riparian planting, and road decommissioning activities. In addition to the common activities, Alternative B (Proposed Alternative) proposes timber harvest on 1,368 acres of forestland, construction of 9.1 miles of system roads and 7.3 miles of road reconstruction. Alternative C would include timber harvest on 1,393 acres of forestland, construction of 6.1 miles of road reconstruction. Alternative D would consist of timber harvest on 602 acres of forestland and 3.7 miles of road reconstruction. Alternative E would not include commercial timber harvest; however it would consist of 1.2 miles of road reconstruction for adjacent landowners. Alternative F would include timber harvest on approximately 1,304 acres, 6.1 miles of road construction and 6.7 miles of road reconstruction.

EPA has rated the draft EIS as Environmental Concerns – Inadequate Information (EC-2) consistent with EPA's rating system (enclosed). EPA's primary concern is the potential for adverse water quality impacts due to the proposed increase in road miles associated with the Proposed Alternative. The increase in road density would occur in watersheds that are impaired due to current high road densities, as well as past mining and grazing activities. EPA supports the selection of Alternative D or E as the environmentally preferred alternative that would meet the purpose and need of the project and address environmental concerns related to roads located in riparian areas and wildlife security. 8-1

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We appreciate the opportunity to comment on the draft EIS for the Hidden Cedar Project. If you would like to discuss issues related to our review, please contact Denise Clark at (206) 553-8414 or myself at (206) 553-1601.

Sincerely,

for

Christine B. Reichgott, Manager
NEPA Review Unit

cc: Leigh Woodruff, Idaho Operations Office

Enclosure

EPA COMMENTS ON THE DRAFT EIS FOR THE HIDDEN CEDAR PROJECT IDAHO PANHANDLE NATIONAL FOREST, IDAHO

Water Quality

The draft EIS indicates that harvest would take place in watersheds that have experienced impacts from past harvest levels, road construction and grazing. Each of the streams that would be potentially affected by the project as analyzed in the draft EIS are characterized as Functioning at Risk, except for the Lower St. Maries River and West Fork St. Maries River, which are functioning at Unacceptable Risk. According to Table 3-22, each of the proposed alternatives would not change the current condition of the streams, except Alternatives D and E, which could change the current condition of the stream towards the preferred condition of functioning appropriately. According to Table 3-23, Alternative D and E would have the greatest effect on improving the quality of streams that are currently classified as Functioning at Risk. EPA supports selection of Alternative D or E, since each meets the purpose and need identified as a need to encourage more resilient and sustainable forests, improve water quality and reduce long-term sedimentation to streams caused by existing roads, improve fish habitat by reducing barriers at road/stream crossings, improve wildlife security, and improve soil stability. In addition, according to Table 3-8, Alternative D or E would result in a greater amount of road miles that would be decommissioned using timber sale revenue than Alternatives B, C, and F. 8-2

We are concerned that Alternative B may not support all the issues listed in the purpose and need of the project. In particular, it would increase the road density on the forest, which would be detrimental to water quality and would increase long-term sedimentation to streams. Page 5 states, "There is a need to improve water quality and reduce long-term sedimentation to streams caused by existing roads." The State of Idaho listed the West Fork St. Maries River and the main stem of the St. Maries River below Clarkia under Section 303(d) of the Clean Water Act as water quality impaired. The pollutants of concern are temperature and sediment for the West Fork, and nutrients, habitat alteration, and sediment for the mainstem. According to Table 3-18, each of the streams potentially affected by this project are indicated as having "High" or "Extremely High" road densities. Although the draft EIS states that many of the road miles that would be constructed would be placed in long-term storage after completion of the project, these roads would continue to contribute sediment to streams for some period after completion of the project. Although there would be barriers to prevent vehicle use, unless the roads were recontoured to the original slope and revegetated, the roads would continue to contribute sediment to nearby streams. In addition, although the draft EIS states that the roads would be closed to vehicular traffic, we are aware of the increased pressure on the forest from the rise in the use of off-road vehicles. It is not clear that the closure would prevent the use of the roads by All Terrain Vehicles that could pass by barriers. 8-3 8-4

In addition, we are concerned that the water yield would be increased significantly in Hidden and Cedar Creeks with selection of Alternatives B and C. Cedar Creek is considered functioning at risk due to road density, the effects of cattle grazing, and the low quality of instream habitat. We are concerned that an increase in water yield may exacerbate the poor quality of the streambank and instream habitat in these streams. 8-5

Sediment Loading to Streams

The introduction of fine sediment to streams from road construction and reconstruction is an important water quality concern. Another potential source of sediment would be the removal of trees from steep slopes. The short term increase in sediment load to streams is projected to be offset by the storage and decommissioning of roads.

The draft EIS indicates that there will be an overall estimated reduction of sediment from all action alternatives due to road decommissioning and long-term storage. Our concern is the uncertainty of funding to decommission roads and how the uncertainty may affect the long term projected sediment reduction. As stated in the section on Finances, work such as decommissioning of roads can only be funded using timber sale revenue if that road was used for timber harvest. The draft EIS also states that "where appropriate", the Forest Service can transfer money received from the value of the sale into "trust fund" accounts, however this funding is not guaranteed since it is dependent on factors associated with the timber sale. We recommend that the final EIS discuss this uncertainty in the amount of road decommissioning that could occur and how it could affect the projections for long term sediment reduction to streams as a result of this project. 8-6

We are also concerned that the timing of road related activities is not discussed. Since there would be a short-term increase in sediment loading to streams, we recommend that the draft EIS discuss the timing of activities that would result in a net decrease of sediment. This is particularly important in the impaired waterbodies, i.e., West Fork St. Maries River and the St. Maries River, which are listed on the State of Idaho's 303(d) list of impaired streams. Each of these streams has an approved Total Maximum Daily Load that calls for a net sediment reduction. We recommend that Table 2-27 include potential sediment increases from the reconstruction of roads. This seems to have been omitted from the table. We also ask that Table 3-79 include the sediment increase projected for reconstruction of roads. 8-7 8-8 8-9

U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

APPENDIX E: RESPONSE TO COMMENTS ON THE DRAFT SEIS

RESPONSE TO COMMENTS

1-1: Your comments have been noted. Thank you.

2-1: Information was added to the Final SEIS as you suggested to clarify the discussion presented in the Draft SEIS on p. 277 (FSEIS p. 299).

2-2: At no time does the DSEIS suggest that violating Water Quality Standards is acceptable. The reference to 58.01.02.080.02 is not included in the Final SEIS. The Forest Service did not request a short-term exemption for restoration activities. Proposed restoration activities are consistent with water quality standards and the goal of supporting beneficial uses (FSEIS pp. 298-299).

2-3: The FSEIS was updated to include a better explanation of short-term (FSEIS pp. 258, 273, and Table 3-72). Sediment modeling includes reductions from road recontouring and long-term storage, but not road graveling. It also includes sediment additions from road construction and short-term additions from stream crossing restoration, non-stocked stands, and temporary roads. Short-term was assumed to be ten years because these activities are expected to be completed in eight years or less, and their effects may linger for two years.

2-4: Yes. Sediment estimates accounted for short-term sediment additions for up to ten years from road construction including system roads and temporary roads. System road construction was also included in long-term additions. Additional information was added to the FSEIS to clarify timeframes used in analysis. See Table 3-72 on page 274 of the FSEIS. Short-term components of the Hidden Cedar sediment analysis include temporary roads, non-stocked stands, and additions from crossing removals (FSEIS, pp. 258, 273).

2-5: Your preference is noted. The EIS shows that all alternatives would reduce sediment compared to the value identified in the DEQ St. Maries Subbasin Assessment and TMDL (FEIS pp. 272-278, 283-286, 289-290, 295, 297, 299).

2-6: We see that this information was confusing, so that line was taken out of the table for the Final SEIS (Table 3-86 p. 297). The sediment estimates presented in the DSEIS and FSEIS include additional sediment from temporary roads, newly constructed roads and from non-stocked stands. Sediment reductions come from road-stream crossing removals and road recontouring (storage and decommissioning). The estimated additions and reductions are based

on the DEQ TMDL spreadsheet model. Overall sediment would be reduced from the proposed activities because there would be less sediment generated after both additions and reductions are considered.

2-7: Typical road reconstruction consists of blading, graveling, and reshaping the road surface; drainage ditch cleaning; clearing brush; and occasionally installing a cross-drain from the cut-slope ditch or upgrading culverts at existing stream crossings (FSEIS Chapter 2 Design Features and Transportation section). Sediment estimates were done using coefficients and equations from DEQ's TMDL model which includes two sources of sediment from roads: Surface-generated sediment from 200-feet on either side of a stream crossing and sediment from roads encroaching on the stream channel. The TMDL model uses roads located within 50-feet of a channel for encroaching sediment-producing lengths. Our sediment analysis, which is based on the DEQ TMDL model does not differentiate road treatments. A road generates sediment (as identified above) and will continue to generate that sediment until those portions of the road are removed through recontouring. It makes no difference if the road is reconstructed or undergoes routine maintenance. No increases in sediment to the stream system is expected from road reconstruction and road maintenance (FSEIS p. 259).

There appears to be some confusion about decommissioning roads and the need to reconstruct them. We are not proposing to reconstruct any decommissioned roads. These two practices do not occur at the same time on the same road. A road may be reconstructed if needed for timber sale activities then be decommissioned after harvest activities. Roads that proposed for reconstruction are not roads that have been decommissioned. See the discussion explaining road reconstruction in response to Comment 2-7 above.

2-8: Additional information was added to the FSEIS to better explain the analysis methods for estimating sediment (FSEIS pp. 258-259). Applying sediment reductions from road decommissioning to the same sediment-generating sources as identified in the approved TMDL is a logical approach to sediment accounting for the St. Maries River.

3-1: Under the 2002 Hidden Cedar decision twelve miles of road were decommissioned or stored before the decision was withdrawn. The existing condition described in the Draft Supplemental EIS (DSEIS) reflects the work that was accomplished before the SDEIS was published. The Final SEIS describes the road densities by drainage by alternative on pages 95 and 106-130. These densities include road miles under all jurisdictions, not just Forest Service jurisdiction. Table 3-63 identifies road miles by jurisdiction, separating those roads under Forest Service jurisdiction from those roads which the Forest Service has no authority over. The Forest Service has jurisdiction on approximately 119 of the 310 miles of road in the project area. Some of the roads with Forest Service jurisdiction are cost-share roads. The management of cost-share roads involves agreements with other parties, and there are some limitations for management. Each road under Forest Service jurisdiction was reviewed in an interdisciplinary context considering resource concerns due to the road and need for the road (RAPS, project file Book 9, Volumes 1-3). System roads identified for cost share, long-term forest management, utilities, developed recreation, and administrative sites were considered to be needed. Roads which had

high resource concerns and low need were identified for decommissioning. If the road had high resource concerns but also was needed to manage Forest Service lands it would be retained and resource concerns would be corrected.

Alternative F was modified in the Final SEIS to include the decommissioning of Wood Creek Road 341.

3-2: The road density numbers identified for the drainages of the project area include all jurisdictions and therefore limit the road density reduction which can occur (DSEIS Table 3-18; FSEIS Table 3-20). The *Biological Assessment for Hidden Cedar Project* (HC BA) describes the possible effects of road density reduction to bull trout (HC BA pp. 30-39, (Appendix F)). Watershed restoration is a priority and was identified in the Purpose and Need for Action (FSEIS pp. 3-6; ROD, pp. 22-23). Riparian planting, road decommissioning, and road long-term storage were designed to improve the watershed conditions (FSEIS pp. 19-20). As mentioned above twelve miles of road were stored or decommissioned under the original 2002 Hidden Cedar ROD before that decision was withdrawn. Existing road densities in many drainages are lower now than they were before any of the Hidden Cedar projects were implemented (Original Hidden Cedar FEIS Table 3-34 p. 3-91; FSEIS Table 3-20).

High road densities are an indication of impacts to fisheries. Sediment and fish passage barriers from roads may cause loss of habitat. The estimated sediment budget shows sediment reduction for all alternatives, and the decommissioning and storage of roads would reduce barriers (FSEIS p. 131).

3-3 & 3-4: The intent of the interim riparian habitat conservation area standard widths is to achieve riparian management goals and objectives. Design Feature B (Fish) on page 22 of the FSEIS identifies that the standard buffer widths will be applied to activities within the project area unless otherwise designated by the district fisheries biologist or district hydrologist. The standard widths were utilized for the analysis process to provide a uniform width for mapping and generation of acres for the SEIS. During the layout of units the widths may be greater based on ground conditions. Also see 3-2 above.

3-5: Approximately 175 feet of temporary road construction was proposed in Wood Creek on high mass failure potential Landtype 717 (Unit 36, Alterantives B and F). The site was investigated and it was determined to have little risk of failure due to its proximity to the ridge top and minimum amount of slope cutting required because the slopes are not steep. Although the landtype map showed this as a high mass failure potential area, on-the-ground conditions do not indicate high mass failure risk (FSEIS p. 230). This temporary road construction, however, was dropped in the Record of Decision (Alternative F Modified, ROD p. 3) because of the detrimental soil disturbance not related to mass failure potential.

3-6: The Design Features related to road storage were updated for the FSEIS. The following applies to all roads that would be put into long-term storage: at a minimum all culverts would be removed, all fill within the stream crossing sites would be removed, stream gradient and valley side-slopes would be returned to natural conditions for 200 feet on both sides of stream, and road surfaces would be decompacted to a minimum of 18 inches to facilitate and augment infiltration. (ROD Design Features 10. F. & G. pp. 14-15). These roads would not be completely recontoured because they are needed for long-term land management. The sediment analysis

shows that all alternatives would reduce sediment levels (FEIS pp. 272-278, 283-286, 289-290, 295, 297, 299).

3-7: After the Draft SEIS was released the interdisciplinary team identified and field verified an alternate route to provide access that would be lost when Hidden Creek Road 498 is decommissioned. That route is included in Alternative F of the Final SEIS (SFEIS p. 43; Map M14; ROD p.7).

3-8: We understand your concerns. The SEIS considered a range of alternatives for road construction. Alternative A proposes no road construction. Alternatives C, D, and E only include road construction associated with access to privately owned land. Alternatives B and F include road construction for timber harvest and to provide access to privately owned land. In addition Alternative F includes road construction to replace access when the Hidden Creek Road is decommissioned. All alternatives would result in a net decrease in roads on National Forest System lands because roads would be decommissioned and roads were already decommissioned under the original 2002 decision (FSEIS Soils and Water sections). See response to comments 2-1, 2-4, and 3-2.

3-9: Much of the high road densities in the area can be attributed to private property which the Forest Service has no control over. A roads analysis process (RAPS) was used to identify roads to be stored or decommissioned (FSEIS pp. 3, 6, 8, 12, 240; project file Book 9, Volumes 1-3). On those roads the beginning of the treatment area would be recontoured for 300 feet or a sight distance to eliminate motorized vehicle use (FSEIS Design Features p. 27). On roads that would be gated or barriered restriction devices would be placed in strategic locations making them difficult to breach. Gates do provide better protection of resources than leaving a road open. If resource damage occurs the Forest Service patrols the area and attempts to cite individuals.

The Hidden Cedar Project decommissioned or stored twelve miles of road before the 2002 decision was withdrawn, and some of those roads were spur roads. All the alternatives in the Final SEIS propose to decommission or store spur roads (FEIS Maps 6, 8, 10, 12, and 15).

3-10: Cleaning and inspection is required for off-road construction and logging equipment (FSEIS Design Feature 4.B. p. 22). OHV issues will be handled in District-wide travel management.

3-11: The Hidden Cedar Project decommissioned or stored 12 miles of road within the project area before the 2002 decision was withdrawn, and with this supplement an additional 15.9 to 25.2 miles (depending on the alternative) would be decommissioned or stored.

OHVs themselves do not necessarily increase the threat of fire starts within the project area due to the characteristics of the fuels. Short needle conifer litter and low to medium high shrub litter are the most common fuel types adjacent to roads and trails in the project area and are not highly susceptible to ignition from sparks except in times of very high to extreme fire danger. The activities of the people riding OHVs (building campfires for example) can increase the threat of fire starts within the project area. Seasonal fire restrictions are utilized to mitigate the effects from activities of forest visitors on an as-needed basis. Newly purchased OHVs come standard with spark arresters.

3-12: We are not proposing to designate routes. That will be handled as part of the District-wide travel management planning that will be done to implement the OHV Rule.

3-13: The Final SEIS includes a range of logging systems and road construction alternatives. See discussions and tables on FSEIS page 14-15, 32-44 and Appendix A. Helicopter logging is proposed in Alternatives B, C, D, and F. Alternative E does not include timber harvest. Helicopter logging does not eliminate the need for roads, and flight distance to a landing site on a road is one of the factors considered for helicopter yarding.

Analysis shows that the proposed timber harvest using the logging systems indicated in Appendix A would meet Forest Plan standards for soils (FEIS pp. 50, 222-224, 227-228, 236-237), so the need to require additional measures was not identified. Winter logging does not always guarantee protection of soils. Historically, weather conditions that allow effective winter logging do not occur very often on the St. Joe Ranger District, especially at the lower elevations in the Hidden Cedar Project Area. If snow accumulations do result in a protective layer, weather conditions can change overnight making operations on snow impossible. At other times there can be too much snow.

3-14: Small portions of units 13, 47, 49, 50, and 51 are proposed on mapped highly sensitive landtypes, but they will not result in unacceptable impacts (FSEIS p. 229). These landtypes are rated as highly sensitive because of surface erosion, subsurface erosion or sediment delivery potential ratings. Subsurface erosion is usually associated with roads, and no road construction is proposed in these areas.

No sediment delivery to streams is expected from harvest operations on sensitive landtypes within these units because design features call for adherence to BMPs, use of proposed harvesting systems, and application of RHCA buffers (SW-44; SSW-14, 50, 59); and the portions of units that have mapped sensitive landtypes (Table 3-52) would be helicopter or skyline harvested. Monitoring of past timber harvest activities that occurred on high sensitivity landtypes found no erosion within the harvest units (SW-44). However, because the DEQ TMDL model does include short-term sediment generation from non-stocked stands and Unit 47 is a proposed clearcut with reserves, some sediment generation was accounted for in our sediment analysis (FSEIS pp. 258, 273, 274, 286, 290).

Because no harvesting activity would take place within RHCA buffers or within high mass failure potential landtypes (FSEIS pp. 22, 229; SSW-52) soil strength will not be reduced; the existing root system will remain undisturbed in these buffers. The edge of the buffered, proposed units would in most cases be 100-300 feet from the stream course (SSW-52) which would adequately buffer high mass failure potential landtypes and would be adequate to maintain and protect RMOs.

Proposed harvest units are **not** located on areas with high landslide potential. This is true for all alternatives. All potential high mass failure landtypes were buffered, as required by INFS (Map M-18).

3-15: Harvest activities and road activities are included in the sediment estimate for the Hidden Cedar Project Area (FSEIS p. 258; SSW-1). All alternatives showed sediment reductions. All alternatives would meet Forest Plan standards for water and soil (FSEIS pp. 236, 298). Also see response to comment 3-14.

3-16: See discussion on harvesting on high sensitivity landtypes (FSEIS p. 229). All action alternatives proposed additional restoration work based on the roads analysis process (FSEIS pp. 3, 6, 8, 12, 240; RAPS, project file Book 9, Volumes 1-3) done for the area. See Table 3-85 Summary of Forest Service Activity Effects on the Watershed. All alternatives would meet state water quality standards (FSEIS p. 299). Also see response to comment 3-14.

3-17: The selected alternative (Alternative F Modified) will meet Forest Plan Standards and Regional guidelines for maintaining soil productivity (ROD p. 47). As you recommended, the temporary road in Unit 36 will not be constructed, and the unit will be harvested using helicopters.

The IPNF Forest Plan Standard for maintaining acceptable soil productivity is to strive to maintain at least 80 percent of the activity area in a condition of acceptable productivity potential for trees and other managed vegetation. The Regional guideline recommends maintaining at least 85 percent of the activity area in a condition of acceptable productivity potential.

Two different accounting methods were used for roads within activity areas. The Forest Plan Standard activity areas include all roads (new, temporary, existing system) within proposed units (SSW-30, SSW-37). The Regional Guideline activity areas include only temporary roads within proposed units because system roads are considered a committed or dedicated resource under the Regional guideline and are not included in calculations of disturbance (SSW-43).

There were errors in Tables 3-51 and 3-52 in the Draft SEIS (pp. 220-223). These were corrected for the Final SEIS (FSEIS Tables 3-50 and 3-51; pp. 225-228).

More information was added to the FSEIS to clarify analysis methods (FSEIS pp. 208-211).

3-18: Yarding systems by unit were displayed in Appendix A in the DSEIS and are included in Appendix A of the FSEIS. Information was added to the FSEIS to better explain how yarding methods were used in estimating detrimental disturbance (FSEIS pp. 209-210). More information about effects related to yarding systems was also added to the FSEIS (pp. 222-223, 229).

3-19: See 3-17 and 3-18 above. Additional discussion about temporary roads and landings was added to the FSEIS (pp. 209-210, 223-224, 231, 237). Skid trails are included in the estimations of detrimental disturbance. Information from field surveys, including skid trails, was used to determine existing detrimental disturbance (FSEIS pp. 208, 217-220). Coefficients used to estimate potential detrimental disturbance were based on actual field information including disturbance from skid trails (FSEIS pp. 209-210).

3-20: The Forest Plan Standard of maintaining at least 80 percent of activity areas in a condition of acceptable productivity potential was developed in part to ensure that management activities on Forest lands will not produce unacceptable levels of sedimentation resulting from soil erosion (Forest Plan p. II-8). The FSEIS estimates soil conditions for all proposed units (Tables 3-50 and 3-51), and all proposed activities would meet the Forest Plan Soils Standard and the Regional guideline for soils, with the exception of units 36, 40, and 48 which are estimated to be at or above Forest Plan standards and/or Regional Guidelines. During analysis it became apparent that Units 36 and 40 would have unacceptable soil impacts. Unit 40 (seven acres) is not included in the selected alternative, and the yarding system of Unit 36 has been changed from ground-based to helicopter and the temporary road has been eliminated (ROD p. 3). Special

mitigation measures were identified to protect soil quality in Unit 48 (ROD Table 8 - Site-Specific Design Features p. 19). Soils in Unit 48 will be monitored to ensure Forest Plan standards are met (ROD Table 10 – Monitoring Plan p.21). If monitoring shows standards are not met landings and skid trails within the unit will be decompacted. Also see 3-17 above.

3-21: All proposed units with potential habitat were surveyed for rare plants and Units 7, 16, 24, 30, 35, and 46 do contain rare plants. Unit 24 has a large population of deer fern and was not included in the selected alternative (FSEIS, pp. 31, 178-180; ROD, p. 3 and Table 8 p. 19). All of the rare plants sites within the remaining units have no-entry buffers around them with the exception of one site of green-bug-on-a-stick moss in Unit 16. A no-harvest buffer will be placed around that population. However, temporary road construction would be allowed through the buffer as long as no cable or ground yarding would occur and woody debris would be retained on site. The population would then be monitored for effects. This is an attempt on a small scale to accumulate some knowledge on how *Buxbaumia viridis* may respond to disturbance.

Since the original surveys were completed in 2002, a new regional rare plant list was issued (2004) that made it necessary to revisit certain stands. These surveys were completed in 2006 and the results are located in the project file (SB-6). One new population was located within a unit 46, so the unit boundary will be adjusted to protect the population. Other known populations which are located in riparian zones would be protected with riparian buffers (FSEIS, Table 2-5 p. 31).

3-22: The portion of the St. Maries River that is to be planted receives very little to no grazing and does not warrant the construction of exclosure fencing. The Hidden Cedar project actually encompasses very little grazing ground that is heavily utilized with the exception of Catspur Creek. Cat Spur Creek has an exclosure fence on some of the NFS land riparian area.

The choice of what to plant in any area is in large part dictated by what might successfully grow there and an effort is made to plant multiple species when possible.

3-23: The St. Joe Ranger District monitors “greenline” vegetation right along the riparian line annually (SB-12). In Catspur Creek (within the Hidden Cedar Project Area) monitoring shows median end-of-season stubble height to be greater than six inches high (usually greater than 12 inches). This indicates good riparian health and good ground cover (FSEIS pp. 35, 288). The same is true for monitoring conducted in Emerald Creek and Charlie Creek which are tributaries of the St. Maries River.

3-24: Water yield is discussed in the DSEIS and additional information was added to the FSEIS and can be found on pages 259-265, 269-271, 278, 280-284, 286-289, 291-296.

The WATSED model calculated ECA for the existing and proposed activities and can be found in project file documents SW-25, 30, 33, 35, and SW-36.

3-25: See response to comment 3-24. Effects on stream temperature are discussed in the FSEIS on pages 270, 271, 282, 287,293, Table 3-85 p. 295, 296, Table 3-86 p. 297**,** 298-299.

3-26: The preface to the Supplemental FEIS discloses that 12 miles of road out of the original 37 authorized have already been decommissioned or put into storage. Chapter 2 of the

Supplemental FEIS states that between 2.5 and 16.2 miles of additional road would be decommissioned depending upon the alternative selected.

Table 3-33 of the FSEIS shows that ground based yarding, the most impactive harvest method, makes up the smallest percentage of harvest methods in all alternatives.

3-27: The analysis addresses connectivity (e.g. travel corridors) and the potential for effects on wildlife, including big game (FSEIS, p. 322-324). In disclosing potential effects common to all alternatives the FSEIS (p. 322) states that proposed harvest units were designed to minimize impacts to ridges and saddles (areas typically used by wildlife for travel) and that design features would provide for continued use of travel ways. The Design Feature13.E. (FSEIS p. 30) would limit the width and location of openings to provide for maintenance of travel by wildlife. All alternatives limit impacts and maintain suitable conditions and opportunities for travel. In addition, Design Feature 13.B. (FSEIS p. 29) specifies actions to provide security for big game through sale subdivisions or scheduling. Further specifying timing of logging activities is not necessary and in some senses is impractical – e.g. identified potential corridors (as well as many other areas) may be used at almost any time by any number of species.

3-28: All of the action alternatives reduce road densities (Table 3-92 FSEIS p. 320) through various combinations of long-term storage (LTS) or decommissioning. These proposed reductions in road density reduce any associated vulnerability to trapping. The effects of roads on wildlife are also lessened by the use of restrictive devices such as gates and barriers. The miles of roads that would be treated are summarized for each alternative in tables shown on pages 34-46 (FSEIS) and in Table 2-27 (FSEIS p. 48). It is also worth noting that as a result of the original Hidden Cedar decision, the St. Joe Ranger District decommissioned or stored 12 miles of road before the original Hidden Cedar Project decision was withdrawn.

3-29: Thank you. Your comment is appreciated

3-30: Your point is well taken. However, that is part of the purpose and need for action in the Hidden Cedar Project Area (FSEIS pp. 3-6). The alternatives include broadcast burning of some harvest units that would benefit black-backed woodpeckers (FSEIS p. 349). The decision to burn harvest units in the Hidden Cedar project is site specific based on silvicultural objectives. The St. Joe District has and will continue to pursue projects that use fire as a tool for wildlife habitat improvement when and where feasible and acceptable.

3-31: Discussions about analysis assumptions and limitations was added to the FSEIS (pp. 208-211, 258-260, 305; SSW-24, SSW-26). Sediment analysis, which is based on the DEQ TMDL model and assumptions are included in the *St. Maries River Subbasin Assessment and TMDL (Idaho, DEQ, 2003).* Also see response 2-7 above.

4-1: Your preference is noted.

Letter #5 – M. Mihelich, Kootenai Environmental Alliance; G. MacFarlane, Friends of the

5-1: The analysis, which led to the development of the values described in this comment, is located in the FSEIS on pages 101-131. The method for analysis is described on pages 99-101 of the FSEIS. These values include all ownership not just the effects of the project on National Forest System lands. Due to the large percentage of land within the project area which is not under Forest Service management (FSEIS p. 95, Table 3-20) the amount of influence the Forest Service management has on conditions within many drainages is very limited.

5-2: The IPNF Forest Plan, as amended by INFS, must provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams. This requirement was stated in the DSEIS Chapter 1 page 5, it seemed redundant to reference the Idaho Forest Practice which states the same requirement. FSEIS page 86 states, "Rules which pertain to the IFPA, as related to fisheries, are found in IDAPA …".

5-3: Seven culverts have been installed in the Hidden Cedar Project Area within the past seven years. All of these culverts were drainage relief culverts, culverts that are not in defined channels (perennial nor intermittent) stream channels.

5-4: The alternatives would improve fishery conditions in some streams in Alternatives C, D, E, and F (FSEIS Table 3-23). In all the other streams in every alternative the fishery condition would be maintained. FSEIS Table 3-24 shows 6.2 miles of stream functioning appropriately and 35.9 miles functioning at risk for Alternative F. As you mentioned, the DSEIS showed 3.2 miles of stream functioning appropriately and 38.9 miles functioning at risk for Alternative F. The change is a result of proposing decommissioning and storage for Wood Creek Road 341 in Alternative F in the Final SEIS.

5-5: The St. Joe Geographic Assessment was used in the development of the purpose and need and proposed action for the Hidden Cedar Project (FSEIS pp. 3, 8). Our starting point for this supplement was the Final Hidden Cedar EIS, not the original draft EIS.

5-6: The alternatives would improve fishery conditions in some streams in Alternatives C, D, E, and F (FSEIS Table 3-23). In all the other streams in every alternative the fishery condition would be maintained. In the Final SEIS Wood Creek shows improvement in Alternative F because decommissioning of Wood Creek Road 341 was added to Alternative F for the Final FSEIS. The DSEIS did not include decommissioning Road 341 in Alternative F.

5-7: The 2005 planning rule at 36 CFR 219.2(c) specifies that projects that are consistent with the land management plan meet the requirements of NFMA (36 CFR 219.8(e)). The Hidden Cedar Project meets NFMA requirements by meeting the standards, objectives, and guidelines of the Forest Plan which requires maintaining and improving habitat of management indicator species [36 CFR 219.14(f)] (FSEIS pp. 101, 131; Appendix F).

The fisheries affected environment analysis is presented in the FSEIS pages 87-99, and the fisheries environmental analysis is presented in the FSEIS pages 99-132. Data for the analysis of the affected environment was collected between 1992 and 2001, and reviewed for current relevancy in 2005 (FSEIS p. 87). Conditions had remained the same for all streams except for

Log Creek. Conditions for this stream were updated based on the 2005 stream review (FSEIS p. 97).

5-8: Information concerning the Clean Water Act has been added to FSEIS page 132.

5-9 and 5-10: FSEIS Pages 282, 287, 293, 295 state that Forest Service activities would not increase stream temperature because of adequate stream buffers. The Forest Service has no authority to monitor conditions on lands where the Forest Service has no jurisdiction. The Idaho Department of Lands and the Department of Water Resources can conduct compliance checks on non-federal lands to determine compliance with Idaho Forest Practices Act. Idaho Forest Practices Act "provides assistance and inspections to ensure continuous growth and harvest of "forest tree species; protect and maintain forest soil, air, water and resources, as well as wildlife and aquatic habitat. The Act established minimum standards for logging, road building and other forest practices." By using INFish buffers the alternatives exceed FPA standards; and, therefore, meet FPA regulations posted July 14, 2006.

IDAPA 58.01.02.350 identifies that BMPs such as the FPA are intended for "protecting designated beneficial uses and ambient water quality." The FSEIS (pp. 256, 293) clarifies that the Forest Service is referring to this section of the water quality standards. The Forest Service is not responsible for documenting or monitoring IDAPA-approved best management practices listed at 58.01.02.350.03 on lands owned or managed by other entities. The Hidden Cedar reference, Idaho DEQ, 2001, (FSEIS p. 282) documents FPA monitoring conducted by the State of Idaho.

5-11: IDAPA 58.01.02.350 identifies that BMPs such as the Forest Practices Act are acceptable and that the "Director" is responsible through monitoring, to determine the effectiveness of practices in protecting beneficial uses. The existing Temperature TMDL (ID DEQ, 2003 (St. Maries) p. 83-93) requires non-federal landowners to increase shade canopy over stream channels on land they manage. Effectiveness of BMPs is discussed in the FSEIS on pages 54, 222, 238, 255, 262, 282, and 298. Monitoring of BMPs used for the Dutch Cat Timber Sale (within the Hidden Cedar Project Area) showed BMP effectiveness ranges between 80 percent and 95 percent (FSEIS p. 282; SSW-14). BMP effectiveness has been qualitatively assessed as part of Forest Plan monitoring for years (SSW-61).

5-12: BMP monitoring has found no appreciable erosion (SSW-14, SW-61) so consequently no sediment increase or violation of water quality Standards has occurred. Also see 5-10 and 5-11. The issue of notification to the DEQ is outside the scope of this analysis. It does not appear that IDAPA 58.01.02 requires notification.

5-13: You are correct, Table 3-30, page 147, of the DSEIS does not display the number of acres of treatment in each stand size class by alternative. Table 3-30 displays the overall changes or differences expected between the existing condition (Alternative A) and the action alternatives (Alternatives B, C, D, E and F) if implemented. This displays the relative distribution of stand size classes within the analysis area by alternative.

Table 3-32 was added to the FSEIS which displays treated acres by stand size class groups.

Using the stand size class groupings disclosed in project file VEG-18 and the updated TSMRS data for this analysis area as disclosed in project file SVEG-7, the information you requested can be calculated. This information, listed below, is included in the FSEIS for clarity:

A	0	0	0	0	0
B	324	1,113	255	0	1,368
C	324	1,120	273	0	1,393
D	324	480	126	0	606
E	324	0	0	0	324
F	324	1,096	208	0	1,304

5-14: Stand size class and tree size are not the same. Stands are generally comprised of a range, or mix, of individual tree sizes with the tree size class that dominates the stand stocking determining the stand size class. The average DBHs displayed in Table 3-7, page 73, are estimated average DBH for the alternative overall, and in this project would represent medium sized trees. In the environmental consequences portion of the forest vegetation section, pages 140-144 and 146-152, the tree size classes expected to be removed by proposed silvicultural prescription is provided for each alternative as part of the forest structure discussion. The effect of these proposed treatments on the stand size class, by prescription, is also discussed.

5-15: See Comment 5-13. The information related to acres treated by stand size class for each alternative, as discussed in Comment 5-13, was added to the FSEIS for clarity.

5-16: As discussed throughout the vegetation section of the draft SEIS and the final SEIS, the intermediate stand treatments would generally remove trees from the smaller tree size classes before removing medium or large trees**.** Pending the site specific conditions, however, medium and large trees may also be removed to meet the objectives of the silvicultural prescription as well as the purpose and need (i.e. larger trees of some species may be removed and smaller western larch trees may be left, or larger diseased trees may be removed and smaller healthy trees may be left). In areas of regeneration harvest, trees of all sizes represented on the site would likely be removed. There are, however, retention objectives in the regeneration proposals which focus on retention of some individual and/or groups of larger sized trees scattered throughout the regeneration treatment areas.

You are correct in that there is not a maximum tree size, expressed in DBH, for removal in the treatments proposed for this project.

5-17: See 5-16 above. The stand in question, 433-01-028, is not proposed for treatment in this project, as can be found by reviewing the list of stands in proposed units (VEG-16). During the old growth validation process for this project, a 33-acre stand was identified that had been assigned a TSMRS special use code 10 and was included in the old growth allocation related to the IPNF Forest Plan. This code is defined as: "**Allocated** (retained) Old Growth, photo identified as likely meeting Old Growth minimum criteria, but **not** field verified." Stand examination was completed in this stand after that original allocation. Analysis of that data is located in project file SOG-9, and displays that this stand does not meet minimum criteria for old

growth allocation. Clarification that stand 433-01-028 is not proposed for treatment, even though it is no longer in the old growth allocation, was added to the FSEIS page 166.

The referenced Ninth Circuit ruling (Ecology Center v. Austin, No. 03-35995 D.C. No. CV-03-00018-DWM, December 8, 2005) related to a proposal treating stands that burned during wildfires on the Lolo National Forest in 2000. That proposal included treatment of old growth stands. This is not directly applicable to this project because, as stated in the draft SEIS on page 171 and 172 (FSEIS, p. 167), no timber harvest is proposed in allocated old growth stands, and none of the stands proposed for timber harvest meet the minimum criteria for old growth.

5-18: Data related to all but three stands proposed for treatment, and all stands allocated as old growth is available in the FSVEG data base. The three stands that did not cross over into FSVEG (429-03-023, 430-01-023, and 430-06-073) were the result of either the map for the original stand and associated inventory plots could not be located, **or** the stand had been re-delineated and which of the original exam plots would be located in the new stands could not be identified. Existing data, both old and new, for all stands proposed for treatment and all allocated old growth stands was reviewed and all stands proposed for treatment received an on-site visit by the silvicultural forester. Additionally, all allocated old growth stands and a 25% sample of stands proposed for treatment received **new** field examinations to monitor current conditions and check the applicability of existing data to current conditions. The documentation of the field reconnaissance and copies of both the old and new data summaries are located in the project file (VEG-9, VEG-10, VEG-14, and SOG-9).

5-19: More information has been added to Final SEIS that clarifies, Section 2 of the FRTA as the most pertinent section to use for this project (FSEIS p. 238). Section 2 applies to the granting of easements across National Forest System lands (FSEIS p. 15).

5-20: The road construction listed in this comment is included in the FSEIS for effects analysis, including cumulative effects (FSEIS pp. 52-61, 64-68, 71-76, 81-82, 84-85, 89, 95-101, 103-131, 154-155, 157, 158-164, 167-170, 172, 174-183, 186-193, 196-201, 205, 209, 211-212, 215-216, 218, 220-224, 227-234, 236-253, 255, 257-261, 264, 267, 271-274, 278, 282-287, 291-297, 300, 303, 305, 310, 312, 314-315, 318-323, 328-336, 339-344, 346, 352-355).

5-21: You are correct: the Draft SEIS did not list these two documents in the references. *Roads Analysis: Informing Decisions About Managing the National Forest Transportation System* was used for the roads analysis process (RAPS), so it was added to the list of references for the Final SEIS. Thank you for pointing out that omission.

Forest Roads: A Synthesis of Scientific Information is a compilation of information about roads and effects from roads. Although that paper was not cited in the references for the Draft SEIS, some of the literature referenced in it was used. Also, some of the older literature cited in this document is now incorporated in more recent literature that was used for the Hidden Cedar FSEIS. The Forest Service recognizes that although we have needs for roads they do affect the environment. In fact, part of the purpose and need for the project stems from the need for roads and their effects (FSEIS p. 4-6). Two of the three alternative-driving issues deal with roads (FSEIS p. 9-12). Roads and their effects are considered in the Draft SEIS (pp. 52-57, 59, 63, 65-67, 71-75, 81-82, 84, 86, 89, 95-102, 105-134, 157, 159-160, 162, 164-170, 173, 175-176, 178-182, 184-187, 189-190, 192-206, 210-216, 218-221, 223-243, 246, 250-251, 254-261, 263-277, 279-280, 282, 284, 289, 291, 294, 296-303, 306-311, 313-314, 316, 318-322, 324, 331-337) and

the Final SEIS (pp. 52-59, 60-61, 64-68, 71-76, 81-82, 84-85, 89, 95-101, 103-131, 154-155, 157, 158-164, 167-169, 170, 172, 174-183, 186-193, 196-201, 205, 209, 211-212, 215-216, 218, 220-224, 227-234, 236-237, 238-253, 255, 257-261, 264, 267, 271-274, 278, 282-287, 291-297, 300, 303, 305, 310, 312, 314-315, 318-323, 328-336, 339-344, 346, 352-355).

