

APPENDIX A

PROPOSED TREATMENT ACREAGE BY WATERSHED

TABLE A-1
Alternative A Treatment Acres by Watershed

Stream	6 th HUC No. ¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues ²
Belts/Dry Range LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Battle Creek	020010		11,991 / 1	
Mike Day Creek	020020		7,433 / 854	
Faulkner Creek	020040	11-ground	6,546 / 1,137	
Hay Creek	020050		9,558 / 2,775	
Sherlock Creek	040010	1-ground	11,556 / 859	
Upper Sixteen Mile Creek	040020		25,802 / 0	Impaired
Middle Sixteen Mile Creek	040030		30,198 / 30	Impaired
Lower Sixteen Mile Creek	040040		19,126 / 0	Impaired
Upper Deep Creek	070010	218-ground	32,369 / 16,209	Burn 2000
Upper Deep Creek tributary	070020	18-aerial; 171-grnd	7,614 / 6,995	Burn 2000
Middle Deep Creek	070030	34-aerial; 3-ground	6,261 / 2,665	Burn 2000
Middle Deep Creek tributary	070040	22-ground	7,774 / 6,297	Burn 2000
Sixmile Creek	090010		27,912 / 507	
Dry Creek	090040	17-ground	30,797 / 6,801	Impaired; Burn 2000
Greyson Creek	090060	1-ground	15,497 / 2,012	
Cottonwood Creek	100010		21,976 / 280	
Ray Creek	100020	6-ground	25,893 / 3,421	Sensitive Fish Spp. ³
Gurnett Creek	100030	23-ground	13,987 / 3,318	
Duck Creek	100040		20,488 / 6,796	Sensitive Fish Spp.
Confederate Gulch	100050	28-aerial; 184-grnd	33,007 / 18,692	Impaired Sensitive Fish Spp.
Upper Canyon Ferry area	100070		89,721 / 0	
White Gulch	110010	165-aerial; 291-grnd	20,450 / 12,436	Impaired Sensitive Fish Spp.
Avalanche Creek	110020	147-aerial; 226-grnd	25,018 / 22,456	Impaired Sensitive Fish Spp.
Hellgate Creek	110030	8-aerial; 54-ground	10,720 / 8,247	
Magpie Creek	110040	291-aerial; 237-grnd	16,249 / 15,600	Impaired; Burn 2000 Sensitive Fish Spp.
Cave Gulch and others	110050	883-aerial; 223-grnd	45,936 / 5,635	Impaired; Burn 2000; 20-25% treatment area
Upper Trout Creek	160010	20-aerial; 313-grnd	19,418 / 14,827	Impaired
Soup Creek	160020	20-aerial; 105-grnd	13,246 / 11,624	
Lower Trout Creek	160030	2889-aerial; 594-grnd	15,386 / 14,008	Impaired; 20-25% treatment area
Oregon Gulch	160040	977-aerial; 386-grnd	6,445 / 5,792	20-25% treatment area
Favorite Gulch	160060	103-ground	5,927 / 4,057	
Missouri River area	160070	15-aerial; 79-ground	21,436 / 1,786	
Upper Beaver Creek	170010	150-ground	21,017 / 12,673	
Hunters Gulch	170020	39-ground	5,700 / 5,697	
Middle Beaver Creek	170030	31-ground	2,582 / 2,582	
Big Log Gulch	170040	24-aerial; 29-ground	6,247 / 6,247	
Lower Beaver Creek	170050	64-aerial; 272-grnd	11,297 / 10,690	

TABLE A-1				
Alternative A Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Elkhorn Creek	180020		13,776 / 692	Sensitive Fish Spp.
Willow Creek	180030		10,046 / 7,993	
Missouri River area	180050	15-aerial; 88-ground	59,291 / 13,134	
Belts/Dry Range LA – 4th HUC No. 10030103 (Smith River)				
Upper Big Birch Creek	020010		8,987 / 7,223	
Little Birch Creek	020020		8,858 / 1,208	
Lower Big Birch Creek	020030	22-ground	12,944 / 2,328	
Upper Smith River area	020070		36,444 / 0	
Upper Camas Creek	050010	3-ground	21,672 / 14,858	Impaired Sensitive Fish Spp.
Thomas Creek	050020	44-ground	9,774 / 2,576	
Benton Gulch	050030	13-aerial; 23-ground	25,272 / 7,137	
Lower Camas Creek	050040		18,469 / 2,224	Impaired
Thompson Gulch	060040	15-aerial; 16-ground	46,583 / 1,190	Sensitive Fish Spp.
Beaver Creek	060050	6-aerial; 2-ground	31,187 / 6,464	
Smith River area	060060		13,621 / 555	Impaired
Upper Rock Creek	080010	185-aerial; 68-grnd	30,318 / 4,363	
Antelope Creek	080020	29-ground	15,895 / 3,022	
Ellis Canyon Creek	080040	4-ground	10,560 / 5,074	
Lower Rock Creek	080050		19,420 / 840	
Smith River area	100030		28,947 / 2,916	Impaired
Elk Creek	110010		11,074 / 0	Impaired
Middle Creek	110020		16,019 / 0	
Hound Creek	110030		17,870 / 0	Impaired
Elkhorn LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Crow Creek	080010		15,395 / 15,090	Impaired Sensitive Fish Spp.
Middle Crow Creek	080020	32-aerial; 66-ground	21,168 / 20,605	Impaired Sensitive Fish Spp.
Upper Crow Creek tributary	080030	5-aerial; 23-ground	10,442 / 10,221	Impaired
Middle Crow Creek tributary	080040	123-aerial; 158-grnd	5,065 / 4,630	Impaired; 5-10% treatment area
Middle Crow Creek	080050		5,646 / 3,648	Impaired
Johnny Gulch	090030	7-aerial; 74-ground	21,245 / 4,815	
Lower Crow Creek	090050	54-aerial; 4-ground	67,254 / 0	Impaired
Indian Creek	090070	31-aerial; 10-ground	13,502 / 5,005	Impaired
Beaver Creek	100060	91-aerial; 73-ground	36,608 / 18,842	Impaired Sensitive Fish Spp.
Whitehorse Creek	100070	11-aerial; 93-ground	89,721 / 4,809	
Upper Prickly Pear Creek	120010		13,072 / 7,164	Impaired Sensitive Fish Spp.
Warm Springs Creek	120030	16-aerial; 50-grnd	13,264 / 9,087	Sensitive Fish Spp.
Middle Prickly Pear Creek	120050	41-aerial	15,535 / 3,752	Impaired Sensitive Fish Spp.

TABLE A-1				
Alternative A Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
McClellan Creek	120070	161-aerial; 462-grnd	23,144 / 14,096	Public water supply for East Helena Sensitive Fish Spp.
Lower Prickly Pear Creek	120080	27-aerial; 12-ground	20,100 / 2,811	
Spokane Creek	160050	111-aerial; 56-grnd	37,421 / 3,103	
Elkhorn LA – 4th HUC No. 10020006 (Boulder River)				
Dry Creek	050030		25,372 / 6,321	Impaired
Continental Divide LA – 4th HUC No. 10030101 (Upper Missouri River)				
Spring Creek	120020		20,266 / 1,834	Impaired
Clancy Creek	120040	81-ground	20,988 / 7,169	Impaired Sensitive Fish Spp.
Lump Gulch	120060	402-ground	27,805 / 14,633	Impaired Sensitive Fish Spp.
Lower Prickly Pear Creek	120080		20,100 / 715	
Upper Tenmile Creek – south	130010	80-ground	26,116 / 21,011	
Upper Tenmile Creek – north	130020	124-aerial; 62-grnd	16,279 / 9,936	
Greenhorn Creek – south	130030	210-aerial; 76-grnd	12,914 / 7,746	
Greenhorn Creek – north	130040		7,785 / 2,287	Sensitive Fish Spp.
Middle Tenmile Creek	130050	44-ground	19,202 / 8,221	Impaired; public water supply for Helena
Lower Tenmile Creek	130070	1-ground	10,976 / 423	Impaired; public water supply for Helena
Upper Silver Creek	140010		10,949 / 918	Impaired Sensitive Fish Spp.
Grizzly-Orofino Gulch	150030	1503-ground	17,078 / 6,578	5-10% treatment area
Upper Little Prickly Pear Creek – south	190010	99-ground	15,078 / 10,068	
Upper Little Prickly Pear Creek – north	190020	149-aerial; 138-grnd	11,775 / 10,239	
Marsh Creek	190050	140-ground	17,216 / 5,152	
Continental Divide LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Baggs Creek	050060		40,449 / 18,928	
Upper Little Blackfoot R. – south	060010	85-ground	18,016 / 17,949	Impaired TES Fish Spp.
Ontario Creek	060020	96-ground	12,829 / 12,643	TES Fish Spp.
Telegraph Creek	060030	154-ground	12,205 / 10,254	Impaired Sensitive Fish Spp.
Mike Renig Gulch	060040	49-ground	7,676 / 3,067	Sensitive Fish Spp.
Upper Little Blackfoot R. – north	060050	448-aerial; 331-grnd	13,066 / 9,177	Impaired; 5-10% treatment area TES Fish Spp.
Hope Creek	070010	117-aerial; 84-grnd	20,444 / 10,597	Sensitive Fish Spp.
Dog Creek	070020	5-aerial; 67-ground	16,714 / 3,148	Impaired Sensitive Fish Spp.
North Trout Creek	070030	10-ground	10,543 / 3,309	Sensitive Fish Spp.

