APPENDIX E: EXISTING VEGETATION REFERENCES AND CODES

February 2014

Existing Vegetation References

Code	Name	Author
SAF	**Forest Cover Types of the United States and Canada**.	F.H. Eyre, Editor. Society of American Foresters (1980)
SRM	Society for Range Management	

Existing SAF Vegetation Codes

Ref.	Code	Description
SAF	000	Non Forest Types
SAF	206	Engelmann spruce - subalpine fir
SAF	208	Whitebark pine
SAF	210	Interior Douglas-fir
SAF	211	White fir
SAF	212	Western larch
SAF	213	Grand fir
SAF	215	Western white pine
SAF	217	Aspen
SAF	218	Lodgepole pine
SAF	219	Limber pine
SAF	220	Rocky Mountain juniper
SAF	235	Cottonwood - willow
SAF	237	Interior ponderosa pine
SAF	238	Western juniper
SAF	239	Pinyon-juniper

Existing SRM Vegetation Codes

Ref.	Code	Description
SRM	001	Urban
SRM	002	Agriculture
SRM	004	Forest Land
SRM	005	Water
SRM	007	Barren Land
SRM	000	Non-vegetated

Existing SRM Vegetation Codes (cont.)

Ref.	Code	Description
SRM	102	Idaho fescue
SRM	104	Antelope bitterbrush-bluebunch wheatgrass
SRM	105	Antelope bitterbrush-Idaho fescue
SRM	107	Western juniper-big sagebrush- bluebunch wheatgrass
SRM	108	Alpine Idaho fescue
SRM	109	Ponderosa pine-shrubland
SRM	110	Ponderosa pine-grassland
SRM	207	Scrub oak mixed chaparral
SRM	208	Ceanothus mixed chaparral
SRM	209	Montane shrubland
SRM	210	Bitterbrush
SRM	211	Creosote bush scrub
SRM	212	Blackbush
SRM	213	Alpine grassland
SRM	217	Wetlands
SRM	301	Bluebunch wheatgrass-blue grama
SRM	302	Bluebunch wheatgrass-Sandberg bluegrass
SRM	303	Bluebunch wheatgrass-western wheatgrass
SRM	304	Idaho fescue-bluebunch wheatgrass
SRM	305	Idaho fescue-Richardson needlegrass
SRM	306	Idaho fescue-slender wheatgrass
SRM	307	Idaho fescue-threadleaf sedge
SRM	308	Idaho fescue-tufted hairgrass
SRM	309	Idaho fescue-western wheatgrass
SRM	310	Needle-and-thread-blue grama
SRM	313	Tufted hairgrass- sedge
SRM	314	Big sagebrush-bluebunch wheatgrass
SRM	315	Big sagebrush-Idaho fescue
SRM	317	Bitterbrush-bluebunch wheatgrass
SRM	318	Bitterbrush-Idaho fescue
SRM	320	Black sagebrush-bluebunch wheatgrass
SRM	321	Black sagebrush-Idaho fescue
SRM	322	Curlleaf mountain-mahogany-bluebunch wheatgrass
SRM	324	Threetip sagebrush-Idaho fescue
SRM	401	Basin big sagebrush
SRM	402	Mountain big sagebrush
SRM	403	Wyoming big sagebrush
SRM	404	Threetip sagebrush
SRM	405	Black sagebrush
SRM	406	Low sagebrush
SRM	407	Stiff sagebrush

Existing SRM Vegetation Codes (cont.)

Ref.	Code	Description
SRM	408	Other sagebrush types
SRM	409	Tall forb
SRM	410	Alpine rangeland
SRM	411	Aspen woodland
SRM	412	Juniper-pinyon woodland
SRM	413	Gambel oak
SRM	414	Salt desert shrub
SRM	415	Curlleaf mountain-mahogany
SRM	416	True moutain-mahogany
SRM	417	Littleleaf mountain-mahogany
SRM	418	Bigtooth maple
SRM	419	Bittercherry
SRM	420	Snowbush
SRM	421	Chokecherry-serviceberry-rose
SRM	422	Riparian
SRM	501	Saltbush-greasewood
SRM	504	Juniper-pinyon pine woodland
SRM	614	Crested wheatgrass

This page intentionally left blank.

APPENDIX F: POTENTIAL VEGETATION REFERENCES

Code	Name/Author
401	**Forest habitat types of Central Idaho.** Gen. Tech. Rep. INT-114 R. Steele, R.D. Pfister, R.A. Ryker; and J.A. Kittams. (1981).
402	**Forest Habitat Types of Eastern Idaho-Western Wyoming**. Gen. Tech. Rep. INT-144, R. Steele, S.V. Cooper, D.M. Ondov, D.W. Roberts, and R.D. Pfister. 1983. 122 p.
403	**Coniferous Forest Habitat Types of Northern Utah.** 1984. USDA Forest Service General Technical Report INT-170, R. L. Mauk and J.A. Henderson. 1984 89 p. Intermountain Forest and Range Experiment Station, Ogden, UT.
404	**Coniferous Forest Habitat Types of Central and Southern Utah.** USDA Forest Service General Technical Report INT-187. A.P. Youngblood and R.L. Mauk. 1985. 89 p. Intermountain Forest and Range Experiment Station, Ogden, UT.
405	**Aspen Community Types of the Intermountain Region**. USDA Forest Service General Report INT-250. W.F. Mueggler 1988, 135 p. Intermountain Forest and Range Experiment Station, Ogden, UT.
406	**Riparian Community Type Classification of Eastern Idaho-Western Wyoming**. USDA Forest Service Report R4-Ecol-85-01, A.P. Youngblood, W.G. Padgett, and A.H. Winward. 1985. 78 p. Intermountain Region, Ogden, UT.
407	**Riparian Community Type Classification of Utah and Southeastern Idaho.** USDA Forest Service Report R4-Ecol-89-01, W.G. Padgett, A.P. Youngblood, and A.H. Winward. 1989. 191 p. Intermountain Region, Ogden, UT.
408	**Sagebrush-Grass Habitat Types of Southern Idaho.** Forest, Wildlife, and Range Experiment Station Bulletin Number 35, M. Hironaka, M.A. Fosberg, and A.H. Winward. 1983. 44 p. University of Idaho, Moscow, ID.
409	**Steppe Vegetation of Washington**. Washington Agricultural Experiment Station Technical Bulletin 62, R.F. Daubenmire, 1970. 131 p.
410	**Canyon Grasslands and Associated Shrublands of West-Central Idaho and Adjacent Areas**.Forest, Wildlife, and Range Experiment Station Bulletin Number 40, E.W. Tisdale, 1985. 42 p. University of Idaho, Moscow, ID.
412	Some combination of 406 and 407.
413	Some combination of 401, 403, and 404.
418	**Curleaf Mountain-Mahogany Habitat Types for Interior West Inventories;** from Ecology of Curlleaf Mountain-mahogany in Oregon and adjacent areas.

This page intentionally left blank.

APPENDIX G: POTENTIAL VEGETATION CODES

REF	CODE	Common Name	Scientific Name
401	41010	limber pine series	PIFL2
401	41050	limber pine/Idaho fescue	PIFL2/FEID
401	41060	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
401	41070	limber pine/common juniper	PIFL2/JUCO6
401	41080	limber pine/spike fescue	PIFL2/LEKI2
401	41100	Ponderosa pine series	PIPO
401	41120	ponderosa pine/western needlegrass	PIPO/ACOCO
401	41130	ponderosa pine/bluebunch wheatgrass	PIPO/PSSPS
401	41140	ponderosa pine/Idaho fescue	PIPO/FEID
401	41160	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
401	41161	ponderosa pine/antelope bitterbrush/bluebunch wheatgrass	PIPO/PUTR2/PSSPS
401	41162	ponderosa pine/antelope bitterbrush/Idaho fescue	PIPO/PUTR2/FEID
401	41170	ponderosa pine/common snowberry	PIPO/SYAL
401	41190	ponderosa pine/mallow ninebark	PIPO/PHMA5
401	41195	ponderosa pine/mountain snowberry	PIPO/SYOR2
401	41200	Douglas-fir	PSME
401	41210	Douglas-fir/bluebunch wheatgrass	PSME/PSSPS
401	41220	Douglas-fir/Idaho fescue	PSME/FEID
401	41221	Douglas-fir/Idaho fescue-Idaho fescue	PSME/FEID-FEID
401	41222	Douglas-fir/Idaho fescue/ponderosa pine	PSME/FEID/PIPO
401	41250	Douglas-fir/dwarf bilberry	PSME/VACA13
401	41260	Douglas-fir/mallow ninebark	PSME/PHMA5
401	41262	Douglas-fir/mallow ninebark/pinegrass	PSME/PHMA5/CARU
401	41264	Douglas-fir/mallow ninebark/ponderosa pine	PSME/PHMA5/PIPO
401	41265	Douglas-fir/mallow ninebark/Douglas-fir	PSME/PHMA5/PSME
401	41280	Douglas-fir/thinleaf huckleberry	PSME/VAME
401	41290	Douglas-fir/twinflower	PSME/LIBO3
401	41310	Douglas-fir/common snowberry	PSME/SYAL
401	41313	Douglas-fir/common snowberry-common snowberry	PSME/SYAL-SYAL
401	41315	Douglas-fir/common snowberry/ponderosa pine	PSME/SYAL/PIPO
401	41320	Douglas-fir/pinegrass	PSME/CARU
401	41323	Douglas-fir/pinegrass-pinegrass	PSME/CARU-CARU
401	41324	Douglas-fir/pinegrass/ponderosa pine	PSME/CARU/PIPO
401	41325	Douglas-fir/pinegrass-Idaho fescue	PSME/CARU-FEID
401	41330	Douglas-fir/Geyer's sedge	PSME/CAGE2
401	41331	Douglas-fir/Geyer's sedge-Geyer's sedge	PSME/CAGE2-CAGE2
401	41332	Douglas-fir/Geyer's sedge/mountain snowberry	PSME/CAGE2/SYOR2