5-22: The Forest Service documents used in the roads analysis are listed in the project file document ST-1.

5-23: Copies of road easements, agreements or Memorandums of Understanding (MOUs) are not included in the project file but rather are located in the Forest Service central filing system, located at the Forest Supervisor's Office (FSEIS p. 239).

5-24: The references cited refer to special use permits and do not apply to the access requests associated with the Hidden Cedar EIS.

5-25: None of the proposed activities or past activities associated with Forest Service land management had activities "whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced". Only minor discharge associated with silvicultural operations may have occurred in the past (FSEIS, pp. 254, 259, Tables 3-73, 3-74, 3-75, 3-76) and that is not expected to have reduced or damaged flow, circulation or reach of waters of the US.

5-26: Additional information was added to the Final SEIS on page 238.

5-27: The TMDL process in the St. Maries river basin has been completed and TMDLs have been approved. TMDLs are identified in the SEIS as existing for the St. Maries River and some of its tributaries. The TMDL calls for reducing sediment and increasing stream shading. All alternatives reduce sediment in relation to the value in the TMDL **(**FSEIS, pp. 270-277). Proposed buffers and riparian plantings are intended to move toward meeting the temperature TMDL (FSEIS, pp. 270, 282, 287, 293, 295-298). A TMDL Implementation Plan needs to be developed for the waterbodies identified for load reductions.

5-28: Sediment production rates would be reduced with all action alternatives due to the proposed road decommission and storage (FSEIS pp. 286, 289, Tables 3-82, 3-83, 3-85, 3-86, 296). See responses to comments 2-4, 2-5, 2-6, 2-7, 3-2, 3-6, and 3-15.

5-29: The original FEIS used WATSED to estimate sediment. At that time TMDLs had not been approved. In 2003 the TMDLs that apply for this area were approved. Sediment estimates have been updated for this supplement by using coefficients and equations from the Idaho Department of Environmental Quality (DEQ) TMDL model (SSW-1, 24, 53, 54, 58; FSEIS pp. 254, 257). The project would meet the Clean Water Act by reducing the amount of sediment produced from National Forest System lands. Sediment increases and reductions are now displayed in the FSEIS on pages pp. 258, 273, and Tables 3-73, 3-74, 3-75, 3-76)

5-30: Project file documents SW-14 and SSW-18 are both copies of the spreadsheet model presented in DEQ's St. Maries River Subbasin Assessment and TMDL. The entire document is on a CD in the project file (SSW-4).

5-31: DEQ TMDLs, approved in 2005, where assigned to the West Fork of the St. Maries River and the Lower St. Maries River, because information indicated that current sediment levels are above natural levels. See the Water section in Chapter 3 of the FSEIS pages 256 to 257 for analysis information. Also see responses 5-27 through 5-30.

This discussion on hydraulic capacity of culvert is not applicable or necessary for culverts proposed for removal. The SEIS identifies the number of crossings (culverts) proposed for removal. No matter what the risk level of culvert failure currently is, all risk of sediment from crossing failure would be eliminated with the removal. The risk of crossing failure sediment values in tons (and annualized over 10 years) is estimated in SSW-56 and SSW-57. The analysis requested may be helpful when determining if a culvert is at risk of failure, but it is not needed for proposed culvert removals.

5-32: See response to comment 5-31.

5-33: See response to comment 5-31.

5-34: See response to comment 5-31.

5-35: Supplying this information is not essential for determining effects to water quality, water quantity, beneficial uses, or channel conditions. This comment does not describe the pertinence or relevance of maximum particle sizes.

5-36: No large storm events occurred after 1996 in the Hidden Cedar Project Area; however, damage assessment reports for road damage from the 1996 floods were added to the project file (ST-9).

5-37: The WATSED model was not updated for sediment analysis for the supplemented EIS. Additional information was added to the FSEIS concerning limitations of the WATSED model (FSEIS pp. 259-260). Limitations of the WATSED model are also found in project file documents SSW-27 and SW-51. DSEIS, p. 249, discusses actual versus modeled water yield for the Cat Spur watershed, a tributary of the West Fork St. Maries River. The variability discussed shows the limitation of this model. Other methods were also used to analyze water yield-peakflows and are discussed in the Water section of the FSEIS (pp. 259-265, 269-271, 278, 280-284. 286-289, 291-296).

5-38: See response to comments 3-24 and 5-37.

5-39: See response to comments 3-24 and 5-37.

5-40: WATSHED was not used to estimate sediment for this analysis. Additional information was added to the FSEIS concerning the TMDL model (FSEIS pp. 254, 257, 258-259, 272-278, 283-286, 289-290, 295, 297, 299; SSW-18) which was used to estimate changes in sediment production. Project file document SSW-60 includes a complete discussion on the sediment model assumptions and documentation. The equations and coefficients from the DEQs TMDL model were used to predict sediment for the TMDL, which EPA approved.

5-41: The DSEIS p. 254, 266, 267, 268, and 271 (FSEIS pp. 260-262, 268, 330) identify some degree of uncertainty in trying to predict cumulative effects of non-FS land activities because

future activities are uncertain. The Final SEIS states that uncertainty exists in trying to assess cumulative effects (FSEIS pp. 260-261).

5-42: Habitat alteration and flow alterations are not considered "other pollutants". "Other pollutants" are considered chemical pollutants for this analysis (FSEIS, Table 3-85).

5-43: The Draft EIS Soils section had some errors that were corrected. Tables 3-51 & 3-52 were updated. In the Final SEIS, Table 3-51 is related to the Forest Plan Standard of maintaining 20% of activity areas in a condition of acceptable productivity potential, and Table 3-50 is related to the Regional guideline of maintaining 15%. Also see responses 3-17 and 3-20 above.

5-44: All proposed units were field verified for soil conditions by trained personnel (FSEIS p. 218, SSW-22, SSW-48). Results are displayed in Tables 3-46 and 3-47 of the FSEIS in the columns for existing detrimental condition acres and percents.

5-45: The Burroughs, et. al. paper was used in the 2002 EIS. This paper is still applicable as reference to road sediment generation, but it was not used in the most recent (2006) sediment estimates. Coefficients and equations from the DEQ TMDL model were used for sediment estimates (FSEIS pp. 254, 257).

6-1: The Idaho Panhandle National Forests' Plan revision process is well underway (the Proposed Land Management Plan was completed in May of 2006) and is expected to be completed in June 2007.

On February 14, 2003, Congress passed House Joint Resolution 2, also known as the Consolidated Appropriations Resolution, 2003. Section 320 of the resolution states, "Prior to October 1, 2003, the Secretary of Agriculture shall not be considered to be in violation of subparagraph 6(f)(5)(A) of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1604(f)(5)(A)) solely because more than 15 years have passed without revision of the plan for a unit of the National Forest System. Nothing in this section exempts the Secretary from any other requirement of the Forest and Rangeland Resources Planning Act (16 U.S.C. 1600 et seq.) or any other law: Provided, that if the Secretary is not acting expeditiously and in good faith, within the funding available, to revise a plan for a unit of the National Forest System, this section shall be void with respect to such plan and court of proper jurisdiction may order completion of the plan on an accelerated basis."

6-2: Comments received from the original Hidden Cedar have been reviewed. Information pertaining to the comments was updated or is addressed in the following responses.

6-3: Habitat types were used for the project planning and site-specific considerations in this environmental assessment. *Forest Habitat Types of Northern Idaho: A Second Approximation* (Cooper et al, 1991) outlines the classification and characteristics of the habitat types. *Fire Ecology of the Forest Habitat Types of Northern Idaho* (Smith, and Fischer, 1997) and *Fire History on the Idaho Panhandle National Forest* (Zack and Morgan 1994) were also used to assess the current and historic fire regime of the project area."

The Forest Service did not sample fire scarred trees to determine the historic fire regime within the analysis area due to unreasonable cost and time commitments for such sampling. What we did do however is review the St. Joe Ranger Districts fire occurrence records to quantify the number of known fire starts on FS ownership in the analysis area between 1950 and 2006. We also reviewed historic aerial photographs showing the extent and severity of the last large-scale wildfire in the area. Our description of the historic fire regime of the analysis area is heavily dependent upon the description of Fire Group eight: moderate and moist western hemlock and western redcedar habitat types, the dominant fire group within the analysis area, found in: Smith Jane, and William C. Fischer. 1997. Fire Ecology of the Forest Habitat Types of Northern Idaho. USDA Forest Service INT-GTR-363.

Integrating habitat types in the description of fire's historic regime and role within the Hidden Cedar analysis area results in the inclusion of other ecological variables that impact stand development and successional pathways. We believe that this methodology utilizes the best available science to assess the historic role of fire within the project area and adequately addresses the inherently high degree of variability that is associated with the mixed severity fire regime of this area. In addition, the resources utilized in our assessment and description of the fire regime of the analysis area adequately address the concerns raised by Baker and Ehle (2001) and to which the Wild West Institute refers (FSEIS p. 78).

6-4: This issue was addressed at the project level in Chapter 3 of the DEIS, Fire/Fuels section on page 79 and was updated for the FSEIS p. 79.

This issue is also addressed in the Forest Vegetation section. The historic and current condition related to forest structure, including size class distribution (utilizing three scales of assessment: the Interior Columbia River Basin study, the St. Joe River Basin Geographic Analysis which is within that larger area, and the Hidden Cedar project area which is within the St. Joe River Basin) are disclosed in the draft SEIS on pages 140 through 142 and the final SEIS pages 137 through 139.

6-5: See above response 6-1.

6-6: The DSEIS (pp. 27 and 265) and FSEIS (pp. 21, 47, 54, 222, 238, 255, 262, 282, and 298) document BMP effectiveness – literature & monitoring. The following project file documents discuss BMP monitoring and effectiveness: SW-42, SSW-14, SSW-50, SSW-59 and SSW-61 (Forest Plan Monitoring and Evaluation Reports).

6-7: This report was conducted over seven years ago on Environmental Assessments. The original Hidden Cedar and this supplement have design features developed for each resource in order to mitigate any resource effects. The design of action alternatives is such that mitigation measures are not necessary. See below 6-8.

6-8: Before the original 2002 decision for the Hidden Cedar Project was withdrawn some watershed restoration work was accomplished; the placement of large woody debris on approximately 1.2 miles of the West Fork of the St. Maries River; fifteen acres of riparian planting; and approximately 12 miles of existing roads were decommissioned and stored (FSEIS, p.ii, ROD, p. 25). With this supplemental EIS I am committing to the decommissioning and storage of approximately 25.2 miles of roads in the Blair, Bechtel, Cedar, Hidden, Mazie, Keeler, Log, Wood, and Lower and West Fork St. Maries Drainages. Approximately 7.1 miles or 28% of

this road decommissioning and storage will be accomplished with timber sale contracts associated with this decision. My commitment to this decision is that I will accomplish the watershed restoration work as quickly and efficiently as possible given budgets, contracts, and timber market-related conditions (ROD, pp. 33-34).

Between 1991 and 2003 the IPNF decommissioned 1,317 miles of existing Forest Service roads using a variety of funding sources (project file: SA-18).

6-9: The Hidden Cedar SEIS does not propose vegetative treatments in order to "reduce fuel loading with the intent of reducing negative effects to watershed and the aquatic system". The vegetative treatments are proposed to "improve tree species composition and structure and to address increased stand densities, increase in pole- and medium-sized trees, and loss of species diversity". The SEIS does say there is a need to manage the transportation system to improve water quality and fish habitat. Road decommissioning, road storage, and riparian planting is proposed to improve water quality, aquatic habitat, and wildlife security (FSEIS p. 4).

6-10: See response to comment 3-1. The Forest Service begins the NEPA process after enough analysis is complete to identify a project, develop the details of the project, ensure the project is feasible, and determine if the timing is right to carry the project forward. The Roads Analysis Process is used before the NEPA process to help develop a proposed action.

6-11: On June 2, 2005, Forest Supervisor for the Idaho Panhandle National Forests signed a Decision Notice and Finding of No Significant Impact that amended the Forest Plan to modify or remove objectives, standards, and monitoring requirements pertaining to fry emergence success (IPNF 2005). There are no longer any fry emergence standards and therefore they will not be addressed further.

Cumulative effects analysis by drainage by alternative can be found on pages 103-131 of the FSEIS (DSEIS pp. 105-133).

6-12: Information about models was added to the Final SEIS (FSEIS pp. 64, 78, 237, 259, 279, 280, 281, 288, 291, 298, 305).

6-13: The term "lethal" was used inappropriately in the DSEIS and was replaced with the term "stand-replacement" in the FSEIS.

The statistics cited are only generally referred to and may be found in a variety of locations. The National Interagency Fire Center has a listing of broadscale wildland fire statistics at: http://www.nifc.gov/stats/index.html

For more specific discussion of such statistics refer to Westerling et. al. (2006) which may be viewed at the following website: http://www.sciencemag.org/cgi/rapidpdf/1128834v1.pdf

6-14: The table in question displays the changes in acres of each size class/size class grouping that would result from implementation of each alternative and the resultant percentages of each size class/ size class grouping in the analysis area. This provides a course/medium filter assessment; and provides context for the scope of the proposed action/alternatives and potential effects for subsequent analyzes of species/habitat. For the FSEIS we added to the explanation and to Table 3-84 itself, now Table 3-90 (FSEIS p. 314; DSEIS, p. 291) to help clarify the table and its intent.

6-15: All proposed units were field verified for soil conditions by trained personnel (FSEIS p. 218, SSW-22, SSW-48).

6-16: Temporary roads are included in the soil assessment, and information was added to the FSEIS to explain how roads were used in the analysis of soil conditions (FSEIS pp. 209, 222, 224, 230, 231, 236, 237, 258, 273, 290, Tables 3-72, 3-82, 3-85, 3-86; SSW-30).

6-17: Map M-2 in the DSEIS displays a history of regeneration harvest activities within the Hidden Cedar Project. Other past activities are displayed in a spreadsheet in the "Past, Present, and Future Activities" section of the project file. A mapped version of this spreadsheet has been created and added to the project file. More data was added to the FSEIS to better explain how past disturbance was accounted for and Tables 3-50 and 3-51 show the effects to the activity area from those disturbances (FSEIS p. 209-211, Table 3-43).

6-18: Soil standards are found in the IPNF Forest Plan. Region 1 has soil guidelines. The water yield analysis (WATSED) includes all previous activity (SW-25, SW-31, SW-33, SW-36, SW-35) including roads which are considered compacted. Project File documents SSW-9, SSW-28, SSW-29 indicate that water yield is not appreciably increasing nor causing substantial changes in stream channels. The spreadsheet model used to estimate potential detrimental impacts to soils is based on coefficients derived from measurements taken in the field. Compaction was one of the parameters measured to develop the coefficients used in the model (SSW-49) (FSEIS pp. 13, 26, 207-210, 212, 220, 222, 224, 229, 230-231, 234-237, 271, 278, 288) .

6-19: On-the-ground assessments within proposed activity areas do not show high levels of existing soil disturbance (FSEIS Tables 3-50 and 3-51). Water yield has not statistically increased in the St. Maries River (SSW-28) for the period of record (1966-2005) (FSEIS pp. 265).

6-20: The IPNF monitors soil disturbance each year. Some of that monitoring is reported in annual Forest Plan Monitoring and Evaluation Reports (SSW-61), and some of that monitoring information doesn't get put into a monitoring report. The soils monitoring on the Dutch Cat Timber Sale is an example of this (SSW-14). Monitoring of proposed activity areas, discloses effects within these areas for all past activity (SW-22, FSEIS Tables 3-50, 3-51).

6-21: FSEIS, p. 212 identifies that Class 2 soil condition is not detrimentally impacted (disturbed). Detrimental soil disturbance includes "the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement" (SSW-43 FSM 2500-99-1).

6-22: The requirement to allow slash to over-winter will allow most of the available nutrients to leach from the material back into the soil, because most nutrients are in the smaller twigs, needles and foliage (IFTNC, 1998, FSEIS p. 214). Soil productivity, through this practice, would be better than natural conditions left by wildfire that burned all this small material. Ecosystems have long been influenced by vegetative cover removal. See FSEIS Fire/Fuels section.

6-23: It is not the purpose of this project to develop regulations for soil protection; however, this project does comply with existing laws related to soil protection. The National Forest Management Act requires the protection of soils and it requires projects to comply with Forest

Plan standards. This project would comply with NFMA and Forest Plan standards for soil protection (FSEIS pp. 236-237). The Clean Water Act is indirectly a soils protection law because we must protect soils in order to maintain water quality which this project would do (FSEIS pp. 298-299)

6-24: BMP effectiveness is monitored on the Idaho Panhandle National Forests. For documentation of BMP monitoring and their effectiveness see project file documents SSW-2, SSW-14, SSW-50, SSW-59 and IPNF Forest Plan Monitoring and Evaluation Report for 2004 pp. 37-44, 60; 2003 pp. 76-77; 2002 pp. 33-37; 2001 pp. 34-39; 2001 pp. 28-40; 1999 pp. 35-41; 1998 pp. 68-75; 1997 pp. 82-89 (SSW-61). FSEIS pp. 54, 222, 238, 255, 262, 282, and 298 discusses BMP effectiveness.

6-25: Additional discussion regarding soil mitigation effectiveness has been added to the FSEIS pages 222 and 224.

6-26: We acknowledge that noxious weeds exist in the project area and that a variety of research on various species shows that there can be detrimental ecological effects due to weed presence (FSEIS p. 158-159). Site and species specific information about the effects on productivity due to the level of weed infestations within the Hidden Cedar project area are not known. The term productivity as used in the comment is very general and could encompass a range of biological and ecological variables. Across the St. Joe Ranger District, anecdotal evidence suggests that weeds do not detrimentally alter vegetative capabilities of areas experiencing timber harvest because herbicide spraying is not necessary to ensure the success of planted trees. In addition, much of the weed infestations that occur in the project area are found in areas without productivity concerns, mainly along roadsides. Weed treatments are ongoing within the project area in order to reduce the potential for expansion (FSEIS p. 159).

The FSEIS discusses design features intended to reduce the potential for weed expansion on page 224, 4.A-G.

Pages 159 through 164 in the FSEIS discuss the potential for weed expansion. Even under the No-Action Alternative of the Hidden Cedar Project, weed populations are expected to remain stable at best. Other federal activities have built-in features to control the spread of noxious weeds. However, given that the majority of land in the area is not in federal jurisdiction, lack of weed control and prevention measures by others may contribute to weed expansion. The overall effect of all activities is expected to result in the gradual increase in weed numbers within the area over time if control methods are not employed. Such increases may not be discernable within the time frame of this project, and will vary depending upon the extent of disturbances.

The analysis assumed that timber harvest will occur in the area on private and state lands. The extent of noxious weed control activities on private land in the area is unknown at this time.

Since approximately 40% of the project area is federally managed, lack of weed control and prevention measures by others may contribute to weed expansion. Overall, the effect of all activities is expected to result in the gradual increase in weed numbers within the area over time, especially if control methods are not employed (FSEIS p. 160).

6-27: Additional information regarding effects to soils outside activity areas was added to the FSEIS (pp. 207, 211, 218-219, 234-236). FSEIS pp. 13, 26, 207-210, 212, 220, 222, 224, 229,

230-231, 234-237, 271, 278, 288 describes increased productivity that would result from recontouring and decompacting roads.

Requirements regarding soil productivity are described on pages 207-208 FSEIS and are summarized as follows:

> Management direction in the IPNF Forest Plan is to manage the soil resource to maintain long-term productivity. The objective is that management activities on forest lands will not significantly impair the long-term productivity of the soil or produce unacceptable levels of sedimentation resulting from soil erosion.

IPNF Forest Plan Monitoring Item K-1 addresses Prescriptions and Effects on Land Productivity (SSW-61). Key elements of maintaining long-term soil productivity include retaining surface organic layers, surface volcanic ash and the bulk density of the surface volcanic ash within natural ranges of variability.

Monitoring items include the following (IPNF 2004 Monitoring Report, p. 55):

- Compaction
- Removal of topsoil (displacement)
- Organic matter and coarse woody debris left on site
- Effects of burning

The IPNF Forest Plan was prepared in accordance with regulations and principles of the Multiple-Use Sustained-Yield Act of 1960, the guidelines and standards prescribed by the National Forest Management Act of 1976, and the National Environmental Policy Act of 1969.

The Multiple Use-Sustained Yield Act of 1960 directs the Forest Service to achieve and maintain outputs of various renewable resources in perpetuity without permanent impairment of the land's productivity (MUSY 1960 sec. 4(b)). Section 6 of the National Forest Management Act of 1976 requires the Forest Service to “insure research on and based on continuous monitoring and assessment in the field evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land” (NFMA 1976 sec. 6(g)(3)(C)). The Code of Federal Regulations for Forest Planning requires the Forest Service to measure effects of prescriptions, including "significant changes in land productivity" (Code of Federal Regulations 36 CFR Part 200, Section 1, 1987). To comply with requirements, the Chief of the Forest Service charged each Forest Service Region to develop soil quality standards for detecting soil disturbances indicating a loss in long-term productive potential. These standards and guidelines are built into Forest Plans.

The Regional Soil Quality standards were revised in November 1999. As included in Forest Plan Standard (1) and as discussed above, detrimental soil disturbance includes the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement. The revised standard specifies that 85 percent of an activity area (i.e. cutting unit) must have soil that is in satisfactory condition. In areas where more than 15 percent detrimental soil conditions exists from prior activities, the cumulative detrimental effects from project implementation and restoration should not exceed the conditions prior to the planned activity and should move toward a net improvement in soil quality. These standards do not apply to intensively developed sites such as mines, developed recreation sites, administrative sites, and permanent roads or landings. These standards are based on the lowest magnitude of adverse change detectable, given the current monitoring technology (Powers 1990).

6-28: Soil improvement is part of the purpose and need for the Hidden Cedar Project. All action alternatives include returning productivity to soil through road decommissioning and road recontouring (FSEIS, pp. 5, 221, 222, 231-232).

6-29: Soils identified to be returned to productivity in the FSEIS p. 231-232 through road recontouring and decompaction will recover over time. Recovery over time is a substantial improvement over compacted road surfaces. See 6-30 below.

6-30: Design features were included in the alternatives to protect the soils resource (FSEIS pp. 25-27) and microorganisms specifically (FSEIS p. 211, 213, 237). The FSEIS includes a 30-page discussion about soils (FSEIS pp. 207-237). BMP effectiveness is covered in project file documents SSW-2, SSW-14, SSW-50, and SSW-59.

6-31: The analysis in the DSEIS and FSEIS does not conflict with the information offered in this comment (Hillis et al., 2002) or any other references. The use of dead and dying trees by black-backed woodpeckers – as noted in the references provided in this comment – is acknowledged in the analysis (FSEIS p. 310, 337, 348-350) and is referenced by the same (i.e. Hutto, 1995) and additional literature (e.g. Samson, 2005; Dixon and Saab, 2000; and Wisdom, 2000). The DSEIS (p. 325) and FSEIS (p. 310, 337, 348-350) go on to describe existing conditions specific to the analysis area and states that insect and disease levels are at or near naturally occurring endemic levels. The analysis displays potential effects based on the existing condition, the proposed actions/alternatives and the habitat relationships referred to in this comment and are described in the FSEIS. No salvage of fire-killed trees or concentrated areas of woodborer infested trees is proposed in any alternative.

6-32: The beneficial effects of fire (and other human-caused and naturally occurring disturbance processes) are acknowledged in the analysis (FSEIS pp. 305, 310). The use of burned/fire killed trees by black-backed woodpeckers is acknowledged and considered in the analysis (FSEIS pp. 348-350) as well as the use of unburned forests (see the response to comment 6-31). The proposed action and alternatives do not propose harvest/salvage of fire killed trees and salvage of fire killed trees is not an issue relevant to this project. We also point out that both DSEIS and FSEIS reference a recent assessment of black-backed woodpecker habitat (Samson, 2005) that concludes that short-term viability of the black-backed woodpecker in the Northern Region is not an issue and that habitat is very abundant across the Northern Region and the IPNFs (DSEIS p. 327; FSEIS p.350).

6-33; 6-34; and 6-35: The Hidden Cedar project is not the appropriate planning level for addressing Region One policies, a conservation strategy for the black-backed woodpecker, or addressing the agency's fire suppression policies. The Hidden Cedar project analyzes the potential effects on black-backed woodpeckers from the project (FSEIS pp. 348-350). The project analysis does a site specific analysis on black-backed woodpeckers, documents the potential effects, and determines that no alternative would adversely impact black-backed woodpecker populations and cumulative effects would not result in appreciable adverse habitat modification or a perceptible change in populations (FSEIS pp. 349-350). See also the response to comment 6-32. The mixed ownership pattern in the Hidden/Cedar Analysis Area precludes the use of wildfire management strategies other than full suppression. Timber harvest and prescribed fire are not substitutes for wildland fire effects, but in many instances can mimic parts

of this ecosystem process while maintaining sustainable and productive soils and watersheds (FSEIS pp. 81 - 84; Graham et al 2004 pp. 29-30).

6-36: The FSEIS acknowledges the relevancy of and addresses "deadwood" in terms of cavity habitat/snags (FSEIS pp. 310-311), soils/down wood (FSEIS pp. 208-209, 211, 213, 217, 219, 221, 223, 233), and habitat (e.g. black-backed woodpecker: FSEIS pp. 348-350, pileated woodpecker: FSEIS pp. 310, 324). Design features are included to provide for snags and down wood (i.e. deadwood), specifically 10. I. iii. (FSEIS p. 27) which stipulates the retention levels of coarse woody debris and 13.C. & D. (FSEIS pp. 29-30) which stipulate the retention levels for snags and describes how they will be met.

6-37: The project and analysis is not based solely on the IPNF snag standards and, in fact, relies heavily on recommendations from such documents as Bull et al. 1997 (FSEIS pp. 29, 30, 310, 311)). The design features for snags (see response to comment 6-36) are consistent with scientific literature (e.g. Bull et al. 1997) and exceed the IPNF Forest Plan snag standards. The Northern Region Snag protocol is an optional snag retention strategy which takes into account recent scientific literature (e.g. Bull et al. 1997) and exceeds the IPNF standards. Also, the FEIS has been updated to reflect new information regarding snags levels on the IPNF (FSEIS p. 311).

6-38: The project and analysis does not rely on Thomas et al. 1979. See the responses to comments 6-36 and 6-37. The analysis specifically addresses processes that produce/retain snag habitat. The FSEIS does not rely on snags per acre only, it includes discussions and analyzes that addresses disturbance (e.g. fire) and forest succession (i.e. processes) and their roles in providing habitat (e.g. FSEIS pp. 303-304, 308, 310-317, 329). There is no debate about fire's important role as an ecological process, but 53% of the project area is in private/corporate mixed ownership (FEIS p. 1). These societal constraints limit our ability to promote fire as an ecological force across a large landscape.

6-39: The analysis documents the reason that lynx are not relevant to the project and why no detailed analysis is necessary (FSEIS pp. 307, 308). Both direct the reader to the project file where additional information and support for this conclusion can also be found (WL-11 & 22). The project/analysis is consistent with the Canada Lynx Conservation Assessment and Strategy (LCAS) which provides the direction for management of lynx on federal lands. The LCAS defines lynx habitat in Idaho and the St. Joe Subbasin, and the delineation of LAUs on the St. Joe District was based on the direction in the LCAS. In fact the capability of the Hidden Cedar analysis to support lynx and its exclusion from a LAU was reassessed; and based on exiting vegetation and habitat types (i.e. potential vegetation) the exclusion of the area in a LAU was reaffirmed (WL-22).

6-40: The boreal owl and great gray owl are not Management Indicator species on the IPNF nor are they sensitive species, and an analysis for them is not required (FSEIS pp.306-311). There is no direction or biological reason to suggest that analysis specifically for them would be beneficial or is required for an informed decision.

The FSEIS contains an analysis of potential effects on flammulated owls (FSEIS pp. 312, 337, 351-353). This analysis documents the low amount of capable habitat, the lack of suitable habitat and the potential impacts – or lack thereof - on habitat and the species. See also the response to comment 6-41.

6-41: The analysis (DSEIS p. 327) states that flammulated owls are associated with "**relatively** open, old forests" (emphasis added). The analysis documents the effects on capable habitat and states that there would be no appreciable adverse habitat modification (FSEIS p. 352) and states that **if anything** the alternatives that treat capable habitat would improve the suitability of the capable habitat being treated. In the FSEIS additional verbiage has been added that more specifically describes their habitat (e.g. canopy cover of 35% - 65%) and is more explicit regarding the lack of potential effects (FSEIS p. 351). Also, in the DSEIS the summary of conclusion of effects for sensitive species – which determined no impact on flammulated owls from all alternatives - was inadvertently omitted; this table has been added to the FSEIS (Appendix F). The analysis in the FSEIS doesn't conflict with the information presented in and associated with this comment.

6-42: The analysis discloses that there are only 108 acres of capable habitat in the analysis area due to the lack of dry habitat types; and no suitable habitat due to young age or stocking (FSEIS p. 351). Only one cutting unit is in capable flammulated owl habitat, this unit is not suitable due to the young age of the stand. The FSEIS does not claim that treatment would result in flammulated owl occupancy, merely that the treatment may improve the suitability due to thinning of the canopy (FSEIS, p. 352). See also the response to comment 6-41.

6-43: The FSEIS references a recent assessment of flammulated owl habitat (Samson, 2005) that concluded that short-term viability of flammulated owl is not an issue and that habitat is abundant in the Northern Region and on the IPNFs (FSEIS p. 352). The existing condition and lack of effects make it clear that there is an inconsiderable potential for displacement of flammulated owls due to management activities. See also the responses to comments 6-40, 6-41, and 6-42.

6-44: The analysis acknowledges the potential for impact on goshawk habitat from the proposed action and alternatives (FSEIS p. 346-348). The assessment of potential effects is predicated on maintaining the integrity of nesting stands and PFAs by assessment area / home range (FSEIS pp. 343-348). Recent experience on the St. Joe district has shown that goshawks will use nest stands buffered from harvest activity (SWL-38).

The proposed action and all alternatives protect all existing old growth and exceed the desired amount of mature forest structure for goshawks (FSEIS pp. 346-348). A large amount of existing forest would be allowed to succeed as habitat for goshawks (FSEIS pp. 346-348). The proposed treatments emphasize the promotion of larger diameter trees (FSEIS p. 4) and create relatively few acres of open stands (FSEIS p. 314 Table 3-90). No attempt has been made to increase the amount of grass/shrub or seed/sapling vegetation structure specifically to meet the goshawk desired condition for those structures. The analysis incorporates information subsequent to 1992 (e.g. Kennedy, 2003 and Samson, 2005). The proposed action and alternatives are consistent with this comment and the references provided.

6-45: The DSEIS analysis used Warren (1990) as well as Reynolds et al. (1992) to determine potential effects (DSEIS p. 320). The FSEIS also incorporates more recent information (FSEIS p. 343; and response to comment 6-44). The analysis applies Reynolds et al. (1992) appropriately for the area, conditions and data. Reynolds et al. (1992) describes habitat in different terms than the DSEIS (e.g. vegetation structural stage [VSS] verses size class), however both habitat descriptions are based on forest structure and tree diameters. The analysis and data in the FSEIS correlate with the methodology in Reynolds. This comment offers no information

that substantiates the opinion that the FSEIS doesn't apply Reynolds correctly; and, in fact, in a previous comment (6-44) the same commenter recommends incorporating information since Reynolds (1992).

6-46: The DSEIS and FSEIS address effects on upland habitat (DSEIS p. 331; FSEIS p. 354) to the extent needed to determine potential effects and for an informed decision. As stated in the DSEIS - and supported by the literature referenced in the FSEIS, specifically Maxell (2000) and Loeffler (1998) - the primary concern regarding potential effects on boreal toads is the impacts on wetlands (e.g. breeding habitat) with a secondary concern being the potential for direct mortality of toads dispersing from breeding habitat. The analysis includes potential effects from road storage and the risk of mortality on uplands (DSEIS p. 331; FSEIS pp. 354-355).

6-47: The DSEIS acknowledges the association of pileated woodpeckers with large snags and old growth and mature forest structure but also acknowledges their use of young forests with abundant remnant old structure (DSEIS p. 301; FSEIS p. 325). The analysis also acknowledges the use of smaller tree sizes by pileated woodpeckers for nesting - e.g. minimum of 15" dbh (Samson, 2005). This is especially worth noting in an analysis area - with known pileated woodpecker presence - that consists of a mosaic of immature sawtimber size stands with inclusions of old growth and mature stands where very large (e.g. 30"+ dbh) trees are less common than in an area of extensive old growth. The presence of large trees for pileated woodpeckers was the subject of scrutiny in the analysis area during field review (SWL -19, 20, 21, 35, and 36), and it was determined that enough large trees are present in mature/sawtimber stands to confirm their designation as potential pileated woodpecker nesting habitat. The analysis documents the effects (or lack thereof) on old growth and mature stands – where large diameter nesting trees are most commonly found. The analysis emphasizes the maintenance of old growth and mature stands and the succession of immature sawtimber size stands to provide large tress now and in the future. The FSEIS (Design Feature 13 C and 13 D, FSEIS pp. 29-30) also specifies the number of snags and replacement trees to be retained and provides direction on size (i.e. leaving the largest).

We are proposing to close roads during and after implementation of the project. The proposed road management changes would reduce the existing open road access in or adjacent to allocated old growth stands by approximately 0.26 from the existing condition (FSEIS p. 169). See Appendix D - Access Management Plan During Implementation.

6-48: See the response to comment 6-39

6-49: The Idaho Panhandle National Forests Plan (USDA Forest Service, 1987) provides direction for managing the old growth resource. The Old Growth section of the final SEIS discloses the regulatory framework providing direction for old growth management on page 165. Disclosure of the old growth analysis and compliance with current direction for this project is provided in the Old Growth section of the final SEIS on pages 168-169. This project has no effect on the District-wide or Forest-wide levels of old growth because activities would not occur in any stands allocated for old growth or that meet minimum criteria for old growth. Compliance with direction for old growth management at the District and the IPNF level, is beyond the scope of this project proposal, but it is disclosed in the Old Growth section of the 2004 IPNF Forest Plan Monitoring Report (SOG-11).

6-50: The old growth analysis method for the final SEIS is discussed in the Old Growth section on pages 165-167. As disclosed in the document, stands allocated as old growth were re-inventoried and the new data was used to determine whether these stands still met old growth criteria. The current old growth status for the three old growth management units associated with this project is disclosed on pages 167-168 of the final SEIS.

A random twenty-five percent (25%) of the stands proposed for treatment were re-inventoried to assist in assessing whether stands proposed for treatment met the minimum criteria for old growth (SOG-3, SOG-3a, SOG-4, SOG-4a). As discussed, comparing the new data with the older existing data and reviewing the on-site reconnaissance by a silvicultural forester, none of the stands proposed for treatment met the minimum criteria for old growth.

6-51: As discussed on page 168 of the FSEIS, the IPNF Forest Plan old growth standard *10a* directed that the definitions of old growth developed by the Regional Old Growth Task Force be applied for all projects developed subsequent to the development of those definitions. The analysis is in compliance with that direction through utilization of the *Old-Growth Forest Types of the Northern Region* (Green and others, 2005) in determining whether stands meet minimum criteria for old growth.

As discussed in that document, there are three minimum criteria applied to stands for determining their old growth status based on habitat type group and forest cover type:

1) minimum age of large trees
2) number of TPA/DBH with a minimum age
3) minimum basal area for trees $\geq$ 5” dbh.

The associated characteristics are relatively broad ranges of other stand characteristics such as canopy layers, snags and down wood but are not included as minimum criteria. These characteristics can be expected to be present, or develop, to some extent in stands meeting the minimum criteria for old growth.

6-52: As disclosed in the analysis methods on pages 165-167 in the old growth section of the FSEIS, allocated old growth stands were re-examined and the new data was used to determine whether stands currently meet the minimum criteria for old growth for this project.

Compliance with the IPNF Forest Plan at the forest-wide level is beyond the scope of this project because this project would not affect stands meeting minimum criteria for old growth; however, pages 66-74 of the Old Growth section of the 2004 IPNF Forest Plan Monitoring Report (SOG-11) discloses the current status for old growth on the IPNF. This section also discloses a multi-scale approach to monitoring old growth using two independent tools.

6-53: Any disturbance within stands, either natural or human-caused, may impact one or more stand characteristics. That disturbance could either enhance or reduce various stand characteristics. Stands are dynamic rather than static, and historically have undergone continuous change pending the disturbance type, intensity and frequency that occur within a stand. It is true that in stands proposed for treatment some stand characteristics, such as number of canopy layers, may be reduced. These same treatments; however, may enhance other stand characteristics, such as increasing average tree and/or stand diameter. The changes in stand characteristics related to forest structure from the proposed stand treatments as well as other

proposed activities are disclosed, by alternative, in the Forest Vegetation section of the FSEIS on pages 142-144, 146-150.

As disclosed in the FSEIS (pp. 167-168), no treatment is proposed within allocated old growth stands or within stands that meet minimum criteria for old growth. Changes over time in stand characteristics for old growth stands are expected to be the result of natural occurrences over the life of this project.

6-54: The Forest Plan standard for old growth is 10%, and consistency with this standard has been documented. The Hidden Cedar project is not the appropriate planning level to assess the adequacy of Forest plan standards. The comment does not specify why the adequacy of the 10% standard is an issue. The analysis uses old growth allocation as one measure of effects on old growth associated species. However, the analysis for old growth-associated species is based on the availability of all suitable habitat (not just old growth) to assess potential impacts, and the effects on species are not predicated only on retaining 10% old growth (DSEIS pp. 301-302, 314-315, 320-322, 325, 327; FSEIS pp. 325-328, 337-352). The analysis, in many places, addresses the fact that a large amount of existing immature size class forest structure will succeed and provide opportunities for future old growth and suitable habitat for old growth-associated species.

The "adequacy of the 10% old-growth standard" is beyond the scope of this project. This project is in compliance with the current regulatory direction for management of old growth under the *Forest Plan for the Idaho Panhandle National Forests* (USDA Forest Service, 1987).