TABLE A-1				
Alternative A Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Snowshoe Creek	070040	49-ground	11,588 / 3,545	Impaired Sensitive Fish Spp.
Elliston Creek	070050	8-aerial; 117-ground	20,295 / 4,919	Impaired TES Fish Spp.
Ophir Creek	070060	365-aerial; 117-grnd	16,786 / 5,748	Sensitive Fish Spp.
Trout Creek	070070	110-aerial; 36-grnd	12,469 / 2,969	Sensitive Fish Spp.
Spotted Dog Creek – west	080010	2-ground	8,128 / 238	Impaired
Spotted Dog Creek – east	080020	128-aerial; 156-grnd	8,801 / 5,094	Impaired Sensitive Fish Spp.
Threemile Creek	080040		14,373 / 4,662	Impaired Sensitive Fish Spp.
Continental Divide Landscape – 4th HUC No. 10020006 (Boulder River)				
High Ore Creek	030040		11,346 / 1,574	Impaired Sensitive Fish Spp.
Blackfoot Landscape – 4th HUC No. 17010203 (Blackfoot River)				
Upper Landers Fork	010010	9-ground	18,673 / 18,576	Sensitive Fish Spp.
Bighorn Creek	010020	14-ground	23,965 / 23,934	Sensitive Fish Spp.
Upper Copper Creek	010030	82-aerial; 137-grnd	16,863 / 16,740	TES Fish Spp. ⁴
Lower Landers Fork	010040		11,235 / 5,175	TES Fish Spp.
Lower Copper Creek	010050	37-aerial; 64-ground	13,446 / 8,425	TES Fish Spp.
Alice Creek	020010	10-aerial; 47-ground	12,618 / 11,194	Sensitive Fish Spp.
Upper Blackfoot River	020020	108-ground	10,084 / 8,884	Sensitive Fish Spp.
Willow Creek	020030	49-ground	12,370 / 8,009	Impaired Sensitive Fish Spp.
Upper Blackfoot River tributary	020040	14-ground	7,136 / 2,128	
Bartlett Creek	020050		11,376 / 3,808	TES Fish Spp.
Hogum Creek	020060	73-aerial; 69-ground	7,613 / 6,862	Sensitive Fish Spp.
Horsefly Creek	020070	23-aerial; 2-ground	12,650 / 3,275	TES Fish Spp.
Poorman Creek	030010	468-aerial; 198-grnd	26,396 / 23,518	Impaired TES Fish Spp.
Humbug Creek	030020	123-aerial; 28-grnd	12,150 / 5,326	Sensitive Fish Spp.
Keep Cool Creek	030030	93-aerial; 170-grnd	22,802 / 13,313	Sensitive Fish Spp.
Beaver Creek	030040	30-aerial; 92-ground	11,582 / 8,841	TES Fish Spp.
Middle Blackfoot River	030050		12,150 / 2,989	TES Fish Spp.
Willow Creek	030060	72-aerial; 130-grnd	12,152 / 5,852	Impaired Sensitive Fish Spp.
Sauerkraut Creek	030070	43-ground	8,518 / 4,922	Sensitive Fish Spp.
Lincoln Gulch	030080	74-aerial; 155-grnd	9,406 / 5,711	TES Fish Spp.
Arrastra Creek	030090	50-ground	15,463 / 8,221	Impaired TES Fish Spp.
Moose Creek Area	030100	789-aerial; 141-grnd	19,783 / 8,332	Sensitive Fish Spp.
Upper Nevada Creek	040010	387-aerial; 110-grnd	25,180 / 17,852	Impaired TES Fish Spp.
Washington Creek	040030		7,998 / 4,966	Impaired Sensitive Fish Spp.

TABLE A-1				
Alternative A Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Jefferson Creek	040040	28-aerial; 27-ground	6,599 / 2,664	Impaired Sensitive Fish Spp.
Buffalo Gulch	040050	178-aerial; 148-grnd	9,162 / 4,856	Sensitive Fish Spp.
Chicken Creek area	040110	287-aerial; 211-grnd	18,096 / 4,089	Sensitive Fish Spp.
Wasson Creek area	040150	35-aerial; 76-ground	31,401 / 4,358	Sensitive Fish Spp.
Meadow Creek	060010	5-ground	12,163 / 11,872	
Mineral Creek	060020		9,485 / 9,485	
East Fork Blackfoot River	060030	41-ground	20,320 / 20,277	Sensitive Fish Spp.
Ward Creek	070020		7,821 / 1,795	Impaired
North Fork Blackfoot River	070040	99-aerial; 83-ground	25,198 / 12,474	Impaired TES Fish Spp.
Blackfoot LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Canyon Creek	190030		15,189 / 8,567	Sensitive Fish Spp.
Virginia Creek	190040	7-aerial; 173-ground	19,383 / 13,466	Sensitive Fish Spp.
Upper Little Prickly Pear Creek	190050		17,216 / 5,152	Impaired
Sears Creek	190060		9,703 / 261	
Canyon Creek	190070		25,322 / 1,054	
Blackfoot LA – 4th HUC No. 10030102 (Upper Missouri River)				
Middle Fork Dearborn River	030000	15-ground	43,172 / 2,442	
South Fork Dearborn River	040010	24-ground	12,993 / 5,237	
Blackfoot LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Sixmile Creek	080050		18,843 / 313	

Source: Montana DEQ 2002b

- 1 HUC = hydrologic unit code; HUCs reported in this table are 6th-Code.
- 2 “Impaired” means the stream or river segment is on the 1996, 1998, 2000, and/or 2002 303(d) Lists of impaired water bodies in Montana. “Burn 2000” indicates those areas that had significant timber burned within the watershed during 2000. “Percent Treatment Area” is the portion of the watershed that is proposed for ground and/or aerial weed treatment.
- 3 Sensitive Fish Spp. are westslope cutthroat trout.
- 4 TES Fish Spp. indicated westslope cutthroat trout or bull trout.

TABLE A-2				
Alternative B Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Belts/Dry Range LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Battle Creek	020010		11,991 / 1	
Mike Day Creek	020020		7,433 / 854	
Faulkner Creek	020040	11-ground	6,546 / 1,137	
Hay Creek	020050		9,558 / 2,775	
Sherlock Creek	040010	1-ground	11,556 / 859	
Upper Sixteen Mile Creek	040020		25,802 / 0	Impaired
Middle Sixteen Mile Creek	040030		30,198 / 30	Impaired
Lower Sixteen Mile Creek	040040		19,126 / 0	Impaired
Upper Deep Creek	070010	218-ground	32,369 / 16,209	Burn 2000
Upper Deep Creek tributary	070020	176-ground	7,614 / 6,995	Burn 2000
Middle Deep Creek	070030	33-ground	6,261 / 2,665	Burn 2000
Middle Deep Creek tributary	070040	22-ground	7,774 / 6,297	Burn 2000
Sixmile Creek	090010		27,912 / 507	
Dry Creek	090040	17-ground	30,797 / 6,801	Impaired; Burn 2000
Greyson Creek	090060		15,497 / 2,012	
Cottonwood Creek	100010		21,976 / 280	
Ray Creek	100020	6-ground	25,893 / 3,421	Sensitive Fish Spp. ³
Gurnett Creek	100030	23-ground	13,987 / 3,318	
Duck Creek	100040		20,488 / 6,796	Sensitive Fish Spp.
Confederate Gulch	100050	212-ground	33,007 / 18,692	Impaired Sensitive Fish Spp.
Upper Canyon Ferry area	100070		89,721 / 0	
White Gulch	110010	414-ground	20,450 / 12,436	Impaired Sensitive Fish Spp.
Avalanche Creek	110020	323-ground	25,018 / 22,456	Impaired Sensitive Fish Spp.
Hellgate Creek	110030	61-ground	10,720 / 8,247	
Magpie Creek	110040	430-ground	16,249 / 15,600	Impaired; Burn 2000 Sensitive Fish Spp.
Cave Gulch and others	110050	809-ground	45,936 / 5,635	Impaired; Burn 2000; 20-25% treatment area
Upper Trout Creek	160010	319-ground	19,418 / 14,827	Impaired
Soup Creek	160020	125-ground	13,246 / 11,624	
Lower Trout Creek	160030	2135-ground	15,386 / 14,008	Impaired; 20-25% treatment area
Oregon Gulch	160040	1259-ground	6,445 / 5,792	20-25% treatment area
Favorite Gulch	160060	103-ground	5,927 / 4,057	
Missouri River area	160070	84-ground	21,436 / 1,786	
Upper Beaver Creek	170010	150-ground	21,017 / 12,673	
Hunters Gulch	170020	39-ground	5,700 / 5,697	
Middle Beaver Creek	170030	31-ground	2,582 / 2,582	
Big Log Gulch	170040	51-ground	6,247 / 6,247	
Lower Beaver Creek	170050	334-ground	11,297 / 10,690	

TABLE A-2				
Alternative B Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Elkhorn Creek	180020		13,776 / 692	Sensitive Fish Spp.
Willow Creek	180030		10,046 / 7,993	
Missouri River area	180050	103-ground	59,291 / 13,134	
Belts/Dry Range LA – 4th HUC No. 10030103 (Smith River)				
Upper Big Birch Creek	020010		8,987 / 7,223	
Little Birch Creek	020020		8,858 / 1,208	
Lower Big Birch Creek	020030	22-ground	12,944 / 2,328	
Upper Smith River area	020070		36,444 / 0	
Upper Camas Creek	050010	3-ground	21,672 / 14,858	Impaired Sensitive Fish Spp.
Thomas Creek	050020	44-ground	9,774 / 2,576	
Benton Gulch	050030	34-ground	25,272 / 7,137	
Lower Camas Creek	050040		18,469 / 2,224	Impaired
Thompson Gulch	060040	31-ground	46,583 / 1,190	Sensitive Fish Spp.
Beaver Creek	060050	8-ground	31,187 / 6,464	
Smith River area	060060		13,621 / 555	Impaired
Upper Rock Creek	080010	253-ground	30,318 / 4,363	
Antelope Creek	080020	29-ground	15,895 / 3,022	
Ellis Canyon Creek	080040	4-ground	10,560 / 5,074	
Lower Rock Creek	080050		19,420 / 840	
Smith River area	100030		28,947 / 2,916	Impaired
Elk Creek	110010		11,074 / 0	Impaired
Middle Creek	110020		16,019 / 0	
Hound Creek	110030		17,870 / 0	Impaired
Elkhorn LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Crow Creek	080010		15,395 / 15,090	Impaired Sensitive Fish Spp.
Middle Crow Creek	080020	93-ground	21,168 / 20,605	Impaired Sensitive Fish Spp.
Upper Crow Creek tributary	080030	28-ground	10,442 / 10,221	Impaired
Middle Crow Creek tributary	080040	280-ground	5,065 / 4,630	Impaired; 5-10% treatment area
Middle Crow Creek	080050		5,646 / 3,648	Impaired
Johnny Gulch	090030	80-ground	21,245 / 4,815	
Lower Crow Creek	090050	58-ground	67,254 / 0	Impaired
Indian Creek	090070	41-ground	13,502 / 5,005	Impaired
Beaver Creek	100060	142-ground	36,608 / 18,842	Impaired Sensitive Fish Spp.
Whitehorse Creek	100070	104-ground	89,721 / 4,809	
Upper Prickly Pear Creek	120010		13,072 / 7,164	Impaired Sensitive Fish Spp.
Warm Springs Creek	120030	64-ground	13,264 / 9,087	Sensitive Fish Spp.
Middle Prickly Pear Creek	120050	41-ground	15,535 / 3,752	Impaired Sensitive Fish Spp.