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
401	41334	Douglas-fir/Geyer's sedge/ponderosa pine	PSME/CAGE2/PIPO
401	41340	Douglas-fir/white spirea	PSME/SPBE2
401	41341	Douglas-fir/white spirea-white spirea	PSME/SPBE2-SPBE2
401	41343	Douglas-fir/white spirea-pinegrass	PSME/SPBE2-CARU
401	41344	Douglas-fir/white spirea/ponderosa pine	PSME/SPBE2/PIPO
401	41360	Douglas-fir/common juniper	PSME/JUCO6
401	41370	Douglas-fir/heartleaf arnica	PSME/ARCO9
401	41371	Douglas-fir/heartleaf arnica-heartleaf arnica	PSME/ARCO9-ARCO9
401	41372	Douglas-fir/heartleaf arnica/timber milkvetch	PSME/ARCO9/ASMI9
401	41375	Douglas-fir/sweetcicely	PSME/OSBE
401	41380	Douglas-fir/mountain snowberry	PSME/SYOR2
401	41385	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
401	41390	Douglas-fir/Rocky Mountain maple	PSME/ACGL
401	41392	Douglas-fir/Rocky Mountain maple-mountain snowberry	PSME/ACGL-SYOR2
401	41393	Douglas-fir/Rocky Mountain maple-Rocky Mountain maple	PSME/ACGL-ACGL
401	41395	Douglas-fir/creeping barberry	PSME/MARE11
401	41396	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
401	41397	Douglas-fir/creeping barberry-mountain snowberry	PSME/MARE11-SYOR2
401	41398	Douglas-fir/creeping barberry-Geyer's sedge	PSME/MARE11-CAGE2
401	41400	Engelmann spruce series	PIEN
401	41410	Engelmann spruce/field horsetail	PIEN/EQAR
401	41440	Engelmann spruce/fragrant bedstraw	PIEN/GATR3
401	41490	Engelmann spruce/softleaf sedge	PIEN/CADI6
401	41493	Engelmann spruce/revolute hypnum moss	PIEN/HYRE70
401	41500	grand fir series	ABGR
401	41505	grand fir/white spirea	ABGR/SPBE2
401	41510	grand fir/common beargrass	ABGR/XETE
401	41511	grand fir/Idaho goldthread	ABGR/COOC
401	41515	grand fir/thinleaf huckleberry	ABGR/VAME
401	41520	grand fir/bride's bonnet	ABGR/CLUN2
401	41525	grand fir/Rocky Mountain maple	ABGR/ACGL
401	41526	grand fir/Rocky Mountain maple-Rocky Mountain maple	ABGR/ACGL-ACGL
401	41527	grand fir/Rocky Mountain maple-mallow ninebark	ABGR/ACGL-PHMA5
401	41580	grand fir/dwarf bilberry	ABGR/VACA13
401	41585	grand fir/pinegrass	ABGR/CARU

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
401	41590	grand fir/twinflower	ABGR/LIBO3
401	41591	grand fir/twinflower-twinflower	ABGR/LIBO3-LIBO3
401	41592	grand fir/twinflower-common beargrass	ABGR/LIBO3-XETE
401	41593	grand fir/twinflower/thinleaf huckleberry	ABGR/LIBO3/VAME
401	41600	subalpine fir series	ABLA
401	41605	subalpine fir/Howell's marsh marigold	ABLA/CALEH2
401	41620	subalpine fir/bride's bonnet	ABLA/CLUN2
401	41621	subalpine fir/bride's bonnet-bride's bonnet	ABLA/CLUN2-CLUN2
401	41625	subalpine fir/bride's bonnet/rusty menziesia	ABLA/CLUN2/MEFE
401	41635	subalpine fir/claspleaf twistedstalk	ABLA/STAM2
401	41636	subalpine fir/claspleaf twistedstalk-claspleaf twistedstalk	ABLA/STAM2-STAM2
401	41637	subalpine fir/claspleaf twistedstalk-Canby's licorice-root	ABLA/STAM2-LICA2
401	41638	subalpine fir/Idaho goldthread	ABLA/COOC
401	41640	subalpine fir/dwarf bilberry	ABLA/VACA13
401	41645	subalpine fir/Rocky Mountain maple	ABLA/ACGL
401	41650	subalpine fir/bluejoint	ABLA/CACA4
401	41651	subalpine fir/bluejoint-bluejoint	ABLA/CACA4-CACA4
401	41652	subalpine fir/bluejoint/Canby's licorice-root	ABLA/CACA4/LICA2
401	41654	subalpine fir/bluejoint/dwarf bilberry	ABLA/CACA4/VACA13
401	41655	subalpine fir/bluejoint/western Labrador tea	ABLA/CACA4/LEGL
401	41660	subalpine fir/twinflower	ABLA/LIBO3
401	41661	subalpine fir/twinflower-twinflower	ABLA/LIBO3-LIBO3
401	41662	subalpine fir/twinflower-common beargrass	ABLA/LIBO3-XETE
401	41663	subalpine fir/twinflower/grouse whortleberry	ABLA/LIBO3/VASC
401	41670	subalpine fir/rusty menziesia	ABLA/MEFE
401	41671	subalpine fir/rusty menziesia-rusty menziesia	ABLA/MEFE-MEFE
401	41672	subalpine fir/rusty menziesia/Hitchcock's smooth woodrush	ABLA/MEFE/LUGLH
401	41690	subalpine fir/common beargrass	ABLA/XETE
401	41691	subalpine fir/common beargrass/thinleaf huckleberry	ABLA/XETE/VAME
401	41692	subalpine fir/common beargrass/grouse whortleberry	ABLA/XETE/VASC
401	41694	subalpine fir/common beargrass/Hitchcock's smooth woodrush	ABLA/XETE/LUGLH
401	41705	subalpine fir/white spirea	ABLA/SPBE2
401	41720	subalpine fir/thinleaf huckleberry	ABLA/VAME

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
401	41721	subalpine fir/thinleaf huckleberry/grouse whortleberry	ABLA/VAME/VASC
401	41723	subalpine fir/thinleaf huckleberry-thinleaf huckleberry	ABLA/VAME-VAME
401	41730	subalpine fir/grouse whortleberry	ABLA/VASC
401	41731	subalpine fir/grouse whortleberry/pinegrass	ABLA/VASC/CARU
401	41732	subalpine fir/grouse whortleberry-grouse whortleberry	ABLA/VASC-VASC
401	41734	subalpine fir/grouse whortleberry/whitebark pine	ABLA/VASC/PIAL
401	41740	subalpine fir/Sitka alder	ABLA/ALVIS
401	41745	subalpine fir/common juniper	ABLA/JUCO6
401	41750	subalpine fir/pinegrass	ABLA/CARU
401	41780	subalpine fir/heartleaf arnica	ABLA/ARCO9
401	41790	subalpine fir/Geyer's sedge	ABLA/CAGE2
401	41791	subalpine fir/Geyer's sedge-Geyer's sedge	ABLA/CAGE2-CAGE2
401	41793	subalpine fir/Geyer's sedge/big sagebrush	ABLA/CAGE2/ARTR2
401	41810	subalpine fir/gooseberry currant	ABLA/RIMO2
401	41830	subalpine fir/Hitchcock's smooth woodrush	ABLA/LUGLH
401	41831	subalpine fir/Hitchcock's smooth woodrush/grouse whortleberry	ABLA/LUGLH/VASC
401	41833	subalpine fir/Hitchcock's smooth woodrush-Hitchcock's smooth woodrush	ABLA/LUGLH-LUGLH
401	41850	whitebark pine-subalpine fir	PIAL-ABLA
401	41870	whitebark pine series	PIAL
401	41900	lodgepole pine series	PICO
401	41905	lodgepole pine/Idaho fescue	PICO/FEID
401	41920	lodgepole pine/dwarf bilberry	PICO/VACA13
401	41940	lodgepole pine/grouse whortleberry	PICO/VASC
401	41955	lodgepole pine/Geyer's sedge	PICO/CAGE2
402	010	limber pine series	PIFL2
402	050	limber pine/Idaho fescue	PIFL2/FEID
402	051	limber pine/Idaho fescue-Idaho fescue	PIFL2/FEID-FEID
402	060	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
402	070	limber pine/common juniper	PIFL2/JUCO6
402	080	limber pine/spike fescue	PIFL2/LEKI2
402	200	Douglas-fir series	PSME
402	220	Douglas-fir/Idaho fescue	PSME/FEID
402	221	Douglas-fir/Idaho fescue-Idaho fescue	PSME/FEID-FEID
402	260	Douglas-fir/mallow ninebark	PSME/PHMA5
402	265	Douglas-fir/mallow ninebark-Douglas-fir	PSME/PHMA5-PSME
402	266	Douglas-fir/mallow ninebark-Oregon boxleaf	PSME/PHMA5-PAMY