6-55: See the response to comment 6-54. The DSEIS does not maintain that providing 10% old growth "is plenty to maintain population viability of all species needing old-growth habitat". Distribution of stand size class, both current and historic, is discussed in the Forest Vegetation section of the draft SEIS on pages 140-142 (FSEIS pp. 140-143). Within that discussion is the disclosure of the historic and current size class distribution for the St. Joe River Basin, as well as the current size class distribution of the project area which contributes to the St. Joe River Basin.

6-56: See response to comment 6-54. Each species mentioned in this comment is analyzed separately (DSEIS pp. 301-332; FSEIS pp. 337-352). Habitat for these species is analyzed specific to and separate from the old growth – although old growth and the amount of old growth is acknowledged to contribute to the availability of suitable habitat.

The Old Growth section of the FSEIS (pp. 165-169) discusses the current status of allocated old growth by percent (%) of Old Growth Management Unit in this analysis, the number of old growth patches and their relative patch size in each OGMU, and the contribution of these patches to connectivity related to OGMUs adjoining this analysis area.

6-57: See also the response to comments 6-41 through 6-45, 6-47, 6-54, and 6-56. A recent assessment as referenced in the DSEIS (i.e. Samson, 2005) of habitat for four species commonly associated with old growth or components of old forest structure (e.g. snags) has documented that (paraphrasing) short-term viability for the four species is not an issue and that habitat is very abundant across the Northern Region and the IPNFs.

As disclosed in the Old Growth section of the final SEIS (pp.165-169), the old growth analysis for this project involved a validation of the current status of stands allocated as old growth as well as old growth status of stands proposed for vegetative treatment. The current regulatory

direction for management of old growth is under the *Forest Plan for the Idaho Panhandle National Forests* (USDA Forest Service, 1987). The process and resulting analysis used for this project discloses this project compliance with Forest Plan Direction. This process also serves as a monitoring activity within the analysis area.

Monitoring of old growth on a forest-wide and Regional scale is beyond the scope of this project. The current status of old growth on the IPNF is; however, disclosed through reference to the *2004 IPNF Forest Plan Monitoring Report* (project file SOG-11) disclosing compliance with the *Forest Plan for the Idaho Panhandle National Forests* (USDA Forest Service, 1987). This document also indicates the contribution of the IPNF to the Regional old growth conditions.

6-58: See also the response to comments 6-36, 6-37, 6-38, and 6-47. The FSEIS documents the analysis of potential effects on cavity habitat/snags (FSEIS pp. 310-311, 314, 327-328). The FSEIS acknowledges and documents the effects of roads on existing forest structure (FSEIS pp. 169, 315). The road storage and decommissioning and the resultant reduction in open and total road miles (FSEIS Table 3-92) in each alternative would decrease the existing effects from firewood cutting. Firewood cutting has been occurring for decades, is included in the past, present and reasonably foreseeable actions (FSEIS pp. 57, 59) and is part of what establishes the existing conditions (FSEIS pp. 303-304). The proposed road management changes would reduce the existing open road access in or adjacent to allocated old growth stands by approximately 0.26 from the existing condition (FSEIS p. 169). The analysis documents which current and foreseeable actions may have a measurable impact on wildlife (FSEIS pp. 303-305) and consciously does not include firewood cutting. There is no commercial firewood cutting occurring in the analysis area. Assessing the overall snag densities across the Forest, in the surrounding landscape (e.g. SWL-37), and within the wildlife analysis area (FSEIS pp. 310-311) provides the existing condition (in the presence of past and present firewood cutting) and the level of analysis necessary to determine effects and make an informed decision. An analysis specific to firewood cutting would not add any additional information that would help assess potential effects or help in the decision.

Harvest is not proposed, either commercial timber harvest or commercial firewood extraction, in allocated old growth or stands known to meet minimum old growth criteria, as disclosed on pages 167-168 of the final SEIS. No temporary or system road construction is associated with this project, as disclosed on pages 167 and 169 of the final SEIS. Therefore, no fragmentation of old growth beyond the existing condition, as analyzed and disclosed in the wildlife report, would occur as a result of commercial harvest or road construction.

Personal-use firewood gathering has occurred and is expected to continue where open access exists. This traditional removal of both standing and down dead trees generally occurs within 100 feet of open roads; however, it may occur as far as 300 feet from a road or not at all. There are a number of factors that affect the potential for loss of snags associated with open roads including: topography, road conditions, tree species, demand for firewood, and distance of the area from demand. This legal removal of standing and down dead material was considered in the wildlife analysis as discussed earlier.

Based on the existing analysis in the FSEIS and the preceding discussion, the potential effects associated with open roads on old growth (i.e. snag habitat, down woody debris, or wildlife habitat) does not pose a significant issue, however, additional analysis was done for the Final EIS. This shows the proposed road management changes would reduce the existing open road

access in or adjacent to allocated old growth stands by approximately 0.26 from the existing condition (FSEIS p. 169).

6-59: Historically, forests in the northwest were fragmented, with accompanying changes to edge effect, patch size and associated interior forest habitat, through natural disturbances. Those disturbances were primarily the result of fires, insects and disease, as well as localized weather events. As disclosed on page 142 of the draft SEIS, these natural disturbances created an array of patch sizes (with associated edge effect and interior forest habitat) from a few acres to patches greater than one thousand (1,000) acres in size. Also disclosed is that since the 1930s creation of openings, or forest fragmentation, has mostly been the result of timber harvest. Insect and disease losses have also been a minor contributing factor.

The *Forest Plan for the Idaho Panhandle National Forests* (USDA Forest Service, 1987) provides the standards for management of old growth. Standards *10b, c, d, f* and *g* contribute to retention of existing old growth throughout the forest, encourage management for larger patch size, and assist in reducing further fragmentation resulting from road construction and timber harvest activities within Old Growth Management Units. As disclosed on pages 167-169 of the final SEIS, this project is in compliance with those Forest Plan Standards.

6-60: See also the response to comments 6-41 through 6-45, 6-47, 6-54, and 6-56. Each wildlife species is analyzed based on habitat relationships specific to the species.

The old growth analysis process for this project is site specific to the project area as discussed in the Old Growth section of the FSEIS (p. 167) and did not rely on FIA data to determine the current old growth status for this project. In determining compliance with Forest Plan old growth standards *10b* and *10e* which are forest-wide elements, the *2004 IPNF Forest Plan Monitoring Report* (project file SOG-11) was used. As disclosed in that report, FIA data was incorporated as part of the forest-wide old growth monitoring program for 2004. On page 67 of that report, it discloses that the FIA data was tested against the minimum criteria from *Green and others (2005).* The forest-wide assessment of old growth habitat quality is beyond the scope of the purpose and need of this project for reasons stated above.

6-61: Also see the response to comments 6-41 through 6-45, 6-47, 6-54, and 6-56. Each wildlife species is analyzed based on habitat relationships specific to the species.

The standards for old-growth habitat management are listed on page II-29 of the *Forest Plan for the Idaho Panhandle National Forests* (USDA Forest Service, 1987). Standard *10f* discloses the stand, or patch, size objectives for the IPNF. The patch-size assessment specific for this project is disclosed on pages 168-169 of the final SEIS.

6-62: See response to comment 6-60. The patch-size assessment specific for this project is disclosed on pages 168-169 of the FSEIS. All old growth stands were tested against *Green and others (2005)* to establish whether they meet the minimum criteria for old growth, as discussed on pages 165-167 of the FSEIS. FSEIS Maps M-21 through M-24 display the spatial distribution and relative size of old growth patches. Additionally, a map identifying old growth patches and their respective areas is included in the project file (SOG-12) as disclosed on page 169 of the FSEIS.

6-63: The intent of vegetation treatments proposed in this project are not specified to produce '…"old-growth" habitat through active management ….'. The proposed treatments were

developed in response to the purpose and need for action as discussed in pages 3-6, and in the Forest Vegetation section on page 132-133 of the final SEIS.

6-64 and 6-65: The Hidden Cedar SEIS does not propose timber harvest in order to reduce "unnatural fuel buildup". The vegetative treatments are proposed to "improve tree species composition and structure and to address increased stand densities, increase in pole- and medium-sized trees, and loss of species diversity" (FSEIS p. 3).

The Forest Vegetation section of the final SEIS, pages 134-140 present the existing and historical conditions relating to forest composition and structure. Suppression of wildfires is only one of several factors disclosed related to the current condition. The proposed treatments are in response to the purpose and need to encourage more resilient and sustainable forest conditions

6-66: This project would maintain stands allocated for old growth management including all stands that meet the minimum criteria for old growth. Activity is not proposed in these stands (FSEIS pp. 13, 55, 166-168, and 350). The Forest Plan recognizes the value of old-growth forests, and directs management to maintain and/or enhance old-growth characteristics through the wildlife objectives (pages II-2, II-3) and the old growth standards (page II-29).

6-67: You are correct: the draft SEIS does not estimate the amount or number of snags that may be lost to compliance OSHA regulations or losses resulting from harvest methods/operations. Analysis of snag and down wood habitat is discussed in the Cavity Habitat portion of the Wildlife section of the draft SEIS, pages 287-288 and the final SEIS, pages 31-311. The DSEIS documents the analysis of cavity habitat (e.g. snags) and the conclusion that snags are not a concern for the reasons specified in the DSEIS (p. 288). The DSEIS acknowledges the loss of some snags due to safety concerns (DSEIS p. 30, FSEIS, pp. 29-30). It would be extremely difficult to predict how much snag loss is anticipated, especially when the natural density and distribution varies across the landscape, and perceived safety risk will vary among operators. However, design features are provided to minimize these losses. The strategic placement of uncut clumps or patches of trees and snags will be used to protect snags from logging operations (included in Design Feature 13.D., DSEIS p. 30; FSEIS, pp. 29-30). Riparian Habitat Conservation Areas (RHCAs), no-cut protection zones along perennial and intermittent streams, would be additional compensation for snags that may be cut for safety reasons (DSEIS, p. 30). In addition, prescribed burning would recruit new snags by fire-killing some residual green trees to help compensate for this loss (DSEIS, p. 326, FSEIS, p. 349). Long-term management objectives are intended to manage snag habitat to exceed Forest Plan guidelines.

Also, see the response to comments 6-36, 6-37, and 6-38.

6-68: The original analysis for the Hidden Cedar Project included a discussion of effects on old growth from harvest on private lands. In the DSEIS that discussion was omitted. In response to this comment, that discussion has been added back to the analysis (FSEIS p.316). This discussion includes the amount of edge impacted and an assessment of the consequences.

The effects of roads on wildlife and wildlife habitat are considered and discussed in the analysis (DSEIS p. 292; FSEIS p. 315, Table 3-85). Past logging has been considered and is a part of the existing condition (DSEIS p. 282; FSEIS pp. 305-306) and its effects are at the very least implied when displaying the amount of seed/sapling structure (DSEIS p. 290; FSEIS pp. 313-314) and/or the amount of suitable habitat for any given species (e.g. DSEIS p. 322; FSEIS p. 345-346). The

analyses for species include consideration of patch size (i.e. fragmentation) - when appropriate - in the analysis methodology. For example, pileated woodpecker "home ranges should have …100 acres of contiguous mature and/or old growth forest habitat" (DSEIS p.302, FSEIS, p. 326) and goshawk nest stand requirements include size requirements (Reynolds et al. 1992).

No stand treatments are proposed in, or adjacent to, allocated old growth in the alternatives developed for this project. No new roads are proposed adjacent to, or through, allocated old growth. No increase in edge effect or patch size would occur in the allocated old growth as the result of this project.

No harvest or burning activities are proposed in, or adjacent to, allocated old growth in this proposal. No reduction in patch size, or alteration of interior habit, in allocated old growth would occur as the result of this project.

6-69: Part of the purpose for the project is to increase western larch forest types where they are reduced from historic conditions (FSEIS p. 3). The proposed treatments are not designed to "suppress fire" but rather promote stand and landscape development that encourages more resilient and sustainable forest conditions. This is in response to item 1 of the purpose and need for this project as disclosed on pages 3-4 of the final SEIS. Further disclosure is found in the Forest Vegetation section of the final SEIS under Affected Environment, pages 134-140. Enhancement of long-lived, shade- intolerant seral species, including western larch, is addressed as part of that disclosure.

6-70: The Hidden Cedar project is not the appropriate planning level for a debate about the Northern Region Overview. While one aspect of the purpose and need for the Hidden Cedar project is to manage for vegetative conditions that, in the long-term, encourage more resilient and sustainable forest conditions. This includes a need for treatments to improve tree species composition and structure and to address increased stand densities, increase in pole- and medium-sized trees, and loss of species diversity (FSEIS p. 3), it does not have a purpose and need or objective of 'logging to prevent the effects of "catastrophic" fire'. The FSEIS addresses and analyzes potential effects on fire behavior (FSEIS p. 76-84), cavity habitat (and on cavity nesting species including the pileated woodpecker (FSEIS pp. 309-310, 325-328 & 348-350).

On pages 135-153 of the FSEIS more information can be found regarding the kind of forest the Forest Service is managing towards.

Also see the response to comments 6-3, 6-4, and 6-14.

6-71: The Hidden Cedar Project analyzes the cumulative effects on old growth habitat (FSEIS p. 315) and old growth associated wildlife (FSEIS pp. 326-327, 340-341, 350, and 352). Region 1 has assessed habitat for four species (Samson, 2005) with a resultant conclusion that short-term viability for those species (i.e. goshawk, pileated woodpecker, flammulated owl, and black-backed woodpecker) is not a concern in the region nor on the IPNFs – e.g. based on the abundance of habitat and suppression of natural processes such as fire. See also the response to comments 6-3, 6-4, and 6-14.

6-72: See response to Comment 6-70.

The anticipated cumulative effect of the proposed treatments related to insect and disease is disclosed on page 154 of the DSEIS (FSEIS p.152). As discussed, the anticipated changes from the existing condition for insect and disease potential are both positive and negative related to

this project if implemented. The silvicultural forester reviewed and considered approximately 36 documents specifically related to forest composition, structure, and other aspects pertaining directly and indirectly to forest insects and disease for this project. These references are included in the bibliography of the FSEIS.

The Design Features Common to the Action Alternatives (DSEIS pp. 21-33; FSEIS pp. 21-32) would directly or indirectly contribute to insect and disease management for this project. The silvicultural prescriptions (SVEG-12) and associated implementation guides are developed to promote forest conditions that reduce the risk of loss to insect and disease while promoting desired conditions in the vegetation component. Additionally, contract provisions and other guidelines would minimize the risk of resource damage during implementation of management activities. These not only help protect the overall forest resource, but also assist in managing the risk of insect and disease.

6-73: There are no inventoried roadless areas within or adjacent to the Hidden Cedar project area (DSEIS p. 1; FSEIS, pp.1, 14; SRDLS-1). It is beyond the scope of this decision to designate roadless area.

6-74: Recent NEPA documents for projects within the Hidden Cedar Area include Dutch Cat EA and St. Maries Grazing Allotments EA. The Dutch Cat Decision Notice does not specifically require monitoring, however, monitoring was conducted. Regeneration success was monitored (SVEG-2). Organic matter and soil disturbance, down woody material, and BMP compliance and effectiveness were monitored (SSW-14). Design Features were implemented (SA-8). The Decision Notice for the St. Maries Grazing Allotments does require monitoring in Catspur Creek which is within the Hidden Cedar Project Area, and some of that has been completed (SB-12).

6-75: We agree: the subject of cumulative effects is complicated. It is too complicated to be discussed as a single subject. Each resource specialist considered relevant past activities and how those activities combined with each other and environmental conditions to result in the existing conditions in the cumulative effects areas (FSEIS, pp. 51-61). The Council on Environmental Quality (CEQ), whose responsibility it is to coordinate federal environmental efforts and work closely with agencies and other White House offices in the development of environmental policies and initiatives, provided guidance to federal agencies on the consideration of past actions in cumulative effects analysis (CEQ, 2005; SA-9). CEQ stated that "generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions" (CEQ memo p. 2). Cumulative impact is defined in CEQ's NEPA regulations as the "impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" (40 CFR 1508.7). CEQ has interpreted this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions (SA-9, CEQ memo p. 2). We are following CEQ's definition for cumulative effects.

7-1: Thank you for your comment.

8-1: Your preference is noted. The SEIS shows that all alternatives have estimated sediment reductions compared to the value identified in the DEQ St. Maries Subbasin Assessment and TMDL (FEIS p. 275, Table 3-73). The sediment analysis (SSW-1) results are displayed and discussed in the FSEIS pp. 272-278, 283-286, 289-290, 295, 297, 299). Also see responses 2-4 through 2-8

8-2: Your preference is noted. The alternatives would improve fishery conditions in some streams in Alternatives C, D, E, and F (Table 3-23, FSEIS). In all the other streams in every alternative the fishery condition would be maintained. Table 3-24 shows 6.2 miles of stream functioning appropriately and 35.9 miles functioning at risk for Alternative F. This is a change from the DSEIS which showed 3.2 miles of stream functioning appropriately and 38.9 miles functioning at risk for Alternative F. The change is a result of proposing decommissioning and storage for Wood Creek Road 341 in Alternative F in the Final SEIS.

8-3: The sediment budget accounted for the construction of permanent roads. Even though these newly constructed roads are placed into storage with stream crossings removed and the roadway recontoured on either side of the drainage, the sediment budget did not remove these new roads as sediment sources because of timing uncertainties in both construction and storage. The addition of sediment from new road construction was included in the long-term value in Tables 3-85 and 3-86 (FSEIS), and temporary roads were included in the short-term sediment values Tables 3-71, 3-72, 3-74 (FSEIS).

All of the action alternatives reduce road densities (Table 3-92, FSEIS) through various combinations of long-term storage (LTS) or decommissioning.

Also see response to comments 2-1, 2-4.

8-4: See response comments 3-12 and 8-3 above.

8-5: Alternative F was the selected alternative in the original 2002 ROD, so it was identified as the preferred alternative in the Draft SEIS (FSEIS p.43) and is the selected alternative with slight modifications (ROD, p. 1). Water yield is discussed at length in the FSEIS pages 270 through 299. In summary the average estimated water yield increase over existing, from the activities proposed in the St Maries Basin within the project area are Alternative B: 3.1%, Alternative C: 3.2%, Alternative D: 1.6%, Alternative F: 3.0% as identified in Table 3-78. Although the models used estimate increases in peak flow, measured discharge does not corroborate this nor do stream channel conditions over time show effects of increased peak flows.

8-6: See response to comments 2-1 and 2-4. Twelve miles of road decommissioning and storage approved in the 2002 Hidden Cedar ROD 2002 was completed. This is approximately 33% of the roads proposed for decommissioning and storage in the Final SEIS.

8-7: See responses 2-3, 2-4, 2-6, 2-7, and 2-8 above.

8-8: See response to comments 2-1, 2-4, and 2-7.

8-9: See response to comment 2-7.

APPENDIX F:

BIOLOGICAL ASSESSMENTS & SENSITIVE SPECIES BIOLOGICAL EVALUATION SUMMARIES OF CONCLUSION OF EFFECTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Upper Columbia Fish and Wildlife Office
11103 East Montgomery Drive
Spokane, Washington 99206

February 26, 2007

Ranotta McNair, Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, Idaho 83815-8363

Subject: Hidden Cedar Project: FWS Ref. 1-9-07-TA-0070 (X-Ref.: 1-9-02-I-324; 1-9-07-TA-0022)

Dear Ms. McNair:

This responds to your February 26, 2007, letter describing changes to the Hidden Cedar Project for which informal consultation was completed for bull trout (*Salvelinus confluentus*) and gray wolves (*Canis lupus*) on May 13, 2002 (FWS Ref. 1-9-02-I-324). Your letter was received in our office, via facsimile, on February 26, 2007.

On November 28, 2006, we responded to your letter of October 17, 2006, letter describing minor changes to the Hidden Cedar Project. In our letter, we agreed that the minor project changes described in your letter would not change the type or level of potential effects previously consulted in the aforementioned completed consultation; provided that implementation of the project occurred as described in the original consultation, except as modified by your October 17, 2006, letter.

Your most recent letter of February 26, 2007, advised of additional project modifications based upon the Final Supplemental Environmental Impact Statement for the Hidden Cedar Project. Your letter states several harvest units will be dropped (Units 24, 35, and 40), and helicopter yarding instead of ground-based yarding will occur in Unit 36 to protect sensitive soils, sensitive plants, and riparian areas, reducing the overall area treated by 36 acres.

We have reviewed the information provided and agree that the proposed changes to the project would not change the level or type of potential effects to bull trout or gray wolves analyzed in the previously completed consultation. The effect determination of the consultation would remain unchanged as well. Thus, we agree reinitiation of consultation on the proposed project changes is not necessary. Our agreement is based on the expectation that implementation of the project will occur as described in the original consultation, except as modified by your October 17, 2006 and February 26, 2007, letters

If you have further questions about this letter, or your responsibilities under the Act, please contact Bryon Holt at the above address (telephone: 509-893-8014; fax: 509-891-6748).

Sincerely,

Suzanne Audet

for Supervisor

cc: IDFG, CdA, ID.
FS, IPNF, CdA SO (Attn: Shanda Dekome)
FS, IPNF, St. Joe RD (Attn.: Chuck Stock)

United States Department of Agriculture | Forest Service | Idaho Panhandle National Forests | 3815 Schreiber Way Coeur d'Alene, ID 83815

File Code: 2670
Date: February 26, 2007

Susan Martin, Field Supervisor
US Fish and Wildlife Service
Upper Columbia River Basin Field Office
11103 E Montgomery Dr., Suite 2
Spokane, WA 99206

Dear Ms. Martin:

I'm sending you this letter to inform you of changes to the Hidden Cedar Project (FWS Ref. 1-9-02-I-324) based on information contained in the Hidden Cedar Project Final Supplemental Environmental Impact Statement. On October 17, 2006 I sent you a letter explaining that the Hidden Cedar Project EIS would be supplemented and re-released. That letter stated that the proposed activities (Alternative F) are virtually identical to those covered in the 2002 FEIS and Record of Decision and would not change the potential impacts or the determinations of effect. Your response letter dated November 28, 2006, stated that you agreed the proposed changes to the project would not change the level or type of potential effects to bull trout or gray wolves, and the effect determination of the consultation would remain unchanged. You agreed that reinitiation of consultation on the proposed project changes was not necessary based on the expectation that implementation of the project will occur as described in the original consultation except as modified by my October 17, 2006 letter.

I plan to select Alternative F with slight modifications. Units 24, 35, and 40 will not be implemented. This reduces the area treated by 36 acres. Updated analysis showed that Unit 36 and Unit 40 would have unacceptable soil impacts, so I decided to eliminate Unit 40 (seven acres) and change the yarding system in Unit 36. Helicopters will be used for yarding instead of ground-based and cable systems, so the temporary road will not be needed and will not be constructed. I dropped Unit 24 (12 acres) to protect populations of sensitive plants. I eliminated Unit 35 (17 acres) because field reconnaissance showed, after implementing necessary buffers for riparian areas and sensitive plants, the remaining areas do not require treatment and the species composition and structural conditions meet silvicultural objectives without treatment.

Forest Service biologists reviewed these modifications and determined they would not affect listed species or critical habitat, and they will not change the effects determinations as documented in the biological assessment. If you have any questions regarding these modifications please contact Chuck Mark, District Ranger.

Sincerely,

RANOTTA K. MCNAIR
Forest Supervisor

faxed/mailed to FWS 2/26/07 SF

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Upper Columbia Fish and Wildlife Office
11103 East Montgomery Drive
Spokane, Washington 99206

TAKE PRIDE IN AMERICA

November 28, 2006

Ranotta McNair, Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, Idaho 83815-8363

Subject: Hidden Cedar Project: FWS Ref. 1-9-07-TA-0022 (X-Ref. 1-9-02-I-324)

Dear Ms. McNair:

This responds to your October 17, 2006, letter describing minor changes to the Hidden Cedar Project for which informal consultation was completed for bull trout (*Salvelinus confluentus*) and gray wolves (*Canis lupus*) on May 13, 2002 (FWS Ref. 1-9-02-I-324). Your letter was received in our office on October 23, 2006, and requested our acknowledgement that re-initiating consultation for bull trout and gray wolves to address the proposed minor project changes is not necessary.

We have reviewed the information provided and agree that the proposed changes to the project would not change the level or type of potential effects to bull trout or gray wolves analyzed in the previously completed consultation. The effect determination of the consultation would remain unchanged as well. Thus, we agree reinitiation of consultation on the proposed project changes is not necessary. Our agreement is based on the expectation that implementation of the project will occur as described in the original consultation, except as modified by your October 17, 2006, letter.

If you have further questions about this letter, or your responsibilities under the Act, please contact Bryon Holt at the above address (telephone: 509-893-8014; fax: 509-891-6748).

Sincerely,

Suzanne Audet

for Supervisor

cc: IDFG, CdA, ID.
FS, IPNF, CdA SO (Attn: Shanda Dekome)
FS, IPNF, St. Joe RD (Attn.: Chuck Stock)

RECEIVED
NOV 29 2006
BY:

United States Department of Agriculture | Forest Service | Idaho Panhandle National Forests | 3815 Schreiber Way Coeur d'Alene, ID 83815

File Code: 2670
Date: October 17, 2006

Susan Martin
Field Supervisor
US Fish and Wildlife Service
Upper Columbia River Basin Field Office
11103 E. Montgomery Drive, Suite 2
Spokane, WA 99206

Dear Ms Martin:

The St. Joe Ranger District prepared a biological assessment (BA) in 2002 that considered potential effects to federally listed terrestrial and aquatic species from the Hidden Cedar Project. Your office provided us with written concurrence with the determinations of effects in the BA, and informal consultation for the Hidden Cedar Project was concluded (FWS Ref. 1-9-02-I-324) pursuant to section 7 (a) (2) of the Endangered Species Act of 1973, as amended, on May 13 of 2002.

The St. Joe Ranger District intends to re-release the Hidden Cedar Project with a Final Supplemental Environmental Impact Statement (FSEIS) and Record of Decision (ROD). The project is identical in its prescription of vegetative treatments to the Hidden Cedar Project that was previously consulted on. There are inconsequential changes in the project description and some existing conditions. These changes do not cause any effect to listed species or critical habitat that was not considered in consultation and do not change the effects determinations as documented in the BA. The changes are documented below:

Changes in information and requirements:

- The GIS vegetation layer was updated changing stand acres by less than 3% over the total project area of approximately 33,000 acres. No significant changes in vegetative conditions on the ground have occurred on NFS lands.
- District road layer maps were updated changing new road construction for access request from 2.2 miles to 2.0 miles on National Forest System lands and from 5.6 to 5.7 miles on other lands. Several miles of road originally proposed on other lands were constructed since the 2002 ROD.
- Field surveys for rare plants were completed.
- The Idaho Department of Environmental Quality approved Total Maximum Daily Loads (TMDLs) for the West Fork and Lower St. Maries River for temperature and sediment. TMDLs were not approved at the time of the original decision.
- Additional soil surveys were completed to more accurately estimate existing areas of disturbance.

Mailed 10/19/06

Changes in proposal:

- A portion of Wood Creek Road 341 would be decommissioned (0.8 miles) and a portion would be put into long-term storage (0.2 miles) under Alternative F of the Final SEIS. This was not included in the original 2002 Record of Decision (ROD).
- The 2002 ROD approved 615 acres of pre-commercial thinning, and 291 acres were accomplished. The Final SEIS proposes to pre-commercial thin the remaining 324 acres.
- 30 acres of riparian planting were approved in the 2002 ROD. Fifteen acres were accomplished, and the remaining 15 acres are proposed in the Final SEIS.
- Placement of large woody debris on approximately 1.2 miles of the West Fork of the St. Maries River was completed.
- The proposed construction and stocking of a fish pond was not completed and is no longer proposed.
- The original 2002 ROD approved approximately 37.3 miles of road decommissioning and storage (including new road construction). Approximately 12.0 miles of decommissioning and storage of existing road was completed before the original decision was withdrawn. Alternative F of the FSEIS proposes to decommission or store approximately 26 miles (including 6 miles of new and temporary road construction).
- Road construction to provide access to part of the Emerald Creek road system when Hidden Creek Road 498 is decommissioned is proposed in a slightly different location than it was in the original 2002 ROD. The new location will avoid road construction in old growth. Approximately 0.6 miles would be constructed with the Final Supplemented EIS, and 0.7 miles was approved in the original ROD. As in the original decision, the road would be gated when construction is complete.

The proposed activities are virtually identical and would not change the potential impacts or the determinations of effect ("may affect, not likely to adversely affect" for the bull trout and "not likely to jeopardize the continued existence" for the gray wolf). No other listed terrestrial or aquatic species would be affected. Because there is no substantive change in the proposed actions re-initiation of informal consultation is not warranted.

We are requesting written acknowledgement that you agree with our assessment that re-initiating consultation is not necessary. If you have questions, please call Chuck Stock (Wildlife Biologist) at 208 245-6061 or Lisa Hawdon (Fisheries Biologist) at 208 245-6045.

Sincerely,

Ranotta K. McNair

RANOTTA K. MCNAIR
Forest Supervisor

PI-28

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Upper Columbia Fish and Wildlife Office
11103 E. Montgomery Drive
Spokane, WA 99206

May 13, 2002

Ranotta McNair, Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, Idaho 83815-8363

Subject: Hidden Cedar Project: FWS Ref. 1-9-02-I-324

Dear Ms. McNair:

This responds to your April 11, 2002, letter referencing a Biological Assessment (BA) for the Hidden Cedar Project. The project is located approximately 26 miles from Saint (St.) Maries, Idaho in the Upper St. Maries and West Fork St. Maries River drainages in Shoshone, Clearwater, Benewah, and Latah Counties, in portions of Townships 41, 42, and 43 North, Ranges 1 and 2 East. Your letter was received in our office on April 16, 2002, and requested our concurrence with your determination of effect for the gray wolf (*Canis lupus*) and bull trout (*Salvelinus confluentus*).

We have reviewed the information provided and concur with your finding that the proposed project "may affect, but is not likely to adversely affect" bull trout, and "is not likely to jeopardize the continued existence " of gray wolves. Concurrence by the U.S. Fish and Wildlife Service is contingent upon implementation of the project as described in the BA.

This concludes informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). This project should be re-analyzed if new information reveals that effects of the action may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or if a new species is listed or critical habitat is designated that may be affected by this project.

If you have further questions about this letter, or your responsibilities under the Act, please contact Bryon Holt at the above address (telephone: 509-893-8014; fax: 509-891-6748).

Sincerely,

Suzanne Audet

for Supervisor

cc: IDFG, CdA, ID.
FS, IPNF, CdA SO (Attn: Shanda Dekome, Bob Ralphs)
FS, St. Joe RD (Attn: Chuck Stock, Lisa Hawdon)

PI 27

BIOLOGICAL ASSESSMENT

FOR

HIDDEN CEDAR PROJECT
Alternative F

Lisa Hawdon, Fisheries Biologist — Date: 4-15-02

Charles Stock, Wildlife Biologist — Date: 4-15-02

Suzanne DiGiacomo, Botanist — Date: 4/15/02

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I. Introduction

The purpose of this assessment is to evaluate and describe potential effects of Alternative F of the Hidden Cedar Project on threatened and endangered species, and to determine whether any such species or habitat is likely to be affected by the proposed action. This assessment was prepared in accordance with USDA Forest Service policy (FSM 2672.4).

The National Forest Management Act directs the Forest Service to review programs and activities to ensure that species do not become threatened or endangered as a result of Forest Service actions. Forest Service direction (FSM 2672.4) requires that programs or activities be reviewed for potential effects on listed species. The Idaho Panhandle National Forest is directed by the forest plan to contribute to the conservation and recovery of listed species (USDA, 1987).

II. Proposed Action

Activity

The St. Joe Ranger District of the Idaho Panhandle National Forests is proposing to implement Alternative F of the Hidden Cedar Project EIS as detailed below. This alternative is the environmentally preferred alternative since it best meets the purpose and need to improve forest health and watershed conditions and addresses the existing transportation system relative to protection of fish and wildlife resources, and development and utilization of lands and resources.

- **Timber management practices and associated road construction/reconstruction necessary to provide access to harvest activities.**

This proposal includes harvesting timber on approximately 1300 acres utilizing primarily a stand improvement harvest treatment. *Intermediate harvest* will be used on approximately *1059 acres* (852 acres of commercial thin, 207 acres of shelterwood preparatory cut). *Regeneration harvest* will be used on approximately *241 acres* (40 acres of shelterwood seed cut, 16 acres of shelterwood removal cut, 22 acres of irregular shelterwood cut, 58 acres of group shelterwood cut and 105 acres of clearcut with reserves). See ROD Appendix A for a summary of the treatment prescriptions by unit and Alternative F – Map 1. Approximately 12 mmbf or 23 ccf of timber would be harvested. The purpose of this harvest is to manage for vegetative conditions that trend toward more resilient and sustainable forest conditions. Approximately 35% of the units will be helicopter yarded; and the remaining 65% a combination of skyline/ground based yarding. Where regeneration harvest is proposed, planting will supplement natural regeneration. Planting of 60% or more of the resilient species (white pine and western larch) would occur on the 241 acres of regeneration harvest.

Approximately 7.3 miles of road construction will be required to access proposed harvest units. Of the 7.3 miles: 1.3 are cost-share, 4.0 are NFSR, and 2.1 are temporary road construction. NFSR road construction will be put into long-term storage and cost share will be gated upon completion of activities. Temporary road construction will be re-

contoured upon completion of activities. (see Alternative F – Road Management Map, M-2)

Some of the existing roads used will require reconstruction (6.4 miles) to allow for safe timber haul, improve drainage, improve water quality and reduce sediment. Reconstruction may include, but is not limited to installation of drain dips, and culverts, grading, clearing, dust abatement, and surfacing (see Alternative F – Road Management Map, M-2).

Slash and fuels reduction treatments include underburning, excavator piling, and yarding tops.

Approximately 615 acres of precommerical thinning will improve the growing conditions of the selected trees by reducing competition for light and nutrients.

This project would produce approximately four timber sales, which would be sold in 2003 and 2004 and harvested over a three to five year period. Prescribed burning associated with harvest activities will begin approximately 1-2 years following the end of harvest activities.

Slash disposal and reforestation activities will follow harvest and are expected to be completed by 2009. These dates are tentative, based upon anticipated budgets, work force, weather and other considerations. Actual dates of implementation and accomplishment could vary.

Sight Specific Design Features

To accommodate the activities proposed in this project, specific design features and mitigation measures as identified below and in the ROD, Appendix B will be applied. Best Management Practices will be implemented as described in the Forest Plan Appendix S.

Table 1 Site – Specific Mitigation Measures and Design Features

OBJECTIVE	SITE-SPECIFIC MITIGATION MEASURES AND DESIGN FEATURES
Maintain Visual Quality	No grapple piling or underburning in Units 3 and 4; Grapple piling is restricted to the southern portion of unit 5; No grapple piling/underburning between rd.#504 and new road construction in unit 8, 16, and 17
Meet Soil Quality Standards	Unit 48 has proposed ground base logging. To meet standards the timber sale administrator should implement alone or in combination: 1) skid trail spacing at minimum of 100 feet, 2) operate only with adequate snow base, frozen soil, or over adequate slash. 3) create ½ acre reserve within the unit, where no equipment could operate. Unit 5 is currently over the standard. To prevent further detrimental soil impacts: skid trails and landings must be decompacted, and use low ground pressure equipment (8 psi or less) dispersed over the activity area or helicopter harvest methods.
Reduce Sediment Production	Miles of new road construction and reconstruction listed in Table 2 below would be surfaced with gravel. These roads are currently needed and are to be maintained. The intent of the treatment is to reduce sediment and minimize the effect of the road on the watershed hydrology.

Table 2 – Maintained roads requiring gravelling to reduce sediment

WATERSHED	ROAD NO.	MILES	ROAD STATUS
Cedar	504A spur	.27	Construction – unit 18, NFS
Cedar	504a spur	.87	Construction - units 7,8,16,17 - NFS
Emerald	3557	1.01	Reconstruction- FRTA
Emerald	3557	2.2	Reconstruction - NFS
Hidden	3478-3914 Bechtel connection	.55	Construction-NFS
Hidden Cr	3901-3343 Bechtel conection	.12	Construction. NFS
Hidden creek	3478 UB-Bechtel connection	.4	Reconstruction. - NFS
Hidden Creek	3914 UD Bectel Connection.	.11	Reconstruction -NFS
Hidden Creek	3343UB	.29	Reconstruction - NFS
Long Slim	765 B	.74	Construction.- C/S
L. St. Maries	1420-potlatch access	.66	Reconstruction. – C/S
L. St. Maries	1452 –potlatch access	.16	Reconstruction. C/S
L. ST. Maries	504A spur	.32	Construction NFS – to unit 18
L.St. Maries	361 C	.93	Reconstruction -NFS
Mazie	765-SH3, NF sale rd	.22	Construction - Cost share
Mazie	765-5143 to units 25,30	.45	Construction -NFS
Mazie	765/SH-3	.57	Construction - NFS
W. Fk. St. Maries	361C west	.50	Construction – Cost share
W. Fk. St.	361C west NF sale rd	1.03	Construction -Cost share
TOTAL		**11.4**	

1.14 miles in cedar creek sub drainage, 3.21 miles in Emerald; 1.47 miles in Hidden creek; .74 in Long Slim; 2.07 in Lower St. Maries; 1.24 in Mazie; and 1.53 in W. Fk. St. Maries

- **Watershed rehabilitation projects**

Under Alternative F, the District is committing to the work described in the tables below to improve watershed conditions. It entails varying levels of decommissioning on approximately 37.3 miles of existing road (Tables 3, 4, and 5 below). ***The work described in Table 3 is funded with appropriated dollars and will be conducted prior to or during road construction activities. The work described in Table 4 is funded by the timber sale.*** Culverts will be removed on existing roads at 70 stream crossings to restore natural drainage functions and reduce sediment. Of the 70, seven are in the 300 foot Riparian Habitat Conservation Area (RHCA) buffer for a fish bearing stream. Three culverts that are currently barriers to fish passage will be replaced to allow for fish passage. It also includes 30 acres of riparian plantings and 1.2 miles of stream channel improvement (large woody debris placement). These activities are displayed in Alternative F Maps 1 and 2.

Road decommissioning is defined as activities that result in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1). Following is a brief description of the "road status" applied to these activities:

> **Long Term Storage Roads:** These roads are not needed in the near future, but use is expected at some time in the foreseeable future (RAP, Project File). Following treatment they will not be open to motor vehicles, but the roadbeds will be left intact. Activities include surface decompaction, culvert removal, reestablishment of stream channels, removal of unstable fill and re-vegetation of road corridor. See Road Management Prescription C definition in Appendix C of the FEIS.

Decommissioned Roads: These are roads where a determination was made that there is no foreseeable use for them (RAP, Project File). Following decommissioning they will not be open to motor vehicles. Activities include culvert removal, re-vegetation, re-contouring, and partial pull back of fill for Road Management Prescription D and restore slopes and drainage to pre-road conditions in Road Management Prescription E. See Road Management Prescription D & E definitions in Appendix C of the FEIS.