TABLE A-2				
Alternative B Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
McClellan Creek	120070	622-ground	23,144 / 14,096	Public water supply for East Helena Sensitive Fish Spp.
Lower Prickly Pear Creek	120080	35-ground	20,100 / 2,811	
Spokane Creek	160050	167-ground	37,421 / 3,103	
Elkhorn LA – 4th HUC No. 10020006 (Boulder River)				
Dry Creek	050030		25,372 / 6,321	Impaired
Continental Divide LA – 4th HUC No. 10030101 (Upper Missouri River)				
Spring Creek	120020		20,266 / 1,834	Impaired
Clancy Creek	120040	81-ground	20,988 / 7,169	Impaired Sensitive Fish Spp.
Lump Gulch	120060	402-ground	27,805 / 14,633	Impaired Sensitive Fish Spp.
Lower Prickly Pear Creek	120080		20,100 / 715	
Upper Tenmile Creek – south	130010	80-ground	26,116 / 21,011	
Upper Tenmile Creek – north	130020	177-ground	16,279 / 9,936	
Greenhorn Creek – south	130030	252-ground	12,914 / 7,746	
Greenhorn Creek – north	130040		7,785 / 2,287	Sensitive Fish Spp.
Middle Tenmile Creek	130050	44-ground	19,202 / 8,221	Impaired; public water supply for Helena
Lower Tenmile Creek	130070	1-ground	10,976 / 423	Impaired; public water supply for Helena
Upper Silver Creek	140010		10,949 / 918	Impaired Sensitive Fish Spp.
Grizzly-Orofino Gulch	150030	1502-ground	17,078 / 6,578	5-10% treatment area
Upper Little Prickly Pear Creek – south	190010	99-ground	15,078 / 10,068	
Upper Little Prickly Pear Creek – north	190020	172-ground	11,775 / 10,239	
Marsh Creek	190050	140-ground	17,216 / 5,152	
Continental Divide LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Baggs Creek	050060		40,449 / 18,928	
Upper Little Blackfoot R. – south	060010	85-ground	18,016 / 17,949	Impaired TES Fish Spp.
Ontario Creek	060020	96-ground	12,829 / 12,643	TES Fish Spp.
Telegraph Creek	060030	142-ground	12,205 / 10,254	Impaired Sensitive Fish Spp.
Mike Renig Gulch	060040	49-ground	7,676 / 3,067	Sensitive Fish Spp.
Upper Little Blackfoot R. – north	060050	760-ground	13,066 / 9,177	Impaired; 5-10% treatment area TES Fish Spp.
Hope Creek	070010	202-ground	20,444 / 10,597	Sensitive Fish Spp.
Dog Creek	070020	73-ground	16,714 / 3,148	Impaired Sensitive Fish Spp.
North Trout Creek	070030	10-ground	10,543 / 3,309	Sensitive Fish Spp.

TABLE A-2				
Alternative B Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Snowshoe Creek	070040	49-ground	11,588 / 3,545	Impaired Sensitive Fish Spp.
Elliston Creek	070050	125-ground	20,295 / 4,919	Impaired TES Fish Spp.
Ophir Creek	070060	376-ground	16,786 / 5,748	Sensitive Fish Spp.
Trout Creek	070070	146-ground	12,469 / 2,969	Sensitive Fish Spp.
Spotted Dog Creek – west	080010	2-ground	8,128 / 238	Impaired
Spotted Dog Creek – east	080020	240-ground	8,801 / 5,094	Impaired Sensitive Fish Spp.
Threemile Creek	080040		14,373 / 4,662	Impaired Sensitive Fish Spp.
Continental Divide Landscape – 4th HUC No. 10020006 (Boulder River)				
High Ore Creek	030040		11,346 / 1,574	Impaired Sensitive Fish Spp.
Blackfoot Landscape – 4th HUC No. 17010203 (Blackfoot River)				
Upper Landers Fork	010010	9-ground	18,673 / 18,576	Sensitive Fish Spp.
Bighorn Creek	010020	14-ground	23,965 / 23,934	Sensitive Fish Spp.
Upper Copper Creek	010030	210-ground	16,863 / 16,740	TES Fish Spp. ⁴
Lower Landers Fork	010040		11,235 / 5,175	TES Fish Spp.
Lower Copper Creek	010050	89-ground	13,446 / 8,425	TES Fish Spp.
Alice Creek	020010	56-ground	12,618 / 11,194	Sensitive Fish Spp.
Upper Blackfoot River	020020	108-ground	10,084 / 8,884	Sensitive Fish Spp.
Willow Creek	020030	49-ground	12,370 / 8,009	Impaired Sensitive Fish Spp.
Upper Blackfoot River tributary	020040	14-ground	7,136 / 2,128	
Bartlett Creek	020050		11,376 / 3,808	TES Fish Spp.
Hogum Creek	020060	114-ground	7,613 / 6,862	Sensitive Fish Spp.
Horsefly Creek	020070	25-ground	12,650 / 3,275	TES Fish Spp.
Poorman Creek	030010	410-ground	26,396 / 23,518	Impaired TES Fish Spp.
Humbug Creek	030020	125-ground	12,150 / 5,326	Sensitive Fish Spp.
Keep Cool Creek	030030	236-ground	22,802 / 13,313	Sensitive Fish Spp.
Beaver Creek	030040	119-ground	11,582 / 8,841	TES Fish Spp.
Middle Blackfoot River	030050		12,150 / 2,989	TES Fish Spp.
Willow Creek	030060	190-ground	12,152 / 5,852	Impaired Sensitive Fish Spp.
Sauerkraut Creek	030070	43-ground	8,518 / 4,922	Sensitive Fish Spp.
Lincoln Gulch	030080	216-ground	9,406 / 5,711	TES Fish Spp.
Arrastra Creek	030090	50-ground	15,463 / 8,221	Impaired TES Fish Spp.
Moose Creek Area	030100	672-ground	19,783 / 8,332	Sensitive Fish Spp.
Upper Nevada Creek	040010	235-ground	25,180 / 17,852	Impaired TES Fish Spp.
Washington Creek	040030		7,998 / 4,966	Impaired Sensitive Fish Spp.

TABLE A-2				
Alternative B Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Jefferson Creek	040040	14-ground	6,599 / 2,664	Impaired Sensitive Fish Spp.
Buffalo Gulch	040050	177-ground	9,162 / 4,856	Sensitive Fish Spp.
Chicken Creek area	040110	295-ground	18,096 / 4,089	Sensitive Fish Spp.
Wasson Creek area	040150	104-ground	31,401 / 4,358	Sensitive Fish Spp.
Meadow Creek	060010	5-ground	12,163 / 11,872	
Mineral Creek	060020		9,485 / 9,485	
East Fork Blackfoot River	060030	41-ground	20,320 / 20,277	Sensitive Fish Spp.
Ward Creek	070020		7,821 / 1,795	Impaired
North Fork Blackfoot River	070040	101-ground	25,198 / 12,474	Impaired TES Fish Spp.
Blackfoot LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Canyon Creek	190030		15,189 / 8,567	Sensitive Fish Spp.
Virginia Creek	190040	180-ground	19,383 / 13,466	Sensitive Fish Spp.
Upper Little Prickly Pear Creek	190050		17,216 / 5,152	Impaired
Sears Creek	190060		9,703 / 261	
Canyon Creek	190070		25,322 / 1,054	
Blackfoot LA – 4th HUC No. 10030102 (Upper Missouri River)				
Middle Fork Dearborn River	030000	16-ground	43,172 / 2,442	
South Fork Dearborn River	040010	24-ground	12,993 / 5,237	
Blackfoot LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Sixmile Creek	080050		18,843 / 313	

Source: Montana DEQ 2002b

- 5 HUC = hydrologic unit code; HUCs reported in this table are 6th-Code.
- 6 “Impaired” means the stream or river segment is on the 1996, 1998, 2000, and/or 2002 303(d) Lists of impaired water bodies in Montana. “Burn 2000” indicates those areas that had significant timber burned within the watershed during 2000. “Percent Treatment Area” is the portion of the watershed that is proposed for ground and/or aerial weed treatment.
- 7 Sensitive Fish Spp. are westslope cutthroat trout.
- 8 TES Fish Spp. indicated westslope cutthroat trout or bull trout.

**TABLE A-3
Alternative C Treatment Acres by Watershed**

Stream	6 th HUC No. ¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues ²
Belts/Dry Range LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Battle Creek	020010		11,991 / 1	
Mike Day Creek	020020		7,433 / 854	
Faulkner Creek	020040	11-ground	6,546 / 1,137	
Hay Creek	020050		9,558 / 2,775	
Sherlock Creek	040010	1-ground	11,556 / 859	
Upper Sixteen Mile Creek	040020		25,802 / 0	Impaired
Middle Sixteen Mile Creek	040030		30,198 / 30	Impaired
Lower Sixteen Mile Creek	040040		19,126 / 0	Impaired
Upper Deep Creek	070010	217-ground	32,369 / 16,209	Burn 2000
Upper Deep Creek tributary	070020	176-ground	7,614 / 6,995	Burn 2000
Middle Deep Creek	070030	33-ground	6,261 / 2,665	Burn 2000
Middle Deep Creek tributary	070040	22-ground	7,774 / 6,297	Burn 2000
Sixmile Creek	090010		27,912 / 507	
Dry Creek	090040	17-ground	30,797 / 6,801	Impaired; Burn 2000
Greyson Creek	090060		15,497 / 2,012	
Cottonwood Creek	100010		21,976 / 280	
Ray Creek	100020	6-ground	25,893 / 3,421	Sensitive Fish Spp. ³
Gurnett Creek	100030	23-ground	13,987 / 3,318	
Duck Creek	100040		20,488 / 6,796	Sensitive Fish Spp.
Confederate Gulch	100050	212-ground	33,007 / 18,692	Impaired Sensitive Fish Spp.
Upper Canyon Ferry area	100070		89,721 / 0	
White Gulch	110010	414-ground	20,450 / 12,436	Impaired Sensitive Fish Spp.
Avalanche Creek	110020	323-ground	25,018 / 22,456	Impaired Sensitive Fish Spp.
Hellgate Creek	110030	61-ground	10,720 / 8,247	
Magpie Creek	110040	398-ground	16,249 / 15,600	Impaired; Burn 2000 Sensitive Fish Spp.
Cave Gulch and others	110050	809-ground	45,936 / 5,635	Impaired; Burn 2000; 20-25% treatment area
Upper Trout Creek	160010	319-ground	19,418 / 14,827	Impaired
Soup Creek	160020	66-ground	13,246 / 11,624	
Lower Trout Creek	160030	1827-ground	15,386 / 14,008	Impaired; 20-25% treatment area
Oregon Gulch	160040	1259-ground	6,445 / 5,792	20-25% treatment area
Favorite Gulch	160060	103-ground	5,927 / 4,057	
Missouri River area	160070	79-ground	21,436 / 1,786	
Upper Beaver Creek	170010	150-ground	21,017 / 12,673	
Hunters Gulch	170020	23-ground	5,700 / 5,697	
Middle Beaver Creek	170030	31-ground	2,582 / 2,582	
Big Log Gulch	170040	41-ground	6,247 / 6,247	
Lower Beaver Creek	170050	328-ground	11,297 / 10,690	

TABLE A-3				
Alternative C Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Elkhorn Creek	180020		13,776 / 692	Sensitive Fish Spp.
Willow Creek	180030		10,046 / 7,993	
Missouri River area	180050	47-ground	59,291 / 13,134	
Belts/Dry Range LA – 4th HUC No. 10030103 (Smith River)				
Upper Big Birch Creek	020010		8,987 / 7,223	
Little Birch Creek	020020		8,858 / 1,208	
Lower Big Birch Creek	020030	22-ground	12,944 / 2,328	
Upper Smith River area	020070		36,444 / 0	
Upper Camas Creek	050010	3-ground	21,672 / 14,858	Impaired Sensitive Fish Spp.
Thomas Creek	050020	44-ground	9,774 / 2,576	
Benton Gulch	050030	34-ground	25,272 / 7,137	
Lower Camas Creek	050040		18,469 / 2,224	Impaired
Thompson Gulch	060040	31-ground	46,583 / 1,190	Sensitive Fish Spp.
Beaver Creek	060050	8-ground	31,187 / 6,464	
Smith River area	060060		13,621 / 555	Impaired
Upper Rock Creek	080010	68-ground	30,318 / 4,363	
Antelope Creek	080020	29-ground	15,895 / 3,022	
Ellis Canyon Creek	080040	1-ground	10,560 / 5,074	
Lower Rock Creek	080050		19,420 / 840	
Smith River area	100030		28,947 / 2,916	Impaired
Elk Creek	110010		11,074 / 0	Impaired
Middle Creek	110020		16,019 / 0	
Hound Creek	110030		17,870 / 0	Impaired
Elkhorn LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Crow Creek	080010		15,395 / 15,090	Impaired Sensitive Fish Spp.
Middle Crow Creek	080020	87-ground	21,168 / 20,605	Impaired Sensitive Fish Spp.
Upper Crow Creek tributary	080030	28-ground	10,442 / 10,221	Impaired
Middle Crow Creek tributary	080040	280-ground	5,065 / 4,630	Impaired; 5-10% treatment area
Middle Crow Creek	080050		5,646 / 3,648	Impaired
Johnny Gulch	090030	80-ground	21,245 / 4,815	
Lower Crow Creek	090050	58-ground	67,254 / 0	Impaired
Indian Creek	090070	41-ground	13,502 / 5,005	Impaired
Beaver Creek	100060	116-ground	36,608 / 18,842	Impaired Sensitive Fish Spp.
Whitehorse Creek	100070	62-ground	89,721 / 4,809	
Upper Prickly Pear Creek	120010		13,072 / 7,164	Impaired Sensitive Fish Spp.
Warm Springs Creek	120030	64-ground	13,264 / 9,087	Sensitive Fish Spp.
Middle Prickly Pear Creek	120050	35-ground	15,535 / 3,752	Impaired Sensitive Fish Spp.