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
402	270	Douglas-fir/mountain ninebark	PSME/PHMO4
402	280	Douglas-fir/thinleaf huckleberry	PSME/VAME
402	281	Douglas-fir/thinleaf huckleberry-thinleaf huckleberry	PSME/VAME-VAME
402	310	Douglas-fir/common snowberry	PSME/SYAL
402	313	Douglas-fir/common snowberry-common snowberry	PSME/SYAL-SYAL
402	320	Douglas-fir/pinegrass	PSME/CARU
402	323	Douglas-fir/pinegrass-pinegrass	PSME/CARU-CARU
402	325	Douglas-fir/pinegrass-Idaho fescue	PSME/CARU-FEID
402	340	Douglas-fir/white spirea	PSME/SPBE2
402	341	Douglas-fir/white spirea-white spirea	PSME/SPBE2-SPBE2
402	343	Douglas-fir/white spirea-pinegrass	PSME/SPBE2-CARU
402	360	Douglas-fir/common juniper	PSME/JUCO6
402	370	Douglas-fir/heartleaf arnica	PSME/ARCO9
402	371	Douglas-fir/heartleaf arnica-heartleaf arnica	PSME/ARCO9-ARCO9
402	372	Douglas-fir/heartleaf arnica/timber milkvetch	PSME/ARCO9/ASMI9
402	375	Douglas-fir/sweetcicely	PSME/OSBE
402	380	Douglas-fir/mountain snowberry	PSME/SYOR2
402	385	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
402	390	Douglas-fir/Rocky Mountain maple	PSME/ACGL
402	391	Douglas-fir/Rocky Mountain maple-Oregon boxleaf	PSME/ACGL-PAMY
402	395	Douglas-fir/creeping barberry	PSME/MARE11
402	396	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
402	397	Douglas-fir/creeping barberry-mountain snowberry	PSME/MARE11-SYOR2
402	398	Douglas-fir/creeping barberry-Geyer's sedge	PSME/MARE11-CAGE2
402	399	Douglas-fir/creeping barberry-common juniper	PSME/MARE11-JUCO6
402	400	Engelmann spruce series	PIEN
402	410	Engelmann spruce/field horsetail	PIEN/EQAR
402	415	Engelmann spruce/white marsh marigold	PIEN/CALE4
402	430	Engelmann spruce/mallow ninebark	PIEN/PHMA5
402	440	Engelmann spruce/fragrant bedstraw	PIEN/GATR3
402	470	Engelmann spruce/twinflower	PIEN/LIBO3
402	475	Engelmann spruce/common juniper	PIEN/JUCO6
402	485	Engelmann spruce/grouse whortleberry	PIEN/VASC
402	490	Engelmann spruce/softleaf sedge	PIEN/CADI6
402	493	Engelmann spruce/revolute hypnum moss	PIEN/HYRE70

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
402	495	Engelmann spruce/heartleaf arnica	PIEN/ARCO9
402	497	Engelmann spruce/gooseberry currant	PIEN/RIMO2
402	600	subalpine fir series	ABLA
402	601	subalpine fir/red baneberry	ABLA/ACRU2
402	603	subalpine fir/mallow ninebark	ABLA/PHMA5
402	607	subalpine fir/common snowberry	ABLA/SYAL
402	609	subalpine fir/western meadow-rue	ABLA/THOC
402	635	subalpine fir/claspleaf twistedstalk	ABLA/STAM2
402	636	subalpine fir/claspleaf twistedstalk-claspleaf twistedstalk	ABLA/STAM2-STAM2
402	645	subalpine fir/Rocky Mountain maple	ABLA/ACGL
402	647	subalpine fir/Rocky Mountain maple-Oregon boxleaf	ABLA/ACGL-PAMY
402	650	subalpine fir/bluejoint	ABLA/CACA4
402	651	subalpine fir/bluejoint-bluejoint	ABLA/CACA4-CACA4
402	654	subalpine fir/bluejoint/dwarf bilberry	ABLA/CACA4/VACA13
402	655	subalpine fir/bluejoint/western Labrador tea	ABLA/CACA4/LEGL
402	660	subalpine fir/twinflower	ABLA/LIBO3
402	661	subalpine fir/twinflower-twinflower	ABLA/LIBO3-LIBO3
402	663	subalpine fir/twinflower/grouse whortleberry	ABLA/LIBO3/VASC
402	670	subalpine fir/rusty menziesia	ABLA/MEFE
402	671	subalpine fir/rusty menziesia-rusty menziesia	ABLA/MEFE-MEFE
402	690	subalpine fir/common beargrass	ABLA/XETE
402	691	subalpine fir/common beargrass/thinleaf huckleberry	ABLA/XETE/VAME
402	692	subalpine fir/common beargrass/grouse whortleberry	ABLA/XETE/VASC
402	701	subalpine fir/broadleaf arnica	ABLA/ARLA8
402	702	subalpine fir/creeping barberry-creeping barberry	ABLA/MARE11-MARE11
402	703	subalpine fir/creeping barberry	ABLA/MARE11
402	704	subalpine fir/creeping barberry-Geyer's sedge	ABLA/MARE11-CAGE2
402	705	subalpine fir/white spirea	ABLA/SPBE2
402	707	subalpine fir/sickletop lousewort	ABLA/PERA
402	720	subalpine fir/thinleaf huckleberry	ABLA/VAME
402	721	subalpine fir/thinleaf huckleberry/grouse whortleberry	ABLA/VAME/VASC
402	722	subalpine fir/thinleaf huckleberry/Oregon boxleaf	ABLA/VAME/PAMY

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
402	723	subalpine fir/thinleaf huckleberry-thinleaf huckleberry	ABLA/VAME-VAME
402	730	subalpine fir/grouse whortleberry	ABLA/VASC
402	731	subalpine fir/grouse whortleberry/pinegrass	ABLA/VASC/CARU
402	732	subalpine fir/grouse whortleberry-grouse whortleberry	ABLA/VASC-VASC
402	734	subalpine fir/grouse whortleberry/whitebark pine	ABLA/VASC/PIAL
402	745	subalpine fir/common juniper	ABLA/JUCO6
402	750	subalpine fir/pinegrass	ABLA/CARU
402	751	subalpine fir/pinegrass-pinegrass	ABLA/CARU-CARU
402	752	subalpine fir/pinegrass-Oregon boxleaf	ABLA/CARU-PAMY
402	760	subalpine fir/sweetcicely	ABLA/OSBE
402	761	subalpine fir/sweetcicely-Oregon boxleaf	ABLA/OSBE-PAMY
402	762	subalpine fir/sweetcicely-sweetcicely	ABLA/OSBE-OSBE
402	780	subalpine fir/heartleaf arnica	ABLA/ARCO9
402	781	subalpine fir/heartleaf arnica-heartleaf arnica	ABLA/ARCO9-ARCO9
402	782	subalpine fir/heartleaf arnica-timber milkvetch	ABLA/ARCO9-ASMI9
402	783	subalpine fir/heartleaf arnica-russet buffaloberry	ABLA/ARCO9-SHCA
402	784	subalpine fir/heartleaf arnica-Engelmann spruce	ABLA/ARCO9-PIEN
402	790	subalpine fir/Geyer's sedge	ABLA/CAGE2
402	791	subalpine fir/Geyer's sedge-Geyer's sedge	ABLA/CAGE2-CAGE2
402	795	subalpine fir/Ross' sedge	ABLA/CARO5
402	810	subalpine fir/gooseberry currant	ABLA/RIMO2
402	811	subalpine fir/gooseberry currant-gooseberry currant	ABLA/RIMO2-RIMO2
402	812	subalpine fir/gooseberry currant-whitebark pine	ABLA/RIMO2-PIAL
402	830	subalpine fir/Hitchcock's smooth woodrush	ABLA/LUGLH
402	831	subalpine fir/Hitchcock's smooth woodrush/grouse whortleberry	ABLA/LUGLH/VASC
402	870	whitebark pine series	PIAL
402	875	whitebark pine/grouse whortleberry	PIAL/VASC
402	880	whitebark pine/Geyer's sedge	PIAL/CAGE2
402	885	whitebark pine/common juniper	PIAL/JUOC
402	886	whitebark pine/common juniper-russet buffaloberry	PIAL/JUCO6-SHCA
402	887	whitebark pine/common juniper-common juniper	PIAL/JUCO6-JUCO6
402	891	whitebark pine/Idaho fescue	PIAL/FEID
402	895	whitebark pine/Ross' sedge	PIAL/CARO5
402	896	whitebark pine/Ross' sedge-lodgepole pine	PIAL/CARO5-PICO
402	897	whitebark pine/Ross' sedge-Ross' sedge	PIAL/CARO5-CARO5
402	90	quaking aspen	POTR5

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
402	900	lodgepole pine series	PICO
402	930	lodgepole pine/twinflower	PICO/LIBO3
402	935	lodgepole pine/thinleaf huckleberry	PICO/VAME
402	940	lodgepole pine/grouse whortleberry	PICO/VASC
402	945	lodgepole pine/white spirea	PICO/SPBE2
402	950	lodgepole pine/pinegrass	PICO/CARU
402	955	lodgepole pine/Geyer's sedge	PICO/CAGE2
402	960	lodgepole pine/common juniper	PICO/JUCO6
402	965	lodgepole pine/heartleaf arnica	PICO/ARCO9
402	970	lodgepole pine/Ross' sedge	PICO/CARO5
402	975	lodgepole pine/russet buffaloberry	PICO/SHCA
402	990	quaking aspen	POTR5
403	41010	limber pine series	PIFL2
403	41045	limber pine/creeping barberry	PIFL2/MARE11
403	41060	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
403	41100	ponderosa pine series	PIPO
403	41115	ponderosa pine/Geyer's sedge	PIPO/CAGE2
403	41140	pinderosa pine/Idaho fescue	PIPO/FEID
403	41141	ponderosa pine/Idaho fescue-Idaho fescue	PIPO/FEID-FEID
403	41143	ponderosa pine/Idaho fescue-greenleaf manzanita	PIPO/FEID-ARPA6
403	41144	ponderosa pine/Idaho fescue/big sagebrush	PIPO/FEID/ARTR2
403	41200	Douglas-fir series	PSME
403	41260	Douglas-fir/mallow ninebark	PSME/PHMA5
403	41266	Douglas-fir/mallow ninebark-Oregon boxleaf	PSME/PHMA5-PAMY
403	41305	blue spruce series	PIPU
403	41320	Douglas-fir/pinegrass	PSME/CARU
403	41375	Douglas-fir/sweetcicely	PSME/OSBE
403	41376	Douglas-fir/sweetcicely/Oregon boxleaf	PSME/OSBE/PAMY
403	41380	Douglas-fir/mountain snowberry	PSME/SYOR2
403	41385	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
403	41390	Douglas-fir/Rocky Mountain maple	PSME/ACGL
403	41395	Douglas-fir/creeping barberry	PSME/MARE11
403	41396	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
403	41397	Douglas-fir/creeping barberry-mountain snowberry	PSME/MARE11-SYOR2
403	41398	Douglas-fir/creeping barberry-Geyer's sedge	PSME/MARE11-CAGE2
403	41399	Douglas-fir/creeping barberry-common juniper	PSME/MARE11-JUCO6
403	41400	Engelmann spruce series	PIEN