TABLE 3 - Watershed Restoration to take place *prior to or during* harvest activities.

WATERSHED	ROAD NO.	MILES*	ROAD STATUS
Bechtel	3340	1.16	Long term storage
Bechtel	3340 A	.46	Long term storage
Cedar Creek	3557	.17	Long term storage
Emerald Cr. **	3556	.60	Long term storage
Hidden Ck	498 UC	.65	Decommmission
Hidden Ck	*498 UD*	.34	Decommission
Hidden Ck	*498 UH*	.2	Decommission
Hidden Ck	*498 UH*	.23	Decommission
Hidden Creek	*498 UB*	.62	Decommission
Hidden creek	*3343 UD*	.31	Decommission
Hidden	3343 spurs; UB, UC	.30	Decommission
Hidden creek	3343	.19	Long term storage
L. St. Maries	3321 AUA	.45	Decommission
L. St. Maries	3321 AUC	.17	Decommission
Lower St. Maries	3321 A	.27	Long term storage
L. St.Maries	3321 BUA	.59	Decommission
Mazie	3340	3.83	Long term storage
W. Fk St. Maries	3340 UB	.36	Decommission
W. Fk. St. Maries	3380	0.16	Decommission
W.Fk. St.Maries	3340	.33	Long term storage
Wood	3340	.33	Long term storage
TOTAL		***11.72***	

*All road miles are National Forest System (NFS) roads

TABLE 4 - Watershed Restoration that will take place *post* harvest activities and is funded through the sale of timber.

WATERSHED	ROAD NO.	MILES*	ROAD STATUS
Wood Creek	341A	.60	Decommission
Hidden Creek	3499	.43	Decommission
W. Fk. St. Maries river	3380	.40	Decommission
Lower St. Maries river	3321C	.26	Decommission
Emerald/Cedar Creeks	3557	2.0	Long Term Storage
W. Fk. St. Maries river	504 AUA	1.09	Long Term Storage
Lower St. Maries river	3321B	.98	Long Term Storage
Keeler Cr	3327 J	1.40	Long Term Storage
Hidden Cr	3499 UA	.55	Long Term Storage
Lower St. Maries	3321 A	0.22	Long Term Storage
Hidden Cr	3343	.25	Long Term Storage
TOTAL		**8.18**	

***NFS roads

TABLE 5 – Watershed restoration work to be completed as funding permits

WATERSHED	ROAD NO.	MILES*	ROAD STATUS
Bechtel	3478 UE	.31	Decommission
Blair		.28	Decommission
Hidden	3457	.21	Long term storage
Hidden	3499 UB	.09	Decommission
Hidden	498	1.43	Decommission
Hidden	3914 spurs a, b, and c	.81	Long term storage
Keeler	1457 A	.17	Decommission
Keeler	1457	.24	Decommission
Keeler	765 - HIR	.81	Decommission
Keeler	1457	.95	Long term storage
L. St. Maries	3334	1.46	Decommission
L. St. Maries	1452	.51	Decommission
L. St. Maries	3335A	1.05	Long term storage
Long Slim	1450 B	.63	Long term storage
Lower .St. Maries	3335 spurs and 3334 spurs and 1916 spurs	4.96	Decommission
L. St. Maries	3 - UZ	.06	Long term storage
Mazie,	3478 spurs	2.23	Decommission
W. Fk. St. Maries	504 - C	1.2	Decommission
TOTAL		**17.40**	

* NFS roads

- **Access Requests**

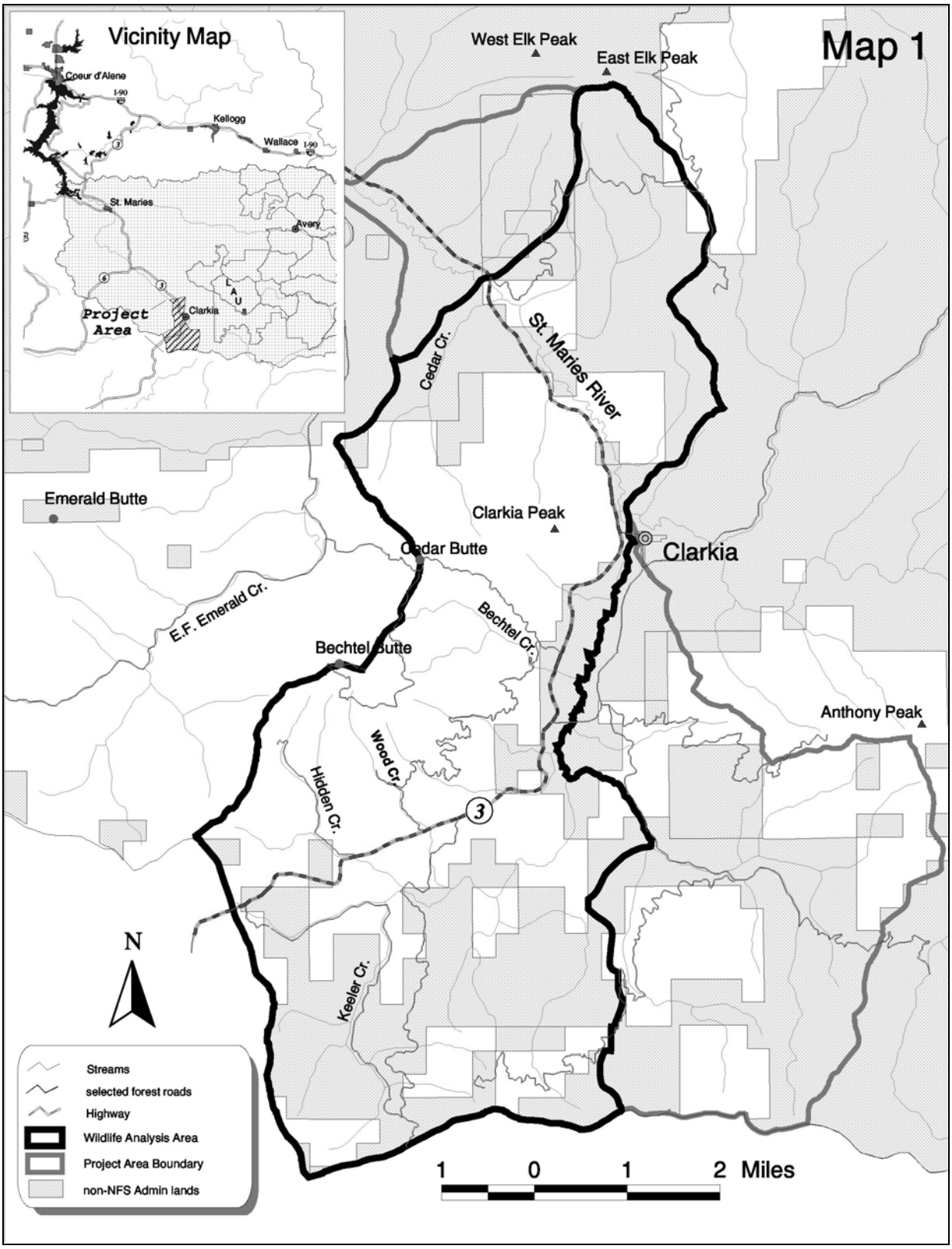
In Alternative F access would be granted to State and Potlatch lands. There is 7.8 miles of road construction associated with the access requests. About 2.4 miles would cross National Forest System lands. Of the 2.4, the Forest Service would be granting 1.5 miles cost share easement and .9 miles of non-cost share easements. The Forest Service would also acquire .7 miles of cost share easement. By exchanging easements and constructing 7.8 miles of road, the private road system and cost shared road systems would have a net increase. Amount of BPA, cost share, private and public roads by road management prescriptions can be found in FEIS, Appendix B.

- **Monitoring**

This decision incorporates monitoring of InFish, BMP's, and Forest Plan Standards as described in the monitoring plan in the FEIS – Appendix E. This plan includes monitoring activities related to water quality, fisheries, wildlife habitat and silvicultural objectives (see Appendix C – ROD). Monitoring items are organized by resource and objective with persons responsible for monitoring to ensure standards are implemented effectively.

Location

The Hidden Cedar project area is approximately 26 miles from St. Maries Idaho in Shoshone, Clearwater and Latah Counties, along the St. Maries River in portions of Township 41, 42, and 43 North, Range 1 and 2 East. The project area is in the Upper St. Maries and West Fork St. Maries River drainages. (See Map 1).


Map 1
Vicinity Map
Coeur d'Alene
I-90
Kellogg
Wallace
I-90
St. Maries
Avery
Project Area
Clarkia
West Elk Peak
East Elk Peak
Cedar Cr.
St. Maries River
Emerald Butte
Clarkia Peak
Cedar Butte
Clarkia
E.F. Emerald Cr.
Bechtel Cr.
Bechtel Butte
Anthony Peak
Wood Cr.
Hidden Cr.
3
N
Keeler Cr.
Streams
selected forest roads
Highway
Wildlife Analysis Area
Project Area Boundary
non-NFS Admin lands
1 0 1 2 Miles

The project area is approximately 33,000 acres and includes the Cedar, Blair, Christmas, and Staples Creek drainages in the Upper St. Maries and the Bechtel, Mazie, Wood, Hidden, Cat Spur, Long Slim and Keeler Creek drainages in the West Fork. Besides National Forest System Lands, the project area contains private industrial land, State lands, private residential land, railroad and highway right-of-ways and a powerline corridor. Approximately 53% of the project area is in private ownership. There are no roadless areas within or adjacent to the project area.

Design Features and Mitigation

The following is a description of design features and mitigations included in the proposed action to protect resource values. Site-specific design features are described in Table 1.

Threatened, Endangered, and Sensitive Plants and Wildlife

- Plant species presence is assumed for un-surveyed habitat that is highly suitable to support threatened, endangered, sensitive and proposed (TESP) species (see FEIS Table 3-49, for Wildlife Species Presence). If TESP species are found during project implementation, appropriate protection measures would be taken to protect habitat and the species. This would include altering management activities if necessary. Timber Sale Contract provisions for Protection of Endangered Species, and Settlement for Environmental Cancellation will be included in any subsequent timber sale contracts.
- Changes in the alternatives or location of any Threatened, Endangered, or Sensitive (TESP) species found prior to or during project implementation would be reported to the District Botanist and District Wildlife Biologist so that appropriate measures can be taken to maintain population viability of TESP species.
- Field surveys for **rare plants** will be conducted where necessary, prior to project activities, to verify or negate presence. Measures to protect population viability and habitat for all known and newly discovered occurrences would include the following: altering or dropping proposed units from activity, modifying the proposed activity, and implementing buffers around plant occurrences.

Wildlife

- Slash depths adjacent to new and reconstructed roads would not exceed 1.5 feet in depth or if this is not practical, 16 foot wide openings would be provided every 200 feet (especially on ridges and at game trail crossings).
- To provide elk security, timber sales in adjacent areas would have a ridgeline between the disturbance and security area. This would be done by either subdivisions (larger sales) or scheduling (smaller sales) in the timber sale contract.
- Travel cover will be maintained. Vegetation management will avoid making openings (i.e. areas with <30% canopy cover) within 200 feet of the ridge top or 400

feet if the other side if the ridge does not provide cover. Any openings created on ridges designated as potential travel areas would meet the following criteria:

- < 300' in width,
- Limited to one side of the ridge top
- Minimum of 800' between openings
- None to be situated in a saddle
- < 25% of the distance from the peak of the ridge to the drainage will consist of openings

- The following Snag Management Recommendations from the Northern Region Snag Management Protocol (January 2000) would be met (where these or higher levels exist) on habitats found in the project area. The retention of snags and snag replacements would be applied at the scale of every 5 to 25 acres, which allows for retention of snags in groups or clumps. Replacement snags would be retained at 5 times the number of snags per acre.

Table -1 – Snag Management Recommendations

Habitat	Snag/acre retention prescriptions
Warm dry ponderosa pine and Douglas-fir	**1-2 greater than 20" dbh**
Cool Douglas-fir, warm grand fir, slope <30%	**4 greater than 20" dbh**
Cool Douglas-fir, warm grand fir, slope >30%	**6-12 total, with 2-4 greater than 20" dbh**
Cool, wet, and dry spruce, grand fir, hemlock, and subalpine fir	**6-12 total with 2 greater than 20" dbh**
Low elevation cedar and hemlock	**12 total with 4 greater than 20" dbh**
High elevation spruce/fir/lodgepole pine	**5-10 greater than 10" dbh**
Whitebark pine/limber pine	**All available**

To meet the objectives listed above in Table 1 Snag Guidelines:

- Snags that show signs of decay, loose bark, or broken tops would not be designated for harvest. Exceptions would be made for road construction and log landings.
- The Reserve Tree Guide (IPNF, 1995) would be followed to reach objectives of the Snag and Woody Debris Guidelines (IPNF Forest Plan, Appendix X) and worker safety.
- Tree marking guidelines for reserve trees would favor the retention of large diameter tree species, particularly hollow and broomed trees except when they pose a safety concern. Western larch, ponderosa pine, and western red cedar > 20" dbh would be marked as first choices for snags and reserve trees.
- Snags cut for safety reasons will be left in the unit - preferably where they fall.
- Silvicultural and burning prescriptions will be prepared with the goal of protecting snag and green tree replacement snags, and retaining recommended

levels and distribution of coarse woody material during site preparation and fuels treatment.

- Excavator piled slash should be left at a rate of one slash pile per 5 acres and constructed to provide wildlife habitat.

- Surveys to determine the status of the known goshawk nest-site and Post Fledging Area will be conducted prior to unit layout and implementation of unit activity (see Appendix F- Monitoring).

- Existing goshawk nests and any nests found before and during implementation would be protected by a 30 acre no activity buffer. Project activity would be suspended within ¼ mile of any active goshawk nests between March 15 and August 15. Activity restrictions can be removed after June 30 if the nest site is determined by the district biologist to be inactive or unsuccessful.

- Activity within an approximately 420-acre area surrounding each active goshawk nest would comply with the following management recommendations:
  - 20% or less in shrub/seed/sapling size class;
  - 60% or more canopy closure in immature and older size classes;
  - created openings are less than 2 acres with a minimum of 300 feet between existing or other created openings and snag retention guidelines are applied on each acre of created opening,
  - non-regeneration treatment in immature and older stands is thinning from below using irregular spacing of leave trees;

Design criteria specific to pre-commercial thinning:

- The maximum diameter of felled trees would be 7 inches. Cull trees that exceed the diameter limit would be girdled in lieu of felling to provide additional cavity-nesting habitat.
- Snags or dead trees would not be cut.
- Directional felling would be used to minimize slash depths. Trees that cannot be directionally felled would be bucked in lengths not to exceed 6 feet.
- Slash would be pulled back a minimum of four feet away from all system roads, cut banks and fill slopes.
- Established game trails would be kept clear of slash by directional felling and slash pullbacks to maintain travel linkages.
- All slash resulting from project activities would be removed from riparian zones.
- A 50-foot no-activity buffer would be maintained along all wet defined channels, springs, and seeps within and adjacent to thinning units.
- Existing closed gates would be locked after each entry and exit.
- Activity behind closed gates would be scheduled for completion prior to the opening of the elk any weapon hunting season. An extension may be allowed based on extenuating circumstances (fire, weather, etc.) after interdisciplinary review.
- Earthen barriers removed to allow access for project activities would be replaced upon completion of the unit and before October 10th.

- If access is desired via roads that have naturally closed through re-vegetation, interdisciplinary field reviews would be conducted to evaluate options and make recommendations regarding opening the road.

Roads

- **Sediment Control:** Road plans and specifications will include measures to minimize sediment production based on site-specific evaluation. This could include slash filter windrows, surfacing, gravel or slash blankets, interim seeding, mulching, controlling the timing or extent of activities, and sediment traps.
- **New Road Construction:** Any new roads would be single lane facilities, suitable for log truck or lowboy use.
- **Reconstruction:** Any existing road used for timber activities could be rebuilt to its approved traffic service level or improved to increase safety, operational efficiency or resource protection. For this document, reconstruction includes rebuilding roads to their original standards. The overall condition of the road is generally inadequate for resource protection or anticipated use or impassable for the design vehicle.

Spot reconstruction may also occur, where the primary disturbance is confined to a limited area, such as culvert installations, rebuilding a shoulder or addition of turnouts.

Areas between the spots generally would need reconditioning (reshaping and processing the road surface and ditches and brushing the shoulders). Most of the reconstruction and reconditioning is actually maintenance (FSM 7705) to restore the road to its' original condition.

- **Cost Share Agreements**: The Forest Service has cost share agreements with Potlatch and the State of Idaho in the analysis area. Cost Share principles apply to construction, reconstruction, maintenance and use of shared facilities. Roads that have cost share agreements are National Forest System Roads (NFSR).

Soil and Water

- All activities would comply with:
  - Standards identified in the Inland Native Fish Strategy (INFS) EA Decision Notice and Finding of No Significant Impact, signed in July 1995. All alternatives will implement the default Riparian Habitat Conservation Areas (RHCA) widths specified by INFS (see Table). These buffer zones are no entry for harvest and equipment. Exceptions are described in the Standards and Guidelines, General Riparian Area Management (RA-2) which states: Trees may be felled in riparian habitat conservation areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives. When necessary to fall trees; the sale administrator may approve the minimum number required and ensure that they remain where dropped.
  - Objectives of Appendix O of the IPNF Forest Plan, Stream Protection.
  - Activities will be designed to meet BMP's as defined in IPNF Forest Plan, Appendix S.

- Requirements and Erosion control Guidelines of the Rules and Regulations pertaining to the Idaho Forest Practices Act, Title 18, chapter 13, Idaho Code.
- Areas of recent or historic landslides and slumping are considered landslide-prone and constitute Category 4 – RHCAs (INFish). Harvest and road design would avoid known sites (see project file) using INFish buffers
- Restrict or limit tractor logging on slopes over 35%.
- A minimum of 100 feet is suggested between skid trails.
- Use of excavated skid trails should be kept to a minimum and reclaimed to original condition.
- To minimize disturbance (soil compaction or displacement), practices such as skidding over slash or adequate snow cover, non-excavated skid trails, and directional falling will be utilized on units using ground base equipment.
- To minimize erosion and sediment delivery on skid trails, no skid trials will be constructed on slopes over 30% and all skid trails will be water-barred and seeded after use to comply with Idaho Forest Practices Act (IFPA) Rules (IDL, 1998).
- Skid trails in tractor-yarded units will be limited to less than 15% of the unit acreage to comply with Region One Soil Quality Standards.
- Unneed roads whose management prescription changes to level C, D or E will **at a minimum** remove all culverts, remove all fill within the crossing sites, and return stream gradient and valley side-slopes to natural conditions. Road management prescription Level C will also de-compact road surfaces to a minimum of 18 inches to facilitate and augment infiltration. Road management prescription D and E re-contour slopes, which also decompacts the old road surface.
- Stored roads that are graveled for sediment reduction –will **not** be de-compacted; however, stream crossings will be rehabilitated.
- Closure at the beginnings of roads may require full obliteration for 300 feet or sight-distance to prevent damage from motorized access.
- Prescribed burning plans will be reviewed by a hydrologist. Prescribed burning will be done during the spring or when soil moistures exceed 25% to maintain soil productivity.

- The soils in the activity areas are inherently low in potassium, a key nutrient for vegetation. The Intermountain Forest Tree Nutrition Cooperative assembled data suggests that potassium levels may be conserved in treatment units by allowing logging slash to over-winter. By leaving sufficient levels of wood on site, long-term soil productivity would be protected.

  - Potassium sources such as needles and limbs would be maintained on site by allowing slash to over-winter prior to any slash disposal treatments.
  - Mechanical piling will be done on a slash mat.

- Silvicultural and burning prescriptions will be developed to retain sufficient levels of coarse woody debris on site **after** slash disposal. The following recommendations will be used in prescriptions:

- Douglas fir, larch, and pine minimum coarse woody residues of 4-6 inches diameters well distributed through a treatment area at 10-15 tons/acre (Harvey et.al.,1987).
- Grand fir/beargrass types at 7-14 tons/acre of coarse woody residues (greater than 3 inches diameter), western hemlock/beadlily types at 17-33 tons/acre coarse woody residues (greater than 3 inches diameter)
- subalpine fir/beargrass types at 12-23 tons/acre coarse woody residues (greater than 3 inches diameter) Graham and others (1994).

- Wetland buffers will meet Standard Widths Defining Interim RHCAs.

Fish

- INFS Standards and Guidelines are specific based upon the activity being proposed, i.e. timber harvest, road management, recreation etc. Standard buffer widths will apply to activities within this project area unless otherwise designated by the district fisheries biologist or district hydrologist (summarized in Table 2-3). These standards are:

Table 2 – Summary of INFish Widths

INFS category	Description	RHCA width
1	Fish bearing streams	300' from either side of channel
2	Permanent, flowing, non fish bearing stream	150' from either side of channel
4	Seasonal, flowing or intermittent streams Wetlands < 1 acres Landslide prone	50' (non-priority watersheds)

- Activity in and around streams should occur during baseflows, after fry emergence and prior to fall spawning of bull trout.
- See Appendix G for clarification of the fry emergence standard.

Air Quality

The proposed burning activities follow procedures outlined by the North Idaho Smoke Management Memorandum of Agreement. Currently, the period of air quality monitoring and restriction is March 1 to November 30.

- During this period, all burning by the Forest Service is regulated to prohibit or restrict burning at times and places where stagnant weather conditions result in poor smoke dispersion and by conducting prescribed burns when ventilation and air quality conditions are good.
- The project is within Airsheds 12a and 12b, which contain no EPA designated non-attainment areas for pollutants nor does it contain any Class I airsheds as designated by the Clean Air Act.
- Burning during any time of the year is regulated by the Idaho State Department of Environmental Quality, which issues burning closures when necessary to protect air quality. The Forest Service cooperates with the State in meeting the State implementation Plan.

- PM10 and PM2.5 projections will be sent to the North Idaho Smoke Management Group one day prior to ignition.
- A notice to local newspapers prior to burning season will explain to the public when, where and why burning will be conducted.

Measures used to mitigate effects of prescribed burning on air quality would include:

- Broadcast and understory burning will be accomplished as much as practical in the spring and early summer with spring-like conditions. This would reduce the total emissions by burning less of the duff and larger fuels. Spring atmospheric conditions are best for smoke dispersion. Risk of fire escape is also less in the spring.
- The discretion to terminate burns when air quality is threatened.
- Slash piles would be constructed as clean as practical and burned as dry as practical to enhance efficient combustion.

Noxious Weeds

A number of preventative measures will be taken to reduce the risk of noxious weed introduction and spread in accordance with the St. Joe Weed Control EIS (ROD – 10/12/99).

Measures include:

- Existing populations of noxious weeds along roads within the project area would be treated prior to harvest activities.
- All off-road logging and construction equipment (including machinery used in restoration projects) cleaned prior to entering the project area. This cleaning removes dirt, plant parts, and material that may carry noxious weed seeds into the sale area. A Timber Sale Contract Provision will be included in the timber sale contract.
- Mulching agents, such as hay or straw, would be certified noxious weed free before being allowed on the project area.
- All seed used for re-vegetation and erosion control purposes would be certified noxious weed free.
- As funding allows, areas where ground-disturbing activities have occurred will be inspected for new populations of noxious weeds.
- Appropriate action, within funding limitations, will be taken if new populations of noxious weeds were discovered within the project are

Recreation

- Any dispersed recreation site used for logging or activities related to harvest operations would be restored or rehabilitated following use. Contractors will follow provisions in timber sale contracts and any other permits required for camping.

Heritage Resources

- All known heritage resource sites will be protected, as directed by the National Historic Preservation Act. Any future discovery of heritage resources sites or caves will be inventoried and protected if found to be of cultural significance. Timber Sale Contract provision (protection of cultural resources) will be included in all timber sale contracts to ensure protection of the sites.

Public Motorized Access/Access Management

At a minimum, the following National Forest System Roads (NFSR) will be managed as unrestricted routes, available for all legal motorized vehicle use (see Road Management Map 13) This list of roads are currently open and will remain open:

- East Elk Road 1451 (Staples Creek), from SH 3 to Road 1491
- Christmas Creek Road 3321, from County Road to the end of road
- Anthony Peak Road 1486, from the County Road to Road 3685
- Bluebell Road 3685, from segment 1 of Road 1486 to 3685C
- Cat Spur Road 361, from Road 1486 (County Road) to Road 1450
- Log Creek Road 1450, from Road 361 to Road 1480
- Keeler Connection Road 765, from SH 3 to Road 765A
- County Line Road 765A, from Road 765 to SH 3
- Clarkia Emerald Creek Road 504, from SH 3 to Road 447
- Bechtel Mountain Road 3478, from Road 504 to the top of Bechtel Butte
- Anthony Peak Road 1486, segment I, from the Road 361 (County Road) to Road 3685
- Anthony Peak Road 1486,segment III, from Road 3685 to Road 3686

Some roads that are currently restricted would be opened to accommodate timber harvest operations. Public travel will not be permitted on these roads due to safety concerns, wildlife security, and soil and water concerns:

- 504A (Clarkia Peak road) @ jct. w/504 (gate)
- 498 (Hidden Cr. road) gate @ mile post 2.8
- 3380 (Q chalk road) @ jct. w/ SH 3 (gate)
- 3557 (Cedar Butte road) @ jct. w/447 (gate)
- 3335(Poacher road) @ road to warehouse (Clarkia Workcenter)
- 3327j (Palouse road) @ jct. w/3327G (gate)

New road construction will have gates installed on the following roads:

- Off of road 765 (to units 30,31,32)
- Off Powerline road # 361C (to units 27 & 28)

Powerlines

- Special concerns for operations near the large transmission lines are discussed in the FEIS.

III. Listed Species

On February 1, 2002 the US Fish and Wildlife Service provided the Idaho Panhandle National Forests (IPNF) with the following list of species (FWS 1-9-02-SP-213) which may be present in the Idaho Panhandle National Forest; **water howellia** (*Howellia aquatilis* A. Gray), **Ute ladies'-tresses** (*Spiranthes diluvialis* Sheviak), **Spalding's catchfly** (*Silene spaldingii* Wats.), **Bald eagle** (*Haliaeetus leucocephalus*), **Gray wolf** (*Canis lupus*), **Grizzly bear** (*Ursus arctos*), **Woodland caribou** (*Rangifer tarandus caribou*), **Canada lynx** (*Lynx canadensis*), and **Bull Trout** (*Salvelinus confluentus*).

IV. Description of Species and Habitat/Analysis of Effects

This Section is organized by Fish, Wildlife, and Plant Species and begins on the next page.

IVa. Fisheries

Species and Habitat Descriptions

Bull trout were listed as a threatened species in 1998. Bull trout exhibit resident, fluvial and adfluvial life histories (Averett and MacPhee 1971, Bjornn and Likens 1986, and Goetz 1989). Resident populations remain in their natal streams throughout their life. Migratory populations (fluvial and adfluvial) use tributary streams for spawning and may remain in these areas throughout the summer. In the fall, fish that have not previously returned to rivers (fluvial) and lakes (adfluvial) migrate to deeper water where they congregate and over-winter. By adopting these life history strategies, bull trout populations are resilient to disturbances of short duration and consequence.

Bull trout life history cycle involves the following pattern. In the spring, adults begin migrating to the spawning stream where they remain in staging areas until spawning. Spawning occurs in the fall in clear, headwater streams with a gravel or rubble bottom. Afterwards the adults return to the rivers or lakes from which they came. Eggs incubate in the spawning gravel during the winter and the fry emerge in the spring. Juveniles will remain in these streams for two to five years before migrating downstream to a river or lake. Resident bull trout follow the same yearly sequence for spawning and fry emergence as the fluvial and adfluvial, but the adults remain in the tributaries year round.

Rieman and McIntyre 1993, state that fragmentation and disruption of bull trout habitat will increasingly isolate populations and isolate or eliminate life-history forms. This fragmentation and disruption of habitat will lead to problems for populations which ultimately will increase the risk of extinction (Rieman and McIntyre 1993).

In a status review of bull trout on the Idaho Panhandle National Forests, bull trout in the St. Joe River system, to which the St. Maries River is a tributary, were designated as being "at moderate risk of extinction" (Cross 1992). Bull trout are historically known to have been found in the St. Maries River. Bull trout were last positively identified and documented in the Hidden Cedar area (in the St. Maries River) during 1987 surveys conducted by Idaho Fish and Game (Apperson et al. 1988).

HABITAT REQUIREMENTS:

Rieman and McIntyre (1993) suggest that five habitat characteristics are particularly important for bull trout. These are channel stability, substrate composition, cover, temperature, and migratory corridors. The preferred habitat for bull trout rearing is cold water - temperatures less than 15 degrees Celsius (Goetz 1989), and abundant cover (Fraley et al. 1989). Rearing habitat is generally in smaller tributaries where the fish will remain for 3-5 years before migrating downstream to seek more suitable habitat. Gravel areas near headwater streams are utilized by spawning bull trout in the fall.

Though there are general characteristics bull trout habitat, specific habitat requirements vary by age and season of the year (Baltz et al. 1991, Moore and Gregory 1988, Rieman and Apperson 1989, Campbell and Neuner 1985). Young-of-the-year fish initially seek

stream margins with heterogeneous habitat structure. Where this habitat is not present or has been lost, juvenile trout populations are virtually eliminated (Moore and Gregory 1989). Dolloff and Reeves (1990) reported that young Dolly Varden (Salvelinus malma), a species closely related to bull trout, most frequently used woody debris as cover. As fish grow larger and mature they seek out deep water habitat types such as pools and deep runs (Baltz et al. 1991, Hickman and Raleigh 1982).

The function of headwater streams and their importance to downstream supported fisheries has been reviewed by Bilby and Likens (1980) and Schlosser (1982). Their work suggests that organic debris dams are an important component of small stream ecosystems and that their loss results in considerable seasonal and annual variation in the trophic structure and total biomass of aquatic ecosystems.

Stream channel equilibrium (stability) is the balance between sediment yield, water yield, and channel morphology which exists within a stream system. Evidence exists which shows that shifts away from channel equilibrium can result in negative changes in the structure and function of stream ecosystems (Bilby and Likens 1980, Schlosser 1982) and their dependent fish populations. Bisson and Sedell (1982) reported that where stream channels have become destabilized, riffles elongated and in many cases extended through former pool locations resulting in loss of pool volume. They suggested that declines in older fish may be the result of their dependency upon deeper water habitats. The persistence of bull trout over time can best be provided by maintaining lateral and in-stream habitat complexity in association with channel stability (Karr and Freemark 1983, Karr and Dudley 1981).

On-site Inspections

Table F-1: Dates of Surveys within the Hidden Cedar Project Area

Fisheries Stream	**Quantitative habitat Surveys**	**Qualitative habitat Surveys**	**Electrofishing Survey**	**Snorkel Survey**	**Spawning Survey**	**Temperature Survey**
Bechtel		7/98,7/99	7/99			
Blair		11/2000				
Cat Spur	10-11/92					
Cedar		5,7,9/98,7/99				
Hidden	7/98	7/98	7/99	7/99	5/98	5-10/2000
Keeler	7/98	10/99			5/98	
Kitten	10/92					
Log	10/92					
Long Slim		7/99	7/99	7/99		
Lower St. Maries		4/200				6-9/977-10/98
Mazie		7/98,7/99				
Swede John		7/99				
W. F. St. Maries	7/98	4, 5/2000			5/98	6-9/97, 7-10/98
Wood		7/98,10/99,5/00	7/99		5/98	5-10/2000

Design Features

- Implementation of InFish standards and guidelines.
- 8.18 miles of road storage/decommissioning funded by the timber sale
- 11.12 miles of road storage/decommissioning committed to with the decision

Analysis of Effects

Geographic scope: The cumulative effects area for the fisheries resource is defined as the St. Maries River watershed from the confluence with Cedar Creek upstream but excludes the Middle Fork St. Maries River. This area was selected because it contains all potential project activities and defines the largest watershed area that allows for the greatest level of resolution for determining a project's contribution to cumulative effects operating at various geographic scales.

Methodology: The effects analysis will focus on the anticipated effects (by alternative) on the issues derived from the identification of the limiting factors (Table 3-30). Based on the fact that low carrying capacity and low overwintering survival (improperly functioning habitats) are both limiting fish production in the Hidden Cedar area, the issue is: How many miles of properly functioning fish habitat are there in the project area? The issue indicators are those used in the bull trout consultation matrix developed by the U.S. Fish and Wildlife Service and have variable influences on the issue and on the limiting factors.

Table F-2: Issue Indicators of Influences on Limiting Factors for Fish

Issue Indicator	**Measurement Method**
Population Characteristics	**Population diversity, isolation, persistence** *(see Table 3-31)*
Watershed Condition	**Road density, riparian harvest, activity on sensitive landtypes, and activity within the ROS elevation** *(see Table 3-32)*
Water Quality	**Temperature, Sediment, Chemical Contaminants/nutrients** *(see drainage descriptions)*
Habitat Access	**Physical barriers** *(see Table 3-32)*
Habitat Elements	**Substrate embeddedness, large woody debris, pool frequency, large pools, off channel habitat, refugia** *(see drainage descriptions)*
Stream channel conditions	**Width to depth ratio, streambank condition, floodplain connectivity** *(see Table 3-33)*
Flow/hydrology	**Change in Peak/base flows**

For example, overwintering habitat is influenced by stream channel stability. A stream is described as stable if its cross-sectional geometry remains relatively constant over some time scale (Gordon et al 1992). Bisson and Sedell (1982) reported that where stream channels had become destabilized, riffles elongated and in many cases extended through former pool locations resulting in a loss of pool volume and effectiveness of large, stable debris as cover. They suggested that declines in older fish may have resulted due to their dependence upon deeper water habitat.

Overwintering habitat is also influenced by the condition of the riparian zone. Large woody debris is a critical element for aquatic habitat diversity and complexity (Reeves et al. 1993). Overwintering habitat (pools) is often created by large woody debris, which also provides cover and adds complexity to habitats; this increases habitat suitability. Riparian activity influences the potential to recruit large woody debris to streams (Sedell et al. 1988). By altering the recruitment potential for large woody debris, riparian activity can alter the composition, diversity, and structural complexity of aquatic habitat (Bisson et al. 1987, Hicks 1990, Bilby and Ward 1991). Riparian conditions are considered during the analysis of effects to the fishery of the project area.
Other factors frequently discussed for streams will not be analyzed for this project because they would not be influenced by the implementation of an alternative, are not the primary limiting factors for fish production, or can be correlated to the determination of effects for other factors, which are analyzed. The latter is true for the effects analysis of recreational fishing (both economics and experience). The viability of fish populations can be negatively affected by aquatic habitat degradation (Bisson and Sedell 1982). A decline in the fish population reduces the catch rate for recreational anglers. This relationship provides the rationale, which allows a cumulative analysis of effects to the aquatic habitat to determine the potential for effects to the recreational fishing industry.

Historic Condition: Bull trout were present historically in the drainages of the project area which contained fish habitat. The habitat historically is assumed to have been similar to the habitat conditions stated above in the section titled Habitat Requirements.

Existing Condition

Table F-3: Fish Distribution Based on Various Survey Methodologies (subpopulation characteristics)

Stream Name	Survey Method[1]	Bull Trout	Westslope Cutthroat Trout	Brook Trout	Sculpin	Northern Pike Minnow (Squaw Fish)	Unidentified Species
Bechtel	**E**		**X**		**X**	**X**	
Cat Spur	**H**		**X**				
Cedar	**H**		**X**			**X**	
Christmas	**H**						**X**
Hidden	**S & E**		**X**	**X**[2]	**X**		
Keeler[3]	**E**		**X**	**X**			
Kitten	**H**		**X**				
Log	**H**		**X**				
Long Slim	**S & E**		**X**		**X**		
Swede John	**H**						**X**
WF St. Maries	**E**		**X**	**X**			
Wood	**E**		**X**	**X**	**X**		

[1] S = Snorkel survey, E = Electrofishing survey, H = Habitat Survey (incidental observation)
[2] Brook trout were not located in the upper survey reach.
[3] Keeler Creek was electrofished by Idaho Department of Fish and Game, summer 2000 (P. Murphy, personal communication).

Existing Habitat Condition:

The following tables and text display the issue indicators or measurable factors for each of the streams within the project area. The numbers listed in Table F-4 were generated from GIS maps. Kitten and Log Creeks are tributaries to Cat Spur Creek. Drainage acres for Cat Spur include both Kitten and Log.

Table F-4: Watershed Conditions and Habitat Access

Stream Name	Drainage Acres	% of drainage NFS	% Sensitive landtypes	Road Density (all roads)	acres past harvest in RHCA	% acres in Rain on Snow zone	Physical Barriers*
Bechtel	**1328**	**95**	**13**	**4.7**	**18**	**70**	**UK**
Blair	**1849**	**8**	**19**	**7.5**	**2**	**90**	**UK**
Cat Spur	**7675**	**24**	**30**	**4.4**	**25**	**95**	**UK**
Cedar	**2126**	**59**	**10**	**3.9**	**2**	**50**	**UK**
Hidden	**1677**	**97**	**16**	**6.8**	**51**	**98**	**Y**
Keeler	**2665**	**28**	**22**	**6.3**	**40**	**99**	**UK**
Kitten	**1523**	**23**	**27**	**8.1**	**3**	**95**	**UK**
Log	**2174**	**54**	**22**	**5.5**	**20**	**98**	**UK**
Long Slim	**2474**	**27**	**18**	**4.9**	**27**	**98**	**UK**
Lower St. Maries	**5373**	**35**	**11**	**6.8**	**135**	**99**	**UK**
Mazie/Swede John	**1407**	**84**	**8**	**5.5**	**28**	**85**	**Y**
WF St. Maries	**5245**	**48**	**7**	**4.6**	**93**	**50**	**UK**
Wood	**777**	**97**	**11**	**5.7**	**53**	**98**	**Y**

***** Y = yes there are physical barriers, UK = unknown if there are physical barriers

The information provided in the following table (Table F-5) is the professional opinion of the District Fisheries Biologist and District Hydrologist, based on field reviews of the streams. The district specialists did not review Kitten, Log and Long Slim Creeks recently because there were no Forest Service activities expected in those drainages, therefore they are not included in the following table.

Width to Depth ratio describes the cross-sectional shape of a stream channel. H = high means the channel is wide and shallow, M = moderate, L = means channel is narrow and deep.

Streambank condition describes the stability of the banks. G = Good or >80% of any stream reach has ≥90 % stability, F= fair or 50-80% has ≥90% stability, and P= poor or <50% has ≥ 90% stability.

Floodplain connectivity: G = good, off–channel areas are frequently hydrologically linked to main channel, overbank flows occur and maintain wetland functions, riparian vegetation and succession; M = moderate, reduced linkage of wetland floodplains and riparian areas to main channel; overbank flows are reduced relative to historic frequency as evidenced by moderate degradation of wetland function, riparian vegetation/succession; P = poor, severe reduction of hydrologic connectivity between off-channel, wetland, floodplain area riparian area wetland extent drastically reduced and riparian vegetation/succession altered significantly.