TABLE A-3 Alternative C Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
McClellan Creek	120070	487-ground	23,144 / 14,096	Public water supply for East Helena Sensitive Fish Spp.
Lower Prickly Pear Creek	120080	35-ground	20,100 / 2,811	
Spokane Creek	160050	133-ground	37,421 / 3,103	
Elkhorn LA – 4th HUC No. 10020006 (Boulder River)				
Dry Creek	050030		25,372 / 6,321	Impaired
Continental Divide LA – 4th HUC No. 10030101 (Upper Missouri River)				
Spring Creek	120020		20,266 / 1,834	Impaired
Clancy Creek	120040	81-ground	20,988 / 7,169	Impaired Sensitive Fish Spp.
Lump Gulch	120060	402-ground	27,805 / 14,633	Impaired Sensitive Fish Spp.
Lower Prickly Pear Creek	120080		20,100 / 715	
Upper Tenmile Creek – south	130010	80-ground	26,116 / 21,011	
Upper Tenmile Creek – north	130020	78-ground	16,279 / 9,936	
Greenhorn Creek – south	130030	252-ground	12,914 / 7,746	
Greenhorn Creek – north	130040		7,785 / 2,287	Sensitive Fish Spp.
Middle Tenmile Creek	130050	44-ground	19,202 / 8,221	Impaired; public water supply for Helena
Lower Tenmile Creek	130070	1-ground	10,976 / 423	Impaired; public water supply for Helena
Upper Silver Creek	140010		10,949 / 918	Impaired Sensitive Fish Spp.
Grizzly-Orofino Gulch	150030	1502-ground	17,078 / 6,578	5-10% treatment area
Upper Little Prickly Pear Creek – south	190010	73-ground	15,078 / 10,068	
Upper Little Prickly Pear Creek – north	190020	156-ground	11,775 / 10,239	
Marsh Creek	190050	140-ground	17,216 / 5,152	
Continental Divide LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Baggs Creek	050060		40,449 / 18,928	
Upper Little Blackfoot R. – south	060010	85-ground	18,016 / 17,949	Impaired TES Fish Spp.
Ontario Creek	060020	96-ground	12,829 / 12,643	TES Fish Spp.
Telegraph Creek	060030	123-ground	12,205 / 10,254	Impaired Sensitive Fish Spp.
Mike Renig Gulch	060040	49-ground	7,676 / 3,067	Sensitive Fish Spp.
Upper Little Blackfoot R. – north	060050	269-ground	13,066 / 9,177	Impaired; 5-10% treatment area TES Fish Spp.
Hope Creek	070010	153-ground	20,444 / 10,597	Sensitive Fish Spp.
Dog Creek	070020	73-ground	16,714 / 3,148	Impaired Sensitive Fish Spp.
North Trout Creek	070030	10-ground	10,543 / 3,309	Sensitive Fish Spp.

TABLE A-3				
Alternative C Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Snowshoe Creek	070040	49-ground	11,588 / 3,545	Impaired Sensitive Fish Spp.
Elliston Creek	070050	117-ground	20,295 / 4,919	Impaired TES Fish Spp.
Ophir Creek	070060	228-ground	16,786 / 5,748	Sensitive Fish Spp.
Trout Creek	070070	39-ground	12,469 / 2,969	Sensitive Fish Spp.
Spotted Dog Creek – west	080010	2-ground	8,128 / 238	Impaired
Spotted Dog Creek – east	080020	140-ground	8,801 / 5,094	Impaired Sensitive Fish Spp.
Threemile Creek	080040		14,373 / 4,662	Impaired Sensitive Fish Spp.
Continental Divide Landscape – 4th HUC No. 10020006 (Boulder River)				
High Ore Creek	030040		11,346 / 1,574	Impaired Sensitive Fish Spp.
Blackfoot Landscape – 4th HUC No. 17010203 (Blackfoot River)				
Upper Landers Fork	010010		18,673 / 18,576	Sensitive Fish Spp.
Bighorn Creek	010020		23,965 / 23,934	Sensitive Fish Spp.
Upper Copper Creek	010030	146-ground	16,863 / 16,740	TES Fish Spp. ⁴
Lower Landers Fork	010040		11,235 / 5,175	TES Fish Spp.
Lower Copper Creek	010050	89-ground	13,446 / 8,425	TES Fish Spp.
Alice Creek	020010	56-ground	12,618 / 11,194	Sensitive Fish Spp.
Upper Blackfoot River	020020	108-ground	10,084 / 8,884	Sensitive Fish Spp.
Willow Creek	020030	49-ground	12,370 / 8,009	Impaired Sensitive Fish Spp.
Upper Blackfoot River tributary	020040	14-ground	7,136 / 2,128	
Bartlett Creek	020050		11,376 / 3,808	TES Fish Spp.
Hogum Creek	020060	114-ground	7,613 / 6,862	Sensitive Fish Spp.
Horsefly Creek	020070	25-ground	12,650 / 3,275	TES Fish Spp.
Poorman Creek	030010	348-ground	26,396 / 23,518	Impaired TES Fish Spp.
Humbug Creek	030020	109-ground	12,150 / 5,326	Sensitive Fish Spp.
Keep Cool Creek	030030	189-ground	22,802 / 13,313	Sensitive Fish Spp.
Beaver Creek	030040	93-ground	11,582 / 8,841	TES Fish Spp.
Middle Blackfoot River	030050		12,150 / 2,989	TES Fish Spp.
Willow Creek	030060	130-ground	12,152 / 5,852	Impaired Sensitive Fish Spp.
Sauerkraut Creek	030070	43-ground	8,518 / 4,922	Sensitive Fish Spp.
Lincoln Gulch	030080	216-ground	9,406 / 5,711	TES Fish Spp.
Arrastra Creek	030090	50-ground	15,463 / 8,221	Impaired TES Fish Spp.
Moose Creek Area	030100	293-ground	19,783 / 8,332	Sensitive Fish Spp.
Upper Nevada Creek	040010	122-ground	25,180 / 17,852	Impaired TES Fish Spp.
Washington Creek	040030		7,998 / 4,966	Impaired Sensitive Fish Spp.

TABLE A-3				
Alternative C Treatment Acres by Watershed				
Stream	6th HUC No.¹	Proposed Treatment Acreage	HUC Acres (Total / Forest)	Sensitivity Issues²
Jefferson Creek	040040	14-ground	6,599 / 2,664	Impaired Sensitive Fish Spp.
Buffalo Gulch	040050	129-ground	9,162 / 4,856	Sensitive Fish Spp.
Chicken Creek area	040110	176-ground	18,096 / 4,089	Sensitive Fish Spp.
Wasson Creek area	040150	84-ground	31,401 / 4,358	Sensitive Fish Spp.
Meadow Creek	060010		12,163 / 11,872	
Mineral Creek	060020		9,485 / 9,485	
East Fork Blackfoot River	060030		20,320 / 20,277	Sensitive Fish Spp.
Ward Creek	070020		7,821 / 1,795	Impaired
North Fork Blackfoot River	070040	101-ground	25,198 / 12,474	Impaired TES Fish Spp.
Blackfoot LA – 4th HUC No. 10030101 (Upper Missouri River)				
Upper Canyon Creek	190030		15,189 / 8,567	Sensitive Fish Spp.
Virginia Creek	190040	180-ground	19,383 / 13,466	Sensitive Fish Spp.
Upper Little Prickly Pear Creek	190050		17,216 / 5,152	Impaired
Sears Creek	190060		9,703 / 261	
Canyon Creek	190070		25,322 / 1,054	
Blackfoot LA – 4th HUC No. 10030102 (Upper Missouri River)				
Middle Fork Dearborn River	030000	16-ground	43,172 / 2,442	
South Fork Dearborn River	040010	24-ground	12,993 / 5,237	
Blackfoot LA – 4th HUC No. 17010201 (Upper Clark Fork)				
Sixmile Creek	080050		18,843 / 313	

Source: Montana DEQ 2002b

9 HUC = hydrologic unit code; HUCs reported in this table are 6th-Code.

10 “Impaired” means the stream or river segment is on the 1996, 1998, 2000, and/or 2002 303(d) Lists of impaired water bodies in Montana. “Burn 2000” indicates those areas that had significant timber burned within the watershed during 2000. “Percent Treatment Area” is the portion of the watershed that is proposed for ground and/or aerial weed treatment.