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
403	41406	blue spruce/bluebunch wheatgrass	PIPU/PSSPS
403	41407	blue spruce/creeping barberry	PIPU/MARE11
403	41410	Engelmann spruce/field horsetail	PIEN/EQAR
403	41415	Engelmann spruce/white marsh merigold	PIEN/CALE4
403	41416	Engelmann spruce/dwarf bilberry	PIEN/VACA13
403	41485	Engelmann spruce/grouse whortleberry	PIEN/VASC
403	41600	subalpine fir series	ABLA
403	41601	subalpine fir/red baneberry	ABLA/ACRU2
403	41603	subalpine fir/mallow ninebark	ABLA/PHMA5
403	41635	subalpine fir/claspleaf twistedstalk	ABLA/STAM2
403	41640	subalpine fir/dwarf bilberry	ABLA/VACA13
403	41645	subalpine fir/Rocky Mountain maple	ABLA/ACGL
403	41650	subalpine fir/bluejoint	ABLA/CACA4
403	41702	subalpine fir/creeping barberry-creeping barberry	ABLA/MARE11-MARE11
403	41703	subalpine fir/creeping barberry	ABLA/MARE11
403	41704	subalpine fir/creeping barberry-Geyer's sedge	ABLA/MARE11-CAGE2
403	41707	subalpine fir/sickletop lousewort	ABLA/PERA
403	41708	subalpine fir/sickletop lousewort/Douglas-fir	ABLA/PERA/PSME
403	41709	subalpine fir/sickletop lousewort-sickletop lousewort	ABLA/PERA-PERA
403	41714	subalpine fir/creeping barberry-limber pine	ABLA/MARE11-PIFL2
403	41715	subalpine fir/creeping barberry-gooseberry currant	ABLA/MARE11-RIMO2
403	41716	subalpine fir/creeping barberry-common juniper	ABLA/MARE11-JUCO6
403	41717	subalpine fir/creeping barberry/Douglas-fir	ABLA/MARE11/PSME
403	41720	subalpine fir/thinleaf huckleberry	ABLA/VAME
403	41725	subalpine fir/grouse whortleberry/broadlef arnica	ABLA/VASC/ARLA8
403	41726	subalpine fir/grouse whortleberry/Geyer's sedge	ABLA/VASC/CAGE2
403	41730	subalpine fir/grouse whortleberry	ABLA/VASC
403	41732	subalpine fir/grouse whortleberry-grouse whortleberry	ABLA/VASC-VASC
403	41745	subalpine fir/common juniper	ABLA/JUCO6
403	41750	subalpine fir/pinegrass	ABLA/CARU
403	41760	subalpine fir/sweetcicely	ABLA/OSBE
403	41800	white fir series	ABCO
403	41810	subalpine fir/gooseberry currant	ABLA/RIMO2
403	41811	subalpine fir/gooseberry currant-gooseberry currant	ABLA/RIMO2-RIMO2

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
403	41813	subalpine fir/gooseberry currant/Fendler's meadow-rue	ABLA/RIMO2/THFE
403	41814	subalpine fir/gooseberry currant/lodgepole pine	ABLA/RIMO2/PICO
403	41815	subalpine fir/gooseberry currant/spike trisetum	ABLA/RIMO2/TRSP2
403	41861	white fir/mallow ninebark	ABCO/PHMA5
403	41862	white fir/sweetcicely	ABCO/OSBE
403	41863	white fir/creeping barberry	ABCO/MARE11
403	41864	white fir/creeping barberry/mountain snowberry	ABCO/MARE11/SYOR2
403	41865	white fir/creeping barberry-creeping barberry	ABCO/MARE11-MARE11
403	41900	lodgepole pine series	PICO
403	41915	lodgepole pine/bluejoint	PICO/CACA4
403	41920	lodgepole pine/dwarf bilberry	PICO/VACA13
403	41940	lodgepole pine/grouse whortleberry	PICO/VASC
403	41956	lodgepole pine/kinnikinnick	PICO/ARUV
403	41957	lodgepole pine/creeping barberry	PICO/MARE11
403	41960	lodgepole pine/common juniper	PICO/JUCO6
403	41970	lodgepole pine/Ross' sedge	PICO/CARO5
404	41010	limber pine series	PIFL2
404	41100	ponderosa pine series	PIPO
404	41107	ponderosa pine/greenleaf manzanita	PIPO/ARPA6
404	41108	ponderosa pine/curl-leaf mountain mahogany	PIPO/CELE3
404	41109	ponderosa pine/black sagebrush	PIPO/ARNO4
404	41111	ponderosa pine/Gambel oak	PIPO/QUGA
404	41112	ponderosa pine/Gambel oak-mountain snowberry	PIPO/QUGA-SYOR2
404	41113	ponderosa pine/Gambel oak-Gambel oak	PIPO/QUGA-QUGA
404	41114	ponderosa pine/mountain muhly	PIPO/MUMO
404	41160	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
404	41195	ponderosa pine/mountain snowberry	PIPO/SYOR2
404	41200	Douglas-fir series	PSME
404	41260	Douglas-fir/mallow ninebark	PSME/PHMA5
404	41305	blue spruce series	PIPU
404	41365	Douglas-fir/greenleaf manzanita	PSME/ARPA6
404	41366	Douglas-fir/alderleaf mountain mahogany	PSME/CEMO2
404	41367	Douglas-fir/Gambel oak	PSME/QUGA
404	41380	Douglas-fir/mountain snowberry	PSME/SYOR2
404	41382	Douglas-fir/creeping barberry/ponderosa pine	PSME/MARE11/PIPO
404	41385	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
404	41395	Douglas-fir/creeping barberry	PSME/MARE11

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
404	41396	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
404	41400	Engelmann spruce series	PIEN
404	41407	blue spruce/creeping barberry	PIPU/MARE11
404	41408	blue spruce/field horsetail	PIPU/EQAR
404	41409	blue spruce/common juniper	PIPU/JUCO6
404	41497	Engelmann spruce/gooseberry currant	PIEN/RIMO2
404	41600	subalpine fir series	ABLA
404	41603	subalpine fir/mallow ninebark	ABLA/PHMA5
404	41640	subalpine fir/dwarf bilberry	ABLA/VACA13
404	41645	subalpine fir/Rocky Mountain maple	ABLA/ACGL
404	41702	subalpine fir/creeping barberry-creeping barberry	ABLA/MARE11-MARE11
404	41703	subalpine fir/creeping barberry	ABLA/MARE11
404	41714	subalpine fir/creeping barberry/limber pine	ABLA/MARE11/PIFL2
404	41718	subalpine fir/creeping barberry/Engelmann spruce	ABLA/MARE11/PIEN
404	41720	subalpine fir/thinleaf huckleberry	ABLA/VAME
404	41745	subalpine fir/common juniper	ABLA/JUCO6
404	41746	subalpine fir/Columbian monkshood	ABLA/ACCO4
404	41747	subalpine fir/whortleberry	ABLA/VAMY2
404	41790	subalpine fir/Geyer's sedge	ABLA/CAGE2
404	41795	subalpine fir/Ross' sedge	ABLA/CARO5
404	41800	white fir series	ABCO
404	41810	subalpine fir/gooseberry currant	ABLA/RIMO2
404	41811	subalpine fir/gooseberry currant-gooseberry currant	ABLA/RIMO2-RIMO2
404	41816	subalpine fir/gooseberry currant/aspen bluebells	ABLA/RIMO2/MEAR6
404	41861	white fir/mallow ninebark	ABCO/PHMA5
404	41863	white fir/creeping barberry	ABCO/MARE11
404	41865	white fir/creeping barberry-creeping barberry	ABCO/MARE11-MARE11
404	41866	white fir/creeping barberry-common juniper	ABCO/MARE11-JUCO6
404	41867	white fir/mountain snowberry	ABCO/SYOR2
404	41868	white fir/common juniper	ABCO/JUCO6
404	41869	white fir/Gambel oak	ABCO/QUGA
404	41871	white fir/greenleaf manzanita	ABCO/ARPA6
404	41872	white fir/curl-leaf mountain mahogany	ABCO/CELE3
404	41873	white fir/Rocky Mountain maple	ABCO/ACGL

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
405	42000	quaking aspen series	POTR5
405	42001	quaking aspen/California false hellebore	POTR5/VECA2
405	42002	quaking aspen/western brackenfern	POTR5/PTAQ
405	42003	quaking aspen/mule-ears	POTR5/WYAM
405	42004	quaking aspen/Thurber's fescue	POTR5/FETH
405	42005	quaking aspen/tall forb	POTR5/2FORB
405	42006	quaking aspen/pinegrass	POTR5/CARU
405	42007	quaking aspen/Fendler's meadow-rue	POTR5/THFE
405	42008	quaking aspen/California brome	POTR5/BRCA5
405	42009	quaking aspen/Ross' sedge	POTR5/CARO5
405	42010	quaking aspen/needle and thread	POTR5/HECOC8
405	42011	quaking aspen/timber milkvetch	POTR5/ASMI9
405	42012	quaking aspen/Kentucky bluegrass	POTR5/POPR
405	42040	quaking aspen/thimbleberry	POTR5/RUPA
405	42041	quaking aspen/red elderberry	POTR5/SARA2
405	42042	quaking aspen/russet buffaloberry	POTR5/SHCA
405	42043	quaking aspen/mountain snowberry	POTR5/SYOR2
405	42044	quaking aspen/mountain snowberry/tall forb phase	POTR5/SYOR2/2FORB
405	42045	quaking aspen/mountain snowberry/pinegrass	POTR5/SYOR2/CARU
405	42046	quaking aspen/mountain snowberry/Fendler's meadow-rue	POTR5/SYOR2/THFE
405	42047	quaking aspen/mountain snowberry/Thurber's fescue	POTR5/SYOR2/FETH
405	42048	quaking aspen/mountain snowberry/Ross' sedge	POTR5/SYOR2/CARO5
405	42049	quaking aspen/mountain snowberry/mule-ears	POTR5/SYOR2/WYAM
405	42050	quaking aspen/mountain snowberry/California brome	POTR5/SYOR2/BRCA5
405	42051	quaking aspen/mountain snowberry/Kentucky bluegrass	POTR5/SYOR2/POPR
405	42052	quaking aspen/common juniper	POTR5/JUCO6
405	42053	quaking aspen/common juniper/Geyer's sedge	POTR5/JUCO6/CAGE2
405	42054	quaking aspen/common juniper/silvery lupine	POTR5/JUCO6/LUAR3
405	42055	quaking aspen/common juniper/timber milkvetch	POTR5/JUCO6/ASMI9
405	42056	quaking aspen/big sagebrush	POTR5/ARTR2
405	42080	quaking aspen/Scouler's willow	POTR5/SASC