Table F-5: Stream Channel Conditions

Stream Name	Width to Depth Ratio	Streambank Condition	Floodplain Connectivity
Bechtel	**L-M**	**F-G**	**G**
Blair	**L-M**	**G**	**G**
Catspur	**M**	**F**	**M**
Cedar	**M**	**F**	**M**
Christmas	**L**	**F-G**	**G**
Hidden	**L-M**	**G**	**G**
Keeler	**L-M**	**G**	**G**
Mazie/Swede John	**L-M**	**F-G**	**G**
WF St. Maries	**M**	**P-F**	**G**
Wood	**L-M**	**G**	**G**

Water Quality and Habitat Elements:

The following is a summary of the information pertaining to water quality and habitat elements. Detailed information is located in the project file.

Bechtel Creek

Bechtel Creek is about 2.5 miles long. The upper 82% of the stream flows through NFS lands, the remainder (18%) at the mouth flows across private lands. The lowest reach of Bechtel Creek has erosion sources due to cattle grazing. Moving upstream the stream channel conditions improve. Banks become more stable, the size of woody debris increases. The majority of the habitat is run. This stream is considered to be "functioning at risk" due to cattle grazing on private lands and high road densities (Table 3-32).

Blair Creek

Blair Creek is about 4 miles long. The majority of the stream (92%) flows across private ownership. The stream flows across NFS lands near the lower end of the drainage. Based on the size of the stream it is assumed that Blair Creek would provide spawning, rearing and overwintering habitat. Blair Creek appears stable and contains plentiful amounts of woody debris.

Although current conditions within the channel appear to be sufficient to maintain a native fish population, the high road densities (Table 3-32), the number of stream crossings and a road within the riparian zone which parallels the stream, indicate that this stream is "functioning at risk".

Cat Spur Creek

Cat Spur Creek is the largest subdrainage to the West Fork St. Maries in the project area. It is comprised of Cat Spur Creek, Log Creek, Kitten Creek, and several unnamed tributaries. Cat Spur Creek is a low gradient, meadow stream, which meanders through a well-developed floodplain for most of its length. Native westslope cutthroat trout utilize

Cat Spur Creek for spawning, rearing, and over-wintering. Cat Spur Creek is identified in the Forest Plan as a high valued stream for fisheries resources.

Runs and pools dominate aquatic habitat. Although Cat Spur Creek provides important habitat for native salmonids within the watershed, the quality of the habitat is impaired. Aquatic habitat in Cat Spur Creek lacks the complexity usually associated with quality habitat. The stream has an abundance of algae which is likely the result of nutrient inputs from cattle grazing and the amount of direct sunlight reaching the stream.

Sediment input is one factor that continues to degrade the quality of aquatic habitat in Cat Spur Creek. Flood damage to roads in the Cat Spur Creek drainage in 1996 increased sedimentation and exacerbated this process in Cat Spur Creek. The riparian conditions and activities along Cat Spur Creek are also influencing the quality of the aquatic habitat.

Riparian stands of red cedar were cleared from the lower portion of the drainage prior to the 1930's. Cattle grazing along Cat Spur Creek perpetuate this condition today.

Channel stability is compromised in these areas resulting in bank sloughing and sediment production to the stream. The lack of trees in the riparian is also influencing stream shade and LWD recruitment. The scarcity of LWD in the stream is affecting habitat complexity. Road #361, pioneered in the 1930's, extends along the north side of Cat Spur Creek for approximately 1.6 miles of the 5 miles of stream length. This road reduces the productive potential of the riparian area, aids access to riparian areas for grazing cattle, and contributes sediment to Cat Spur Creek.

Cat Spur Creek is considered to be “functioning at risk” due to the impaired instream habitat conditions, high road densities (Table 3-32) and the influence of cattle grazing.

Cedar Creek

Cedar Creek is about 3.5 miles in length and flows through NFS lands at the confluence with the St. Maries River and in the headwaters. Cedar Creek is a low gradient stream that is slightly entrenched and has moderate sinuosity. Historically large trees existed in the riparian zone and would have had a greater influence on fish habitat but they were removed by logging. Currently the riparian zone is primarily alder and brush near the mouth and begins to include conifers about ½ mile up from the mouth. Instream habitat is primarily deep runs and glides with occasional pools formed by woody debris and meanders. Aside from the effects of riparian harvest, cattle and bulldozers crossing the channel have also influenced the stream. On private land it appears that at some time heavy equipment created a soil dam.

Cedar Creek is considered to be “functioning at risk” due to the road density (Table 3-32), the effects created by cattle grazing and the low quality of the instream habitat.

Christmas Creek

Christmas Creek is about 1.6 miles long. The middle section, 25%, of Christmas Creek flows through NFS lands, the remainder flows across mixed ownership. There is no defined channel at the confluence with the St. Maries River because the stream flow disperses among marsh habitat across the St. Maries River floodplain. There are two

culverts along this stream, one at the main road crossing and the other is on a spur road, which may be partial fish migration barriers due to the distance between resting areas. This stream will not be discussed separately in the analysis of alternatives but will be included in the Lower St. Maries analysis.

Hidden Creek

Hidden Creek is about 3.25 miles long and flows primarily through NFS lands, 93% of the stream length. Hidden Creek is assumed to be utilized for spawning, rearing and overwintering habitat. The surveyed reach (lowest reach) of Hidden Creek has low habitat diversity, and cover complexity. There are fewer numbers of pools and less large woody debris than recommended in InFish. The riparian zone is primarily open becoming more timbered moving upstream. Road 498 parallels the stream for the majority of its length. The road is within the RHCA for approximately 2.5 miles and encroaches on the stream itself for about 0.4 miles, (based on GIS mapping). There are four road crossings and one railroad bridge on Hidden Creek. The road crossing nearest the confluence is a cement culvert; the other crossings are metal culverts. One culvert is a migration barrier.

Hidden Creek is considered to be "functioning at risk" due to the low quality of instream habitat, a road within the RHCA and high road density (Table 3-32).

Keeler Creek

Keeler Creek is approximately 3.8 miles along. It flows through NFS lands at the confluence with the West Fork of the St. Maries River and in the headwaters. This comprises approximately 41% of the stream length, the remainder flows across Potlatch Timber Company lands. Keeler Creek is assumed to be utilized for spawning, rearing and overwintering habitat. The surveyed reach (lowest reach) of Keeler Creek has low habitat diversity, a fair amount of cover but the cover is of poor quality. Large woody debris meets InFish guidelines. Substrate composition is primarily sands, which is not conducive to salmonid spawning. Forest Service road 765 was within the RHCA of Keeler Creek for approximately 2.62 miles, of this 0.2 miles directly encroached upon the stream channel. In 2000 this road was closed, i.e. culverts pulled, but fills still remain in place. The stream continues to pass through 1 culvert near the mouth; this is a concrete culvert, which is partially collapsed. This culvert is located on county road.

Keeler Creek is consider to be "functioning at risk" due to the low quality of instream habitat, and the high road densities (Table 3-32), with an associated high number (92) of stream crossings.

Kitten Creek

Native westslope cutthroat trout utilize Kitten Creek for spawning, rearing, and over-wintering habitat. There is a lack of quality over-wintering and rearing habitat for native salmonids which is limiting the carry capacity of Kitten Creek. Cover complexity in Kitten Creek is adequate. Riparian roads have a negative impact on reach two.

The condition of aquatic resources in Kitten Creek are unlikely to be influenced by any future Federal actions because National Forest System land only occupies a very small percentage of the sub-basin in the extreme headwater reaches. Kitten Creek is considered to be "functioning at risk" due to the low of quality instream habitat and the high road density (Table 3-32)

Log Creek

Native westslope cutthroat trout utilize Log Creek for spawning, rearing, and over-wintering. NFS lands primarily occur in the middle and upper reaches of Log Creek. Surveys of the lowest reach identified that instream habitat diversity is low and pool development is poor. Stream cover and cover complexity are adequate for the habitat conditions in Log Creek. Cattle grazing influences the structure and composition of riparian vegetation along reach 1. The substrate composition in Log Creek is more conducive to successful spawning toward the headwater reaches.

Log Creek is considered to be "functioning at risk" due to the low quality of instream habitat, the influence of cattle grazing and the high road density (Table 3-32).

Long Slim

Long Slim Creek is about 4.3 miles long and has Forest Service managed lands at its confluence with the West Fork of St. Maries and in the headwaters.
Approximately 34% of the stream is on NFS lands, the remainder is managed by either Idaho State Department of Lands or Potlatch Timber Corporation. Long Slim Creek is utilitized by westslope cutthroat trout for spawning, rearing and overwintering. The lower portion of Long Slim Creek, on Forest Service land has dense riparian vegetation and has sand to small gravel sized substrate.

Long Slim Creek is considered to be "functioning at risk" due to low quality habitat and high road densities (Table 3-32).

Mazie Creek

Mazie Creek is about 2 miles long. The upper 56% of the stream flows through NFS lands, the remainder at the mouth flows across private lands. Mazie Creek is utilized by salmonids but it is uncertain as to the species. Based on the usage of other streams in the area it is assumed that Mazie Creek is used for spawning, rearing and overwintering. Culverts under Highway 3 are low flow migration barriers. Mazie Creek progresses from a low gradient, sandy/silty meadow type stream in reach one to a stream with sand/gravel substrate and an increasing amount of riparian conifers in reach 3. Instream habitat has very little diversity, a low percentage of pool habitat and low quality pool habitat.

Mazie Creek is considered to be "functioning at risk" due to low quality habitat, and high road densities (Table 3-32)

Swede John (tributary to Mazie Creek)

Swede John Creek is a small stream about 2.7 miles long, which flows across NFS lands in the upper reaches of the stream, 73% of the stream length. The lower portion of the stream flows through private lands, 27%. Swede John is utilized by salmonids but it is uncertain as to the species. Based on the usage of other streams in the area, the size of the stream and the size of the fish observed, it is assumed that Swede John is used for spawning, and early rearing. The culvert under Highway 3 was determined to provide fish passage. Swede John will not be discussed separately from Mazie Creek in the remainder of the document.

St. Maries River (Mainstem)

The St. Maries River within the project area is approximately 8.1 miles long. It is primarily a low gradient, meadow stream, which meanders through a well developed floodplain for most of its length. The River provides spawning, rearing, and over-wintering habitat for native salmonids and other fish species. This stream also serves as a migration corridor for non-resident fish that utilize river tributaries. Only small sections totaling about 27% of the mainstem flow through National Forest land. This section of the St. Maries River has been listed as a Water Quality Limited Water Body (303(d)list). The pollututes of concern are nutrients, habitat alternation and sediment.

This section of the St Maries River is considered to be "functioning at unacceptable risk" due to the 303(d) listing, low quality of instream habitat, and high road densities (Table 3-32).

West Fork St. Maries

The West Fork St. Maries River (hereafter called the West Fork) is primarily a low gradient, meadow stream, which meanders through a well-developed floodplain for most of its length. The West Fork has been listed as a Water Quality Limited Water Body (303(d)list). The pollutants of concern are temperature and sediment. The West Fork provides spawning, rearing, and over-wintering habitat for native salmonids (primarily westslope cutthroat trout) and other fish species. This stream also serves as a migration corridor for non-resident fish that utilize river tributaries. Only small sections totaling about 21% of the West Fork flow through National Forest land. The remainder flows the commercial timber company lands, state lands and private ownership. Although the West Fork provides important habitat for native salmonids within the watershed, the quality of the habitat is impaired. Aquatic habitat lacks the complexity usually associated with quality habitat. Riparian zones have been impacted by human activity which produces a negative impact to instream habitat.

The West Fork St. Maries is considered to be "functioning at unacceptable risk" due to the 303(d) listing, low quality habitat, high road densities, and impacts to the riparian zone.

Wood Creek

Wood Creek is about three miles long and flows primarily through NFS lands, 97%, with only a small portion on Potlatch Timber Corporation and Idaho State lands near the mouth. Wood Creek is assumed to be providing spawning, rearing and overwinter habitat. Instream habitat is providing good habitat although pool development is low. Riparian conditions have been influenced by human activity, and are currently in a less desireable condition. The culvert under Highway 3 is not a migration barrier but the culvert under Forest Service road 341 is a low flow migration barrier due to a vertical jump. Upstream of Highway 3 the channel continues to be an E channel type.
The riparian zone is primarily grasses and forbs. Road 341 parallels the channel for the length of the road. Approximately 90% of the road is within 100' of the channel and approximately 20% is within 25' of the channel.

Wood Creek is considered to be "functioning at risk" due to the road within the RHCA and the high road density (Table 3-32).

Summary:
Based on the information provided in Table F-4 and Table F-5, as well as the descriptions provided for each individual stream, a condition for each stream was determined (Table F-6).

The definition for the categories in Table F-6 are described under the section titled Analysis Method, Current Habitat Condition (see page 3-67). Stream miles are based on GIS mapping.

Table F-6: Miles of Stream by Habitat Condition

Stream Name	Functioning	Functioning at Risk	Functioning at Unacceptable Risk
Bechtel		**2.5**	
Blair		**4**	
Catspur		**5**	
Cedar		**3.5**	
Christmas		**1.6**	
Hidden		**3.2**	
Keeler		**3.8**	
Kitten		**3**	
Log		**3.5**	
Long Slim		**4.3**	
Lower St. Maries			**8.1**
Mazie		**2**	
Swede John		**2.7**	
WF St. Maries			**9.5**
Wood		**3**	
Total project area stream length		**42.1**	**17.6**

Analysis of Effects

Analysis Methodology: Past activities contribute to the current condition of the area therefore theses activities were considered during cumulative effects analysis. A description of the past activities within the area is located in the fisheries portion of the Hidden Cedar EIS project file. Table F-7 provides a list of the on going federal and non-federal activities throughout the project area and future foreseeable activities on non-federal lands which were considered during the cumulative effects analysis. This table also provides a brief description of the anticipated effects from the activity.

Table F-7 Summary of Effects of Current and Reasonable Foreseeable Actions

Status	Activity	Direct/Indirect Effects	Comments
On Going Federal	Noxious Weeds	No significant impacts	St. Joe Noxious Weeds EIS, Oct. 1999
	Dutch Cat Timber Sale	No. Indirect Effects of water yield and peak flows not influenced by activities on FS land	Dutch Cat EIS, May 1997
	Merry Creek White Pine	No effects	USFWS concurrence letter,
	Power-line clearing and maintenance	Minimal if any	Primarily associated to tree felling
	Outfitter and Guides	No	Regulated by State fishing regulations
On Going Activity on both Federal and Non-Federal	Fire Suppression	Minimal, if any due to InFish	Also documented in the St.Joe River/NF Clearwater Basins BA, July, 1998
	Recreational Uses	yes	Influence of roads
	Miscellaneous Gathering of forest products	yes	Influence of roads
	Cattle grazing (private)	yes	Due to effects displayed by current practices
	Cattle grazing (USFS permit)	Not likely	Due to proposed modifications identified in the Draft St. Maries Grazing Allotments EA
	Unregulated Mining	yes	Effects limited in scope
	Operation and maintenance of non-FS or joint transportation systems	minimal	Water resources report states" it is not expected to be cumulatively significant because effects are temporary"
	Biotic Factors (brook trout)	Yes	Influence will not be affected by selection of an action alternative
On-going Non-Federal	Timber management	yes	Related to road construction, and increased water yields
	Road abandonment	Short term negative, long term benefit	Cedar Creek
	Clarkia community and related business activity	yes	Potential to increase sediment to streams and loss of riparian vegetation

The Hidden Cedar project proposes a wide variety of activities. This analysis assumes that all proposed activities will be implemented within the next 10 years. Activities described as having "committed funding", and "associated to the timber sale" are required to occur to meet the minimum positive effects described. Additional improvement activities, which currently have uncertain funding sources, would provide additional positive cumulative effects to the streams of the project area.

Some types of activities will be occurring in more than one drainage, (see appendix A) and will have similar direct and indirect effects irregardless of the drainage in which they occur. Table F-8, lists these activities and describes the anticipated direct and indirect effects from those activities.

Table F-8 Summary of Effects Common to All Action Alternatives

Activity	**Direct/Indirect**	**Comments**
InFish - bufferstrips	Reduces the risk of negative impacts to streams, especially temperature, retains future large woody debris, reduces sediment inputs, etc.	See InFish for documentation of beneficial effects of bufferstrips
Timber Harvest	Ranges from no effect to negative effects, especially from increased water yields, change to peak flows, etc.	Dependant on the location, prescription, area, timing and harvest method, see individual drainage descriptions.
Road construction	Ranges from minimal short term negative effects to long term impactive negative effects, especially from increases in sediment.	Dependant on the location, extent and timing of road construction, see individual drainage descriptions.
Road Obliteration	Short term increases in sediment create short term negative impacts, long term benefits from reduced risk of road failure and reduced continuous minor inputs of sediment	Extent of impacts are dependant on the location of the road, the number of culverts to be removed and the rate of revegetation
Access Road Requests	See road construction	See road construction
Gopher Baiting	No direct effects due to buffers. Indirect effects possible but unlikely to occur.	Tier to Gopher Baiting BA,
Precommercial Thinning	No effect short term, long term benefit from increasing the rate of growth on remaining trees.	Bufferstrips will be maintained between units and streams, no heavy equipment will be used,
Riparian Planting	Long term benefit by reestablishing coniferous riparian zone	Uncertain funding source
Large Woody debris placement	Short term sediment input creates short term negative effect, long term benefit from increased diversity	Uncertain funding source
Fish Pond Construction	Short term sediment input creates short term negative effect, long term benefit by creating a managed fishery which will reduce fishing pressure on native population	Uncertain funding source

Effects Analysis By Drainage

Bechtel Creek:

Direct and Indirect Effects

Pre-commercial thinning, 33 acres, will have no direct or indirect effects, see Table F-8.

The proper storage of 1.6 miles of roads, including the removal of 3 culverts, would have a short term increase in sediment to the streams during the removal of the culverts but there would be a long-term benefit due to the reduction in potential for culvert failure. Revegetation of the road surface would reduce the introduction of fine sediments to the streams. The majority of the roads (83%) identified for storage or decommissioning has committed funding. This would reduce road densities from 4.2 mi/mi^2 to 3.4 mi/mi^2. There are currently 2.6 miles of road listed in a long term storage condition, however it is uncertain if this entire length is in a proper storage condition, if those miles are reviewed and any problems corrected, the road density in Bechtel Creek would be reduced to 2.1 mi/mi^2.

Cumulative Effects

The Forest Service activity will reduce road densities and decrease the number of culverts, this will be a beneficial contribution to the cumulative effect to the stream. However, the activity on private lands near the confluence with the West Fork of the St. Maries River will likely continue to degrade the habitat of that section of stream thus it is unknown whether fish would migrate through that section to arrive at the more secure and higher quality habitat.

Based on this information the stream would continue to *"Function at Risk"*.

Blair Creek:

Direct and Indirect Effects

The effects of gopher baiting was discussed in Table F-8. There will be no influence from that activity.

The use of InFish bufferstrips would ensure that the timber harvest would have no direct negative effects on the aquatic ecosystem, (see Table F-8). Timber harvest is minimal, 39.5 acres, therefore, there would be no change to water yield, timing of flow, or change to water quality, (see Hidden Cedar watershed report).

The new road constructed for Forest Service activity would have a very minor risk of creating effects to the fishery of Blair Creek, because of its location near the ridge, the lack of stream crossings and following sale activity it will be put into long term storage.

The new road construction related to access request would have a very minor risk of creating effects to the fishery of Blair Creek. The proposed road access is short (0.1 miles), there are no stream crossings, and the road will either be surfaced and stored following use or ripped and stored. This combination of factors greatly reduces the risk of increased sedimentation to streams.

Cumulative Effects

The very limited Forest Service activities in this drainage will not contribute negatively to the cumulative effects.

The granting of access across Forest Service managed lands makes it possible for increased timber harvest and road construction on private lands, (see Table F-7). There will be a small amount of additional road construction on private lands which is directly related to the approval of the access request, but it does not cross any streams, therefore it also produces very minor risk of sediment increases to the stream

Considering the above factors in combination with the continued high road density (7.5 miles/mi^2), the high percentage of non-federal lands, and the lack of restoration activity this stream will be maintained in a *"Functioning at Risk"* condition.

Cat Spur Creek:

Direct and Indirect Effects

The access road request would create very minimal risk for negative effects to a stream channel. There are no culverts and the road is located near a ridge. In addition the road will be ripped and put into a long term storage status after use, which will further reduce the potential for sediment transport in the long term.

Cumulative Effects

Currently habitat within Cat Spur Creek is impaired. This condition will not change due to the activity proposed by this project. There will be some road obliteration associated to the Dutch Cat Timber Sale which will benefit the stream in the long term but the additional road construction, which will occur on non-federal lands, will somewhat negate that improvement, road densities will remain high (4.5 mi/mi^2**).**

The Forest Service activity proposed by this project will not contribute negatively to the cumulative effects in this stream. The trend for this stream will continue to be *"functioning at risk"***.**

Cedar Creek:

Direct and Indirect Effects

The effects of the gopher baiting was discussed in Table F-8. There will be no influence from this activity.

The implementation of bufferstrips will prevent timber harvest from having a direct effect on the fishery or aquatic environment. Water yields will increase slightly but due to the channel types the increase is not expect to be consequential, (see Watershed Report).

The construction of roads will cause a short-term increase in sediment during construction. These roads however are located near the ridge and therefore do not cross any stream channel. Both road segments will be surfaced and after harvest activities are completed, the roads will be put into long term storage, these treatments will reduce the long-term effects of these roads.

There will be 0.95 miles of reconstruction, including surfacing, on road 3557 within the Cedar Creek drainage. This road is located near the ridge between the Cedar Creek drainage and the Emerald Creek drainage. Because the road switches back and forth across the ridge between the two drainages, approximately 1.26 miles of road reconstruction on this road (3557) will occur within the Emerald Creek drainage. This

road reconstruction will have no negative impacts on the Emerald Creek drainage because location of the road, the fact that the road already exists and is being used, there should be no removal of vegetation, there should be a minimal amount of soil movement, and because of the large size of the Emerald Creek drainage.

There will be 1.3 miles of road converted from gated or barriered to a long term storage or decommissioned condition. This may create short term increases in sediment to the stream but in the long term would reduce the potential for sediment inputs from these roads.

Cumulative Effects

The Forest Service activity in this drainage will have very minor if any negative contribution to the cumulative condition of the drainage and should provide some beneficial impacts through the proper storage of roads.

The on-going activities (grazing and non-federal timber harvest) combined with, the current condition of the stream, and the moderately high road densities (3.5 mi/mi^2), should maintain the stream in a *'Functioning at Risk"* condition

Hidden Creek

Direct and Indirect Effects

The effects of the gopher baiting and riparian planting were discussed Table F-8. There will be no negative impacts from these activities and there should be long term benefits from the riparian planting.

The implementation of InFish bufferstrips will prevent timber harvest from having a direct effect on the fishery or aquatic environment. The harvest will cause a slight increase in water yield but this is not expected to create a consequential effect to the stream channel (Water Resources Report).

There will be four road segments constructed. One segment is a temporary road which will be decommissioned after use, another segment will be put into long term storage after use. Neither of these roads includes stream crossings. Because of these features these roads should not increase the risk of sediment entering a stream channel. The other two segments are located near the ridge which divides the Hidden Creek drainage and the Emerald Creek drainage. These roads will be constructed to replace the main Hidden Creek road, which will be decommissioned. The new roads are necessary to maintain access to lands in the Emerald Creek drainage. One of these road segments (#3901-3343 connection) includes no stream crossings, is short (0.12 miles) and will be barriered following use. This road will not contribute a measureable amount of sediment to any stream channels. The other segment (#3478-3914 connection) includes 4 stream crossing. The installation of these culverts will create a short-term increase in sediment. These stream crossings will not create any barriers to migration, because they are not located on fish bearing streams. This road will be gated following construction. Periodic monitoring of these culverts will ensure that they don't create potential for failure. The location of this new road is considered to be less impactive to the aquatic environment of the Hidden Creek drainage than is Road 498, which is in the RHCA.

Approximately 6.6 miles of road have been identified as candidates for conversion from an open, gated or barriered status to a long-term storage or decommissioned status. Sixty two percent of these roads have either committed funding or are associated to the timber sale. The removal and storage of the roads may create short-term increases in sediment to the stream but in the long-term would reduce the potential for sediment inputs from these roads. This activity would reduce roads densities to (5.2 mi/mi^2). An additional 6.2 miles of road are currently listed as being in a long term storage condition although it is uncertain if they were properly stored. If they are confirmed to have been properly stored and problems corrected then the road density for the Hidden Creek drainage would be reduced to 2.8 mi/mi^2. The main Hidden Creek road (Road 498), located within the RHCA, will be obliterated under this alternative. In addition to the reduction in a sediment source, the removal of the Hidden Creek road will also allow the stream full use of its floodplain and eliminate road induced constrictions. The removal of a culvert under this road will reduce the potential for failure of this culvert, which is storing a large quantity of deposition and will remove an undesirable migration barrier.

Cumulative Effects

The Forest Service activity in this drainage will have short term increases in sediment due to the storage/decommissioning of road but in the long term this will provide beneficial cumulative effects. The removal of road 498 will improve long-term conditions for the stream channel. The high percentage of Forest Service managed lands within the drainage, combined with the above mentioned factors and even with the presence of brook trout, indicates that the Hidden Creek fisheries would be improving toward a **"functioning properly"** condition.

Keeler Creek:

Direct and Indirect Effects

The implementation of InFish bufferstrips will prevent timber harvest from having a direct effect on the fishery or aquatic environment. The harvest will cause a slight increase in water yield but this will not cause any changes to channel morphology (see Water Resources Report).

There will be an increase in properly stored roads (2.7 miles) which can cause a short term increase in sediment during the implementation but in the long term it will decrease the potential for sediment reaching the stream. One and four tenths miles of this road storage is associated to the timber sale. The removal of culverts from these roads will eliminate all culverts on Forest Service managed roads within the Keeler Creek drainage.

Cumulative Effects

The Forest Service activity will not contribute negatively to cumulative effects to the stream. The primary influences in this drainage continue to be the effects from activity on private lands and the presence of brook trout. Even with the road storage/decommissioning on Forest Service lands the road density will continue to be high (6mi/mi2) due to the roads on non-Forest Service managed lands. The trend for this stream is to continue to *"function at risk."*

Kitten Creek:

Direct/Indirect/Cumulative Effects

There are no activities planned in the Kitten Creek Drainage under any of the alternatives therefore it will not be altered from the current condition. No further analysis will occur.

Log Creek:

Direct and Indirect Effects

There are no Forest Service planned activities within this drainage under any of the action alternatives and therefore no direct/indirect effects.

Cumulative Effects

Private industry will be constructing road within this drainage as a result of granting an access request on an existing Forest Service managed road in the West Fork drainage. This new road would have at least 5 stream crossings on private lands. The combination of new road construction, and the lack of road removal, increases the road density for this drainage. The road density is currently high and will become even higher. The construction of this road system also indicates that further timber harvest will be occurring in the drainage on private land.

There are no Forest Service activities planned for this drainage, however by granting access there is an increase in the potential for sediment reaching a stream channel. The combination of this high road density, the likelihood of the presence of brook trout in the system and the assumed continuation of timber harvest on private lands, it is expected that this drainage will remain in a *"functioning at risk"* condition.

Long Slim:

Direct and Indirect Effects

The effects of the pre-commercial thinning were described in Table F-8. There will be no influence from that activity.

The project proposes to convert 0.6 miles of open road to road management prescription C. The proper storage of this road will reduce the potential for increased sediment introduction to the stream and it will slightly reduce the road density. This road storage is contingent on funding sources other than those associated to a timber sale from this project.

Cumulative Effects

The Forest Service activity does not contribute negatively to a cumulative effect to the stream. The combination of high road density (5.4 mi/mi^2), the likelihood of the presence of brook trout in the system and the assumed continuation of timber harvest and road construction on private lands, it is expected that this drainage will remain in a *"functioning at risk"* condition.

Mazie Creek:

Direct and Indirect Effects

There will be no direct effects attributable to the proposed timber harvest due to the application of InFish buffers, (see Table F-8). Indirect effects deal with water and sediment yields and changes to peak flow and timing as a result of the harvest are addressed in the Water Resources Report. That report states that for water yield "the low predicted increases will not cause a significant channel morphologic change," therefore instream fish habitat will remain in its current condition.

Sediment yields are also expected not to be measurable. The new road constructed on NFS lands for this project will create short-term increases in sediment during construction, there are no stream crossings, the road will be surfaced and following use placed into long-term storage.

The access request road, including one stream crossing, will be surfaced and gated. This road potentially will increase sediment to the channel during construction, but the surfacing and the closure should in the long term reduce any sediment that might be produced.

The project proposes to convert almost 4 miles of open road into properly stored road (2 miles of decommission and 1.8 mile of long term storage. This road work has committed funds. Road storage would have short term negative influences on the aquatic environment from sediment increases, especially during culvert removal, however in the long term this will benefit the drainage by reducing the amount of sediment reaching the streams, restore subsurface flow patterns, and reestablish infiltration. This activity would reduce roads densities to (3.7 mi/mi^2). An additional 4.2 miles of road are currently listed as being in a long-term storage condition although it is uncertain if they were properly stored. If they are confirmed to have been properly stored and problems corrected then the road density for the Mazie Creek drainage would be reduced to 1.5 mi/mi^2.

The identified migration barrier on Mazie Creek would not be corrected because it is located on a road that is not administered by the Forest Service.

Cumulative Effects

The proposed activity on Forest Service lands will either not contribute towards negative cumulative effects or have a beneficial effect in the case of the road storage/closures. The granting of the road access does have the potential of contributing some amount of sediment. Granting the access request will increase the road on FS lands, and on private lands and will be used to conduct timber management. However the majority of the land in this drainage is under Forest Service management therefore the activity on private lands has less of an influence on the condition of the stream. Based on the above factors, even including the likelihood of the presence of Brook trout, it is considered that Mazie Creek would be trending to a "*properly functioning*" condition.

West Fork St. Maries:

Direct and Indirect Effects

The harvest associated to these alternatives does not create any direct effects due to the implementation of InFish buffers. The harvest should create only minimal increases in water

yield and will not have a negative impact on channel conditions (Water Resources Report) and therefore will not impact instream habitat.

The new road construction proposed for Forest Service activity is a short road (0.1 miles) does not cross any streams, will be surfaced and after use placed into long term storage. Because of all of these factors this road should not increase the amount of sediment that would be entering any stream channel.

The new access request roads construction (1.3 mi), will create some increases in sediment, due to the installation of at least 2 culverts. These roads will be surfaced and gated. The measures should reduce the potential for sediment from reaching the channel, as long as the culverts are periodically checked.

The conversion of 3.2 miles of open, gated or barriered roads into properly stored or decommissioned roads will create a short term increase in sediment during the storage but in the long term will benefit the drainage by reducing the potential for sediment inputs and by returning the sites to more natural runoff patterns. An additional 3.7 miles of road are currently listed as being in a long-term storage condition although it is uncertain if they were properly stored. If they are confirmed to have been properly stored and problems corrected then the road density for the West Fork St. Maries drainage would be reduced to 4.1 mi/mi^2.

Cumulative Effects

The proposed activity on Forest Service lands will either not contribute towards negative cumulative effects or have a beneficial effect in the case of the road storage/closures. Although the Forest Service would be treating a large percentage of roads, activity on private land is expected to constructed an additional 3.4 miles of road. The granting of the road access does have the potential of contributing some amount of sediment. Granting the access request will increase the road density on FS lands, and on private lands and will be used to conduct timber management. There will also be 8 culverts installed on non-Forest Service lands which would be a result of the approval of granting the access request.

The above information in combination with, the high percentage of non- federal lands, continued high road density, the presence of brook trout in the system and the assumed continuation of timber harvest on private lands, it is expected that this drainage will remain in a **"functioning at risk"** condition.

Wood Creek:

Direct and Indirect Effects

The effects of the pre-commercial thinning and gopher baiting were described in table F-8. There will be no influence from these activities.

The commercial harvest activity is very limited, and will utilize InFish Buffers. This combination will prevent direct or indirect effects to the aquatic environment.

There will be a short section of new road construction, which will require at least 2 stream crossing. This activity will create a short-term increase in sediment during construction. Following use the road will be put into storage and the culverts removed,

which again will create a short-term increase in sediment but in the long term will return the site to more natural function.

The conversion of gated or barriered roads into properly stored roads will create a short-term increase in sediment during the storage but in the long term will benefit the drainage by returning the sites to more natural runoff patterns. The road treatments are either committed funding or to be done by the timber sale. An additional 2.5 miles of road are currently listed as being in a long-term storage condition although it is uncertain if they were properly stored. If they are confirmed to have been properly stored and problems corrected then the road density for the Wood Creek drainage would be reduced to 2.2 mi/mi^2.

A migration barrier on the main Wood Creek road would be corrected which will improve fish passage, and a currently undersized culvert on a side road, which crosses Wood Creek will be removed.

Cumulative Effects

The Forest Service is the primary land manager in this drainage, therefore it has a strong influence on the trend of this drainage. The Forest Service activity in the Wood Creek drainage will create short term increases in sediment, which should not cause a change to the current channel conditions, due primarily to road reconstruction and decommissioning. In the long term there will be a decrease in the road density of the drainage from 5.4 mi/mi^2 to 4.3 mi/mi^2 or 2.2 mi/mi^2, if all management C roads are confirmed as stored properly.

Although the presence of brook trout will still have a negative effect on the aquatic system, the reduction in road density, the correction of culvert problems, the immeasurable impacts from timber harvest activity, will all trend this stream toward "functioning properly".

Lower St. Maries River:

Direct and Indirect Effects

The harvest associated to this alternative will not create any direct effects due to the implementation of InFish buffers. The harvest should create only minimal increases in water yield and will not have a negative impact on channel conditions (Soil and Water Report) and therefore will not impact instream habitat.

All the new road construction will be put into long term storage following use. All but 21% (0.32 miles) of the roads will be ripped. The remainder will be surfaced. There will be one culvert installation associated to the new road construction, this culvert will be removed following use. This road construction and subsequent closure will create some sediment production especially at the stream crossing. In the long term the roads should create a very small risk for adding sediment to a stream channel.

The road built for the access request is a small section of road which does not cross any streams therefore it should have minor influence on the aquatic environment. It will however add a small amount to the road density of the drainage.

The conversion of open, gated or barriered roads into properly stored roads will create a short-term increase in sediment during the storage but in the long term will benefit the drainage by returning the sites to more natural runoff patterns. Approximately 26% of the proposed road work has either committed funding sources or is associated to the timber sale. An additional 3.25 miles of road are currently listed as being in a long-term storage condition although it is uncertain if they were properly stored. If they are confirmed to have been properly stored and problems corrected then the road density would be further reduced although there would remain 12.7 miles of management C roads on non-federal lands with uncertain status.

Cumulative Effects

The granting of the road access will not directly impact the stream but the approval allows for further road construction and more timber harvest. Even though there will be road construction on NFS lands and on other ownership lands, the overall road density is decreased due to the proper storage of roads on NFS lands. Density is reduced from 6.8 mi/mi^2 to 5.9 mi/mi^2. The proper storage of roads on NFS lands will benefit the drainage by reducing slightly the negative effects of the increase in new road miles.

The Forest Service activity in this drainage, including the tributaries included in the cumulative effects area will not add negatively to the cumulative effects, it will provide some benefit by reducing the road density in the drainage, correct fish passage barriers on Forest Service managed roads, plant riparian areas and add woody debris to the West Fork stream channel. Although there will be improvements due to the above described activities, based on the current condition of the stream, continued high road density, the presence of brook trout in the system, continued grazing and the assumed continuation of timber harvest on private lands, it is expected this drainage will remain in a **"functioning at unacceptable risk"** condition.

SUMMARY OF DIRECT/INDIRECT/CUMULATIVE EFFECTS:

Species Occurrence: The activity associated to this project is not expected to influence the occurrence of bull trout in the project area or surrounding streams because they are not recently known to use this area.

Water Quality (temperature, sediment, chemical/nutrients): Temperature should be improved in the long term due to riparian planting. The activity associated to this project is expected to contribute to minor increases in sediment production in the short term primarily due to the road storage and decommissioning, and replacement of culverts with correctly sized fish passage structures. Overall there should be a 6.5% decrease in sediment in the Lower St. Maries drainage.

Habitat Access: Habitat access will be improved due to the correction of migration barriers

Habitat Elements (composition/quality of spawning, rearing, other): The activities associated to this project will either have no effect on instream habitat or in the case of the instream woody debris placement project, will have a beneficial effect.

Channel Conditions/Dynamics (includes RHCA conditions): The activity associated to this project will have no impact to channel conditions.

Flow/Hydrology (hydrograph characteristics): The activity associated to this project will have no impact to flow.

Watershed Conditions (road density/locations, disturbance regime): This project will decrease road densities in the Lower St. Maries drainage, the cumulative effects area. Forest Service activity will reduce road densities in six of the twelve subdrainages. The remaining drainages will either not be altered or will be increased due to activity on non-federal lands.

Species/Habitat Integration: The effects from this project are expected to slightly improve conditions within the project area, due to the reduction in road densities, the improvement to fish passage, the increase in diversity of instream habitat of the West Fork and the riparian planting in various areas.

Determination of Effects

The activities analyzed within this biological assessment have received a determination of ***"May Affect-Not Likely to Adversely Affected"*** bull trout or their habitat. No other threatened or endangered fish species are found within the cumulative effects area for this project.

CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS

Authorizing Agency: **US Forest Service** Management Unit(s): **USFS**
5th HUC Watershed: **Lower St. Maries River within cumulative effects area**
Action Type: Timber/Roads/Miscellaneous
Specific Actions (list):

Subpopulation Characteristics	Subpopulation Size	FA/FR/**UR**/?	R/**M**/D/NA	See attached Biological Assessment
	Growth and Survival	FA/FR/**UR**/?	R/**M**/D/NA	
	Life History Diversity and Isolation	FA/FR/**UR**/?	R/**M**/D/NA	
	Persistence and Genetic Integrity	FA/FR/**UR**/?	R/**M**/D/NA	
Water Quality .	Temperature	FA/FR/**UR**/?	R/**M**/D/NA	
	Sediment	FA/FR/**UR**/?	R/**M**/D/NA	
	Chemical Contaminants/Nutrients	FA/**FR**/UR/?	R/**M**/D/NA	
Habitat Access	Physical Barriers	FA/**FR**/UR/?	**R**/M/D/NA	
Habitat Elements	Substrate Embed.	FA/FR/**UR**/?	R/**M**/D/NA	
	LWD	FA/FR/**UR**/?	**R**/M/D/NA	
	Pool Frequency & Quality	FA/FR/**UR**/?	R/**M**/D/NA	
	Off-channel habitat	FA/**FR**/UR/?	R/**M**/D/NA	
	Refugia	FA/FR/**UR**/?	R/**M**/D/NA	
Channel Condition and Dynamics	Width/Depth Ratio	FA/**FR**/UR/?	R/**M**/D/NA	
	Streambank Condition	FA/FR/**UR**/?	R/**M**/D/NA	
	Floodplain Connectivity	FA/**FR**/UR/?	R/**M**/D/NA	
Flow/Hydrology	Change in Peak/Base Flows	FA/FR/**UR**/?	R/**M**/D/NA	
	Increase in Drainage Networks	FA/FR/**UR**/?	R/**M**/D/NA	
Watershed Conditions	Road Density and Location	FA/FR/**UR**/?	**R**/M/D/NA	
	Disturbance History	FA/FR/**UR**/?	R/**M**/D/NA	
	Riparian Conservation Areas	FA/FR/**UR**/?	**R**/M/D/NA	
	Disturbance Regime	FA/FR/**UR**/?	R/**M**/D/NA	
Integration of Species and Habitat Conditions	Habitat Quality and Connectivity	FA/FR/**UR**/?	R/**M**/D/NA	

Status: Functioning Appropriately - FA Functioning at Risk - FR
Functioning at Unacceptable Risk - UR
Effect: R - Restore: the action will result in a positive change in the indicator evaluated
M - Maintain: the action will have no effect on the status of the indicator evaluated
D - Degrade: the action will result in a negative change in the indicator evaluated
PJ: Professional Judgement

DICHOTOMOUS KEY DETERMINATION

1. Does the authorizing agency have discretionary authority to grant, modify, or amend provisions of the use authorization(s)? **Yes**/No

A "**No**", results in a "**NO EFFECT**" determination and the evaluation is completed. If "**Yes**", move to question #2.

2. Are there naturally reproducing species listed or proposed for listing currently or historically present at any time of the year in riverine habitat directly or indirectly affected by the actions? **Yes**/No

If "**Yes**", continue with question #3 through #11. If "**No**", document the "**NO EFFECT"** determination and the evaluation is completed.

3. Can the action change the existing input of Large Woody Debris (LWD) into occupied or historic habitat? **Yes**/No/NA

4. Can the action affect stream morphology for occupied or historic habitat? **Yes**/No/NA

5. Can the action affect properly functioning condition of the riparian area for occupied or historic habitat? **Yes**/No/NA

6. Can the action affect water quality and/or quantity in occupied or historic habitat? **Yes**/No/NA

7. Can the action affect the water flow regime/annual hydrography in occupied or historic habitat? **Yes**/No/NA

8. Can the action affect juvenile or adult behavior related to survival or reproduction? **Yes**/No/NA

9. Will the action involve toxic and/or hazardous materials which may reach occupied or historic habitat? Yes/**No/**NA

10. Can the action affect juvenile or adult access to habitat? **Yes**/No/NA

11. Can the action affect substrate material? **Yes**/No/NA

"**No**" responses to question #3-11 would result in a **"NO AFFECT"** finding and should be documented in the action file.

A "**Yes**" to any of the questions #3-11, results in a "**MAY AFFECT**" determination; continue with questions #12-14.

12. Are the effects described in #3-11 inconsequential/temporary in nature? **Yes**/No

13. Do the actions employ Best Management Practices (BMP's) designated to meet State water quality standards? **Yes**/No/NA

14. Is mitigation established that will preclude or reduce measurable effects on species and their habitat? **Yes**/No/NA

"**Yes**" responses to #12-14 results in a "**NOT LIKELY TO ADVERSELY AFFECT**" determination.

"**No**" responses to #12-14 results in a "**LIKELY TO ADVERSELY AFFECT**" determination. **If the project can't be mitigated to a "NOT LIKELY TO ADVERSELY AFFECT", go to Documentation of Expected Incidental Take.**

Project	**Mitigation**
Hidden Cedar	**Road decommissioning and proper storage will occur throughout the project area.**

IVb. Wildlife

Project Assessment Area

The Hidden Cedar Project Area is approximately 33,000 acres and includes Cedar, Blair, Christmas, and Staples Creek drainages in the Upper St. Maries River and Bechtel, Mazie, Wood, Hidden, Cat Spur, Long Slim and Keeler Creek drainages in the West Fork St. Maries River. Besides National Forest System Lands, the project area contains private industrial land, private residential land, railroad and highway right-of-ways and a powerline corridor. There are no roadless areas within or adjacent to the project area.

The geographic scope of potential effects on listed wildlife species for a project level analysis is determined by a combination of factors including: the geographic location, the scope of the proposed action, the capability and suitability of habitat, and the species which may be present.

The Hidden Cedar project area was defined early in the planning process and was delineated based on watershed boundaries. The geographic scope of potential effects on wildlife species (including listed species) for the project level analysis was determined based on the spatial distribution of proposed federal actions and the home range of species that may be impacted. The wildlife analysis area for the Hidden Cedar Project is displayed in Map 1. The area is 21,575 acres in size with 11,749 (54%) under Forest Service administration (unshaded areas in Map 1).

Historic Condition: Lieberg, in a report to the Secretary of the Interior dated 1897-98, stated that the St. Mary [sic] basin "…originally contained the largest continuous body of old growth in the northern portion of the State". However, at the time of the report he described large tracts - burned twenty to twenty five years earlier – were still covered with dense brush. Information from Lieberg also indicates that approximately 15% of the basin was composed of "yellow pine" (i.e. ponderosa pine) stands. Other information indicates there were more mixed severity fires and fires occurred on a larger scale than compared to present.

Based on this and other data it is logical to infer that historically there were larger stand sizes - and depending on which "snapshot in time" you use as a reference - more mature/old forest structure and a greater abundance of large snags. These conditions would have provided different habitat than that which occurs today. There would have been more habitat for mature/old forest associated species and species associated with snags (and fire killed trees). These species would include such species as: fisher (and other forest carnivores), flammulated owls, and black-backed woodpeckers. These same conditions would have provided less habitat for species associated with early seral forests (e.g. elk and deer).

Historic human access and disturbance was obviously very low and large remote areas provided habitat for species such as grizzly bears, wolves, and wolverines.

The documents “Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin” and “Toward a Forest Ecosystem Approach: An Assessment for the St. Joe Area” both revealed (at their respective scales) that here has been a decrease in late seral habitat compared to historic levels. These documents also reveal a reduction of secure habitat due to human uses.

Existing Condition: Past and ongoing actions influence existing wildlife habitat in the project area and the surrounding landscape. Inherent biophysical conditions (e.g. elevation), natural disturbance, and succession also affect wildlife habitat and its capability and suitability for some species. These factors were considered in the evaluation of existing conditions.

Obvious and notable differences between historic and present conditions are affecting species presence and abundance within the Hidden Cedar Project Area and St. Maries River basin. These differences in habitat due to fire history, harvest history, ownership pattern, fire suppression, and increased human presence (e.g. roads, private residences, railroad, etc.), affect the suitability of habitat for some species. The area is no longer providing suitable habitat for some species of concern (e.g. large remote areas for wolves and wolverines). Many of the factors affecting existing habitat in the landscape area are outside of the Forest Services influence (e.g. roads on private lands).

The existing vegetative component of habitat conditions in the drainage is a result of the interaction of disturbance (historically primarily fire and more recently harvest) and succession. Without disturbance (from management or natural causes) continued succession of forest stands on NFS land would move vegetation towards conditions more suitable for species associated with mature/old forest structure. However, whether this would result in suitable conditions for all species that may have occurred historically is debatable given the ownership situation. Due to ownership patterns and management objectives on non-NFS lands, even species for which capable and suitable habitat can be maintained on NFS land may not be able to sustain populations at a level to maintain viability in the St. Maries River drainage (e.g. those with large home ranges).

The existing structure of forest vegetation on NFS land in the Hidden Cedar wildlife analysis area - as measured by size class from the TSMRS database- is displayed in the following table.

Table WL 1

Large/Mature/Old Forest	1,662 acres	(14%)
*Old growth**	*501 acres (6%)*	
*Allocated old growth**	*487 acres (6%)*	
Small/Medium/Immature	6,998 acres	(60%)
Multistory	435 acres	(4%)
Pole/Young	887 acres	(8%)
Shrub/Seedling/Sapling	1,424 acres	(12%)
Open (field/riparian)	331 acres	(3%)
Total acres	11,737 acres	

* Not all old growth is in the large/mature/old forest size class

In the wildlife analysis area there are approximately 65 miles of roads on NFS land that, based on field review and an assessment of potential use, may impact wildlife (e.g. provide some level of access). For the wildlife analysis this results in a total road density on NFS land in the Hidden Cedar wildlife analysis area of 3.5 mi/mi^2. There are approximately 34 miles of open road that results in an open road density of 1.8 mi/mi^2. On all lands there are approximately 168 miles of roads of all types (main paved highway to primitive road) and status (open, gated, barriered, brushed-in) in the Hidden Cedar wildlife analysis area. For the wildlife analysis this results in a total road density of 5 mi/mi^2. There are approximately 69 miles of open road that results in an open road density of 2.1 mi/mi^2.

Species and Habitat Descriptions

The Listed wildlife species, a short description of habitat requirements, and a synopsis of existing conditions by species are displayed in the following table.

Table WL 2

Bald Eagle	**Nest in large dominant trees near large bodies of water in areas relatively free from disturbance. Perch sites, roost sites and access to prey are essential components of winter habitat.**	**No large bodies of water are present in the wildlife analysis area. There are no nests or reported sightings in the project assessment area.**
Canada Lynx	**Mesic conifer forests that provide a prey base of snowshoe hare (generally above 4,000' & in association with subalpine fir and spruce habitat types). Late and early successional stages.**	**Based on elevation, forest type, and potential vegetation (habitat type) the WL analysis and project area do not contain a sufficient amount of capable habitat to support resident lynx. The area is not in any Lynx Analysis Unit.**
Gray Wolf	**Large areas with high prey densities and isolation from human activities. Availability of den and rendezvous sites.**	**There is no evidence of den or rendezvous sites in the project area. The geographic location relative to surrounding human disturbances reduces the likelihood of occurrence.**
Grizzly Bear	**Large areas of undisturbed habitat. Low elevation riparian areas, meadows, snowchutes, shrubfields, grasslands, and open timbered stands.**	**Project area is in the Experimental Population Area of the Bitterroot Ecosystem. No documentation of grizzly bears in the Bitterroot Ecosystem. No known or suspected suitable habitat in analysis area.**
Woodland Caribou	**Mature to old growth forests with dense canopies over a large elevation gradient. High elevation timbered ridges with abundant lichens.**	**The project area is outside of the woodland caribou recovery area. The species is not known or suspected on the St. Joe Ranger District.**

On-site Inspections

Numerous documented (Hidden Cedar EIS Project Files) and undocumented field visits were made to the project area. Field trips were for various purposes - some specifically related to Listed species and the Hidden Cedar Project, some more general in their purpose and/or not specifically related to this Project. There was no evidence of listed wildlife species during these field visits.

Surveys for the presence/absence of Canada Lynx were conducted in 1999 (negative results for the presence of lynx). A field review of habitat was conducted in 2001 specifically to determine the capability/suitability of lynx habitat in the area and to further validate the decision to not include the area in a Lynx Analysis Unit.

The existing condition for species in the Project area is based on field visits, sighting records, scientific literature, and habitat/vegetation data.

Design Features

Design features of the selected alternative in the Hidden Cedar Project that contribute to avoiding adverse impacts to listed wildlife species include the following measures.

- If TESP species were found during project implementation, appropriate protection measures would be taken to protect habitat and the species. This would include altering management activities if necessary. Timber Sale Contract provisions for Protection of Endangered Species, and Settlement for Environmental Cancellation will be included in any subsequent timber sale contracts.
- Changes in the alternatives or location of any Threatened, Endangered, or Sensitive (TESP) species found prior to or during project implementation would be reported to the District Botanist and District Wildlife Biologist so that appropriate measures can be taken to maintain population viability of TESP species.
- Slash depths adjacent to new and reconstructed roads would not exceed 1.5 feet in depth or if this is not practical, 16 foot wide openings would be provided every 200 feet (especially on ridges and at game trail crossings).
- To provide elk security, timber sales in adjacent areas would have a ridgeline between the disturbance and security area. This would be done by either subdivisions (larger sales) or scheduling (smaller sales) in the timber sale contract.
- Travel cover will be maintained. Vegetation management will avoid making openings (i.e. areas with <30% canopy cover) within 200 feet of the ridge top or 400 feet if the other side if the ridge does not provide cover. Any openings created on ridges designated as potential travel areas would meet the following criteria:
  - < 300’ in width,
  - Limited to one side of the ridge top
  - Minimum of 800’ between openings

- None to be situated in a saddle
- < 25% of the distance from the peak of the ridge to the drainage will consist of openings

o The following Snag Management Recommendations from the Northern Region Snag Management Protocol (January 2000) would be met (where these or higher levels exist) on habitats found in the project area. The retention of snags and snag replacements would be applied at the scale of every 5 to 25 acres, which allows for retention of snags in groups or clumps. Replacement snags would be retained at 5 times the number of snags per acre.

Table –WL 3 – Snag Management Recommendations

Habitat	Snag/acre retention prescriptions
Warm dry ponderosa pine and Douglas-fir	**1-2 greater than 20" dbh**
Cool Douglas-fir, warm grand fir, slope <30%	**4 greater than 20" dbh**
Cool Douglas-fir, warm grand fir, slope >30%	**6-12 total, with 2-4 greater than 20" dbh**
Cool, wet, and dry spruce, grand fir, hemlock, and subalpine fir	**6-12 total with 2 greater than 20" dbh**
Low elevation cedar and hemlock	**12 total with 4 greater than 20" dbh**
High elevation spruce/fir/lodgepole pine	**5-10 greater than 10" dbh**
Whitebark pine/limber pine	**All available**

To meet the objectives listed above in Table 1 Snag Guidelines:

- Snags that show signs of decay, loose bark, or broken tops would not be designated for harvest. Exceptions would be made for road construction and log landings.
- The Reserve Tree Guide (IPNF, 1995) would be followed to reach objectives of the Snag and Woody Debris Guidelines (IPNF Forest Plan, Appendix X) and worker safety.
- Tree marking guidelines for reserve trees would favor the retention of large diameter tree species, particularly hollow and broomed trees except when they pose a safety concern. Western larch, ponderosa pine, and western red cedar > 20" dbh would be marked as first choices for snags and reserve trees.
- Snags cut for safety reasons will be left in the unit - preferably where they fall.
- Silvicultural and burning prescriptions will be prepared with the goal of protecting snag and green tree replacement snags, and retaining recommended levels and distribution of coarse woody material during site preparation and fuels treatment.

o Excavator piled slash should be left at a rate of one slash pile per 5 acres and constructed to provide wildlife habitat.

- **Design criteria specific to pre-commercial thinning:**
  - The maximum diameter of felled trees would be 7 inches. Cull trees that exceed the diameter limit would be girdled in lieu of felling to provide additional cavity-nesting habitat.
  - Snags or dead trees would not be cut.
  - Directional felling would be used to minimize slash depths. Trees that cannot be directionally felled would be bucked in lengths not to exceed 6 feet.
  - Slash would be pulled back a minimum of four feet away from all system roads, cut banks and fill slopes.
  - Established game trails would be kept clear of slash by directional felling and slash pullbacks to maintain travel linkages.
  - All slash resulting from project activities would be removed from riparian zones.
  - A 50-foot no-activity buffer would be maintained along all wet defined channels, springs, and seeps within and adjacent to thinning units.
  - Existing closed gates would be locked after each entry and exit.
  - Activity behind closed gates would be scheduled for completion prior to the opening of the elk any weapon hunting season. An extension may be allowed based on extenuating circumstances (fire, weather, etc.) after interdisciplinary review.
  - Earthen barriers removed to allow access for project activities would be replaced upon completion of the unit and before October 10th.
  - If access is desired via roads that have naturally closed through re-vegetation, interdisciplinary field reviews would be conducted to evaluate options and make recommendations regarding opening the road.

Analysis of Effects

Based on direction provided by the USFWS, the Species List, review of the area, a search of district records, scientific literature, professional knowledge of the area, the EAWS, and a review of information from the Conservation Data Center (CDC) species requiring analysis were identified (and the level of analysis was determined).

The grizzly bear and woodland caribou are not present in the project area (see Appendix A). However, the project area is in the Experimental Population Area of the Bitterroot Ecosystem (USDI, 2000). If grizzly bears are reintroduced into the Bitterroot Grizzly Bear Recovery Area the Record of Decision (ROD) on Grizzly Bear Recovery in the Bitterroot Ecosystem provides provisions for management of bears that move onto public land in the Experimental Population Area (USDI, 2000). The USFWS does not envision conflicts with any current or anticipated management actions of the U.S. Forest Service (USDI, 2000). Based on the species not being present, the existing condition of habitat (i.e. low elevation, lack of remoteness), the nature of the proposed activities, the uncertainty of when/if bears may occur in the project area, and the time frames of the decision to be made and any reintroduction effort, there would be no effect on grizzly

bear. There would be no effect on **grizzly bear** or **woodland caribou** and no further discussion for those species is needed.

The Hidden Cedar wildlife analysis area does not provide nesting or wintering habitat for the bald eagle - bald eagle occurrence in the drainage is considered incidental (see Appendix A). The wildlife analysis area does not provide sufficient capable habitat to support resident lynx and was not included in any Lynx Analysis Unit on the district. The closest LAU is approximately 2 miles east of the project area. (See Appendix A). There would be no effect on **bald eagle** or **Canada lynx** and no further analysis is needed or required.

Further analysis of the potential for effects on gray wolves will be documented in this BA.

Gray Wolf

Historically wolves were distributed throughout most of Idaho in unknown populations. Wolf packs of 4 to 10 animals appear to have ranged widely in the mountains of northern and central Idaho. A decline of native ungulates, control programs designed to eradicate wolves and conflicts with livestock and humans caused the decline of wolf populations in Idaho and led to the absence of a breeding population in Idaho (Hansen, 1986).

High prey densities -particularly big game - and minimal conflict with human interests and uses characterize wolf habitat. Human disturbance measured by open road densities and prey availability measured by elk habitat potential (EHP) will be used to disclose potential effects in this analysis. Other important habitat features for wolves include den and rendezvous sites (Hansen, 1986).

Affected Environment and Existing Condition

The Hidden Cedar wildlife analysis area falls within the Central Idaho Reintroduction Area where gray wolves are classified as nonessential experimental populations. This classification treats wolves as proposed for listing under the ESA. The reintroduction of wolves in Central Idaho did not envision conflicts with current or anticipated management actions. No changes in land use restrictions (other than the possibility of temporary restrictions near den sites) are required because of the reintroduction.

Existing biophysical habitat does not preclude the presence of wolves in the drainage. However current road densities, human presence, and existing land uses reduce the likelihood of wolves occurring in the area. The area was not identified as a “dispersal corridor” or as a “key area for wolf conservation” (Hansen, 1986).

There are no known or suspected wolf dens or rendezvous sites in the wildlife analysis area or the St. Maries drainage. The nearest wolf territory is approximately 8 miles from the project area. Available data does not indicate that wolves from that pack use the Hidden Cedar Project Area. The existing road density in the wildlife analysis area is 5 mi/mi^2 on all ownerships and 3.4 mi/mi^2 on NFS lands.

The EHP value in the Cedar Creek elk analysis area is .47 and in the Hidden Creek elk analysis area it is .43. The weighted average for both areas is .45.

Environmental Consequences

Table WL 4 – Effects on Road Density and Prey Availability

	Total*	ORD*	Total*	ORD*	
Existing	3.5	1.8	5.0	2.1	.45
No Action	3.5	1.8	5.2	2.0	.44
Alternative F	3.1	1.3	5.0	1.7	.53

Direct and Indirect Effects

There are no known or suspected dens or rendezvous sites in the project area. There would be no adverse impact on any linkage or connections between habitats. The nearest wolf territory is more than 8 miles from the project area. Based on the duration and timing of activity any change in human disturbance from the proposed actions would be short lived and inconsequential. For these reasons, the likelihood of direct effects on gray wolves is very low.

Indirect effects from the granting of access requests and the road construction on non-NFS lands would increase road density and adversely affect elk habitat potential. The potential for adverse effects from these actions are more than counteracted by the changes in road management and road obliteration/storage on NFS land that result in a decrease in open road densities and a long term increase in EHP and therefore in prey availability (Table WL 4).

There would be no adverse effect on access or on prey availability. There would be no consequential increase in the likelihood of human wolf conflicts. The potential for disturbance (of transient wolves) during project implementation is extremely low, would be limited to the time of implementation and any impact would be short term and inconsequential. The proposed action would have no adverse effect on gray wolf habitat nor affect their occurrence.

Cumulative Effects

Historically, gray wolves occurred throughout northern Idaho. An intensive campaign to eradicate wolves led to wolves being essentially gone from the West by the 1930s. Based on the analysis of direct and indirect effects presented in the evaluation, design criteria which would avoid adverse impacts (e.g. maintenance of corridors/linkages), the envisioned impacts on land management from wolf reintroduction, the likelihood and nature of occurrence of wolves, and the relative lack of preference for special habitat exhibited by wolves; the federal actions evaluated in this proposal would not add to any adverse cumulative effects nor contribute to the loss of populations or adversely affect critical or important habitat for gray wolves.

Determination of Effects

It has been determined that the activities analyzed in this Biological Assessment would have ***"No Effect"*** on the *bald eagle*, *Canada lynx*, *grizzly bear*, or *woodland caribou*; and are ***"Not Likely to Jeopardize the Continued Existence of the Species or Result in Destruction or Adverse Modification of Proposed Critical Habitat"*** for the *gray wolf*.

IVc. Plants

Species and Habitat Descriptions

Water howellia - a member of the family Campanulaceae, has the potential to occur on the St. Joe Ranger District. According to the Conservation Strategy for *Howellia aquatilis* (USDA 1994), there are currently 110 known occurrences of the species; most occurrences are in Montana and Washington, with only one known occurrence in Idaho in Latah County. Water howellia occurred historically on the Forest but is believed to have been extirpated.

Water howellia is an annual aquatic species restricted to small, seasonal, pothole ponds or the quiet water of abandoned river oxbows. It occurs at elevations from 10 feet in Washington to 4,420 feet in Montana. The species reproduces only by seed. Germination occurs in October, presuming the plant's habitat has dried sufficiently to expose the seeds to oxygen. Because of this restrictive habitat requirement, population numbers in a given year are directly influenced by the extent of pond drawdown at the end of the previous growing season (USDA 1994).

Ute ladies'-tresses - a member of the plant family Orchidaceae, has the potential to occur on the St. Joe Ranger District. It is currently known from Colorado, Idaho, Montana, Nebraska, Utah, Washington and Wyoming. The total population for the species is approximately 25,000 to 30,000 individuals (Mousseaux 1998). In Idaho it is only known from the Snake River floodplain in the far eastern part of the state. There are no historical or undocumented sightings elsewhere in the state of Idaho. (Moseley, 1998)

It is a perennial, terrestrial species that may undergo periods of prolonged dormancy. "It is a lowland species, typically occurring beside or near moderate gradient medium to large streams and rivers in the transition zone between the mountains and plains. It is not found in steep mountainous parts of the watershed, nor along slow meandering streams out in the flats. The communities where it is found tend to be typical of riparian habitat in the area. … Soil moisture must be at or near the surface throughout the growing season." (USDI, 1998). Floodplains, river meanders, islands, and man-made wetland habitats are typical settings. The communities it is found in are predominantly herbaceous (graminoid) wet meadows, but also include riparian shrublands, riparian deciduous forests, and irrigated pastures (Moseley, 1998).

Spalding's catchfly - a member of the family Caryophyllaceae, is suspected to occur in the IPNF. It is currently known from 52 sites in west-central Idaho, northwestern Montana, eastern Oregon, eastern Washington and British Columbia. The total number of individuals is around 16,500 (USDI, 2001a).

Spalding's catchfly is a long-lived perennial species which reproduces only by seed (Lichthardt 1997). Individual plants often exhibit long periods of dormancy (one to three years), and may even experience dormancy within a growing season (Lesica 1997). Its habitat is in dry grassland habitats and grassland inclusions in ponderosa pine and

Douglas-fir forest. Suitable habitat for this species is typically dominated by fescues (*Festuca* species), blue bunch wheat grass (*Pseudoroegneria spicata*) and other bunchgrasses, but also has a high density of forbs. Some sites may have large shrub thickets of *Symphoricapos albus*, *Physocarpus malvaceus*, or *Rosa* spp. Soil types on which it has been found include loam, silty loam, granitic, loamy basaltic and loess (USDI 2000). Soils in its habitat are characterized as deep to moderately deep.

On-site Inspections

Regional direction (Leonard, 1992) states that the need for and extent of field reconnaissance should be commensurate with the risk associated with the project and species involved, and the level of knowledge already in hand. Field surveys will be conducted in all areas slated for project activities that contain high potential suitable habitat. Surveyors will walk through activity areas with the potential to contain listed plants during the growing season of those species likely to be found there. A general survey will be conducted, with more time being spent in special habitats. If any rare plant individuals are found, intensive searches will be conducted within the area. Species presence is assumed for all highly suitable habitats and field surveys either validate or negate presence. Any occurrences that are deemed necessary to ensure species and population viability are protected. These practices are assumed to be an effective conservation strategy. Occurrences discovered prior to project implementation would have mitigation measures designed by the District Botanist to ensure that species and population viability are maintained.

Currently, some field surveys have been conducted for water howellia, Ute's ladies-tresses, and Spalding's catchfly within the Hidden Cedar project area. These surveys were associated with the St. Maries Grazing EA project and do not coincide with proposed activity areas in the Hidden Cedar project. However, the most promising areas for these species were examined, and in the case of water howellia and Ute's ladies-tresses, no habitat was found. Potential habitat of poor quality was located for Spalding's catchfly, although no plants were found. These areas will be resurveyed in conjunction with the grazing allotment project in the upcoming season. Additional field surveys in potential habitat scheduled for ground disturbing activities associated with the Hidden Cedar project will be conducted prior to project implementation. Survey records will be located within the project file.

Design Features

Plant species presence is assumed for un-surveyed habitat that is highly suitable to support threatened species. If listed species are found during project implementation, appropriate protection measures would be taken to protect habitat and the species. This would include altering management activities if necessary. Timber Sale Contract provisions for Protection of Endangered Species, and Settlement for Environmental Cancellation will be included in any subsequent timber sale contracts.

The location of any threatened species found prior to or during project implementation would be reported to the District Botanist so that appropriate measures can be taken to maintain population viability.

Field surveys for rare plants will be conducted where necessary, prior to project activities, to verify or negate presence. Measures to protect population viability and habitat for all known and newly discovered occurrences would include the following: altering or dropping proposed units from activity, modifying the proposed activity, and implementing buffers around plant occurrences.

A number of preventative measures will be taken to reduce the risk of noxious weed introduction and spread in accordance with the St. Joe Weed Control EIS (USDA, 1999). Measures include:

- Existing populations of noxious weeds along haul roads would be treated prior to harvest activities.
- All off-road logging and construction equipment (including machinery used in restoration projects) would be cleaned prior to entering the project area. This cleaning would remove dirt, plant parts, and material that may carry noxious weed seeds into the sale area. A Timber Sale Contract Provision will be included in the timber sale contract.
- Mulching agents, such as hay or straw, would be certified noxious weed free before being allowed on the project area.
- All seed used for re-vegetation and erosion control purposes would be certified noxious weed free.

Analysis of Effects

Geographic scope

The geographic scope of analysis for rare plant species in this project is the Hidden Cedar Project Area (approximately 13,500 acres of Forest Service ownership, and 32,957 total acres). Geographic scope of potential effects (direct, indirect, and cumulative) is determined by a combination of factors including: geographic location, the scope of the proposed action, resources and species which may be present, consequences and scope of effects, and the ability to measure effects. The scope of the action and potential for adverse effects determine the extent of analysis necessary. This analysis considers short and long-term management as it may affect known or suspected populations of listed plant species as well as their potential habitat.

Methodology

Based on current information regarding preferred habitat and successional state for species, potential habitat was delineated using site-specific information from timber stand examination records, aerial photographs, topographic position, existing habitat, survey information, personal knowledge and professional judgment. Potential habitat for *Silene spaldingii* was delineated using a GIS layer created from satellite imagery of reflectance

patterns. This method reasonably identifies areas with grassland/forb communities. On the ground visits will be used to verify habitat suitability.

Historic/Existing Condition

Howellia aquatilis was known to have occurred on the Idaho Panhandle Forest at one time, but is believed to have been extirpated. Currently, there are no known sites of federally listed plants on the Forest. The USDI Fish and Wildlife Service lists three species (threatened) that are suspected on the district (USDI, 2002). A threatened species is any that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. "Suspected" means that this species is believed to have potential to occur, but to date, has not been found on the Idaho Panhandle National Forest.

Past and ongoing activities within the project area such as road construction, timber sales, and recreational use have led to habitat modification and fragmentation. These activities have also contributed to an encroachment of weeds into the area, primarily along roads, in open meadows, and in disturbed areas. Grazing has been occurring within the area for many decades. Most open grassland communities have had their native grass species largely displaced by introduced pasture grasses.

Effects Analysis

Activities associated with timber harvest, road construction/reconstruction, controlled burning, watershed rehabilitation, and pre-commercial thinning have the potential to impact listed plants. Effects on population viability from disturbance events (natural or human-caused) are hard to quantify with certainty for all plant species. Much of the current knowledge regarding listed plant species is based on observational and even anecdotal information.

The risk of adverse effects to plants from activities varies with treatment type, timing of treatment, extent of treatment, habitat suitability, and the species at risk. Plant surveys and mitigation measures are designed to protect populations and suitable habitat. Activities with effects that could lead to loss of population viability or trend toward federal listing would have the highest risks associated with them. Other activities may impact individual plants but are not likely to adversely affect population viability and as such are low to moderate risk activities. Small changes in the light regime, moisture levels, or moderate soil disturbance can impact individuals or populations of species dependent on specific successional habitats, soil fungi (mycorrhizae) associations, or canopy closure.

The purpose of this analysis is to determine if the proposed action will adversely impact listed plants that may occur in the Hidden Cedar project area, to insure that the proposed action does not contribute to the loss of rare plant population viability, and to insure compliance with Forest Service and other federal policies. Indicators used to measure

effects include: the extent of ground disturbance, proximity of proposed activities to known occurrences and suitable habitat, and the predicted reduction of fuel loads. Most of the activities associated with the Hidden Cedar project, such as gopher control or the construction of a recreational fish pond, will not be taking place within potential habitat for the three listed species. Riparian planting and associated fencing may occur in potential habitat but will result in very little ground disturbance and are not expected to adversely affect the population viability of any rare species. Because water howellia, Ute's ladies-tresses, and Spalding's catchfly do not occur in forested habitats, timber harvest and the associated burning are not expected to directly affect these species. New road construction is a ground disturbance activity that may have adverse effects on species and/or suitable habitat. Road reconstruction and reconditioning occur in existing road prisms which are already disturbed and of very low habitat suitability. Therefore, these activities pose low risk to species and habitat. Full road prism obliteration could affect plants in suitable habitat immediately adjacent to the road system. Direct impacts from equipment can occur above the top of the cut slope, and below the bottom of the existing fill as the slope is returned to a stable position. However, the actual amount of habitat affected along any road prism would be small and present little risk to species or habitat. Existing populations in these areas are rarely viable populations and often consist of individual plants that are part of, or isolated from, a larger "meta-population" in the local vicinity. The long-term effects of these treatments could be beneficial to such populations by improving habitat.

An indirect effect of project activities may be the expansion of noxious weed populations into newly disturbed areas. If left unchecked, weeds could then spread into surrounding areas, further degrading any suitable habitat present. Weed treatment and monitoring within the project area will occur in accordance with the St. Joe Noxious Weed Control FEIS (USDA, 1999), and would serve to decrease weed populations size. Other mitigations will be applied as listed in the section, Mitigation Measures. If listed species are found and weeds are thought to be a potential threat, weed treatments will be used as a mitigation measure. Noxious weed treatments are expected to improve or maintain habitat quality which may ultimately benefit rare species.

Alternative F: The selected alternative would result in approximately 1300 acres of timber harvest. In addition there will be 9 miles of new road construction on Forest Service land (for access requests and timber harvest). A very small portion (.1 mile) of the 9 miles would also include some moderately high probability habitat for *Silene spaldingii*. Suitable habitat for water howelia and Ute's ladies'-tresses is not present within proposed activity areas. There will also likely be 11.9 miles of road construction on private land. Road construction poses a high risk to rare species. Road reconstruction, long-term storage, and decommissioning will also occur, some of which will be on newly constructed roads after harvest activities end. These activities are expected to pose a low risk to rare plant species or habitat. All areas scheduled for ground disturbing activities that have a possibility for adverse effects within potential habitat, will be surveyed for listed species prior to project implementation. In the event that any rare plant populations are found prior to project implementation, the District Botanist will implement mitigation measures.

The cumulative effects area for listed plants and highly suitable habitat was determined to be the project area. It is likely that potential habitat for the three listed species was more extensive in the past. Past activities on federal and other lands, including fire, road construction, grazing, and timber harvest have likely adversely affected habitat quality. Design criteria would be applied to protect listed plant species and viability for any populations discovered prior to project implementation. The loss of individual plants would not contribute to the loss of population viability.

Current and future activities such as road building, timber harvest, grazing, burning, and recreation can be expected to result in continued habitat modification on these lands. Future activities within the project area are likely to include 6.5 miles of new access road construction on private lands and associated activities. Within the project area, activities may occur that are associated with garnet digging. All such activities will be analyzed in future environmental documents. However, there are several reasonably foreseeable activities that may occur. Unauthorized digging for garnets currently occurs along a tributary of Cat Spur Creek in T42N R1E Sec 19 and is likely to continue. Recreational digging may be proposed for this area in the future. Wood Creek will likely be tested for garnets in the near future. Testing is done by digging three to fifteen feet deep trenches in the riparian areas at approximate 50 foot intervals. All soil removed during trenching would be replaced. The results of the testing may lead to Wood Creek being opened up for recreational digging. This typically results in approximately 100 feet of riparian being hand dug every season. Digging would start at the head of the drainage and work down, and all digging sites would be rehabilitated yearly. Neither the area along Cat Spur Creek or Wood Creek have potential habitat for listed plants. The Merry Creek white pine progeny site consists of a young stand of timber which will be cleared, burned, and then replanted with disease resistant strains of trees. The site does not occupy potential habitat and no impacts to listed species are expected to occur. All proposed and future ground disturbing activities on National Forest lands, except wildfire suppression, will be evaluated through surveys and biological assessments/evaluations as to their impact on listed plant species.

The selected alternative would have **no effect** on Spalding's catchfly. Potential habitat does exist within the project area, however only a very small amount (< 1 acre) of this potential habitat would be impacted by any project activities. These areas would be thoroughly surveyed prior to any project initiation.

For Ute's ladies'-tresses and water howelia the selected alternative would have **no effect**, as habitat is not present within proposed activity areas.

V. Determination of Effects

Table 8

Water howelia	X			
Ute's ladies'-tresses	X			
Spalding's catchfly	X			
Bull trout		X		
Grizzly bear	X			
Bald eagle	X			
Woodland caribou	X			
Canada lynx	X			

Gray Wolf		X	

Cumulative Effects on T&E Species

There are no cumulative effects that would cause the federal action to contribute to the loss of key populations or adversely affect proposed critical habitat. The proposed action would not result in any irreversible or irretrievable commitment of resources that would violate Section 7(a)(2) of the ESA.

VI. Additional Consultation

This project was reviewed at Level 1 Consultation meetings in Coeur d'Alene on September 20, 2001 and March 13, 2002. At that time the project was reviewed and tentative determinations for fish and wildlife were discussed.

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Appendices

Appendix A

Species/Habitat not present in the Hidden Cedar project area

The T&E species list from the USFWS identifies species at the Forest level (i.e. IPNF). It is used as a starting point from which to identify species that may require analysis in NEPA documents and Biological Assessments at a project level. Capable and/or suitable habitat for some species on the list does not occur everywhere on the Forest. This document provides rationale for the determination that capable/suitable habitat for some species is not present in the St. Joe Area, that some species do not occur on the District, and/or that some species do not occur in the analysis area and need not be addressed in detail at the project level.

Grizzly Bear

Quality grizzly bear habitat provides minimum potential for grizzly - human conflicts, sufficient space, isolation from human developments, and diversity of habitats that provide food during different seasons. In northern Idaho, grizzly bears occupy cedar/hemlock, spruce-fir, lodgepole/larch, and shrub fields in the Selkirk Mountains Ecosystem and the Cabinet/Yaak Ecosystem.

The eastern portion of the St. Joe Ranger District is in the Bitterroot Grizzly Bear Primary Analysis Area of the Bitterroot Ecosystem. There have been reported “possible” grizzly bear sightings on the St. Joe district. However, the U.S. Fish and Wildlife Service has determined that there are no grizzly bears in the Bitterroot Ecosystem at this time (USDI, 2000a). There is no evidence or reason to suspect that grizzly bears are present in the Hidden Cedar analysis area.

The St. Joe Ranger District is in the Experimental Population Area of the Bitterroot Ecosystem (USDI, 2000b). If grizzly bears are reintroduced into the Bitterroot Grizzly Bear Recovery Area the Record of Decision (ROD) on Grizzly Bear Recovery in the Bitterroot Ecosystem provides provisions for management of bears that move onto public land in the Experimental Population Area (USDI, 2000b). The USFWS does not envision conflicts with any current or anticipated management actions of the U.S. Forest Service (USDI, 2000b).

The Hidden Cedar analysis area is not within the Grizzly Bear Evaluation Area of the Bitterroot Ecosystem (MacCracken et. al., 1994) or the Bitterroot Grizzly Bear Recovery Area. The Hidden Cedar analysis area is not expected to provide habitat for grizzly bears. The ownership pattern, associated land management objectives and resultant existing conditions (e.g. road densities) result in the area being unsuitable for grizzly bears. The geographic location of the project precludes the potential for effects on the species. No further analysis or discussion is warranted.

Woodland Caribou

Caribou are found in habitats that range from arctic tundra to mature coniferous forests, most often where lichens are common. In Idaho, they occupy high-elevation open forests in winter, move to mature/old growth forests with high lichen densities in the spring, shallower slopes with more understory in summer, and lower elevations with denser overstories in the fall.

Historically, woodland caribou were numerous enough to be hunted by the Coeur d'Alene, Kalispel and Kootenai Indians; and once ranged south to central Idaho and as far east as Missoula, Montana. Today caribou in Idaho are restricted to the extreme northern part of the state in the Selkirk mountains.

The St. Joe Ranger District is outside of the woodland caribou recovery area (U.S. Fish and Wildlife Service. 1993). The species does not occur on the District. The geographic location of the District precludes the presence of caribou and therefore the potential for effects on the species. No analysis or discussion of caribou is necessary on the St. Joe Ranger District.