11 Sensitive Fish Spp. are westslope cutthroat trout.

12 TES Fish Spp. indicated westslope cutthroat trout or bull trout.

APPENDIX B

SCIENTIFIC NAMES OF PLANT, FISH AND WILDLIFE SPECIES

PLANTS

American vetch	<i>Vicia americana</i>
Arrowleaf balsamroot	<i>Balsamorhiza saggitata</i>
Arrow-leaf groundsel	<i>Senecio triangularis</i>
Baneberry	<i>Actea rubra</i>
Beargrass	<i>Xerophyllum tenax</i>
Big sagebrush	<i>Artemisia tridentata</i>
Bitterbrush	<i>Purshia tridentate</i>
Blue gramma	<i>Bouteloua gracilis</i>
Bluebunch wheatgrass	<i>Pascopyron spicatum</i> (= <i>Agropyron spicatum</i>)
Bluejoint reedgrass	<i>Calamogrostis canadensis</i>
Buffaloberry	<i>Sheperdia canadensis</i>
Burdock	<i>Arctium minus</i>
Canada thistle	<i>Cirsium arvense</i>
Chokecherry	<i>Prunus virginianus</i>
Common horsetail	<i>Equisetum arvense</i>
Common juniper	<i>Juniperus communis</i>
Common snowberry	<i>Symphoricarpos albus</i>
Creeping juniper	<i>Juniperus horizontalis</i>
Cut-leaf groundsel	<i>Senecio streptanthifolius</i>
Death camas	<i>Zigadenus spp</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Dotted gayfeather	<i>Liatris punctata</i>
Douglas-fir	<i>Psuedotsuga menziesii</i>
Dwarf bilberry	<i>Vaccinium caespitosum</i>
Elk sedge	<i>Carex geyeri</i>
Few flowered aster	<i>Canadanthus modestus</i> (= <i>Aster modestus</i>)
Fringed sage	<i>Artemisia frigida</i>
Globe huckleberry	<i>Vaccinium globulare</i>
Green needlegrass	<i>Nassella viridis</i> (= <i>Stipa viridula</i>)
Ground dogwood	<i>Cornus unalaskense</i> (= <i>Cornus canadensis</i>)
Grouse whortleberry	<i>Vaccinium scoparium</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Houndstongue	<i>Cynoglossum officinale</i>
Idaho fescue	<i>Festuca idahoensis</i>
Kinnikinnik	<i>Arctostaphylos uva-ursi</i>
Labrador tea	<i>Ledum glandulosum</i>
Leafy spurge	<i>Euphorbia esula</i>
Limber pine	<i>Pinus flexilis</i>
Lodgepole pine	<i>Pinus contorta</i>
Low sagebrush	<i>Artemisia arbuscula</i>
Lupine	<i>Lupinus spp.</i>
Meadowrue	<i>Thalictrum occidentale</i>
Menziesia	<i>Menziesii ferruginea</i>
Mountain gooseberry	<i>Ribes montigenum</i>

Mountain mahogany	<i>Cercocarpus ledifolius</i>
Narrow-leaved sedge	<i>Carex filifolia</i>
Needle and threadgrass	<i>Hesperostipa comata</i> (= <i>Stipa comata</i>)
Oregon grape	<i>Berberis repens</i>
Oxeye daisy	<i>Leucanthemum vulgare</i> (= <i>Chrysanthemum leucanthemum</i>)
Paintbrush	<i>Castilleja</i> spp.
Parry's rush	<i>Juncus parryii</i>
Penstemon	<i>Penstemon</i> spp.
Pinegrass	<i>Calamagrostis rubescens</i>
Ponderosa pine	<i>Pinus ponderosa</i>
Porcupinegrass	<i>Hesperostipa spartea</i> (= <i>Stipa spartea</i>)
Prairie junegrass	<i>Koeleria macrantha</i>
Rabbitbrush	<i>Ericameria nauseosa</i> (= <i>Chrysothamnus nauseosus</i>)
Red twig dogwood	<i>Cornus sericeus</i> (= <i>C. stolonifera</i>)
Redtop bentgrass	<i>Agrostis stolonifera</i>
Richardson needlegrass	<i>Achnatherum richardsonii</i> (= <i>Stipa richardsonii</i>)
Rocky Mountain alder	<i>Alnus incana</i>
Rose	<i>Rosa</i> spp.
Rough fescue	<i>Festuca campestris</i> (= <i>F. scabrella</i>)
Round-leaved violet	<i>Viola orbiculata</i>
Russian knapweed	<i>Centaurea repens</i>
Sandburg bluegrass	<i>Poa sandbergii</i>
Shiny-leaved spirea	<i>Spiraea betulifolia</i>
Shreddy ninebark	<i>Physocarpus malvaceus</i>
Shrubby cinquefoil	<i>Pentaflouides floribunda</i> (= <i>Potentilla fruticosa</i>)
Sitka alder	<i>Alnus sitchensis</i>
Sitka valerian	<i>Valerian sitchensis</i>
Smooth woodrush	<i>Luzula hitchcockii</i>
Snakeweed	<i>Gutierrezia sarothrae</i>
Soft cinquefoil	<i>Potentilla gracilis</i>
Spotted knapweed	<i>Centaurea maculosa</i>
Spruce	<i>Picea englemanni</i> x. <i>glauca</i>
St. Johnswort	<i>Hypericum perforatum</i>
Starry Solomon's seal	<i>Smilicina stellata</i>
Sticky geranium	<i>Geranium viscosissimum</i>
Stink current	<i>Ribes hudsonianum</i>
Sulfur cinquefoil	<i>Potentilla recta</i>
Water birch	<i>Betula occidentalis</i>
Western mountain aster	<i>Symphotrichum spathulatum</i> (= <i>Aster occidentalis</i>)
Western snowberry	<i>Symphoricarpos occidentalis</i>
Whitetop	<i>Cardaria draba</i>

FISH

Bull trout	<i>Salvelinus confluentus</i>
Burbot (ling)	<i>Lota lota</i>
Westslope cutthroat trout	<i>Oncorhynchus clarki lewis</i>

WILDLIFE

American redstart	<i>Setophaga ruticilla</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Bighorn Sheep	<i>Ovis canadensis</i>
Black-backed Woodpecker	<i>Picoides arcticus</i>
Blue grouse	<i>Dendragapus obscurus</i>
Boreal Toad	<i>Bufo boreas</i>
Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>
Common garter snake	<i>Thamnophis sirtalis</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Coyote	<i>Canis latrans</i>
Elk	<i>Cervus elaphus</i>
Fisher	<i>Martes pennanti</i>
Flammulated Owl	<i>Otus flammeolus</i>
Gopher snake	<i>Pituophis catenifer</i>
Gray Wolf	<i>Canis lupus</i>
Grizzly Bear	<i>Ursus arctor</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Harlequin Duck	<i>Histrionicus histrionicus</i>
Leopard Frog	<i>Rana pipiens</i>
Lynx	<i>Lynx lynx</i>
Macgillivray's warbler	<i>Oporornis tolmiei</i>
Mountain Plover	<i>Charadrius montanus</i>
Mule Deer	<i>Odocoileus hemionus</i>
Northern alligator lizard	<i>Elgaria coerulea</i>
Northern Bog Lemming	<i>Synaptomys borealis</i>
Northern Goshawk	<i>Accipiter gentilis</i>
Olive-sided flycatcher	<i>Contopus borealis</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Pine Marten	<i>Martes americana atrata</i>
Racer	<i>Coluber constrictor</i>
Rubber boa	<i>Charina bottae</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Sage grouse	<i>Centrocercus urophasianus</i>
Spruce grouse	<i>Dendragapus Canadensis</i>
Swift fox	<i>Vulpes velox</i>
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>

Townsend's warbler	<i>Dendroica townsendi</i>
Townsend's warbler	<i>Dendroica townsendi</i>
Warbling vireo	<i>Vireo gilvus</i>
Western rattlesnake	<i>Crotalus viridis</i>
Western skink	<i>Eumeces skiltonianus</i>
Western terrestrial garter snake	<i>Thamnophis elegans</i>
Willow flycatcher	<i>Empidonax traillii</i>
Wolverine	<i>Gulo gulo</i>
Yellow warbler	<i>Dendroica petechia</i>

APPENDIX C
SPILL PLAN AND PROCEDURES

The following equipment will be available with vehicles or pack animals used to transport pesticides and in the immediate vicinity of all spray operations.

1. A shovel
2. A broom (except backcountry operations)
3. 10 pounds of absorbent material or the equivalent in absorbent pillows
4. A box of large plastic garbage bags
5. Rubber gloves
6. Protective overalls
7. Rubber boots

The appropriate Material Safety Data Sheets (MSDSs) will be reviewed with all personnel involved in the handling of pesticides.

The following material from the U.S. EPA document entitled *Applying Pesticides Correctly: A Guide for Private and Commercial Applicators* will be reviewed with all personnel involved in handling pesticides.

CLEAN UP OF PESTICIDE SPILLS

MINOR SPILLS

Keep people away from spilled chemicals. Rope off the area and flag it to warn people. Do not leave unless someone is there to confine the spill and warn of the danger. If the pesticide was spilled on anyone, wash it off immediately.

Confine the spill. If it starts to spread, dike it up with sand or soil. Use absorbent material such as soil, sawdust, or absorbent clay to soak up the spill. Shovel all contaminated material into a leak-proof container for disposal. Dispose of it as you would excess pesticides. Do not hose down the area, because this spreads the chemical. Always work carefully and do not hurry.

Do not let anyone enter the area until the spill is completely cleaned up.

MAJOR SPILLS

The cleanup of a major spill may be too difficult for you to handle, or you may not be sure of what to do. In either case, keep people away, give first aid if needed, and confine the spill. Then call Chemtrec, the local fire department, and State pesticide authorities for help.

Chemtrec stands for Chemical Transportation Emergency Center, a public service of the Manufacturing Chemicals Association. Its offices are located in Washington, D.C. Chemtrec provides immediate advice for those at the scene of emergencies.

Chemtrec operates 24 hours a day, seven days a week, to receive calls for emergency assistance. For help in chemical emergencies involving spills, leaks, fire, or explosions, call toll-free 800-424-9300 day or night. This number is for **emergencies** only.

If a major pesticide spill occurs on a highway, have someone call the highway patrol or the sheriff for help (**carry these phone numbers with you**). Do not leave until responsible help arrives.

In addition, the section from the *Northern Region Emergency and Disaster Plan* entitled “Hazardous Materials Releases and Oil Spills” will be reviewed with all appropriate personnel (see following pages). Notification and reporting requirements as outlined in this section will be followed in the unlikely event of a serious spill.

HAZARDOUS MATERIALS RELEASES AND OIL SPILLS

(Excerpted from the *Northern Region Emergency and Disaster Plan*)

AUTHORITY: Comprehensive Environmental Response, Compensation, and Liability Act (CER-CLA); and Superfund Amendments and Reauthorization Act of 1986 (SARA). Other statutes that may apply include Resource Conservation and Recovery Act (RCRA); Hazardous and Solid Waste Amendments (HSWA); Toxic Substances Control Act (TSCA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); Clean Water Act (CWA); and Clean Air Act (CAA).

DEFINITION: A hazardous materials emergency or oil spill is defined as any release or threat of release of a hazardous substance or petroleum product that presents an imminent and substantial risk of injury to health or the environment.

A release is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

Releases that do not constitute an immediate threat, occur entirely within the work place, are federally permitted, or are a routine pesticide application, are not considered to be an emergency and are not covered by this direction.

RESPONSIBILITY: The first person who knows of a release and is capable of appreciating the significance of that release has the responsibility to report the release.

Only emergency release response and reporting is covered by this direction. Appropriate RO staff specialists who should be notified directly of all non-emergency releases will accomplish non-emergency reporting.

An emergency release of a hazardous substance or petroleum product may be from a Forest Service operation or facility; from an operation on National Forest land by a permit holder, contractor, or other third party; or from a transportation related vehicle, boat, pipeline, aircraft, etc., crossing over, on, or under Forest Lands. Response and/or reporting by Forest Service employees will differ in each situation:

1. If the release is from a Forest Service facility or operation, the Forest Service and its employee(s) is clearly the “person in charge”, and is fully responsible for all reporting. Immediate response action is limited to that outlined in emergency plans and only to the extent that personal safety is not threatened.
2. If the release is from a third party operation, the Forest Service will only respond and/or report the emergency if the third party fails to take appropriate action.
3. If the release is from a transportation related incident, the Forest Service will only respond and/or report the emergency if the driver or other responsible party is unable or fails to take appropriate action.