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
405	42081	quaking aspen/Saskatoon serviceberry-mountain snowberry	POTR5/AMAL2-SYOR2
405	42082	quaking aspen/Saskatoon serviceberry-mountain snowberry/tall forb	POTR5/AMAL2-SYOR2/2FORB
405	42083	quaking aspen/Saskatoon serviceberry-mountain snowberry/Fendler's meadow-rue	POTR5/AMAL2-SYOR2/THFE
405	42084	quaking aspen/Saskatoon serviceberry-mountain snowberry/pinegrass	POTR5/AMAL2-SYOR2/CARU
405	42085	quaking aspen/Saskatoon serviceberry-mountain snowberry/California brome	POTR5/AMAL2-SYOR2/BRCA5
405	42086	quaking aspen/Saskatoon serviceberry	POTR5/AMAL2
405	42087	quaking aspen/Saskatoon serviceberry/western brackenfern	POTR5/AMAL2/PTAQ
405	42088	quaking aspen/Saskatoon serviceberry/tall forb	POTR5/AMAL/2FORB
405	42089	quaking aspen/Saskatoon serviceberry/Fendler's meadow-rue	POTR5/AMAL2/THFE
405	42100	quaking aspen-subalpine fir series	POTR5-ABLA
405	42101	quaking aspen-subalpine fir/tall forb	POTR5-ABLA/2FORB
405	42102	quaking aspen-subalpine fir/Fendler's meadow-rue	POTR5-ABLA/THFE
405	42103	quaking aspen-subalpine fir/Geyer's sedge	POTR5-ABLA/CAGE2
405	42104	quaking aspen-subalpine fir/Ross' sedge	POTR5-ABLA/CARO5
405	42105	quaking aspen-subalpine fir/russet buffaloberry	POTR5-ABLA/SHCA
405	42106	quaking aspen-subalpine fir/mountain snowberry	POTR5-ABLA/SYOR2
405	42107	quaking aspen-subalpine fir/mountain snowberry/tall forb	POTR5-ABLA/SYOR2/2FORB
405	42108	quaking aspen-subalpine fir/mountain snowberry/Fendler's meadow-rue	POTR5-ABLA/SYOR2/THFE
405	42109	quaking aspen-subalpine fir/mountain snowberry/California brome	POTR5-ABLA/SYOR2/BRCA5
405	42110	quaking aspen-subalpine fir/common juniper	POTR5-ABLA/JUCO6
405	42111	quaking aspen-subalpine fir/Saskatoon serviceberry	POTR5-ABLA/AMAL2
405	42200	quaking aspen-lodgepole pine series	POTR5-PICO
405	42201	quaking aspen-lodgepole pine/Fendler's meadow-rue	POTR5-PICO/THFE
405	42202	quaking aspen-lodgepole pine/Geyer's sedge	POTR5-PICO/CAGE2
405	42203	quaking aspen-lodgepole pine/mountain snowberry	POTR5-PICO/SYOR2
405	42204	quaking aspen-lodgepole pine/common juniper	POTR5-PICO/JUCO6
405	42300	quaking aspen-Douglas-fir series	POTR5-PSME

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
405	42301	quaking aspen-Douglas-fir/pinegrass	POTR5-PSME/CARU
405	42302	quaking aspen-Douglas-fir/mountain snowberry	POTR5-PSME/SYOR2
405	42303	quaking aspen-Douglas-fir/common juniper	POTR5-PSME/JUCO6
405	42304	quaking aspen-Douglas-fir/Saskatoon serviceberry	POTR5-PSME/AMAL2
405	42400	quaking aspen-white fir series	POTR5-ABCO
405	42401	quaking aspen-white fir/Kentucky bluegrass	POTR5-ABCO/POPR
405	42402	quaking aspen-white fir/mountain snowberry	POTR5-ABCO/SYOR2
405	42403	quaking aspen-white fir/greenleaf manzanita	POTR5-ABCO/ARPA6
405	42500	quaking aspen-blue spruce series	POTR5-PIPU
405	42600	quaking aspen-limber pine series	POTR5-PIFL2
405	42700	quaking aspen-ponderosa pine series	POTR5-PIPO
406	43000	riparian series	
406	43002	spruce/redosier dogwood	PICEA/COSES
406	43004	spruce/field horsetail	PICEA/EQAR
406	43006	spruce/bluejoint	PICEA/CACA4
406	43012	spruce/fragrant bedstraw	PICEA/GATR3
406	43043	narrowleaf cottonwood/redosier dogwood	POAN3/COSES
406	43046	narrowleaf cottonwood/Kentucky bluegrass	POAN3/POPR
406	43105	gray alder/northern black currant	ALIN2/RIHU
406	43202	Booth's willow/beaked sedge	SABO2/CARO6
406	43203	Booth's willow/Nebraska sedge	SABO2/CANE2
406	43204	Booth's willow/bluejoint	SABO2/CACA4
406	43205	Booth's willow/field horsetail	SABO2/EQAR
406	43206	Booth's willow/fowl bluegrass	SABO2/POPA2
406	43207	Booth's willow/Kentucky bluegrass	SABO2/POPR
406	43208	Booth's willow/starry false lily of the valley	SABO2/MAST4
406	43222	Geyer's willow/beaked sedge	SAGE2/CARO6
406	43223	Geyer's willow/bluejoint	SAGE2/CACA4
406	43224	Geyer's willow/fowl bluegrass	SAGE2/POPA2
406	43225	Geyer's willow/Kentucky bluegrass	SAGE2/POPR
406	43227	Geyer's willow/forb (mesic)	SAGE2/2FORB
406	43241	narrowleaf willow/field horsetail	SAEX/EQAR
406	43242	narrowleaf willow/Kentucky bluegrass	SAEX/POPR
406	43271	yellow willow	SALU2
406	43283	mountain willow	SAEA
406	43301	Wolf's willow/water sedge	SAWO/CAAQ
406	43302	Wolf's willow/beaked sedge	SAWO/CARO6
406	43303	Wolf's willow/Nebraska sedge	SAWO/CANE2
406	43305	Wolf's willow/bluejoint	SAWO/CACA4
406	43306	Wolf's willow/tufted hairgrass	SAWO/DECA18
406	43307	Wolf's willow/fowl bluegrass	SAWO/POPA2

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
406	43308	Wolf's willow/mesic forb	SAWO/2FORB
406	43321	diamondleaf willow	SAPL2
406	43353	redosier dogwood/common cowparsnip	COSES/HEMA80
406	43354	redosier dogwood/fragrant bedstraw	COSES/GATR3
406	43400	alderleaf buckthorn	RHAL
406	43551	shrubby cinquefoil/tufted hairgrass	DAFL3/DECA18
406	43552	shrubby cinquefoil/Idaho fescue	DAFL3/FEID
406	43553	shrubby cinquefoil/Kentucky bluegrass	DAFL3/POPR
406	43602	silver sagebrush/Idaho fescue	ARCA13/FEID
406	43604	silver sagebrush/Kentucky bluegrass	ARCA13/POPR
406	43801	water sedge	CAAQ
406	43807	smallwing sedge	CAMI7
406	43808	Nebraska sedge	CANE2
406	43809	beaked sedge	CARO6
406	43812	analogue sedge	CASI2
406	43813	sedge	CAREX
406	43831	Baltic rush	JUBA
406	43871	tufted hairgrass	DECA18
406	43881	fowl bluegrass	POPA2
406	43882	Kentucky bluegrass	POPR
406	43921	tall fringed bluebells	MECI3
406	43931	California false hellebore	VECA2
406	43941	"forb (mesic, meadow)"	2FORB
407	43001	conifer/redosier dogwood	2TE/COSE16
407	43003	conifer/field horsetail	2TE/EQAR
407	43005	conifer/bluejoint	2TE/CACA4
407	43007	conifer/blue wildrye	2TE/ELGL
407	43008	conifer/shrubby cinquefoil	2TE/DAFL3
407	43009	conifer/tufted hairgrass	2TE/DECA18
407	43010	conifer/Kentucky bluegrass	2TE/POPR
407	43011	conifer/Columbian monkshood	2TE/ACCO4
407	43013	conifer/red baneberry	2TE/ACRU2
407	43041	narrowleaf cottonwood/water birch	POAN3/BEOC2
407	43042	narrowleaf cottonwood/bigtooth maple	POAN3/ACGR3
407	43043	narrowleaf cottonwood/redosier dogwood	POAN3/COSE16
407	43044	narrowleaf cottonwood/Woods' rose	POAN3/ROWO
407	43045	narrowleaf cottonwood/fragrant sumac	POAN3/RHAR4
407	43046	narrowleaf cottonwood/Kentucky bluegrass	POAN3/POPR
407	43081	boxelder/redosier dogwood	ACNE2/COSE16
407	43082	boxelder/field horsetail	ACNE2/EQAR
407	43101	gray alder/redosier dogwood	ALIN2/COSE16