Bald Eagle

Bald eagles are winter visitors and year-long residents of northern Idaho. They are attracted to the area's larger lakes and rivers which provide most of their foraging opportunities (i.e. fish, waterfowl). Accordingly, bald eagles select isolated shoreline areas with larger trees to pursue such activities as nesting, feeding, loafing, etc. Components of nesting habitat include proximity to sufficient food supply, the presence of dominant trees, and line-of-sight to a large body of water (often within 0.25 mile of water). Nest trees typically are large ponderosa pine, Douglas-fir, western larch and cottonwood trees with open crowns in areas that are relatively free from human disturbance (Montana Bald Eagle Working Group 1991).

Perch sites, roost sites and access to prey are the essential components of winter habitat. Bald eagles generally use traditional communal roost sites in the winter, especially during periods of severe weather. Roosts are often located in large trees at the head of sheltered draws that provide protection from wind and inclement weather. Although proximity to food resources is not critical, roosts are often in the closest available forest stand. Roosts at greater distances from food sources will require more energy expenditure (MBEWG 1991).

Species/habitat presence: Occasional sightings of bald eagle have been recorded in the lower St. Maries River. District sighting information indicates very limited use during winter and the area is not considered bald eagle wintering habitat. There are no bald eagle nests in the St. Maries drainage (this includes the analysis area). Based on the above information, bald eagle occurrence in the analysis area is considered incidental.

There are no large bodies of water in the project area. The general quality/suitability of bald eagle nesting habitat in the analysis area is unknown. However, based on existing disturbance factors (e.g. distance to open road), the limited occurrence, the size of the

streams (e.g. West Fork St. Maries River) and the prey base, the quality is considered low at best (Bureau of Reclamation, 1994).

Much of the riparian habitat adjacent to the St. Maries River is in non-NFS ownership. This limits the Forest Service's ability to manage nesting habitat for bald eagles and influences the potential for effects from Forest Service actions.

Rationale for No Further Analysis: There are no large bodies of water in the project area and no bald eagle nesting habitat. Based on the lack of capable habitat and design features of the proposed action and alternatives (e.g. RCA buffers) the potential for effects on bald eagle habitat in areas adjacent to water is negligible. Project activity will have no effect on the bald eagle or capable habitat under any alternative. No further analysis or discussion is warranted.

Canada Lynx

Lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare. In northern Idaho lynx habitat generally occurs above 4,000 feet in subalpine fir forests or cedar/hemlock habitat types when in association with subalpine fir and spruce habitat types. Habitats that support their primary prey include early successional stages resulting from natural disturbance and timber harvest. Characteristics of foraging habitat include a dense, multi-layered understory that provides cover and browse at ground level and at varying snow depths throughout the winter. Older forests with a substantial understory of conifers or small patches of shrubs and young trees also provide lynx foraging habitat.

The common component of natal den sites appears to be large woody debris. Den sites may be located within older regenerating stands or in mature conifer. For denning habitat to be functional it must be in or adjacent to foraging habitat.

Species/habitat presence: There is one unconfirmed reported sighting of a lynx in the LAA. Lynx detection surveys in 1999 in the Hidden Cedar wildlife analysis area and in lynx habitat approximately 10 miles from the project area did not detect the presence of lynx. The "Canada Lynx Conservation Assessement and Strategy" (Ruediger et.al. 2000) provides direction for management of lynx on federal lands. As part of the programmatic planning standards, Lynx Analysis Units (LAUs) were deliniated (in collaboration with the USFWS) to facilitate project planning. Based on the forest types, potential vegetation, and elevation the Hidden Cedar area was not included in any LAU and is not considered capable of providing sufficient habitat for lynx. The closest LAU is approximately 2 miles east of the Hidden Cedar project area. Further assessment of existing forest types and potential vegetation done for this analysis validates the conclusion that the area is not capable habitat for lynx.

Rationale for No Further Analysis: The geographic location of the project – and the associated lack of capable habitat - precludes the potential for effects on the species. Therefore, activities in the Hidden Cedar Project will have no effect on lynx under any alternative. No further analysis or discussion is warranted and the project is consistent with the Canada Lynx Conservation Assessment and Strategy.

SENSITIVE SPECIES BIOLOGICAL EVALUATION
SUMMARY OF CONCLUSION OF EFFECTS*

Project Name: Hidden Cedar Project

Species	ALT A	ALT B	ALT C	ALT D	ALT E	ALT F
Westslope Cutthroat Trout	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH

Comments:
See Hidden Cedar Supplemental EIS for analysis

Prepared by: Lisa Hawdon Date: 2/27/07
District Fisheries Biologist

NI =No Impact
MIIH =May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species
WIFV =Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species
BI = Beneficial Impact

* Note: Rationale For Conclusion Of Effects Is Contained In The NEPA Document.

Form 2 (R-1/4/6-2670-95)

Appendix B

SENSITIVE SPECIES BIOLOGICAL EVALUATION

SUMMARY OF CONCLUSION OF EFFECTS*

Project Name: Hidden Cedar Project

Alternative: F modified

Species	No Impact	May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing or Loss Of Viability To The Population Or Species	Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species	Beneficial Impact
Westslope Cutthroat Trout		X		

Conditions: Include any actions or activities that are necessary to maintain the determination of effects.

Recommendations: Include any activities or opportunities that are optional.

Conditions:

See Hidden Cedar Supplemental EIS

Recommendations:

See Hidden Cedar Supplemental EIS

* Note: The rationale for the conclusion of effects is contained in the NEPA document

Form 1 (R-1/4/6-2670-95)

SENSITIVE SPECIES BIOLOGICAL EVALUATION

SUMMARY OF CONCLUSION OF EFFECTS*

Wildlife

Project Name: Hidden Cedar

Species	ALT A	ALT B	ALT C	ALT D	ALT E	ALT F
Black-backed Woodpecker	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Black Swift	NI	NI	NI	NI	NI	NI
Western Toad (Boreal Toad)	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Coeur d'Alene Salamander	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Common Loon	NI	NI	NI	NI	NI	NI
Fisher	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Flammulated Owl	NI	NI	NI	NI	NI	NI
Fringed Myotis	NI	NI	NI	NI	NI	NI
Harlequin Duck	NI	NI	NI	NI	NI	NI
Northern bog lemming	NI	NI	NI	NI	NI	NI
Northern Goshawk	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Perigrine Falcon	NI	NI	NI	NI	NI	NI
Pygmy Nuthatch	NI	NI	NI	NI	NI	NI
Townsend's Big-Eared Bat	NI	NI	NI	NI	NI	NI
Wolverine	NI	NI	NI	NI	NI	NI

Conditions: None

Recommendations: The district biologist should be notified if any sensitive species are observed during pre-sale and sale activity.

Prepared by: [signature] Date: 11/3/06

Wildlife Biologist

NI = No Impact

MIIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species

WIFV** =Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species

BI = Beneficial Impact

* The rationale for the conclusion of effects is contained in the Wildlife section of Chapter 3 in the Hidden Cedar Project SFEIS. Other pertinent information for the evaluation of effects on sensitive species (e.g. description of activity) is also contained in the SFEIS.

** Considered a trigger for a significant action in NEPA

BIOLOGICAL EVALUATION

FOR

HIDDEN CEDAR PROJECT

Suzanne DiGiacomo, Botanist

1/18/07

Date

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APPENDIX A 7

I. Introduction

The purpose of this evaluation is to assess and describe potential effects of the Hidden Cedar Project on sensitive species, and to determine whether any such species or habitat is likely to be affected by the proposed action. This evaluation was prepared in accordance with USDA Forest Service policy (FSM 26.70.32 & 2672.4).

The National Forest Management Act directs the Forest Service to review programs and activities to ensure that species do not become threatened or endangered as a result of Forest Service actions. Forest Service direction (FSM 2672.1-2672.43) requires that programs or activities be reviewed for potential effects on rare species and outlines policy, objectives and procedures. The Idaho Panhandle National Forest is directed by the forest plan to manage populations so as not to contribute to the need for listing under the Endangered Species Act (USDA 1987).

II. Proposed Action

Location

The project is located on the St. Joe Ranger District of the Idaho Panhandle National Forests within the St. Maries and West Fork St. Maries River Drainages. The project is found within Shoshone, Clearwater, and Latah Counties in Townships 41, 42, and 43 North, Ranges 1 and 2 East, Boise Meridian.

Activity

The Project Area is approximately 33,000 acres, about 47% of which is National Forest System land. The project entails harvesting timber on approximately 1,268 acres utilizing primarily stand improvement harvest treatments. The following silvicultural systems will be used: 829 acres of commercial thin, 216 acres of shelterwood preparatory cut, 39 acres of shelterwood seed cut, 16 acres of shelterwood removal cut, 22 acres of irregular shelterwood cut, 40 acres of group shelterwood cut and 106 acres of clearcut with reserves. The purpose of this harvest is to manage for vegetative conditions that trend toward more resilient and sustainable forest conditions. Approximately 35% of the units will be helicopter yarded; and the remaining 65% will be a combination of skyline/ground based yarding. Where regeneration harvest is proposed, planting will supplement natural regeneration. Planting of 60% or more of the resilient, early seral species (white pine and western larch) would occur on the 160 acres of regeneration harvest.

Approximately 4.6 miles road construction, 1.4 temporary road construction and 6.0 miles reconstruction are associated with harvest. Temporary road construction will be completely recontoured upon completion of activities. Some of the existing roads used for timber harvest will require reconstruction (6.0 miles) to allow for safe timber haul, improve drainage, improve water quality and reduce sediment. Reconstruction may include but is not limited to installation of drain dips and culverts, grading, clearing, dust abatement, and surfacing.

Slash and fuels reduction treatments include broadcast (136 acres), excavator piling (461 acres) and subsequent pile burning, lopping (614 acres), jackpot burning(38) and hand piling (19 acres) for a total of 1,268 acres treated.

Approximately 324 acres of pre-commercial thinning will improve the growing conditions of the selected trees by reducing competition for light and nutrients.
This project would result in timber sales planned to be sold in 2007 and 2008 and be harvested over a three- to five-year period. Prescribed burning associated with harvest activities will begin approximately 1-2 years following the end of harvest activities. Slash disposal and reforestation activities will follow harvest and are expected to be completed by 2015. These dates are *tentative*, based upon anticipated budgets, work force, weather and other considerations. Actual dates of implementation and accomplishment could vary.

The following design features pertain directly to rare plants. For additional design features and mitigation, see the Hidden Cedar Project Record of Decision. Known sensitive species sites will receive the following protections. In unit 7 a tree height exclusion buffer was marked to protect a site of *Buxbaumia viridis.* In unit 16 a single deefern was located in a draw on the boundary of the unit. The planned buffer for the unit will provide adequate protection for the site. There is also one site of *Buxbaumia viridis* (with two individuals) in the southern portion of the unit. A buffer of 100 feet will be necessary here to protect the site. A proposed road will be constructed within this buffer but no cable or ground yarding will occur within it. Downed wood will be retained on the site to provide for future recruitment. The site will then be monitored for effects to the *Buxbaumia viridis*. Unit 24 was eliminated from the decision (Aternative F modified)and will not be implemented. There are two sites of *Buxbaumia viridis* in unit 30, about 200 yards from each other. One population is in extremely poor habitat with little possibility for recruitment due to the lack of appropriate substrate. This area would be better served in the long run by stand improvement rather than by preserving a large chunk of poor habitat. A 25-foot radius buffer was marked around the site to provide physical protection. A 100-foot buffer was marked around the second population. The gentle draw in which the individuals are located should have the downed wood preserved throughout. A proposed road ends near here and would need to remain outside of the buffer. Unit 35 was eliminated from the decision and will not be implemented. In unit 46, a reserve tree island was marked around a population of *Rhizomnium nudum*.

An agency Botanist will be notified of sensitive species discovered during project implementation so that measures could be taken to maintain population viability. Measures to protect population viability and habitat for all known and newly discovered occurrences will include altering or dropping proposed units from activity, modifying the proposed activity, or implementing buffers around plant occurrences. Timber sale contract provisions for protection of Endangered Species, and settlement for environmental cancellation will be included in any subsequent timber sale contracts.

III. Sensitive Species

Sensitive species, as determined by the Regional Forester (USDA 2004), are those for which population viability is a concern. This can be indicated by a current or predicted

downward trend in population numbers or suitable habitat, which would reduce the species' existing distribution. Currently, the St. Joe Ranger District recognizes 24 species as sensitive (see Section V- Determination of Effects).

IV. Description of Species and Habitat/Analysis of Effects

Analysis of Effects

Geographic scope

The geographic scope of analysis for rare plant species in this project is the Hidden Cedar project area. Geographic scope of potential effects (direct, indirect, and cumulative) is determined by a combination of factors including: geographic location, the scope of the proposed action, resources and species which may be present, consequences and scope of effects, and the ability to measure effects. The scope of the action and potential for adverse effects determine the extent of analysis necessary. This analysis considers short and long-term management as it may affect known or suspected populations of listed or sensitive plant species as well as their potential habitat.

Methodology

Sensitive plant species can be assigned to one or more rare plant guilds, which are artificial groups based on similar habitat requirements and useful for the purpose of analysis (Mousseaux 1995). For the District the rare plant guilds are: aquatic, deciduous riparian, peatlands, wet forest, moist forest, dry forest, and sub-alpine. Rock seeps and springs are another habitat that can support certain sensitive species, but they can occur across all guilds and are not identifiable at a coarse scale. A complete description of all guilds is located in Appendix A.

Based on current information regarding preferred habitat and successional state for species within the different guilds, the District Timber Stand Database indicates the amount of highly suitable rare plant habitat that may be present in the project area. Evaluation of known sites for sensitive species was accomplished using District Sensitive Plant Records and Idaho Department of Fish and Game Conservation Data Center (ICDC 2006) Element Occurrence Records.

Regional direction (Leonard 1992) states that the need for and extent of field reconnaissance should be commensurate with the risk associated with the project and species involved, and the level of knowledge already in hand. Before any action alternative would be implemented, field surveys would be conducted in all areas slated for project activities that contain high potential suitable habitat. Species presence is assumed for all highly suitable habitats and field surveys either validate or negate presence. Any occurrences that are deemed necessary to ensure species and population viability against a potential trend towards federal listing would be protected. The importance of a population is based on a variety of factors such as size of population, number of known sites, ranking, and sensitivity to disturbance. These practices are assumed to be an effective conservation strategy. Some isolated individuals or occurrences, not deemed critical to population viability, may be impacted by activities.

Occurrences discovered prior to project implementation would have mitigation measures designed by the District Botanist to ensure that species and population viability are maintained

Historic/Existing Condition

The sub-basins of northern Idaho contain varied and diverse habitats and plant communities. Of the estimated 1,200 to 1,500 plant species known or thought to occur here, about ten percent are considered rare or uncommon.

Queries of the district timber stand database indicate that the only high-potential habitat occurring within areas of proposed activities is within the moist forest and wet forest guilds. High-potential dry forest, sub-alpine, deciduous riparian, aquatic, and peatland habitats do not occur within proposed activity areas.

Prior to project initiation, one occurrence of Henderson's sedge (*Carex hendersonii*) was known within the project area (ICDC 2006) on private land. Outside of the project area, but within two miles of the project boundary, there were three populations of the sensitive species deerfern (*Blechnum spicant*) (ICDC 2006).

Past and ongoing activities within the project area have led to habitat modification and fragmentation. Grazing has been occurring within the area for many decades. Road construction, timber sales, recreational use, vehicular traffic, and natural events have all contributed to an encroachment of weeds into the area, primarily along roads, in open meadows and in disturbed areas.

Effects Analysis

Field surveys for rare plants were conducted in 2002 for the original Hidden Cedar project. These surveys discovered five populations of green bug on a stick moss (*Buxbaumia viridis)* and four populations of deerfern (*Blechnum spicant*). Surveys conducted in 2005 in the vicinity of the Hidden Cedar Project revealed another population of deerfern and four populations of naked mnium moss (*Rhizomnium nudum*). In 2004 a new sensitive species list was issued by the Regional Forester (USDA 2004). Two new species from this list, *Rhizomnium nudum* and *Grimmia brittoniae*, had the potential to be found in the project area which resulted in the need to re-survey portions of the project area in the spring of 2006. These additional surveys in 2006 discovered two populations of Blechnum spicant, one population of Hookeria lucens, and five populations of Rhizomnium nudum. Most of these additional populations will be adequately protected within riparian and unit buffers. Those populations receiving additional protection are listed in Section II.

High-potential dry forest, sub-alpine, deciduous riparian, aquatic, and peatland habitats do not occur within proposed activity areas. Therefore, there would be no impact to these habitats and their associated rare species.

The known population of Henderson's sedge within the project area is located on private land, and so its continued existence is not guaranteed.

The Hidden Cedar project also includes the following activities that are considered low risk to sensitive plant species. Riparian planting would result in very little ground disturbance and is not expected to imperil any rare species. Pre-commercial thinning would generally occur in areas with low probability of providing habitat for sensitive species. While it is possible that undetected individuals of *Botrychium* sp. could be impacted, no other sensitive species is expected to occur in such habitat. Effects to *Botrychium* species would likely be restricted to damage of seasonal, above-ground vegetation. There is no evidence that such removal adversely affects individual plants (Dr. Cindy Johnson-Groh, personal communication, July 2001). Full road prism obliteration could affect some sensitive plants in suitable habitat, especially riparian areas. Direct impacts from equipment can occur above the top of the cut slope, and below the bottom of the existing fill as the slope is returned to a stable position. However, the actual amount of habitat affected along any road prism would be small and present little risk for any sensitive plant species or habitat. Removal and replacement of channel crossings also takes place in previously disturbed sites. Existing populations in both of these areas are rarely viable populations and often consist of individual plants that are part of, or isolated from, a larger "meta-population" in the local vicinity. The long-term effects of these treatments could be beneficial to sensitive plants due to improved channel stability and riparian community habitat.

V. Determination of Effects

St. Joe Sensitive Plants by Rare Plant Habitat Guild
(revised October 2004)*

Species	**Common Name**	**Habitat Guild**	Effects
Asplenium trichomanes	maidenhair spleenwort	rock seeps in Moist/Wet Forest	NI
Blechnum spicant	deerfern	Moist/Wet Forest	NI
Botrychium ascendens	upswept moonwort	Wet Forest	NI
Botrychium crenulatum	dainty moonwort	Wet Forest	NI
Botrychium lanceolatum	triangle moonwort	Wet Forest/Moist Forest	NI
Botrychium lineare	Slender moonwort	Moist Forest	NI
Botrychium minganense	Mingan moonwort	Wet Forest/Moist Forest	NI
Botrychium montanum	western goblin	Wet Forest	NI
Botrychium paradoxum	paradox moonwort	Wet Forest/Moist Forest	NI
Botrychium pedunculosum	stalked moonwort	Wet Forest	NI
Botrychium pinnatum	northwestern moonwort	Wet Forest/Moist Forest	NI
Botrychium simplex	least moonwort	Wet Forest/Moist Forest	NI
Buxbaumia aphylla	leafless bug-on-a-stick moss	Wet Forest/Moist Forest	NI
Buxbaumia viridis	Green bug-on-a-stick moss	Wet Forest/Moist Forest	NI

Cardamine constancei	Constance's bittercress	Deciduous Riparian/Moist/Wet Forest	NI
Cypripedium fasciculatum	clustered lady's slipper	Moist/Wet/Dry Forest	NI
Grindelia howellii	Howell's gumweed	Dry Forest (St. Joe, basalt breaklands)	NI
Gimmia brittoniae	Britton's Grimmia	Rock outcrops in Moist Forest	NI
Hookeria lucens	clear moss	Wet Forest	NI
Mimulus alsinoides	chickweed monkeyflower	rock cliffs/seeps in Wet/Moist/Dry Forest	NI
Rhizomnium nudum	Naked Mnium	Wet/Moist Forest	NI
Thelypteris nevadensis	Sierra woodfern	Wet Forest Seeps	NI
Triantha occidentalis spp brevistyla	sticky asphodel	Subalpine Peatlands (St. Joe?)	NI
Waldsteinia idahoensis	Idaho barren strawberry	Moist and Wet Forest	NI

* based on Regional Forester's TES list, October 2004.

NI-No Impact
MI- May impact individuals or habitat but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species.
WI-Will Impact individuals or habitat with a consequence that the action may contribute to a trend toward federal listing or cause a loss of viability to the population or species.
BI-Beneficial Impact

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Appendix A

St. Joe Rare Plant Guild Descriptions:
based on March 1999 Regional Forester's Species at Risk list

-**Subalpine Plant Guild**: Includes certain plant communities found at high elevation sites, generally above ca 5,000 feet, mostly on ridges, subalpine balds and parklands (green fescue and sedge communities), exposed rock-outcrops and the following high elevation communities: *Abies bifolia* (subalpine fir) krummholtz, *Abies bifolia / Rhododendron albiflorum* (subalpine fir/white rhododendron), *Salix commutata* (undergreen willow), *Abies bifolia / Vaccinium scoparium* (subalpine fir/grouse whortleberry), *Abies bifolia / Luzula hitchcockii* (subalpine fir/smooth woodrush), and *Larix lyallii* (subalpine larch) / *Pinus albicaulis* (whitebark pine) plant communities. It also includes the cool/moist and cool/dry phases of *Abies bifolia / Menziesia ferruginea* (subalpine fir / menziesia), *Abies bifolia / Xerophyllum tenax* (subalpine fir / beargrass), *Tsuga mertensiana / Menziesia ferruginea* (mt. hemlock / menziesia) and *Tsuga mertensiana / Xerophyllum tenax* (mt. hemlock / beargrass) plant communities. The rare species found in this guild are *Buxbaumia aphylla* (bug-on-a-stick moss) and *Carex xerantica* (dryland sedge). *Cetraria subalpina* (Iceland-moss lichen) is associated with menziesia in cold subalpine fir sites.

-**Wet Forest Guild**: This guild is found in wet, generally riparian, often (not always) middle to late successional western redcedar and wet western hemlock plant communities, including most identified 'ancient cedar groves' found scattered throughout the northern sub-basins, generally at less than 4,000 feet. Plant communities within these systems that have a high potential to support rare plants include; *Thuja plicata / Oplopanax horridum* (cedar/devil's club), *Thuja plicata / Athyrium filix-femina* (cedar/ladyfern), *Thuja plicata / Adiantum aleuticum* (cedar/maidenhair fern), *Tsuga heterophylla / Gymnocarpium dryopteris* (western hemlock/oakfern) and *Thuja plicata / Gymnocarpium dryopteris* (cedar/oakfern) plant communities. Several species within this guild are rare coastal disjuncts such as *Blechnum spicant* (deerfern), *Thelypteris nevadensis* (sierra woodfern), *Hookeria lucens* (clear moss) and *Carex hendersonii* (Henderson's sedge). Sierra woodfern and clear moss are associated with seeps and "boggy" areas in wet cedar forests. Certain endemic or scattered rare species like the rare *Botrychium* species (moonworts), especially *Botrychium montanum* (western goblin), *Botrychium minganense* (Mingan moonwort), *Botrychium pedunculosum* (stalked moonwort), *Botrychium paradoxum* (paradox moonwort), and *Botrychium ascendens* (upswept moonwort), can be found in these communities on riparian benches or other shallow sloped microsites. The scattered species *Cypripedium fasciculatum* (clustered lady's slipper), and the Idaho endemics *Cardamine constancei* (Constance's bittercress) and *Waldsteinia idahoensis* (Idaho Barren strawberry) can occur in wet forest communities. *Asplenium trichomanes* (maidenhair spleenwort) and *Mimulus alsinoides* (chickweed monkey-flower) can also be found in seasonally wet rock seeps, and *Buxbaumia viridis* (green bug-on-a-stick moss) can be found on decomposing cedar logs in wet forest habitat. Many of the Wet Forest Guild species can also be found in upslope in Moist forest guild habitats.

-**Moist Forest Guild**: This guild is found in moist *Thuja plicata* (western redcedar) and *Tsuga heterophylla* (western hemlock) plant communities, generally in later successional states below 4,500 feet. A few species can also be found in moist *Abies grandis / Asarum caudatum* (grand fir / ginger) and *Abies grandis / Clintonia uniflora* (Grand fir / queencup beadlily) communities. Many members of the Wet Forest Guild can be found in these more mesic upland plant communities. This guild contains the following plant associations: *Tsuga heterophylla / Asarum caudatum* (hemlock/wild ginger), *T. heterophylla / A. caudatum - Aralia nudicaulis* (hemlock/ginger - wild sarsaparilla), *T. heterophylla / Clintonia uniflora* (hemlock / beadlily), *T. heterophylla / C. uniflora / Aralia nudicaulis* (hemlock / beadlily - wild sarsaparilla), *T. heterophylla / C. uniflora / Menziesia ferruginea* (hemlock / beadlily - fool's huckleberry), *Thuja plicata / Asarum caudatum* (cedar/ginger) and *Thuja plicata / Clintonia uniflora* (cedar/beadlily). Some of the rare species

found in these communities occur in small moist microsites, like *Asplenium trichomanes* (maidenhair spleenwort) and *Mimulus alsinoides* (chickweed monkey-flower), which are found on seepy rock outcrops. Rare plant species such as the coastal disjuncts *Blechnum spicant* (deerfern) and *Carex hendersonii* (Henderson's sedge) are found in moist forest habitats. Certain regional endemic or scattered rare species like the *Botrychium* species. (moonworts), especially *Botrychium minganense* (Mingan moonwort), *Botrychium lanceolatum* (triangle moonwort) and *Botrychium pinnatum* (northwestern moonwort) can be found in shallow sloped microsites, and *Cypripedium fasciculatum* (clustered lady's slipper) and the Idaho endemic *Cardamine constancei* (Constance's bittercress) occur in these communities. *Waldsteinia idahoensis* (Idaho barren strawberry), an Idaho endemic, has also been found in dry *Abies grandis / Clintonia uniflora* (grand fir / beadlily) communities on the breaklands of the Coeur d'Alene River.

-**Dry Forest Guild**: This guild encompasses dry, open sites in *Pinus ponderosa* (ponderosa pine), *Pseudotsuga menziesii / Physocarpus malvaceus* (Douglas-fir / ninebark), *P. menziesii / Calamagrostis rubescens / Arctostaphylos uva-ursi* (Douglas-fir / pinegrass - kinnikinnick), *P. menziesii / Festuca idahoensis* (Douglas-fir / Idaho fescue) or *Agropyron spicatum* [*Elymus spicatus*] (bluebunch wheatgrass) communities, generally less than 4500 feet. The Idaho endemic *Grindelia howellii* (Howell's gumweed) can be found in these dry communities on the St. Joe associated with basalt breaklands. Dry Douglas-fir and grand fir communities, *Abies grandis / Physocarpus malvaceus* (Grand fir / nine bark) and *Abies grandis / Clintonia uniflora* (grand fir / beadlily) also support populations of *Cypripedium fasciculatum* (clustered lady's slipper) on the Coeur d'Alene and St. Joe National Forests. *Mimulus alsinoides* (chickweed monkey-flower) can occur on seasonally seepy rock outcrops and moss mats in otherwise dry communities.

-**Deciduous Riparian Guild** (broad-leaved deciduous) forests occur on islands and margins of lowland major rivers such as the lower Coeur d'Alene River, lower St. Joe River, and the St. Maries River. These forests are most commonly dominated by the cottonwood *Populus trichocarpa* (black cottonwood), with lesser amounts of introduced *P. deltoides* (plains cottonwood) and hybrid poplars (*Populus trichocarpa X* ?) planted for streambank stability. Cottonwood communities often are adjacent to shrub-carr communities and can form an indistinguishable mosaic. These communities provide the only high potential habitat for the listed threatened species *Spiranthes diluvialis* (Ute ladies'-tresses), which is suspected to occur here. *Collema curtisporum* (short-spored jelly lichen), is a globally rare lichen found on large diameter (old) black cottonwood. The rare Idaho endemic *Cardamine constancei* (Constance's bittercress) can be found in the transition zone between cottonwood and western redcedar communities on the Coeur d'Alene and St. Joe Rivers. Stands of *P. tremuloides* (quaking aspen) are also present and associated with higher gradient streams or moist seeps. *Populus tremuloides* (quaking aspen), *Betula papyrifera* (paper birch) and *Betula occidentalis* (water birch) also occur as secondary components in lowland conifer dominated forests throughout northern Idaho. *Alnus rubra* (red alder), is an uncommon, but sometimes locally abundant, coastal disjunct, and can be a codominant in moist forests in lower elevation riparian zones along Coeur d'Alene Lake, the lower Coeur d'Alene River and the lower St. Joe River. It is also found in patches in drainages in the Little North Fork of the Clearwater River on the Idaho Panhandle National Forests. Channel bars along major rivers are frequently vegetated with *Salix exigua* (coyote willow) and young *Populus trichocarpa* (black cottonwood) seedlings.

-**Aquatic Guild**: This guild occurs generally in littoral (< 2 meters) zones of vernal pools, small ponds and lakes throughout northern Idaho, generally at lower elevations. *Potamogeton natans* (floating-leaved pondweed), *Myriophyllum* species (water-milfoil), *Utricularia* species (bladderwort), and other *Potamogeton* species occur alone or in combination in shallow littoral zones. *Nuphar polysepalum* (yellow pond lily) and *Brasenia shreberi* (water-shield) are frequently present as monocultures in deeper littoral zones. A single population of the rare *Nymphaea tetragona var. liebergii* (pygmy waterlily) was historically known from Granite Lake and is believed to be extinct in Idaho. The listed threatened species *Howellia aquatilis* (water howellia) was historically known to occur near Spirit and Hoodoo Lakes and is believed to have been extirpated. Only one other population is known in Idaho near Harvard along the Palouse River; however,

populations occur to the west in Spokane County, Washington. No other populations have been found to date in northern Idaho, even though high quality habitat exists.

-**Peatland Rare Plant Guild**: Peatlands by definition are habitats whose soil substrate is composed of organic material; deposition of organic material exceeds decomposition. This guild can be divided into five distinct sub-guilds, each containing different communities and species, substrates, pH and abiotic processes. These five sub-guilds are Poor Fens, Intermediate/Rich Fens, Ombrotrophic Bogs, Paludified Forests and Shrub-carr. Peatland habitats are predominantly found in the northern three sub-basins (Priest, Kootenai and Pend Oreille); however, several lowland fens are known for the lower Coeur d'Alene (Twin Lakes, Hauser Lakes, Rose Lake, Hidden and Thompson lakes). Several *Sphagnum*-dominated subalpine peatlands have been found on the divide between the Clearwater and the St. Joe sub-basins. These systems are the oldest plant communities in northern Idaho and have changed little since the end of glaciation 6,000-7,000 years ago (Bursik and Moseley 1995; Moseley 1998). The rare species *Carex chordorrhiza* (string-root sedge), *Carex livida* (pale sedge), *Hypericum majus* (large Canadian St. John's wort), *Rhynchospora alba* (white beakrush), *Scheuchzeria palustris* (pod grass) and *Scirpus subterminalis* (water clubrush) have been documented for lowland fens in the Coeur d'Alene sub-basin. *Triantha occidentalis spp. brevistyla*, a species only known on the Priest Lake District on the Idaho Panhandle, has been reported for a subalpine fen complex on the St. Joe; however, this sighting has not been verified.

SENSITIVE SPECIES BIOLOGICAL EVALUATION

SUMMARY OF CONCLUSION OF EFFECTS*

Sensitive Plants

Project Name: Hidden Cedar

Habitat Guild	Alt A	Alt B	Alt C	Alt D	Alt E	Alt F
Wet Forest	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Moist Forest	NI	MIIH	MIIH	MIIH	MIIH	MIIH
Dry Forest	NI	NI	NI	NI	NI	NI
Deciduous Riparian	NI	NI	NI	NI	NI	NI
Subalpine	NI	NI	NI	NI	NI	NI
Aquatic	NI	NI	NI	NI	NI	NI
Peatland	NI	NI	NI	NI	NI	NI

NI = No Impact

MIIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species

WIFV** = Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species

BI = Beneficial Impact

Rationale: The rationale for the conclusion of effects is contained in the NEPA document

Recommendations: New listed, proposed, or sensitive plant occurrences identified during project implementation should be reported to the Botany Coordinator for evaluation. Any occurrence deemed essential to population or species viability would be protected by project design.

Prepared by: _____ Date: March 3, 2006

Suzanne DiGiacomo, Botanist

* Note: The rationale for the conclusion of effects is contained Plants Species at Risk section of Chapter 3 in the Hidden Cedar Project FEIS. Other pertinent information for the evaluation of effects on sensitive species (e.g. description of activity) is contained in the FEIS.

** Considered a trigger for a significant action in NEPA

APPENDIX G: BIBLIOGRAPHY

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APPENDIX H: GLOSSARY

GLOSSARY

A

ACCESS MANAGEMENT OBJECTIVES. Objectives that describe the extent and form of access needed to accomplish the management area direction, including how access to and within National Forest lands will be provided, whether by foot, horse, motorized vehicle, or aircraft; over water, roads, or trails; or through the air. (FSH 7709.55 section 06).

ACTIVITY AREA. Area within the project area where activities are proposed.

ACTIVITY FUELS. See Slash

AFFECTED ENVIRONMENT. The natural, physical, and human-related environment that is sensitive to changes due to proposed actions.

AGE CLASSES. A distinct group of trees, or portion of growing stock recognized on the basis of age (i.e., seedling, pole, mature.)

AGGRADATION. When more sediment enters a reach than leaves it, there is a buildup of sediment. This is called aggradation.

AIR QUALITY. Refers to standards for various classes of land as designated by the Clean Air Act, P.L. 88-206: Jan. 1978

AIRSHED. A geographical area that, because of topography, meteorology, and climate, shares the same air.

ALTERNATIVE. A mix of management prescriptions applied to specific land areas to achieve a set of goals and objectives. Each alternative represents a different way of achieving a set of similar management objectives. Sometimes the term "action alternative" is used when it is desirable to recognize that there is a "no action" alternative under which the proposed activity would not take place.

ANALYSIS AREA. The geographic area defining the scope of analysis for a particular resource. This area may be larger than the project area when effects have potential to extend beyond the boundaries of the proposed action.

APPEAL. A request by any party dissatisfied with a decision of a forest officer to have that decision reviewed at a higher organizational level within the Forest Service and, where appropriate, by the Secretary.

B

BANKFULL. The level water reaches in the stream that is at or near the lowest terrace.

BASIC INDUSTRY. These are fundamental manufacturing industries which serve as the basis of the economy. They do not include the service side. These are business and government activities that produce raw materials, products made from those materials, and which transport those materials or products.

BEST MANAGEMENT PRACTICES. A set of practices in the Forest Plan which, when applied during implementation of a project, ensures that water related beneficial uses are protected and that State water quality standards are met.

BIG GAME. Those species of large mammals normally managed as a sport hunting resource.

BIOLOGICAL ASSESSMENT. Information (document) prepared by or under the direction of the federal agency concerning listed and proposed threatened and endangered species and proposed critical habitat that may be present in the action area and the evaluation of potential effects of the action on such species and habitats.

BIOLOGICAL EVALUATION. A documented Forest Service review of programs or activities in sufficient detail to determine how an action or proposed action may affect any sensitive species.

BLIND DRAIN. A drainage structure installed in the subgrade of a road which intercepts, collects, and redirects subsurface water.

BLOWDOWN. See windthrow.

BOARD FOOT (BF). A unit of measurement equal to an unfinished board one foot square by one inch thick. Timber volumes are often expressed in terms of thousands of board feet.

BOGS. Perennially saturated areas that usually have wetland and riparian plants surrounding them.

BOLE. The trunk or main stem of the above ground part of a tree.

BROADCAST BURN. See prescribed burning.

C

CANOPY. The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth. Layers of canopy may be called stories.

CANOPY CLOSURE. The progressive reduction of space between tree crowns as they spread laterally; a measure of the percent of potential open space occupied by the collective tree crowns in a stand.

CAVE. A natural underground chamber that is open to the surface.

CAVITY. The hollow, excavated in snags by birds; used for roosting and reproduction by many birds and mammals.

CAVITY HABITAT. Snags, broken-topped live trees and down logs used by wildlife species that excavate and/or occupy cavities in these trees.

CAVITY NESTERS. Wildlife species that nest in cavities.

CLEARCUT HARVEST. A regeneration method under which the entire mature stand is cut. Some snags and potential snags may be left to benefit snag-dependent wildlife species.

CLEARCUT WITH RESERVES. A variation of the clearcutting method where reserve trees are left for all or part of a stand rotation and serve a specific function that is consistent with management objectives.

CLOSED CANOPY. The condition that exists when the canopy created by trees or shrubs or both is dense enough to exclude most of the direct sunlight from the forest floor.

CODE OF FEDERAL REGULATIONS (CFR). The official, legal tabulation or regulations directing Federal Government activities.

COMMUNITY. A group of one or more populations of plants and animals in a common spatial arrangement; an ecological term used in a broad sense to include groups of various sizes and degrees of integration.

COMPARTMENTS. A geographic area delineated by a watershed drainage for management planning purposes.

CONIFER. Any of a group of needle and cone bearing evergreen trees.

CONNECTORS. Strips or patches of vegetation used by wildlife to move between habitats.

CORE SAMPLE. Stream bed material removed from the stream for analysis.

CORRIDORS. Areas of vegetation (may be linear or patch-like) available to wildlife to facilitate movement between habitats. Corridors may vary in size by species need. For big-game, forested areas of at least 600 feet in width is generally acceptable.

COVER. Vegetation used by wildlife for protection from predators, breeding and rearing of young (hiding cover), or to ameliorate conditions of weather (thermal cover).

COVER/FORAGE RATIO. The ratio, in percent, of the amount of area in cover conditions to that in forage conditions.

COVER TYPE. See forest cover type

CROWN FIRE. A fire burning into the crowns of the vegetation, generally associated with an intense understory fire.

CULTURAL RESOURCES. The physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) having scientific, prehistoric, or social values.

CUMULATIVE EFFECT. The impact on the environment which results from the incremental impact of the action when added to other actions. Cumulative impacts can also result from individually minor but collectively significant actions taking place over a period of time.

D

DEADFALL. Previously dead trees that have fallen.

DEBRIS. The scattered remains of some things broken or destroyed; ruins; rubble; fragments.

DECADENT. Deteriorating; when used in reference to stand condition there are inferences of the loss of trees from the overstory and of the presence of disease, or indications of loss of vigor in dominant trees so that the mean annual increment is negative.

DECISION AREA. The geographic area defining the scope of this document and the alternatives proposed by it.

DEGRADATION. This occurs when a stream has excess energy and more sediment leaves a reach than enters it. This is associated with channel scouring.

DENNING SITE. A place of shelter for an animal; also where an animal gives birth and raises young.

DETRIMENTAL SOIL DISTURBANCE. The condition where established threshold values for soil properties exceed and result in significant change. (FSH 2509.18, section 2.05, 9).