RESPONSE ACTION GUIDE: THE PRIMARY RESPONSIBILITY OF ANY FOREST EMPLOYEE(S) ENCOUNTERING A HAZARDOUS MATERIALS EMERGENCY OR OIL SPILL IS COMPLETE AND ACCURATE REPORTING TO APPROPRIATE AUTHORITIES IN A TIMELY MANNER.

Forest Service employee(s) will not assume an incident command role for any hazardous materials emergency or spill, but may provide support services as directed by an authorized Federal On-Scene Coordinator (OSC) or other State or local authorized authority.

Within the limits of personal safety, common sense, and recognition of the dangers associated with any hazardous materials emergency or spill, Forest Service employee(s) may provide necessary and immediate response action until an authorized OSC or other authority can take charge. These actions may include:

- Public warning and crowd control;
- Retrieval of appropriate information for reporting purposes.

Additionally, and only after verification of the type of hazardous material involved and its associated hazards, a Forest Service employee(s) may also take actions including:

- Rescue of persons in imminent danger;
- Limited action to mitigate the consequences of the emergency.

Under no condition shall a Forest Service employee(s):

- Place themselves or others in imminent danger.
- Perform or direct actions that will incur liability for the Forest Service

IF THERE IS ANY QUESTION THAT THE EMERGENCY MAY CONSTITUTE A THREAT TO PERSONAL SAFETY. LIMIT YOUR RESPONSE TO PUBLIC WARNING AND REPORTING OF THE INCIDENT.

PRECAUTIONS: When approaching the scene of an accident involving cargo, or other unknown or suspected hazardous material emergency including oil spills:

- Approach incident from an upwind direction, if possible;
- Move and keep people away from the incident scene;
- Do not walk into or touch any spilled material;
- Avoid inhaling fumes, smoke, and vapors even if no hazardous materials are involved;
- Do not assume that gases or vapors are harmless because of lack of smell; and,
- Do not smoke, and remove all ignition sources.

ORGANIZATIONS FOR EMERGENCY AND TECHNICAL ASSISTANCE

CHEMTREC – Chemical Transportation Emergency Center – 800-424-9300 (24 hour) (For assistance in any transportation emergency involving chemicals).

Rocky Mountain Poison Control Center – 800-525-5042 (24 hour); 303-629-1123 (24 hour).
National Agricultural Chemicals Association –202-296-1585 (for pesticide technical assistance and information referral).

Bureau of Explosives – 202-293-4048 (For explosives technical assistance).
Centers for Disease Control – 404-633-5313 (For technical assistance regarding etiologic agents).

EPA Region 8 (MT, ND, SD) Emergency Response Branch – 3030293-1723

EPA Region 10 (ID) Superfund Removal and Invest Section – 206-442-1196

Montana Department of Health and Environmental Sciences (24 hour) 406-444-6911

Water Quality Bureau – 406-444-2406

Solid Waste Management Bureau – 406-444-2821

North Dakota State Health Department

Environmental Engineering – 701-224-2348

Hazardous Waste Division –701-224-2366

Radiological Hazardous Substances – 701-224-2348

South Dakota Division of Environmental Quality

Office of Water Quality- 605-773-3296

Office of Solid Waste Management – 605-773-5047

Idaho Department of Health and Welfare

Water Quality Bureau – 208-334-5867

Solid Waste Bureau – 208-334-5879

HAZARDOUS MATERIALS RELEASES AND OIL SPILLS

CONTACT LIST AND IMMEDIATE ACTION GUIDE

Individual

Actions	Contacts
Do not expose yourself or others to any unknown material. Do not attempt rescue or mitigation until material has been identified and hazards and precautions noted. Warn others and keep people away. Approach only from upwind. Do not walk in or touch material. Avoid inhaling fumes and vapors. Do not smoke, and remove ignition sources.	District Ranger or Dispatcher
Report the incident. Complete "Reporting Action Guide" within reasonable limits of exposure and timeliness, and report information to District/Forest Dispatcher	
If there is any question that the incident is a threat to personal safety, limit response to public warnings and reporting.	

District

Actions	Contacts
Insure reporting individual is aware of hazards associated with incident.	Forest Dispatcher
Obtain as much information as possible, complete a copy of the "Reporting Action Guide" and relay all information to Forest Dispatcher.	
For fixed facilities, verify if possible, whether or not an emergency guide, Spill Prevention Control and Countermeasure Plan, or similar response plan is available for the specific emergency. If so, implement the response actions as indicated	
Dispatch additional help, communication systems, etc., to incident scene if incident is on National Forest land or is caused by Forest Service activity or facility. Otherwise support as requested by official in charge.	
If there is any question that the incident is a threat to personal safety, limit response to public warning and reporting.	

Forest

Actions	Contacts
<p>Immediately contact the Forest Hazardous Materials Incident Commander who will take the following actions:</p> <p>Determine if the incident is a true emergency.</p> <p>Determine who is the responsible party for the incident, and whether appropriate actions and reporting have been accomplished.</p> <p>From available information, determine hazards and precautions, if possible, and relay further instructions to reporting individual through the District.</p> <p>Initiate appropriate local reporting actions, and coordinate responses with District.</p> <p>Arrange Forest support for on-scene coordinator and/or local emergency response officials as requested.</p>	<p>Forest Hazardous Materials Incident Coordinator who will determine extent of emergency. If incident is determined reportable, contact:</p> <p>National Response Center</p> <p>EPA Hazmat emergency response</p> <p>Regional Incident Dispatcher</p> <p>County sheriff and/or county disaster and emergency services coordinator</p> <p>State Emergency and Disaster organizations</p> <p>North Dakota State Fire Marshal for oil spills in ND only.</p> <p>Internal Forest Contacts</p>
<p>Make appropriate local emergency contacts as directed by Forest Hazardous Materials Incident Coordinator.</p>	
<p>Relay information from Forest Hazardous Materials Incident Coordinator back to District and up to Regional Office as appropriate.</p>	

Regional Incident Dispatcher

Actions	Contacts
<p>Immediately contact the Regional Hazardous Materials Incident Coordinator who will take the following actions:</p> <p>Personally work with Forest Hazardous Materials Incident Coordinator to determine extent of the emergency. If incident is reportable, implement the following actions:</p> <p>By computer mailing list notify: Regional Forester, Deputy Regional Foresters, Staff Directors, Attorney-in-charge (OGC).</p> <p>Contact other RO specialists, other agency personnel, etc., as necessary to determine scope of problem and appropriate actions. RO specialist contacts include:</p> <p>Regional Watershed Coordinator (water)</p> <p>Regional Reclamation Officer (mining)</p> <p>Regional Safety and Health Program Manager</p> <p>Regional Cooperative Forestry and Pest Management (pesticides)</p> <p>Arrange Regional Support for on-scene coordinator and/or local emergency response officials as requested.</p> <p>Arrange a Regional Investigation/follow-up team if determined necessary.</p> <p>Keep Regional Forester, Staff Directors and OGC advised of situation via routine computer updates</p>	<p>Regional Hazardous Materials Incident Coordinator</p>
	<p>Regional Emergency Coordinator</p>
	<p>If incident is determined to be reportable, verify the National Response Center and appropriate Federal, State, and local contacts have been made</p>
	<p>WO Engineering</p>
	<p>WO Personnel Management</p>

Although reporting requirements vary depending on the type of incident, the responsibility of the employee(s) in the field is limited to collecting appropriate information and relaying it to the proper level of the organization in a timely manner. Following is a list of the information that should be collected, if possible; however, **it is more important to maintain personal safety and report in a timely manner than to collect all information.**

1. Date

Time of release:

Time discovered:

Time Reported:

Duration of release:

2. Location (include state, county, route, milepost, etc)

3. Chemical name:

Chemical identification number:

Other chemical data:

NOTE: For transportation related incidents, this information may be available from the driver, placards on the vehicle, and/or shipping papers.

4. Known health risks:

5. Appropriate precautions if known:

6. Source and cause of release:

7. Estimate of quantity released: _____ gallons

Quantity reaching water: _____ gallons

Name of affected watercourse: _____ gallons

8. Number and type of injuries

9. Potential future threat to health or environment:

10. Your Name: _____

Phone number for duration of emergency: _____

Permanent phone number: _____

For transportation related incidents, also report:

11. Name and address of carrier:

12. Railcar or truck number: *If there is any doubt whether an incident is a true emergency, or whether reportable quantities of hazardous materials or petroleum products are involved, or whether a responsible party has already reported the incident, always report the incident.*

APPENDIX D
RAVE/SITE EVALUATION FORM

PESTICIDE SENSITIVITY EVALUATION FOR RANGE AND WILDERNESS LANDS

RATING GROUNDWATER VULNERABILITY TO CONTAMINATION

Depth to Groundwater:

0 to 2 feet = 18
2 to 10 feet = 15
10 to 25 feet = 10
25 to 50 feet = 3
> 50 feet = 0

Soil Texture:

Gravelly = 12
Sandy = 12
Loam over Sand = 10
Loamy = 7
Clayey = 2

Percent Organic Matter:

0 to 1% = 5
1 to 3% = 3
> 3% = 2

Soil/Vegetation Class:

- 1) Annual Floodplain = 12
- 2) 5- to 10-year Floodplain = 8
- 3) 20- to 100-year Floodplain = 5
- 4) Stream Terrance/FGM = 3
- 5) Forest Steep Lateral Moraine = 1
- 6) Warm Aspect Forested Breakland = 0

Herbicide Leaching Index:

Picloram = 20
Clopyralid = 15
Dicamba = 10
2,4-D = 8
Glyphosate = 5

Distance to Surface Water:

0 to 3 feet = 10
3 to 10 feet = 8
10 to 50 feet = 5
50 to 100 feet = 3
100 to 500 feet = 2
>500 feet = 0

Precipitation Zone:

40 to 50 inches = 10
30 to 40 inches = 7
20 to 30 inches = 2

Pesticide Application Frequency:

>1 Application/year = 5
1 Application/year = 2

Pesticide Application Method/Percent Ground Cover:

Soil Application = 13
Spray Applied to 0 to 25% Vegetation Cover = 10
Spray Applied to 25 to 50% Vegetation Cover = 8
Spray Applied to 50 to 100% Vegetation Cover = 3
Wick Applied to 0 to 100% Vegetation Cover = 1

TOTAL SCORE: _____

NOTE: The herbicide leaching index is added to the total score that is developed from the site characteristics listed above. The point assessment given to the five herbicides was based on three major herbicide characteristics: persistence, solubility, and mobility to move through the soil.

The Forest Service feels that the application methods and percent ground cover are crucial in determining groundwater vulnerability to contamination. The reasoning for this is that the lesser amount of vegetative cover, the more likely the herbicide will contact the soil surface. Therefore, the more vegetative cover, the greater the chance of herbicide interception. The greater amount of herbicide interception decreases the amount of soil surface contact.

APPENDIX E

REGION I SUPPLEMENT TO FSM 2080 - RI 2000-2001-I



FSM 2000 – NATIONAL FOREST RESOURCE MANAGEMENT
ZERO CODE 2080 – NOXIOUS WEED MANAGEMENT

Supplement No.: R1 2000-2001-1

Effective Date: May 14, 2001

Duration: Effective until superseded or removed

Approved: KATHY A. MCALLISTER
 Acting Regional Forester

Date Approved: 04/27/2001

Posting Instructions: Supplements are numbered consecutively by Title and calendar year. Post by document name. Remove entire document and replace with this supplement. Retain this transmittal as the first page of this document.