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
407	43102	gray alder/field horsetail	ALIN2/EQAR
407	43103	gray alder/mesic forb	ALIN2/2FORB
407	43104	gray aldet/mesic graminoid	ALIN2/2GRAM
407	43151	water birch/redosier dogwood	BEOC2/COSE16
407	43152	water birch/mesic forb	BEOC2/2FORB
407	43155	water birch/Kentucky bluegrass	BEOC2/POPR
407	43201	Booth's willow/water sedge	SABO2/CAAQ
407	43202	Booth's willow/beaked sedge	SABO2/CARO6
407	43203	Booth's willow/Nebraska sedge	SABO2/CANE2
407	43204	Booth's willow/bluejoint	SABO2/CACA4
407	43205	Booth's willow/field horsetail	SABO2/EQAR
407	43206	Booth's willow/fowl bluegrass	SABO2/POPA2
407	43207	Booth's willow/Kentucky bluegrass	SABO2/POPR
407	43209	Booth's willow/mesic forb	SABO2/2FORB
407	43210	Booth's willow/mesic graminoid	SABO2/2GRAM
407	43221	Geyer's willow/water sedge	SAGE2/CAAQ
407	43222	Geyer's willow/beaked sedge	SAGE2/CARO6
407	43223	Geyer's willow/bluejoint	SAGE2/CACA4
407	43224	Geyer's willow/fowl bluegrass	SAGE2/POPA2
407	43226	Geyer's willow/tufted hairgrass	SAGE2/DECA18
407	43228	Geyer's willow/mesic graminoid	SAGE2/2GRAM
407	43242	narrowleaf willow/Kentucky bluegrass	SAEX/POPR
407	43243	narrowleaf willow/mesic forb	SAEX/2FORB
407	43244	narrowleaf willow/mesic graminoid	SAEX/2GRAM
407	43245	narrowleaf willow (barren)	SAEX
407	43281	Bebb willow/mesic graminoid	SABE2/2GRAM
407	43286	arroyo willow (barren)	SALA6
407	43301	Wolf's willow/water sedge	SAWO/CAAQ
407	43302	Wolf's willow/beaked sedge	SAWO/CARO6
407	43306	Wolf's willow/tufted hairgrass	SAWO/DECA18
407	43308	Wolf's willow/mesic forb	SAWO/2FORB
407	43322	diamondleaf willow/water sedge	SAPL2/CAAQ
407	43323	diamondleaf willow/bluejoint	SAPL2/CACA4
407	43324	diamondleaf willow/tufted hairgrass	SAPL2/DECA18
407	43326	grayleaf willow/tufted hairgrass	SAGL/DECA18
407	43353	redosier dogwood/common cowparsnip	COSE16/HEMA80
407	43551	shrubby cinquefoil/tufted hairgrass	DAFL3/DECA18
407	43553	shrubby cinquefoil/Kentucky bluegrass	DAFL3/POPR
407	43601	silver sagebrush/tufted hairgrass	ARCA13/DECA18
407	43603	silver sagebrush/sheep fescue	ARCA13/FEOV
407	43604	silver sagebrush/Kentucky bluegrass	ARCA13/POPR

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
407	43801	water sedge	CAAQ
407	43802	Buxbaum's sedge	CABU6
407	43804	woollyfruit sedge	CALA11
407	43805	woolly sedge	CAPE42
407	43806	mud sedge	CALI7
407	43808	Nebraska sedge	CANE2
407	43809	beaked sedge	CARO6
407	43810	rock sedge	CASA10
407	43812	analogue sedge	CASI2
407	43821	common spikerush	ELPA3
407	43831	Baltic rush	JUBA
407	43851	bluejoint	CACA4
407	43861	timber oatgrass	DAIN
407	43871	tufted hairgrass	DECA18
407	43882	Kentucky bluegrass	POPR
407	43901	white marsh marigold	CALE4
407	43907	smallwing sedge	CAMI7
407	43925	broadleaf cattail type	TYLA
407	43931	tall fringed bluebells	MECI3
407	43932	California false hellebore	VECA2
408	46000	little sagebrush series	ARAR8
408	46001	little sagebrush/bluebunch wheatgrass	ARAR8/PSSPS
408	46002	little sagebrush/Idaho fescue	ARAR8/FEID
408	46003	little sagebrush/Sandberg bluegrass	ARAR8/POSE
408	46011	silver sagebrush/mat muhly	ARCAB3/MURI
408	46021	silver sagebrush/Idaho fescue	ARCAV2/FEID
408	46031	little sagebrush/Idaho fescue	ARARL/FEID
408	46041	black sagebrush/bluebunch wheatgrass	ARNO4/PSSPS
408	46042	black sagebrush/Idaho fescue	ARNO4/FEID
408	46043	black sagebrush/needle and thread	ARNO4/HECOC8
408	46051	scabland sagebrush/Sandberg bluegrass	ARRI2/POSE
408	46061	little sagebrush/Idaho fescue	ARART/FEID
408	46100	big sagebrush series	ARTRS2
408	46101	big sagebrush/California brome (subalpine)	ARTRS2/BRCA5
408	46111	big sagebrush/bluebunch wheatgrass	ARTR2/PSSPS
408	46112	big sagebrush/basin wildrye	ARTR2/LECI4
408	46113	big sagebrush/Idaho fescue	ARTR2/FEID
408	46114	big sagebrush/needle and thread	ARTR2/HECOC8
408	46131	threetip sagebrush/bluebunch wheatgrass	ARTR4/PSSPS
408	46132	threetip sagebrush/Idaho fescue	ARTR4/FEID
408	46133	threetip sagebrush/needle and thread	ARTR4/HECOC8

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
408	46151	mountain big sagebrush/bluebunch wheatgrass	ARTRV/PSSPS
408	46152	mountain big sagebrush/basin wildrye	ARTRV/LECI4
408	46153	mountain big sagebrush/Idaho fescue	ARTRV/FEID
408	46154	mountain big sagebrush/needle and thread	ARTRV/HECOC8
408	46155	mountain big sagebrush/Thurber's needlegrass	ARTRV/ACTH7
408	46156	big sagebrush/Geyer's sedge	ARTRS2/CAGE2
408	46157	mountain big sagebrush/mountain snowberry/bluebunch wheatgrass	ARTRV/SYOR2/PSSPS
408	46158	mountain big sagebrush/mountain snowberry/Idaho fescue	ARTRV/SYOR2/FEID
408	46159	mountain big sagebrush/mountain snowberry/Geyer's sedge	ARTRV/SYOR2/CAGE 2
408	46171	Wyoming big sagebrush/bluebunch wheatgrass	ARTRW8/PSSPS
408	46172	Wyoming big sagebrush/Sandberg bluegrass	ARTRW8/POSE
408	46173	Wyoming big sagebrush/squirreltail	ARTRW8/ELELE
408	46174	Wyoming big sagebrush/Thurber's needlegrass	ARTRW8/ACTH7
408	46175	Wyoming big sagebrush/needle and thread	ARTRW8/HECOC8
408	46191	big sagebrush/bluebunch wheatgrass	ARTRX/PSSPS
408	46192	big sagebrush/Idaho fescue	ARTRX/FEID
408	46200	other shrub series	2SHRUB
408	46201	antelope bitterbrush/bluebunch wheatgrass	PUTR2/PSSPS
408	46202	antelope bitterbrush/needle and thread	PUTR2/HECOC8
408	46301	curl-leaf mountain mahogany/bluebunch wheatgrass	CELE3/PSSPS
409	35	antelope bitterbrush-needle and thread	PUTR2-HECOC8
409	42	snow buckwheat-Sandberg bluegrass	ERNI2-POSE
409	42020	Idaho fescue-common snowberry	FEID-SYAL
409	42021	Idaho fescue-Nootka rose	FEID-RONU
409	42022	Idaho fescue-houndstongue hawkweed	FEID-HICY
409	42023	Idaho fescue-parsnipflower buckwheat	FEID-ERHE2
409	43	rock buckwheat-Sandberg bluegrass	ERSP7-POSE
409	43115	needle and thread-Sandberg bluegrass	HECOC8-POSE
409	431151	needle and thread-Sandberg bluegrass-snow buckwheat	HECOC8-POSE-ERNI2
409	43652	basin big sagebrush-bluebunch wheatgrass	ARTRT-PSSPS
409	43653	basin big sagebrush-Idaho fescue	ARTRT-FEID
409	44	Douglas' buckwheat-Sandberg bluegrass	ERDO-POSE
409	451	arrowleaf buckwheat-Sandberg bluegrass	ERCO12-POSE
409	452	thymeleaf buckwheat-Sandberg bluegrass	ERTH4-POSE
409	453	slender buckwheat-Oregon twinpod	ERMI4/PHOR2
409	46051	scabland sagebrush-Sandberg bluegrass	ARRI2-POSE