DESIGN CRITERIA. The requirements derived from management area direction such as safety requirements and traffic characteristics that govern the selection of elements and standards for a road or section of a road. (FSM 7721.05. Also see FSH 7709.56, section 4.05)

DESIGN STANDARDS. The definitive lengths, widths, and depths of individual elements, such as a 12-foot traveled way, 2-foot shoulders, 3/4:1 cut slopes, 3-foot curve widening, and 6 inches of crushed aggregate, that define a road template. (FSM 7721.05 and FSH 7709.56, section 4.05)

DESIRED FUTURE CONDITION. A portrayal of the land or resource conditions which are expected to result if goals and objectives are fully achieved.

DISPERSED RECREATION. Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.

DISPLACEMENT AREA. An area of suitable habitat reserved for use by a local population of a wildlife species while that population is displaced from, or caused to vacate, its former habitat by disturbance from human activities.

DISTURBANCE. Any event which affects the successional development of a plant community (examples: fire, insect attack, windthrow, timber harvest).

DIVERSITY. The relative distribution and abundance of different plant and animal communities and species within an area.

DOWN WOODY COMPONENT. A component of forest habitats used by wildlife for feeding, denning, and shelter. (See Old Growth Habitat.)

DRAINAGE EFFICIENCY. The net runoff for a given amount of precipitation in a drainage.

DUFF. An organic surface soil layer, below the litter layer, in which the original form of plant and animal matter cannot be identified with the unaided eye.

E

ECOLOGICAL NICHE. The set of habitat conditions that are favorable for the growth and reproduction of a given species.

ECOSYSTEM. The complete system formed by the interaction of a group of organisms and their environment. In this context of activities on National Forest lands, humans are considered a part of the ecosystem.

EFFECTS (or impacts). Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects may be either direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative.

ENDANGERED SPECIES. Any plant or animal species which is in danger of extinction throughout all or a significant portion of its range. (Endangered Species Act of 1973).

ENDEMIC. Plant or animal species occurring only in a restricted geographic area.

ENVIRONMENT. The aggregate of physical, biological, economic, and social factors affecting organisms in an area.

ENVIRONMENTAL ANALYSIS. An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic, and social consequences and their interactions; short- and long-term effects; direct, indirect, and cumulative effects.

ENVIRONMENTAL ASSESSMENT (EA). A concise public document which serves to: (a) Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact; (b) Aid an agency's compliance with NEPA when no EIS is necessary; (c) Facilitate preparation of an EIS when necessary.

ENVIRONMENTAL IMPACT STATEMENT (EIS). A detailed statement prepared by the responsible official in which a major Federal action which significantly affects the quality of the human environment is described, alternatives to the proposed action provided, and effects analyzed.

EPHEMERAL STREAMS. Streams that flow only as a direct response to rainfall or snowmelt events. They have no baseflow.

EPIDEMIC. The populations of plants, animals, and diseases that buildup, often rapidly, to highly abnormal and generally injurious levels .

EQUIVALENT CLEARCUT AREA (ECA). Equivalent Clearcut Area is an indicator of basin condition and is calculated from the total amount of crown removal that has occurred from harvesting, road building, and other activities based on the current state of vegetative recovery.

EROSION. Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of activities of people animals, or natural catastrophes.

EVEN-AGED MANAGEMENT. Deliberate planned actions that result in stands of trees of essentially the same age, growing together. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands.

EXTIRPATION . Complete loss.

F

FEDERAL REGISTER. A daily publication which reports Presidential and Federal Agency documents.

FLOODPLAIN. The lowland and relatively flat areas adjoining inland and coastal waters, including, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year.

FIRE PERIMETER. The outer edge limits of a fire-burned area.

FIRE REGIME. The combination of fire frequency characteristics, predictability, intensity, seasonality and extent in an ecosystem.

FIRE TOLERANT. A plant which has properties or charistics which enable it to survive fire.

FORAGE. Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

FORAGE AREAS. Vegetated areas with less than 60 percent combined canopy closure of tree and tall shrub (greater than 7 feet in height).

FOREST COVER TYPE. A descriptive classification of forestland based on the present vegetative species composition and/or locality (ie: lodgepole pine, mixed conifer). Most stands are given a classification (stratum label), based on aerial photo interpretation, that includes the forest cover type, the size class, density class, and stand development phase. For example: a stand with the stratum label of LP2W would be considered a lodgepole pine cover type (LP) that is of a pole/small sawtimber size class (2) and is well stocked with coniferous trees (W).

FOREST HEALTH. An ecological perspective that looks at the resiliency of an ecosystem and its ability to be sustainable.

FOREST LAND. Land at least 10 percent occupied by forest trees or formerly having had such tree cover and not currently developed for nonforest use.

FROST HEAVING. Occurs when moist or saturated soils are frozen, causing seedlings which are not yet deeply rooted to be ejected from the soil. This occurs mostly in low elevation areas that have frost before there is a cover of snow.

FUELS. Combustible materials present in the forest which potentially contribute a significant fire hazard.

FUEL LOADING. The amount of available fuels, usually expressed in tons per acre.

FUELBED. The arrangement of available fuels, continuity and amount.

FUELS MANAGEMENT. Manipulation or reduction of fuels to meet Forest protection and management objectives while preserving and enhancing environmental quality.

G

GAP. An opening in the stand or canopy caused by some disturbance.

GENETIC INTROGRESSION . The entry or introduction of genetic material from one gene complex to another.

GRADIENT. The rise or fall of a ground surface expressed in degrees of slope.

H

HABITAT. The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

HABITAT COMPONENT. A simple part, or a relatively complex entity regarded as a part, or an area or type of environment in which an organism or biological population normally lives or occurs.

HABITAT DIVERSITY. The variation in types, sizes, and shapes of landscape elements or vegetation types.

HABITAT EFFECTIVENESS. The ability of an area to support a species (individual or population) based on a potential of 100%.

HABITAT TYPE. An aggregation of all land areas potentially capable of producing similar plant communities at climax. Within the analysis area the following habitat types are present: western redcedar/queencup beadlily (531), western hemlock/queencup beadlily (571), western hemlock/menziesia (579), subalpine fir/queencup beadlily (620), subalpine fir/menziesia (670), subalpine fir/beargrass (690), subalpine fir/beargrass, grouse whortleberry (692), subalpine fir/grouse whortleberry, pinegrass (731), subalpine fir/alder (740).

HABITAT TYPE GROUP. A category of habitat types with similar ecological amplitudes and environmental conditions. Combined with information on stand conditions, habitat type groups can be used to develop silvicultural stand treatment priorities during the IDT process.

HARDWOODS. A conventional term for the wood of broadleaf trees. In the decision area these trees are generally confined to areas near water.

HIDING COVER. Vegetation capable of hiding 90 percent of a standing adult deer or elk at 200 feet or less. Includes some shrub stands and all forested stand conditions with adequate tree stem density or shrub layer to hide animals. In some cases, topographic features also can provide hiding cover.

HIGH RISK. Individual or groups of trees that are live (green) but have the physical characteristics favorable to insect infestation. Trees in this category are subject to mortality and loss of economic value.

HOST TREE. A tree in which other organisms, parasites, or insects live for part of their life cycle.

I

INDICATOR SPECIES. See management indicator species.

INDIRECT EFFECTS. Secondary effects which occur in locations other than the initial action or significantly later in time.

INFISH. (Inland Native Fish Strategy) On July 31, 1995, the Decision Notice for Inland Native Fish Strategy Environmental Assessment (INFISH) was signed. This strategy was developed to provide interim (approximately 18 months) direction to protect habitat and populations of native resident fish and supersedes the Idaho Panhandle Riparian Guidelines previously used.

INSTREAM FLOWS. The minimum water volume (cubic feet/second) in each stream necessary to meet seasonal streamflow requirements for maintaining aquatic ecosystems, visual quality, recreational opportunities and other uses.

INTERAGENCY GUIDELINES. A document which was originally developed in the Yellowstone grizzly bear ecosystem and later applied to all grizzly habitat through congressional mandate. Previously known as the "Yellowstone Guidelines" , it identifies important, specific management measures regarding the conduct of multiple use activities in grizzly bear habitat and parameters for identifying the sensitivity of grizzly bear habitat to human activities.

INTERDISCIPLINARY TEAM (IDT). A group of resource professionals with different expertise that collaborate to develop and evaluate resource management decisions.

INTERMEDIATE HARVEST. Any harvest in an even-age stand rotation which retains the major stand components and does not regenerate the stand.

INTERMITTENT STREAM. A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow.

INVENTORIED ROADLESS AREAS. Areas identified in a set of inventoried roadless area maps, contained in *Forest Service Roadless Area Conservation, Draft Environmental Impact Statement, Volume 2,* dated May 2000, which are held at the National headquarters office of the Forest Service, or any update or revision of those maps (FSM 1920.5).

IRREVERSIBLE. A term that describes the loss of future options. Applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity that are renewable only over long periods of time.

IRRETRIEVABLE. A term that applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

L

LADDER FUELS. Small trees and understory shrubs that allow fire to burn up into the canopy of larger trees.

LANDSCAPE. The aspect of the land that is characteristic of a particular region or area.

LANDTYPE. A unit of land with similar designated soil, vegetation, geology, topography, climate and drainage. The basis for mapping units in the land systems inventory.

LARGE WOODY MATERIAL. (Also large woody debris; LWD)- Branches and/or tree trunks located within a stream channel, originating from trees growing in or near the channel. Such material is considered "large" if it is of sufficient size that it remains at least partially submerged during all but major flood events. These materials are important in stream systems because they serve a variety of functions related to channel hydraulics and morphology. Functions would include flow energy reduction due to friction and turbulence on downstream side of debris, and sediment storage on upstream side of materials. LWD is delivered to stream channels by decay and/or windfall of trees in close proximity to stream channels.

LETHAL FIRES A descriptor of fire response and effect in forested ecosystems of high-severity or severe fire that burns through the overstory and understory which consumes large woody surface fuels and may consume entire duff layer. Stand is set back to initiation stage.

LIMITING FACTOR. The environmental influence through which the toleration limit of an organism is first reached, which acts, therefore, as the immediate restriction in one or more of its functions or activities or in its geographic distribution.

LODGEPOLE PINE. See explanation under timber type.

M

MANAGEMENT AREA. Geographic areas, not necessarily contiguous, which have common management direction, consistent with the Forest Plan allocations.

MANAGEMENT DIRECTION. A statement of multiple use and other goals and objectives, along with the associated management prescriptions and standards and guidelines to direct resource management.

MANAGEMENT INDICATOR SPECIES (MIS). A species of wildlife, fish, or plant whose health and vigor are believed to accurately reflect the health and vigor of other species having similar habitat and protection needs to those of the selected indicator species.

MASS EROSION (also called mass wasting) Downslope movement of a unit of soil. Mass erosion includes landslides, debris flows, debris avalanches, debris torrents, slumps and soil creeping.

MATURE. On lands allocated for timber harvest, mature is defined as trees or stands that have reached rotation age, generally around 100 years. In the context of wildlife - Mature forest habitat with characteristics needed to provide habitat for species such as pine marten and pileated woodpecker (generally occurs around age 100).

MID-SERAL. A middle transitory stage in forest succession.

MITIGATION. Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

MIXED CONIFER. See explanation under timber type.

MIXED LETHAL FIRES A descriptor of fire response and effect in forested ecosystems of moderate fire, burns in surface fuels but may involve a tree understory. It consumes litter, upper duff, understory plants and

foliage on understory trees. Individual and groups of overstory trees may torch out if fuel ladders exist. Enough of the stand's overstory survives to provide for the major portion of the regeneration that results.

MONITORING AND EVALUATION. The evaluation, on a sample basis, of Forest Plan management practices to determine how well objectives are being met, as well as the effects of those management practices on the land and environment.

MONOCULTURE. A pure stand of a single species.

MOSAIC. The intermingling of plant communities and their successional stages in such a manner as to give the impression of an interwoven design.

MOUNTAIN PINE BEETLE. The common name for the bark beetle (Dendroctonous ponderosae, Hopkins) which is an insect pest that has caused more tree mortality in the intermountain west than any other

MULTI-STORY. A forest stand or plant community having more than two main canopy layers or "stories".

N

NATIONAL FOREST SYSTEM ROAD. A classified forest road under the jurisdiction of the Forest Service. The term “National Forest System roads” is synonymous with the term “forest development roads” as used in 23 U.S.C. 205. (FSM 7705).

NEPA PROCESS. An interdisciplinary process, mandated by the National Environmental Policy Act, which concentrates decisionmaking around issues, concerns, alternatives and the effects of alternatives on the environment.

NO-ACTION ALTERNATIVE. The No-Action alternative is required by regulations implementing the National Environmental Policy Act (NEPA) (40 CFR 1502.14). The no-action alternative provides a baseline for estimating the effects of other alternatives. Where a project activity is being evaluated, the no action alternative is defined as one where no action or activity would take place.

NONGAME SPECIES. All wild animals not subject to sport hunting, trapping or fishing regulations.

NON-LETHAL FIRES A descriptor of fire response and effect in forested ecosystems of low-severity or cool fire. Has minimal impact on the site. It burns in surface fuels consuming only the litter, herbaceous fuels, and foliage and small twigs on woody undergrowth. Little heat travels downward through the duff. None of the large (commercial size) trees are killed.

NONSTOCKED. A stand of trees or aggregation of stands that have a stocking level below the minimum specified for meeting the prescribed management objectives.

NOXIOUS WEEDS. Rapidly spreading plants which can cause a variety of major ecological impacts to both agricultural and wild lands.

NUTRIENT. An element found in the soil that is needed for plant growth.

O

OBLITERATION. The reclamation and/or restoration of land to resource production from that of a transportation facility. This may include, but is not limited to, one or more of the following: ripping, seeding, pulling culverts, or recontouring. The term “obliteration” is often used in place of “road decommissioning” as defined in 36 CFR 212.1.

OLD GROWTH HABITAT. Old growth is a distinct successional stage in the development of a timber stand that has special significance for wildlife, generally characterized by: (1) large diameter trees (often exceeding 19" dbh) with a relatively dense, often multilayer canopy. (2) the presence of large, standing dead or dying trees. (3) down and dead trees, (4) stand decadence associated with the presence of various fungi and heartrots, (5) and an average age often in excess of 200 years.

OPEN ROAD DENSITY. A measure of the amount of open roads per area of land, usually expressed as miles per square mile

OUTBREAK. Sudden occurrence of a disease or insect pest.

OUTSLOPE. When the slope from inside of shoulder to outside of shoulder exceeds the alignment grade.

OVERMATURE. The condition that exists after an even-aged stand reaches maturity and decline in vigor, health and soundness.

OVERSTOCKED. Stands exceeding a prescribed standard or expected number of trees or basal area per acre.

OVERSTORY. The portion of trees in a forest which forms the uppermost layer of foliage.

P

PATCH. An area of vegetation that is relatively homogeneous internally with respect to composition and successional stage and that differs from what surrounds it.

PATHOGEN An organism which causes disease in another organism.

PAYMENTS TO STATES (or Payments to Counties) The portion of receipts derived from Forest Service resource management that is distributed to State and county governments as the Forest Service 25 percent fund payments.

PEAK FLOW. The greatest flow attained during the melting of the winter snowpack.

PERENNIAL STREAMS. Streams that flow continuously throughout the year.

PLANT ASSOCIATION. A potential natural plant community of definite floristic composition and uniform appearance.

PLANTATIONS. Areas in the forest where trees have been planted.

POPULATION. In statistics, the aggregate of all units forming the subject of study; otherwise, a community of individuals that share a common gene pool.

PRE-COMMERCIAL THINNING A felling made in an immature stand in order primarily to accelerate diameter increment but also, by suitable selection, to improve the average form of the trees that remain. Usually occurs in crowded (by crown competition or stems per acre) stands to give remaining trees (a prescribed desired number of trees) a competitive advantage for full development.

PREFERRED ALTERNATIVE. The agency's preferred alternative, one or more, that is identified in the impact statement (40 CFR 1502.14).

PRESCRIBED BURNING. The intentional application of fire to wildland fuels in either their natural or modified state under such conditions as to allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives (ie: silviculture, wildlife management, reduction of fuel hazard, etc.)

PRESCRIBED FIRE. A wildland fire burning under preplanned specified conditions to accomplish specific planned objectives. It may result from either a planned or unplanned ignition.

PRESCRIPTION. Management practices selected and scheduled for application on a designated area to attain specific goals and objectives.

PROJECT AREA. The geographic area defining the scope of this document and the alternatives proposed by it.

PROJECT FILE. An assemblage of documents that contains all the information developed or used during an environmental analysis. This information may be summarized in an Environmental Assessment or an Environmental Impact Statement. The project file becomes part of the administrative record for judicial review in case of legal action.

R

RANGER DISTRICT. An administrative subdivision of the Forest, supervised by a District Ranger who reports to the Forest Supervisor.

REBURN. Re-ignition and burning on incompletely burned fuels.

RECONDITIONING. Road maintenance consisting of cleaning ditches and culverts, including inlets and outlets; removing slide material; scarifying and blading the road surface including turnouts, and approach road connections.

RECONTOUR. A form of road decommissioning or obliteration where fill material is pulled back onto the road surface to a more natural sideslope.

RECORD OF DECISION. A concise public document disclosing the decision made following preparation of an EIS and the rationale used by the deciding officer to reach that decision.

RECREATION OPPORTUNITY SPECTRUM (ROS). A range of possible combinations or recreation activities, settings, and experience opportunities, from Primitive to Urban, arranged along a continuum. Classes used herein are:

> **Roaded Natural Appearing (RNA)-** Area is characterized by predominantly natural appearing environment with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in the construction standards and design facilities.
>
> **Roaded Modified** – is a subclass of roaded natural that is less located along less used forest roads where the user will likely encounter large clear cuts and areas where management activities may be present.
>
> **Rural (R)-** Area is characterized by substantially modified natural environment. Resource modification and utilization practices are primarily to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of man are readily evident, and the interaction between users if often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.

REFORESTATION. The natural or artificial restocking of an area with forest trees. It may include tree planting and seeding measures to obtain natural regeneration.

REGENERATION. The renewal of a tree crop, whether by natural or artificial means. This term may also refer to the crop (seedlings, saplings) itself.

REGENERATION HARVEST. Used in reference to clearcut, seedtree and shelterwood harvest methods which remove an existing stand to prepare a site for regeneration.

REHABILITATION. Returning of land to farm use or to productivity in conformity with a prior land use plan, including a stable ecological state that does not contribute substantially to environmental deterioration and is consistent with surrounding aesthetic values.

RELIC. A tree that has survived several stand replacing events.

RESERVE TREE. Trees retained after the regeneration period (pole sized or larger) under the clearcutting, seed tree, or shelterwood methods.

RESIDUAL TREE. Trees remaining after any harvest.

RESTOCKING. The process of adding additional trees by planting or seeding to bring the stocking up to prescribed conditions.

RESTORATION. The act of returning to historic site conditions or ecological processes that existed before the disruption or interruption of these processes.

RESTRICTED ROAD. A National Forest road or segment which is restricted from a certain type of use or all uses during certain seasons of the year or yearlong. The use being restricted and the time period must be specified. The closure is legal when the Forest Supervisor has issued an Order and posted that Order in accordance with 36 CFR 261.

RHIZOME. A rootlike stem under or on top of the ground, ordinarily in a horizontal position, which usually sends out roots from its lower surface and leafy shoots from its upper surface.

RIFFLE STABILITY INDEX (RSI). A system of measure that predicts channel substrate stability.

RIPARIAN AREAS/HABITATS. Land areas where the vegetation and microclimate are influenced by perennial and/or intermittent water.

RIPARIAN MANAGEMENT OBJECTIVES (RMOs). Quantifiable measures of stream and streamside conditions that define good fish habitat and serve as indicators against which attainment or progress toward attainment of goals will be measured.

RIPARIAN HABITAT CONSERVATION AREAS (RHCAs). Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris, and nutrient delivery systems.

RIPPING. A form of road surface treatment; a method of aerating the surface and subsurface material of a road, landing, and/or skid trail to allow water infiltration by tilling the soil with a piece of machinery equipped with ripper bars.

ROAD. A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified or temporary (36 CFR 212.1).

> **Classified Road.** Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access, including State roads, county roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service (36 CFR 212.1).
>
> **Temporary Road.** Roads authorized by contract, permit, lease, or other written authorization, or emergency operation, not intended to be a part of the forest transportation system and not necessary for long-term resource management (36 CFR 212.1).
>
> **Unclassified Road.** Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon termination of the authorization (36 CFR 212.1).

ROAD DECOMMISSIONING. Activities that result in the stablization and restoration of unneeded roads to a more natural state (36 CFR 212.1), (FSM 7703).

ROAD MAINTENANCE. The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective (FSM 7712.3)

ROAD MANAGEMENT OBJECTIVE. Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria. (FSM 7721.31 and FSH 7790.55--33).

ROAD RECONSTRUCTION. Activity that results in improvement or realignment of an existing classified road as defined below:

> **Road Improvement.** Activity that results in an increase of an existing road's traffic service level, expansion of its capacity, or a change in its original design function.
>
> **Road Realignment** – Activitiy that results in a new location of an existing road or portions of an existing road and treatment of the old roadway (36 CFR 212.1).

ROOT CROWNS. The point at or just below the surface of the ground where the stem and root join.

ROOT DISEASE. A fungal organism which lives in organic matter i the soil and invades the living roots systems of trees.

ROSGEN CHANNEL CLASSIFICATION. A system of measure that utilizes various channel features to rate a stream or river into reproducible classes.

ROTATION. The planned number of years required to establish (including the regeneration period) and grow timber crops to a specified condition or maturity for regeneration harvest.

S

SALMONIDS . Members of the family of elongate soft-finned fishes Salmonidae - the trout and salmon family.

SALVAGE HARVEST. The cutting of trees that are dead, dying, or deteriorating before they lose commercial value as sawtimber. The removed trees are generally overmature, damaged by fire, wind, insects, fungi or other injurious agencies.

SCOPING. The procedures by which the Forest Service determines the extent of analysis necessary for a proposed action, i.e., the range of actions, alternatives, and impacts to be addressed, identification of significant issues related to a proposed action, and establishing the depth of environmental analysis, data, and task assignments needed.

SCREE Refers to slopes covered with loose rock fragments, including the accumulation of rock at a cliff or slope base (talus) as well as loose, unstable material lying on slopes without cliffs.

SEDIMENT. Any material carried in suspension by water, which will ultimately settle to the bottom. Sediment has two main sources: from the channel area itself and from disturbed sites.

SEDIMENT TRAP. Any natural or man-made feature in a stream that traps sediment.

SEED TREE. A tree selected as a natural seed source within a shelterwood or seedtree harvest cut; sometimes also reserved for seed collection.

SEEDTREE HARVEST. A regeneration method under an even-aged silvicultural system. A portion of the mature stand, usually 10-15 trees/acre, is retained as a source of seed for regeneration of the stand. The seed trees are intended for removal after regeneration is considered to be established. Note: where there is no intention of removing the seed trees once the stand is regenerated, a seedtree seed cut with reserves is the appropriate silvicultural system.

SEEDLINGS AND SAPLINGS. Non-commercial-size young trees, generally occurring in plantations.

SELECTION HARVEST. The periodic removal of trees, usually at 10-20 year intervals, individually or in small groups, from an uneven-aged forest in order to realize yield and establish regeneration of irregular constitution.

SENSITIVE SPECIES. Those species identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trends in (a) population numbers or density, or (b) habitat capability that would reduce a species' existing distribution.

SENSITIVITY LEVEL. A particular degree or measure of viewer interest in the scenic qualities of the landscape.

SERAL STAGE. A transitory or developmental stage of a biotic community in an ecological succession (does not include climax successional stage or pioneer stage).

SEROTINOUS Late in developing; particularly applied to plants that flower or fruit late in the season and to fruit and cones that remain closed for a year or more after the seeds mature, but also to bud opening, leaf shedding etc. . Applies to the nature of lodgepole pine cones, as a positive adaptive trait for fire dependent ecosystems.

SHELTERWOOD HARVEST. A regeneration method under an even-aged silvicultural system. A portion of the mature stand is retained as a source of seed and site protection during the regeneration period.

SHRUB. A plant with persistent woody stems and relatively low growth form; usually produces several basal shoots as opposed to a single bole; differs from a tree by its low stature and nonarborescent form.

SIGNIFICANT. As used in NEPA, requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts (40 CFR 1508.27).

SILVICULTURE. The art and science of growing and tending forest vegetation, i.e., controlling the establishment, composition, and growth of forests, for specific management goals.

SILVICULTURAL DIAGNOSIS. The process of comparing existing stand conditions to a desired condition or "target stand", and determining a need for treatment to bring the stand to the desired condition.

SILVICULTURAL SYSTEM. A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the cuttings that remove the mature crop and provide for regeneration, and according to the type of forest thereby produced.

SITE PREPARATION. A general term for a variety of activities that remove or treat competing vegetation, slash, and other debris that may inhibit the establishment of regeneration.

SIZE CLASS. A classification of forest stands based on live trees in the stand. The classification uses a four letter acronym based on descriptive adjectives. For example, a stand that is designated as a size class MLRS is a mature stand (M) that is considered low risk to damaging insects or disease (LR) and is stocked with sawtimber sized trees of a specified diameter and stocking level (S).

SLASH. The residue left on the ground after felling and other silvicultural operations and/or accumulating there as a result of storm, fire, girdling, or poisoning of trees.

SLASH BURNING. The treatment or burning of slash so as to reduce fire or insect hazards.

SNAG. A standing dead tree usually without merchantable value for timber products, but may have characteristics of benefit to some cavity nesting wildlife species.

SNAG DEPENDENT WILDLIFE. Wildlife species that are dependent on snags for nesting or roosting habitat or for food.

SPECIAL USE PERMIT. A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

SPECIES. A unit of classification of plants and animals consisting of the largest and most inclusive array of sexually reproducing and cross-fertilizing individuals which share a common gene pool.

STAGNATION Refers to stand growth, implying that there is a failure to express dominance due to poor site conditions, competition of other trees that limit development of the crowns which suppresses individual tree growth and over all stand development. Usually diameter growth is severely limited and height growth still occurs but slowly.

STAND. A community of trees or other vegetation uniform in composition, constitution, spatial arrangement, or condition to be distinguishable from adjacent communities.

STAND COMPOSITION. The representation of tree species in a forest stand, expressed by some measure of dominance (ie % volume, number, basal area).

STAND DENSITY A measure of the degree of crowding of trees within stocked areas, commonly expressed by various growing-space ratios such as crown length to tree height, crown diameter to diameter at breast height, crown diameter to tree height, or of stem spacing to tree height.

STAND REPLACING FIRE. A fire that kills most or all of a stand, and causes a new stand to be started.

STAND STRUCTURE. The horizontal and vertical arrangement of the vegetation in a stand.

STANDARD. A particular action, level of performance, or threshold specified by the Forest Plan for resource protection or accomplishment of management objectives. Unlike "guidelines" which are optional, standards specified in the Forest Plan are mandatory.

STOCKED. Stands falling within a prescribed standard or expected number of trees or basal area per acre.

STOCKING. The degree to which trees occupy the land, measured by basal area and/or number of trees by size and spacing, compared with a stocking standard; that is, the basal area and/or number of trees required to fully utilize the land's growth potential.

STREAM CHANNEL STABILITY. A classification system that utilizes ocular estimates of various channel, bank, and riparian area features to evaluate channel health.

STREAM ORDER. It is often convenient to classify streams within a drainage basin by systematically defining the network of branches. Each nonbranching channel segment (smallest size) is designated a first-

order stream. A stream which receives only first-order segments is termed a second-order stream, and so on. The order of a particular drainage basin is determined by the order of the principle or largest segment.

STRUCTURAL DIVERSITY. The variation in sizes and shapes of landscape elements, as well as diversity of pattern (ie: heterogeneity).

SUCCESSION. The changes in vegetation and in animal life that take place as the plant community evolves from bare ground to climax.

SUCCESSIONAL STAGE. A stage or recognizable condition of a plant community which occurs during its development from bare ground to climax.

SUMMER RANGE. A range, usually at higher elevation, used by deer and elk during the summer; a summer range is usually much more extensive than a winter range.

SUITABLE FOREST LAND. Forest land (as defined in CFR 219.3, 219.14) for which technology is available that will insure timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be adequately restocked (as provided in CFR 219.4); and for which there is management direction that indicates that timber production is an appropriate use of that area.

SUPPRESSED Refers to individual trees, very slowly growing trees with crowns entirely below the general level of the crown cover, receiving no direct light either from above or from the sides, common in stands that are considered overstocked.

SURFACE EROSION. Downslope movement of individual particles of soil by water transport. Surface erosion includes sheet erosion, riling and gullying.

T

TARGET STAND. A classification of individual forest stands that reflects the desired attributes within a range of stand conditions that have the potential in meeting timber management objectives as described in the Kootenai Forest Plan. Target stands are generally described for each habitat type group based on site productivity for even-aged, multi-storied, and uneven-aged silvicultural systems. The reference to site productivity is differentiated between Mixed Conifer 1 (MC 1), Mixed Conifer 2 (MC 2), and Lodgepole Pine (LP). For example, an MC 1 designation refers to the productivity group made up of commercial conifer (other than LP) that have the potential to produce >85 cubic feet/acre/year at the culmination of mean annual increment. An MC 2 designation includes the group that encompasses all stands not meeting the above conditions. The LP group includes lodgepole pine stands that have a full range of productivity.

THERMAL COVER. Vegetation used by animals to modify the adverse effects of weather. A forest stand that is at least 40 feet in height with tree canopy cover of at least 70 percent provides thermal cover. These stand conditions are achieved in closed sapling-pole stands and by all older stands unless the canopy cover is reduced below 70 percent. Deciduous stands may serve as thermal cover in summer, but not in winter.

THINNING. A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality.

THREATENED SPECIES. Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

TIERING. The use of a previously written environmental document with a broad scope to cover discussion of issues common to both.

TIMBER TYPES. A descriptive classification of forestland based on present occupancy of an area by tree species (ie: lodgepole, mixed conifer). More appropriately called forest cover types, this category is further defined by the composition of its vegetation and/or environmental factors that influence its locality. See Appendix A (Silvicultural Prescriptions) for more information.

TRAMPLING. A method of treating fuels by knocking down by walking over or through small trees with a piece of machinery.

TURBIDITY. An optical measure of how fine sediment inhibits the transmission light in a given water sample due to scattering and absorption by suspended particles.

TWO-STORIED. A forest stand or plant community having two main canopy layers or "stories".

U

UNDERBURN. Understory fuels treatment.

UNDERSTORY. Vegetation (trees or shrubs) growing under the canopy formed by taller trees.

UNSUITABLE FOREST LAND. Lands not selected for timber production in Step II and III of the suitability analysis during the development of the Forest Plan due to: (1) the multiple-use objectives for the alternative preclude timber production, (2) other management objectives for the alternative limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met, and (3) the lands are not cost-efficient over the planning horizon in meeting forest objectives that include timber production. Land not appropriate for timber production shall be designated as unsuitable in the Forest Plan.

UNROADED AREAS. Any area without the presence of a classified road, that is of a size and configuration sufficient to protect the inherent characteristics associatied with its roadless condition. Unroaded areas are distinct from and do not overlap with inventoried roadless areas (FSM 1920.5).

V

VERTICAL DIVERSITY. The diversity in an area that results from the complexity of the above ground structure of the vegetation; the more tiers of vegetation or the more diverse the species makeup is, the higher the degree of vertical diversity

VIABLE POPULATION. A wildlife population of sufficient size to maintain its existence over time in spite of normal fluctuations in population levels.

VIEWSHED. Sub-units of the landscape where the visitor's view is contained by topography similar to a watershed.

VISUAL QUALITY OBJECTIVE (VQO). A system of indicating the potential expectations of the visual resource by considering the frequency an area is viewed and the type of landscape.

Maximum Modification: A Visual Quality Objective meaning man's activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Modification: A Visual Quality Objective meaning man's activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Partial Retention: A Visual Quality Objective which in general means man's activities may be evident but must remain subordinate to the characteristic landscape.

Retention: A Visual Quality Objective which in general means man's activities are not evident to the casual forest visitor.

Preservation: A Visual Quality Objective that provides for ecological change only.

VARIETY CLASS. A particular level of visual variety or diversity of landscape character.

VISUAL RESOURCE. The composite of landforms, water features, vegetative patterns and cultural features which create the visual environment.

W

WATER ROUTING. Spring snowmelt and storm runoff intercepted and redirected by roads, ditches, and trails.

WATER YIELD. The measured output of streams.

WILDERNESS. All lands included in the National Wilderness Preservation System by public law; generally defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation.

WILDFIRE. Any fire not designated and managed as a prescribed fire with an approved prescription.

WINDTHROW. The action of wind uprooting trees.

WINTER RANGE. A range, usually at lower elevation, used by migratory deer and elk during the winter months; usually better defined and smaller than summer ranges.

Y

YARDING. A method of bringing logs in to a roadside area or landing, for truck transport. Methods may include forms of skyline cable logging systems, ground-based skidding, balloon, helicopter, etc.

ABBREVIATIONS AND ACRONYMS

ABIS	Aquatic Biota Information System
AIRFA	American Indian Religious Freedom Act of 1978
ALT	Alternative
ANILCA	Alaska National Interest Lands Conservation Act
BA	Biological Assessment
BE	Biological Evaluation
BLM	Bureau of Land Management
BMP	Best Management Practices
CCE	Clearcut Equivalent Acres
CDC	Conservation Data Center
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
CFS	Cubic Feet Per Second
CT	Commercial Thin
CWA	Clean Water Act
CWD	Coarse Woody Debris
DBH	Diameter Breast Height
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality
EA	Environmental Assessment
EAWS	Ecosystem Analysis at the Watershed Scale
ECA	Equivalent Clearcut Acres
EHP	Elk Habitat Potential
EIS	Environmental Impact Statement
EHU	Elk Habitat Unit
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FDR	Forest Development Road
FEIS	Final Environmental Impact Statement
FP	Forest Plan
FRTA	Forest Roads and Trail Act
FSH	Forest Service Handbook
FSM	Forest Service Manual
GIS	Global Information Systems
GSW	Group Shelterwood
HE	Habitat Effectiveness
IDT	Interdisciplinary Team
IMSA	Immature Sawtimber
INFish	Inland Native Fish Strategy
INFS	Inland Native Fish Strategy
IPNF	Idaho Panhandle National Forests
IRA	Inventoried Roadless Area
KV	Knutson-Vandenberg Act of 1924
LAA	Landscape Analysis Area
LAU	Lynx Analysis Unit
LWD	Large Woody Debris
MA	Management Area
MIS	Management Indicator Species
MBF	Thousand Board Feet
MMBF	Million Board Feet
MOU	Memorandum of Understanding
MS	Management Situation
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NFS	National Forest System
NRT	National Recreation Trail
OGMU	Old Growth Management Unit
ORD	Open Road Density (mi/sq. mi.)
PFI	Peak Flow Increase
PFA	Post-fledging Family Area
PL	Public Law
PNV	Present Net Value
RHCA	Riparian Habitat Conservation Area
RMO	Road Management Objective
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
RSI	Riffle Stability Index
SAWT	Sawtimber
SCS	Stream Channel Stability
SEIS	Supplemetal Environmental Impact Statement
SHPO	State Historic Preservation Officer
SW	Shelterwood
SWCP	Soil and Water Conservation Practices
T&E	Threatened and Endangered Species
TES	Threatened and Endangered Species
TMDL	Total Maximum Daily Load
TSMRS	Timber Stand Management Record System
ICB	Interior Columbia Basin
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	United States Forest Service
USGS	United States Geological Survey
USFWS	USDI-Fish & Wildlife Service
VQO	Visual Quality Objectives
VMS	Visual Management system
WQLS	Water Quality Limited Segments

APPENDIX I: LIST OF PREPARERS

LIST OF PREPARERS

Bill Anderson*	Education: National Construction Certification in: Roads; Public Works Administration; Timber Purchases; Aggregate, Base and Surfacing Experience: 33 years	Transportation for SEIS
Cliff Avery	Education: AAS, Forestry Experience: 32 years	Logging Systems
William Beach	Education: BS, General Biological Science Experience: 30 years	Transportation
Denise Best	Education: AA, General Studies Experience: 30 years	Recreation
Suzanne DiGiacomo	Education: BS and MS, Biology Experience: 16 years	Plants, Weeds, Range
Cameo Flood	Education: BS, Forest Resource Management Experience: 14 years	Finances Writer/Editor
Sam Gibbons	Education: BA, Business Administration and Finance Experience: 18 years	Fire/Fuels Air Quality
Tracy Gravelle	Education: BS, Forest Engineering Experience: 26 years	Heritage Resources Minerals
Lisa Hawdon	Education: BS, Biology Experience: 16 years	Fisheries
Cornie Hudson*	Education: BS, Forestry w/ Recreation minor Experience: 20 years	NEPA Coordination for SEIS
Jason Jerman*	Education: BS, Forestry – Ecological Restoration Emphasis Experience: 14 years	Air Quality and Fire/Fuels for SEIS
Kimberly Johnson	Education: BS, Wildlife Management Experience: 15 years	Team Leader
John Macy	Education: BA, geography Experience: 16 years	Soil and Water
Barbara Montgomery	Education: ARC and Associated Software Experience: 11 years ARC, 16 years data management.	GIS Technician
Lynette Myhre*	Education: BS, Forest Resource Management Experience: 18 years	Writer/Editor for SEIS
Steve Nelson	Education: AAS, Wildlife Management Experience: 30 years	Visuals
Ed Odegaard*	Education: Advanced / Check Cruising, Sale Administration, Advanced Logging Systems, Sale Area Layout and Harvesting Institute at OSU & U of I, project-level economics Experience: 19 years	Finances for SEIS
John Orton	Education: AAS, Forest Technology Experience: 29 years	Fire/Fuels Air Quality
Mary Price*	Education: BS, Forestry with Outdoor Recreation Focus Experience: 26 years	Recreation
Pete Ratcliffe*	Education: BS, Forestry Experience: 26 years	Team Leader for SEIS
Cort Sims*	Education: MA, Anthropology Experience: 40 years	Heritage Resources for SEIS
Chuck Stock	Education: BS, Biology Experience: 27 years	Wildlife
Mike Ware	Education: BS, Forest Management Experience: 36 years	Forest Vegetation Old Growth

* = new team member for supplemented EIS

APPENDIX J: LIST OF RECIPIENTS

LIST OF RECIPIENTS

Native American Tribes:
Coeur D'Alene Tribe

Agencies:
Environmental Protection Agency Office of Environmental Review
Environmental Protection Agency Office of Federal Activities
Environmental Protection Agency Region 10
Idaho Dept of Environmental Quality Surface Water Section
Idaho Department of Lands
USDA Forest Service Ecosystem Management Coordination
USDA National Agricultural Library
USDA Office of Civil Rights
USDI Fish & Wildlife Service

Organizations:
Kootenai Environmental Alliance
Idaho Conservation League
Friends of the Clearwater
The Lands Council
WildWest Institute

Individuals:
B. Sachau

Businesses:
Potlatch Corporation