New Document(s):	2080	16 Pages
Superseded Document(s):	None. (This is the first supplement to this Manual.)	0 Pages

Digest:

	This supplement implements an Integrated Weed Management approach for management of noxious weeds on National Forest System lands in Region 1.
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2080.4 - Responsibility.

Encourage weed awareness and education in employee development and training plans and orientation for both field and administrative work.

2080.43 - Forest Supervisor.

Forest Supervisors are responsible for:

1. Emphasizing weed awareness and weed prevention in all fire training, especially resource advisors, fire management teams, guard school, and district orientation.
2. Adding weed awareness and prevention education to Fire Effects and Prescribed Fire training.
3. Giving helicopter managers training in weed prevention and mitigation measures.
4. Resource Advisors should provide briefings to identify operational practices to reduce weed spread.
5. Providing Field Observers with weed identification aids and striving to avoid weed infestations in fire line location.

2080.44 - District Rangers.

District Rangers are responsible for:

1. Providing weed prevention briefings for helibase staff.
2. Ensuring at least one permanent staff member per District is trained and proficient in weed management.
3. Applying weed treatment and prevention on all Forest Service administrative sites including Ranger Stations, trailheads, campgrounds, pastures, interpretive and historic sites.

2081 – MANAGEMENT OF NOXIOUS WEEDS.

2081.2 - Prevention and Control Measures.

1. Roads.

a. Required Objectives and Associated Practices.

(1) Incorporate weed prevention into road layout, design, and alternative evaluation. Environmental analysis for road construction and reconstruction will include weed risk assessment.

(2) Remove the seed source that could be picked up by passing vehicles and limit seed transport in new and reconstruction areas.

(a) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.

(b) Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders as determined by the Forest Weed Specialist. Reference Contract Provision C/CT 6.626.

(3) Re-establish vegetation on bare ground due to construction and reconstruction activity to minimize weed spread.

(a) Revegetate all disturbed soil, except the travel way on surfaced roads, in a manner that optimizes plant establishment for that specific site, unless ongoing disturbance at the site will prevent weed establishment. Use native material where appropriate and available. Use a seed mix that includes fast, early season species to provide quick, dense revegetation. To avoid weed contaminated seed, each lot must be tested by a certified seed laboratory against the all State noxious weed lists and documentation of the seed inspection test provided.

(b) Use local seeding guidelines for detailed procedures and appropriate mixes. Use native material where appropriate and available. Revegetation may include planting, seeding, fertilization, and weed-free mulching as indicated by local prescriptions.

(c) Monitor and evaluate success of revegetation in relation to project plan. Repeat as indicated by local prescriptions.

(4) Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. The borrow pit will not be used if new invaders, defined by the Forest Weed Specialist, are found on site.

(5) Minimize sources of weed seed in areas not yet revegetated. If straw is used for road stabilization and erosion control, it must be certified weed-free or weed-seed free.

-
- (6) Minimize roadside sources of weed seed that could be transported to other areas during maintenance.
 - (a) Look for priority weed species during road maintenance and report back to District Weed Specialist.
 - (b) Do not blade roads or pull ditches where new invaders are found.
 - (c) Maintain desirable roadside vegetation. If desirable vegetation is removed during blading or other ground disturbing activities, area must be revegetated according to section (3) (a), (b), (c) above.
 - (d) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)
 - (e) Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders, as determined by the Forest Weed Specialist. Reference Contract Provision C/CT 6.626.
 - (f) Straw used for road stabilization and erosion control will be certified weed-free or weed-seed-free.
 - (7) Reduce weed establishment in road obliteration/reclamation projects. Revegetate according to section (3) (a), (b), (c) above.

b. Recommended Objectives and Associated Practices.

- (1) Retain shade to suppress weeds. Consider minimizing the removal of trees and other roadside vegetation during construction, reconstruction, and maintenance, particularly on southerly aspects.
 - (2) Consider re-establishing vegetation on bare ground due to construction and reconstruction activity to minimize weed spread. Road maintenance programs should include scheduled fertilization to maintain vigor of competitive vegetation (3-year period suggested).
 - (3) Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. All gravel and borrow sources should be inspected and approved before use and transport. The source will not be used if the weeds present at the pit are not found at the site of intended use. If weeds are present, they must be treated before transport and use.
 - (4) Minimize roadside sources of weed seed that could be transported to other areas. Weed infestations should be inventoried and scheduled for treatment.
-

(5) Ensure that weed prevention and related resource protection are considered in travel management. Consider weed risk and spread factors in travel plan (road closure) decisions.

(6) Reduce weed establishment in road obliteration/reclamation projects. Consider treating weeds in road obliteration and reclamation projects before roads are made undriveable. Monitor and retreat as indicated by local analysis and prescription.

(7) Evaluate and prioritize noxious weeds along existing Forest Service access roads leading to project area and treat as indicated by local analysis and prescriptions, before construction equipment moves into project area. New road construction must be revegetated as described in Weed Prevention measure, see Roads Required Objectives and Associated Practices section (3) (a), (b), (c) above.

2. Recreation, Wilderness, Roadless Areas.

a. Required Objectives and Associated Practices.

(1) Minimize transport and establishment of weeds on National Forest Service lands.

(a) Include environmental analysis for recreation and trail projects in weed risk assessment.

(b) Post and enforce statewide weed-free feed orders.

(c) Seed only when necessary at backcountry sites to minimize introduction of nonnative species and weeds. Reseed according to Roads (3) (a), (b), (c) above.

(2) Reduce weed establishment and spread from activities covered by Recreation Special Use Permits.

(a) Include Clause R1-D4, (or subsequent approved direction), in all new and reissued recreation special use permits, authorizations, or other grants involving ground-disturbing activities. Include this provision in existing ground-disturbing authorizations, which are being amended for other reasons.

(b) Revegetate bare soil resulting from special use activity according to Roads (3) (a), (b), (c) above.

(3) Prevent weed establishment resulting from land and float trail use, construction, reconstruction and maintenance activities.

(a) Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders (as determined by the Forest Weed Specialist).

b. Recommended Objectives and Associated Practices.

- (1) Minimize transport and establishment of weeds on National Forest System (NFS) lands.
 - (a) Encourage backcountry pack and saddle stock users to feed only weed-free feed for several days prior to traveling off roads in the Forest. Before entering NFS land, animals should be brushed to remove any weed seed.
 - (b) Stock should be tied and/or held in the backcountry in such a way as to minimize soil disturbance and avoid loss of native/desirable vegetation.
 - (c) Maintain trailheads, boat launches, outfitter and public camps, airstrips, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition.
 - (d) Motorized and/or mechanized (such as mountain bikes) trail users should inspect and clean their vehicles prior to using NFS lands.
- (2) Consider reducing weed establishment and spread from activities covered by recreation, special use permits. Consider including Clause R1-D4, (or subsequent approved direction), by amending existing ground-disturbing authorizations as indicated by local prescriptions.
- (3) Prevent weed establishment resulting from land and float trail use, construction, reconstruction, and maintenance activities.
 - (a) All trail crews should inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment.
 - (b) Inspect and approve all gravel and borrow sources before use and transport. The source will not be used if the weeds present at the pit are not found at the site of intended use. If weeds are present, they must be treated before transport and use.

3. Cultural Resources.

Required Objectives and Associated Practices. Reduce weed establishment and spread at archeological excavations.

Revegetate bare soil resulting from cultural resource excavation activity according to the Roads (3) (a), (b), (c) section above.

4. Wildlife, Fisheries, and Botany.

Required Objectives and Associated Practices. Incorporate weed prevention into wildlife, fisheries, and botany project design.

- a. Include weed risk assessment in environmental analysis for wildlife, fish and botany projects with ground disturbing actions.

- b. Revegetate bare soil resulting from wildlife and fish project activity according to the Roads (3) (a), (b), (c) section above.
 - c. Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)
 - d. Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders (as determined by the Forest Weed Specialist).
5. Range.
- a. Required Objectives and Associated Practices.
 - (1) Ensure weed prevention and control are considered in management of all grazing allotments.
 - (a) Include weed risk assessment in environmental analysis for rangeland projects.
 - (b) When other plans do not already address noxious weeds, include practices and control measures in Annual Operating Plans.
 - (2) Minimize ground disturbance and bare soil.
 - (a) Revegetate, where applicable, bare soil from grazing activities according to the Roads (3) (a), (b), (c) section above.
 - (b) Check areas of concentrated livestock use for weed establishment and treat new infestations.
 - (3) Minimize transport of weed seed into and within allotments.
 - (a) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)
 - (b) Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders (as determined by the Forest Weed Specialist).
 - (c) Straw used for road stabilization and erosion control will be certified weed-free or weed-seed-free.
 - b. Recommended Objectives and Associated Practices.
 - (1) Transport of weed seed into and within allotments should be minimized.

- (a) Avoid driving vehicles through off-road weed infestations.
 - (b) Feed certified weed-free feed to livestock for several days prior to moving them onto the allotment to reduce the introduction of new invaders and spread of existing weed species. Consider using transitional pastures when moving animals from weed infested areas to the National Forest. (Transitional pastures are designated fenced areas that can be logistically and economically maintained.)
 - (c) Consider excluding livestock from sites with new invaders or treat new invaders in these areas before entry by livestock.
- (2) Maintain healthy desirable vegetation that is resistant to noxious weed establishment.
- (a) Consider managing forage utilization to maintain the vigor of desirable plant species as described in the Allotment Management Plan.
 - (b) Minimize or exclude grazing on restoration areas until vegetation is well established.

6. Timber.

a. Required Objectives and Associated Practices.

- (1) Ensure that weed prevention is considered in all pre-harvest timber projects.
 - (a) Include weed risk assessment in environmental analysis for timber harvest projects.
 - (b) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.) Reference Contract Provision C/CT6.26
 - (c) Clean all equipment prior to leaving the project site, if operating in areas infested with new invaders (as designated by the Forest Weed Specialist). Reference Contract Provision C/CT6.261
- (2) Minimize the creation of sites suitable for weed establishment. Revegetate bare soil as described in the Roads (3) (a), (b), (c) section above.

b. Recommended Objectives and Associated Practices.

- (1) Ensure that weed prevention is considered in all timber projects.
 - (a) Consider treating weeds on roads used by timber sale purchasers. Reference Contract Provision C/CT6.26.

- (b) Treat weeds on landings, skid trails and helibases that are weed infested before logging activities, where practical.
- (2) Minimize the creation of sites suitable for weed establishment. Soil disturbance should be minimized to meet harvest project objectives.
- (3) Consider monitoring for weeds after sale activity and treat weeds as indicated by local prescriptions.
 - (a) Consider trust, stewardship, or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities.
 - (b) Consider monitoring and treating weed infestations at landings and on skid trails after harvest.

7. Minerals.

a. Required Objectives and Associated Practices.