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
409	46113	big sagebrush-Idaho fescue	ARTR2-FEID
409	46114	big sagebrush-needle and thread	ARTR2-HECOC8
409	46131	threetip sagebrush/bluebunch wheatgrass	ARTR4/PSSPS
409	46133	threetip sagebrush-needle and thread	ARTR4-HECOC8
409	46201	antelope bitterbrush/bluebunch wheatgrass	PUTR2/PSSPS
409	46632	antelope bitterbrush-Idaho fescue	PUTR2-FEID
409	47000	grass	2GRAM
409	47001	Idaho fescue-bluebunch wheatgrass	FEID-PSSPS
409	47011	bluebunch wheatgrass-Sandberg bluegrass	PSSPS-POSE
409	47012	bluebunch wheatgrass-Idaho fescue	PSSPS-FEID
409	47021	sand dropseed-Sandberg bluegrass	SPCR-POSE
409	47025	Fendler threeawn-Sandberg bluegrass	ARPUL-POSE
409	47145	bluebunch wheatgrass-Sandberg bluegrass (lithosolic phase)	PSSPS-POSE
409	501	inland saltgrass	DISP
409	502	basin wildrye-inland saltgrass	LECI4-DISP
409	51	greasewood-inland saltgrass	SAVE4-DISP
409	54	black hawthorn/common snowberry	CRDO2/SYAL
409	55	black hawthorn/common snowberry-quaking aspen	CRDO2/SYAL-POTR5
409	56	black hawthorn/common cowparsnip	CRDO2/HEMA80
409	59	black hawthorn/common cowparsnip-quaking aspen	CRDO2/HEMA80-POTR5
409	601	black cottonwood/western water hemlock (wetlands)	POBAT/CIDO
409	602	white alder	ALRH2
409	62	big sagebrush/Sandberg bluegrass	ARTR2/POSE
409	64	spiny hopsage/Sandberg bluegrass	GRSP/POSE
409	65	winterfat/Sandberg bluegrass	KRLA2/POSE
409	721	smooth sumac/bluebunch wheatgrass	RHGL/PSSPS
409	722	smooth sumac/bluebunch wheatgrass	RHGL/PSSPS
409	723	smooth sumac/sand dropseed	RHGL/SPCR
409	73	netleaf hackberry/cheatgrass	CELAR/BRTE
409	77	mountain big sagebrush	ARTRV
409	78	camassia marshes	CAMAS
410	31	common snowberry series	SYAL
410	402	bluebunch wheatgrass	PSSPS
410	402041	bluebunch wheatgrass/plains pricklypear	PSSPS/OPPO
410	40215	bluebunch wheatgrass/Sandberg bluegrass/arrowleaf balsamroot	PSSPS/POSE/BASA3
410	43813	sedge series	CAREX

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
410	43815	Hood's sedge/Idaho fescue	CAHO5/FEID
410	4605	scabland sagebrush series	ARRI2
410	46051	scabland sagebrush/Sandberg bluegrass	ARRI2/POSE
410	46300	curl-leaf mountain mahogany series	CELE3
410	46301	curl-leaf mountain mahogany/bluebunch wheatgrass	CELE3/PSSPS
410	47002	Idaho fescue/prairie Junegrass	FEID/KOMA
410	47021	sand dropseed-Sandberg bluegrass	SPCR-POSE
410	47025	Fendler threeawn-Sandberg bluegrass	ARPUL-POSE
410	47120	Idaho fescue	FEID
410	47126	Idaho fescue/bluebunch wheatgrass	FEID/PSSPS
410	5600	netleaf hackberry series	CELAR
410	60	smooth sumac series	RHGL
412	43001	conifer/redosier dogwood	2TE/COSE16
412	43010	conifer/Kentucky bluegrass	2TE/POPR
412	43043	narrowleaf cottonwood/redosier dogwood	POAN3/COSES
412	43046	narrowleaf cottonwood/Kentucky bluegrass	POAN3/POPR
412	43101	gray alder/redosier dogwood	ALIN2/COSE16
412	43103	gray alder/mesic forb	ALIN2/2FORB
412	43104	gray alder/mesic graminoid	ALIN2/2GRAM
412	43151	water birch/redosier dogwood	BEOC2/COSE16
412	43152	water birch/mesic forb	BEOC2/2FORB
412	43155	water birch/Kentucky bluegrass	BEOC2/POPR
412	43203	Booth's willow/Nebraska sedge	SABO2/CANE2
412	43204	Booth's willow/bluejoint	SABO2/CACA4
412	43205	Booth's willow/field horsetail	SABO2/EQAR
412	43206	Booth's willow/fowl bluegrass	SABO2/POPA2
412	43207	Booth's willow/Kentucky bluegrass	SABO2/POPR
412	43222	Geyer's willow/beaked sedge	SAGE2/CARO6
412	43223	Geyer's willow/bluejoint	SAGE2/CACA4
412	43224	Geyer's willow/fowl bluegrass	SAGE2/POPA2
412	43228	Geyer's willow/mesic graminoid	SAGE2/2GRAM
412	43242	narrowleaf willow/Kentucky bluegrass	SAEX/POPR
412	43243	narrowleaf willow/mesic forb	SAEX/2FORB
412	43301	Wolf's willow/field horsetail	SAWO/EQAR
412	43302	Wolf's willow/beaked sedge	SAWO/CARO6
412	43306	Wolf's willow/tufted hairgrass	SAWO/DECA18
412	43308	Wolf's willow/mesic forb	SAWO/2FORB
412	43353	redosier dogwood/common cowparsnip	COSES/HEMA80
412	43551	shrubby cinquefoil/tufted hairgrass	DAFL3/DECA18
412	43553	shrubby cinquefoil/Kentucky bluegrass	DAFL3/POPR

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
412	43604	silver sagebrush/Kentucky bluegrass	ARCA13/POPR
412	43801	water sedge	CAAQ
412	43805	woolly sedge	CAPE42
412	43807	smallwing sedge	CAMI7
412	43808	Nebraska sedge	CANE2
412	43809	beaked sedge	CARO6
412	43812	analogue sedge	CASI2
412	43821	common spikerush	ELPA3
412	43831	Baltic rush	JUBA
412	43871	tufted hairgrass	DECA18
412	43882	Kentucky bluegrass	POPR
412	43921	tall fringed bluebells	MECI3
412	43931	California false hellebore	VECA2
413	41050	limber pine/Idaho fescue	PIFL2/FEID
413	41060	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
413	41070	limber pine/common juniper	PIFL2/JUCO6
413	41080	limber pine/spike fescue	PIFL2/LEKI2
413	41140	ponderosa pine/Idaho fescue	PIPO/FEID
413	41160	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
413	41195	ponderosa pine/mountain snowberry	PIPO/SYOR2
413	41210	Douglas-fir/bluebunch wheatgrass	PSME/PSSPS
413	41220	Douglas-fir/Idaho fescue	PSME/FEID
413	41221	Douglas-fir/Idaho fescue-Idaho fescue	PSME/FEID-FEID
413	41260	Douglas-fir/mallow ninebark	PSME/PHMA5
413	41265	Douglas-fir/mallow ninebark/Douglas-fir	PSME/PHMA5/PSME
413	41266	Douglas-fir/mallow ninebark-Oregon boxleaf	PSME/PHMA5-PAMY
413	41280	Douglas-fir/thinleaf huckleberry	PSME/VAME
413	41290	Douglas-fir/twinflower	PSME/LIBO3
413	41310	Douglas-fir/common snowberry	PSME/SYAL
413	41313	Douglas-fir/common snowberry-common snowberry	PSME/SYAL-SYAL
413	41320	Douglas-fir/pinegrass	PSME/CARU
413	41323	Douglas-fir/pinegrass-pinegrass	PSME/CARU-CARU
413	41330	Douglas-fir/Geyer's sedge	PSME/CAGE2
413	41334	Douglas-fir/Geyer's sedge/ponderosa pine	PSME/CAGE2/PIPO
413	41340	Douglas-fir/white spirea	PSME/SPBE2
413	41341	Douglas-fir/white spirea-white spirea	PSME/SPBE2-SPBE2
413	41343	Douglas-fir/white spirea/pinegrass	PSME/SPBE2/CARU
413	41360	Douglas-fir/common juniper	PSME/JUCO6
413	41370	Douglas-fir/heartleaf arnica	PSME/ARCO9
413	41371	Douglas-fir/heartleaf arnica-heartleaf arnica	PSME/ARCO9-ARCO9

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
413	41372	Douglas-fir/heartleaf arnica/timber milkvetch	PSME/ARCO9/ASMI9
413	41375	Douglas-fir/sweetcicely	PSME/OSBE
413	41380	Douglas-fir/mountain snowberry	PSME/SYOR2
413	41385	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
413	41390	Douglas-fir/Rocky Mountain maple	PSME/ACGL
413	41395	Douglas-fir/creeping barberry	PSME/MARE11
413	41396	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
413	41397	Douglas-fir/creeping barberry-mountain snowberry	PSME/MARE11-SYOR2
413	41398	Douglas-fir/creeping barberry/Geyer's sedge	PSME/MARE11/CAGE2
413	41399	Douglas-fir/creeping barberry/common juniper	PSME/MARE11/JUCO6
413	41407	blue spruce/creeping barberry	PIPU/MARE11
413	41410	Engelmann spruce/field horsetail	PIEN/EQAR
413	41415	Engelmann spruce/white marsh marigold	PIEN/CALE4
413	41440	Engelmann spruce/fragrant bedstraw	PIEN/GATR3
413	41485	Engelmann spruce/grouse whortleberry	PIEN/VASC
413	41490	Engelmann spruce/softleaf sedge	PIEN/CADI6
413	41493	Engelmann spruce/revolute hypnum moss	PIEN/HYRE70
413	41497	Engelmann spruce/gooseberry currant	PIEN/RIMO2
413	41601	subalpine fir/red baneberry	ABLA/ACRU2
413	41603	subalpine fir/mallow ninebark	ABLA/PHMA5
413	41635	subalpine fir/claspleaf twistedstalk	ABLA/STAM2
413	41636	subalpine fir/claspleaf twistedstalk-claspleaf twistedstalk phase	ABLA/STAM2-STAM2
413	41640	subalpine fir/dwarf bilberry	ABLA/VACA13
413	41645	subalpine fir/Rocky Mountain maple	ABLA/ACGL
413	41650	subalpine fir/bluejoint	ABLA/CACA4
413	41651	subalpine fir/bluejoint-bluejoint	ABLA/CACA4-CACA4
413	41654	subalpine fir/bluejoint/dwarf bilberry	ABLA/CACA4/VACA13
413	41655	subalpine fir/bluejoint/western Labrador tea	ABLA/CACA4/LEGL
413	41660	subalpine fir/twinflower	ABLA/LIBO3
413	41661	subalpine fir/twinflower-twinflower	ABLA/LIBO3-LIBO3
413	41663	subalpine fir/twinflower/grouse whortleberry	ABLA/LIBO3/VASC
413	41670	subalpine fir/rusty menziesia	ABLA/MEFE
413	41671	subalpine fir/rusty menziesia-rusty menziesia	ABLA/MEFE-MEFE
413	41690	subalpine fir/common beargrass	ABLA/XETE