- (1) Minimize weed establishment in mining, oil and gas operations, and reclamation.
 - (a) Include weed risk assessment in environmental analysis for minerals and oil and gas projects.
 - (b) Include weed prevention measures in operation and/or reclamation plans.
 - (c) Retain bonds until reclamation requirements are completed.
 - (d) Revegetate bare soil as described in the Roads (3) (a), (b), (c) section above.
- (2) Remove seed source and limit seed transport into new or existing mining and oil and gas operations. Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)
- (3) Minimize weed spread caused by moving infested gravel and fill material.
 - (a) The borrow pit will not be used if new invaders (as defined by the Forest Weed Specialist) are found on the site.
 - (b) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)
 - (c) Do not establish new gravel and fill material sources in areas where new invaders are present on National Forest Service lands. Where widespread weeds occur at new

pit sites strip at least the top 8" and stockpile contaminated material. Treat weeds at new pits where widespread weeds are present.

b. Recommended Objectives and Associated Practices.

(1) Consider removing seed source and limiting seed transport into new or existing mining and oil and gas operations. Where applicable, treat weeds on project access routes. Reference Contract Provision C/CT6.27.

(2) Minimize weed spread caused by moving infested gravel and fill material.

(a) Inspect and approve all gravel and borrow sources before use and transport. The source should not be used if the weeds present at the pit are not found at the site of intended use. If weeds are present, they should be treated before transport and use.

(b) Consider maintaining stockpiled material in a weed-free condition.

(c) Check the area where pit material is used to ensure that no weed seeds are transported to the use site.

8. Soil and Water.

a. Required Objectives and Associated Practices.

(1) It is required that integrated weed prevention and management be used in all soil, watershed, and stream restoration projects.

(a) Include weed risk assessment in environmental analysis for soil, watershed, and stream restoration projects with ground disturbing actions.

(b) Revegetate bare soil resulting from excavation activity according to the Roads (3) (a), (b), (c) section above.

(c) Remove all mud, dirt, and plant parts from all off road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)

(d) Clean all equipment prior to leaving the project site, if operation in areas infested with new invaders (as designated by the Forest Weed Specialist).

(e) Straw used for road stabilization and erosion control will be certified weed-free or weed-seed-free.

b. Recommended Objectives and Associated Practices.

Integrate weed prevention and management in all soil, watershed, and stream restoration projects by considering treating weeds in road obliteration and reclamation

projects before roads are made undriveable. Monitor and retreat as indicated by local prescriptions.

9. Lands and Special Uses.

a. Required Objectives and Associated Practices.

(1) Incorporate weed prevention provisions in all special use permits, road use permits, and easements.

(a) Include weed risk assessment in environmental analysis for land projects with ground disturbing actions.

(b) Revegetate bare soil as described in the Roads (3) (a), (b), (c) section above, as a condition of the authorization.

(c) Include approved special use provision R1-D4, see FSH 2709.11, chapter 50, (or subsequent approved direction) in all new and reissued special use permits, authorizations, or other grants involving ground disturbing activities. Include this provision in existing ground disturbing authorizations, which are being amended for other reasons .

(d) Include noxious weed prevention and control measures as indicated by local prescriptions in new or reissued road permits or easements granted pursuant to FLPMA (P.L. 94579 0/2/76), FRTA (P.L. 88657 0/3/64) or subsequent authorities. This includes FLPMA Private and Forest Road Permits and Easements; FRTA Private and Forest Road Easements; Cost Share Easements; and Road Use (commercial haul) Permits (7730). (While the approved terms and conditions of certain permits or easements may not provide for modification, the necessary weed prevention and control provisions may be included in written plans, specifications, stipulations and /or operation and maintenance plans attached to and made a part of the authorization.)

(e) Clean all equipment prior to leaving the project site, if operating in areas infested with New Invaders (as designated by the Forest Weed Specialist).

(2) Minimize weed spread caused by moving infested gravel and fill material.

(a) Do not establish new gravel and fill material sources on National Forest Service lands in areas where new invaders are present. Where widespread weeds occur at new pit sites strip at least the top 8" and stockpile contaminated material. Treat weeds at new pits where widespread weeds are present.

(b) Remove all mud, dirt, and plant parts from all off-road equipment before moving into project area. Cleaning must occur off National Forest lands. (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area.)

b. Recommended Objectives and Associated Practices.

(1) Incorporate weed prevention provisions in all special use permits, road use permits and easements.

(a) Consider including special use provision R1-D4 by amending existing ground disturbing authorizations as indicated by local prescriptions.

(b) Consider including noxious weed prevention and control provisions by amending existing ground disturbing authorizations when determined to be necessary by the authorized officer. (While the approved terms and conditions of certain permits or easements may not provide for modification, the necessary weed prevention and control provisions may be included in written plans, specifications, stipulations and/or operation and maintenance plans attached to and made a part of the authorization.)

(2) Minimize weed spread caused by moving infested gravel and fill material. All gravel and borrow sources should be inspected and approved before use and transport. The source should not be used if the weeds present at the pit are not found at the site of intended use. If weeds are present, they should be treated before transport and use.

10. Fire.

a. Required Objectives and Associated Practices.

(1) Increase weed awareness among all fire personnel. Include weed risk factors and weed prevention considerations in the Resource Advisor duties on all Incident Management Teams and Fire Rehabilitation Teams during pre-fire, pre-incident training.

(2) Mitigate and reduce weed spread during wild fire activities

(a) Initiate establishment of a network of helibases, camps and staging areas that will be maintained in a noxious weed-free condition.

(b) Minimize weed spread in camps by incorporating weed prevention and containment practices such as mowing, flagging or fencing weed patches, designating weed-free travel routes and washing equipment.

(c) Inspect all fire going vehicles regularly to assure that undercarriages and grill works are kept weed seed free. All vehicles sent off Forest for fire assistance will be cleaned before they leave or return to their home.

(3) Minimize weed spread during smoke jumper operations.

(a) Inspect, remove, and properly dispose of weed seed and plant parts found on clothing and equipment.

- (b) Coordinate with Weed Specialist(s) to locate and/or treat practice jump areas.
- (4) Mitigate and reduce weed spread in Air Operations.
 - (a) Initiate establishment of a network of helibases that will be maintained in a noxious weed-free condition.
 - (b) Minimize weed spread at helibases by incorporating weed prevention and containment practices such as mowing, flagging or fencing weed patches, designating weed-free travel routes.
 - (c) Provide weed prevention briefings for helibase staff.
 - (d) Inspect, and if necessary clean, contract fuel and support vehicles before and after each incident when travelling off road or through weed infestations.
 - (e) Inspect and remove weed seed and plant parts from all cargo nets.
- (5) Mitigate and reduce weed spread from Logistics Operations activities.
 - (a) Look for weed-free camps, staging, drop points and parking areas.
 - (b) Regularly inspect and clean fire vehicles as necessary to assure that undercarriages and grill works are kept weed seed free.
- (6) Integrate weed prevention and management in all prescribed burning. Mitigate and reduce weed spread during prescribed fire activities.
 - (a) Include weed risk assessment in environmental analysis for prescribed fire projects.
 - (b) Coordinate with local Noxious Weed Management Specialist to utilize helibases that are maintained in a weed-free condition, whenever possible.
 - (c) All crews should inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment.
 - (d) Add weed awareness and prevention education to Fire Effects and Prescribed Fire training.
- (7) Encourage desirable vegetation during rehabilitation activities.
 - (a) Revegetate only erosion susceptible and high risk areas (as defined in Regional Risk Assessment Factors and Rating protocol) as described in the Roads (3) (a), (b), (c) section above.
 - (b) Straw used for road stabilization and erosion control will be certified weed-free or weed-seed-free.

b. Recommended Objectives and Associated Practices.

(1) Mitigate and reduce weed spread during fire activities.

(a) Initiate establishment of a network of helibases, camps, and staging areas on private land that will be maintained in a noxious weed-free condition.

(b) Consider checking and treating weeds that establish at cleaning sites after fire incidents, during rehabilitation.

(c) Emphasize Minimum Impact Suppression Tactics (M.I.S.T.) to reduce soil and vegetation disturbance.

(2) Minimize weed spread during smokejumper operations. Travel through weed infested areas should be avoided or minimized.

(3) Mitigate and reduced weed spread from Logistics Operations activities. Traffic should be routed through camps to avoid weed infested areas.

(4) Integrate weed prevention and management in all prescribed burning. Mitigate and reduce weed spread during prescribed fire activities.

(a) Consider treating high risk areas (as defined in Regional Risk Assessment Factors and Rating protocol) with weed infestations (such as roads, disturbed ground) before burning and check and retreat after burning if necessary.

(b) Consider avoiding ignition and burning in high risk areas (as defined in Regional Risk Assessment Factors and Rating protocol) that cannot be treated before or after prescribed fire.

(5) Encourage desirable vegetation during rehabilitation activities.

(a) Check and treat weeds at cleaning sites and all disturbed staging areas.

(b) Treat weeds within the burned area as part of rehabilitation plan to reduce weed spread.

(c) Check weed spread resulting from fire and fire suppression activities.

(d) Consider applying for restoration funding for treatment of weed infestations within the fire area.

11. Administration.

a. Required Objectives and Associated Practices.

(1) Ensure all Forest Service employees are aware of and knowledgeable about noxious weeds.

- (a) Train Line Officers in noxious weed management principles and practices.
 - (b) Each unit will have access to Weed Specialist at the Ranger District or Supervisor's Office.
- (2) Ensure all Forest workers are reducing the chance of spreading noxious weeds. All Forest workers will inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment including Forest Service vehicles.

b. Recommended Objectives and Associated Practices.

Consider a reward program for weed awareness, reporting, and beating new invaders.

2082 - COOPERATION.

1. Required Objectives and Associated Practices. Coordinate road maintenance activities with herbicide applications to maximize efficacy. Ensure road blading and roadside herbicide applications are coordinated chronologically to minimize herbicide use and increase effectiveness.

2. Recommended Objectives and Associated Practices. Consider providing Plans Section with weed control contact familiar with weeds in the fire area.

2082.2 - Methods of Cooperation.

6. Region 1 Required Objectives and Associated Practices.

a. Reduce weed establishment and spread at archeological excavations. Passports In Time programs and other Cultural Resource workers shall be given weed briefings and will inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment.

b. Promote weed awareness and prevention efforts among range permittees. Discuss weed awareness and prevention practices at annual permittee meetings.

APPENDIX F

PROCEDURES FOR MIXING, LOADING, AND DISPOSAL OF PESTICIDES

PROCEDURES FOR MIXING, LOADING, AND DISPOSAL OF PESTICIDES

1. The following measure will apply to all pesticide applications, where on-site mixing is required:
2. All mixing of pesticides will occur at least 100 feet from surface waters or well heads.
3. Dilution water will be added to the spray container prior to addition of the spray concentrate.
4. All hoses used to add dilution water to spray containers will be equipped with a device to prevent back-siphoning.
5. Applicators will mix only those quantities of pesticides that can be reasonably used in a day.
6. During mixing, mixers will wear all necessary personal protective equipment as required by the pesticide label.
7. All empty containers will be triple rinsed and rinsate disposed of by spraying near the application site at rates that do not exceed those on the spray site.
8. All unused pesticide will be stored in a locked building in accord with pesticide storage regulations contained in Forest Service Handbook 2109.13.
9. All empty and rinsed pesticide containers will be punctured and properly disposed of. Disposal records will be maintained using a container disposal log.