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
413	41691	subalpine fir/common beargrass/thinleaf huckleberry	ABLA/XETE/VAME
413	41692	subalpine fir/common beargrass/grouse whortleberry	ABLA/XETE/VASC
413	41702	subalpine fir/creeping barberry-creeping barberry	ABLA/MARE11-MARE11
413	41703	subalpine fir/creeping barberry	ABLA/MARE11
413	41705	subalpine fir/white spirea	ABLA/SPBE2
413	41707	subalpine fir/sickletop lousewort	ABLA/PERA
413	41714	subalpine fir/creeping barberry/limber pine	ABLA/MARE11/PIFL2
413	41718	subalpine fir/creeping barberry/Engelmann spruce	ABLA/MARE11/PIEN
413	41720	subalpine fir/thinleaf huckleberry	ABLA/VAME
413	41721	subalpine fir/thinleaf huckleberry/grouse whortleberry	ABLA/VAME/VASC
413	41723	subalpine fir/thinleaf huckleberry-thinleaf huckleberry	ABLA/VAME-VAME
413	41730	subalpine fir/grouse whortleberry	ABLA/VASC
413	41731	subalpine fir/grouse whortleberry/pinegrass	ABLA/VASC/CARU
413	41732	subalpine fir/grouse whortleberry-grouse whortleberry	ABLA/VASC-VASC
413	41734	subalpine fir/grouse whortleberry/whitebark pine	ABLA/VASC/PIAL
413	41745	subalpine fir/common juniper	ABLA/JUCO6
413	41750	subalpine fir/pinegrass	ABLA/CARU
413	41760	subalpine fir/sweetcicely	ABLA/OSBE
413	41780	subalpine fir/heartleaf arnica	ABLA/ARCO9
413	41790	subalpine fir/Geyer's sedge	ABLA/CAGE2
413	41791	subalpine fir/Geyer's sedge-Geyer's sedge	ABLA/CAGE2-CAGE2
413	41795	subalpine fir/Ross' sedge	ABLA/CARO5
413	41810	subalpine fir/gooseberry currant	ABLA/RIMO2
413	41811	subalpine fir/gooseberry currant-gooseberry currant	ABLA/RIMO2-RIMO2
413	41830	subalpine fir/Hitchcock's smooth woodrush	ABLA/LUGLH
413	41831	subalpine fir/Hitchcock's smooth woodrush/grouse whortleberry	ABLA/LUGLH/VASC
413	41861	white fir/mallow ninebark	ABCO/PHMA5
413	41863	white fir/creeping barberry	ABCO/MARE11
413	41865	white fir/creeping barberry-creeping barberry	ABCO/MARE11-MARE11
413	41920	lodgepole pine/dwarf bilberry	PICO/VACA13

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
413	41940	lodgepole pine/grouse whortleberry	PICO/VASC
413	41955	lodgepole pine/Geyer's sedge	PICO/CAGE2
413	41960	lodgepole pine/common juniper	PICO/JUCO6
414	41090	Great Basin bristlecone pine series	PILO
414	41091	Great Basin bristlecone pine-limber pine/common juniper	PILO-PIFL2/JUCO6
414	41858	white fir-Rocky Mountain juniper	ABCO-JUSC2
414	41859	white fir-ponderosa pine/curl-leaf mountain mahogany	ABCO-PIPO/CELE3
414	42400	quaking aspen-white fir series	POTR5-ABCO
414	43157	water birch/starry false lily of the vally	BEOC2/MAST4
414	44010	Utah juniper-singleleaf pinyon/blackbrush	JUOS-PIMO/CORA
414	44106	singleleaf pinyon-Utah juniper/big sagebrush	PIMO-JUOS/ARTR2
414	44121	singleleaf pinyon-curl-leaf mountain mahogany/big sagebrush	PIMO-CELE3/ARTR2
414	44132	singleleaf pinyon/big sagebrush	PIMO/ARTR2
414	44250	Rocky Mountain juniper series	JUSC2
415	51090	Washoe pine series	PIWA
416	44100	singleleaf pinyon-Utah juniper series	PIMO-JUOS
416	44101	singleleaf pinyon-Utah juniper/little sagebrush	PIMO-JUOS/ARAR8
416	44102	singleleaf pinyon-Utah juniper/black sagebrush/bluebunch wheatgrass	PIMO-JUOS/ARNO4/PSSP6
416	44103	singleleaf pinyon-Utah juniper/black sagebrush/Indian ricegrass	PIMO-JUOS/ARNO4/ACHY
416	44104	singleleaf pinyon-Utah juniper/black sagebrush/Sandberg bluegrass	PIMO-JUOS/ARNO4/POSE
416	44105	singleleaf pinyon-Utah juniper/black sagebrush/squirreltail	PIMO-JUOS/ARNO4/ELEL5
416	44107	singleleaf pinyon-Utah juniper/basin big sagebrush/western wheatgrass	PIMO-JUOS/ARTRT/PASM
416	44108	singleleaf pinyon-Utah juniper/basin big sagebrush/Indian ricegrass	PIMO-JUOS/ARTRT/ACHY
416	44109	singleleaf pinyon-Utah juniper/basin big sagebrush/Sandberg bluegrass	PIMO-JUOS/ARTRT/POSE
416	44110	singleleaf pinyon-Utah juniper/mountain big sagebrush/bluebunch wheatgrass	PIMO-JUOS/ARTRV/PSSP6
416	44111	singleleaf pinyon-Utah juniper/mountain big sagebrush/Indian ricegrass	PIMO-JUOS/ARTRV/ACHY
416	44112	singleleaf pinyon-Utah juniper/mountain big sagebrush/Sandberg bluegrass	PIMO-JUOS/ARTRV/POSE

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
416	44113	singleleaf pinyon-Utah juniper/Wyoming big sagebrush/James' galleta	PIMO-JUOS/ARTRW8/PLJA
416	44114	singleleaf pinyon-Utah juniper/Wyoming big sagebrush/Sandberg bluegrass	PIMO-JUOS/ARTRW8/POSE
416	44115	singleleaf pinyon-Utah juniper/Wyoming big sagebrush/squirreltail	PIMO-JUOS/ ARTRW8/ELEL5
416	44131	singleleaf pinyon/mountain big sagebrush/Idaho fescue	PIMO/ARTRV/FEID
416	44201	Utah juniper/basin big sagebrush/bluebunch wheatgrass	JUOS/ARTRT/PSSP6
416	44202	Utah juniper/basin big sagebrush/James' galleta	JUOS/ARTRT/PLJA
416	44203	Utah juniper/Wyoming big sagebrush/bluebunch wheatgrass	JUOS/ARTRW8/ PSSP6
417	100999	cottonwood series	POPUL
417	11999	ponderosa pine series	PIPO
417	12999	Douglas-fir series	PSME
417	1999	white fir series	ABCO
417	201999	oneseed juniper series	JUMO
417	202999	Utah juniper series	JUOS
417	204999	twoneedle pinyon series	PIED
417	210999	mesquite series	PROSO
417	220999	mountain mahogany series	CERCO
417	230999	redberry juniper series	JUCO11
417	231999	alligator juniper series	JUDE2
417	232999	border pinyon series	PIDI3
417	233999	singleleaf pinyon series	PIMOF
417	238999	bristlecone pine series	PIAR
417	240999	limber pine series	PIFL2
417	250999	desert ironwood series	OLTE
417	31999	Arizona cypress series	CUAR
417	32999	Apache pine series	PIEN2
417	33999	chihuahuan pine series	PILE
417	3999	subalpine fir series	ABLA
417	43020	Utah juniper series	JUOS
417	43021	Rocky Mountain juniper series	JUSC2
417	43022	bigtooth maple series	ACGR3
417	43023	Floodplain communities	FLOODPLAIN
417	4999	Engelmann spruce series	PIEN
417	610999	Mexican blue oak series	QUOB
417	620999	Emory oak series	QUEM

Potential Vegetation Codes (cont.)

REF	CODE	Common Name	Scientific Name
417	631999	gray oak series	QUGR3
417	632999	Arizona white oak series	QUAR
417	640999	Gambel oak series	QUGA
417	650999	silverleaf oak series	QUHY
417	6999	blue spruce series	PIPU
417	9000042	Old High Site Woodland	PIED
417	9000043	Old Low Site Woodland	JUMO
417	9999999	type undefined	UNDEFINED
418	45101	curl-leaf mountain mahogany/big sagebrush/Idaho fescue	CELE3/ARTR2/FEID
418	45104	curl-leaf mountain mahogany/big sagebrush/bearded wheatgrass	CELE3/ARTR2/ELCA 11
418	45107	curl-leaf mountain mahogany/big sagebrush/Sandberg bluegrass	CELE3/ARTR2/POSE
418	45110	curl-leaf mountain mahogany/Idaho fescue	CELE3/FEID
418	45115	curl-leaf mountain mahogany/Idaho fescue/bluebunch wheatgrass	CELE3/FEID/PSSPS
418	45120	curl-leaf mountain mahogany/basin wildrye	CELE3/LECI4
418	45130	curl-leaf mountain mahogany/common snowberry/Idaho fescue	CELE3/SYAL/FEID
418	45140	curl-leaf mountain mahogany/mountain snowberry/Sandberg bluegrass	CELE3/SYOR2/POSE
418	45141	curl-leaf mountain mahogany/mountain snowberry/Sandberg bluegrass/heartleaf arnica	CELE3/SYOR2/POSE/ ARCO9
418	45145	curl-leaf mountain mahogany/mountain snowberry	CELE3/SYOR2
418	45146	curl-leaf mountain mahogany/mountain snowberry/arrowleaf balsamroot	CELE3/SYOR2/BASA3
418	45148	curl-leaf mountain mahogany/mountain snowberry/Idaho fescue	CELE3/SYOR2/FEID
418	45160	curl-leaf mountain mahogany/pinegrass	CELE3/CARU
418	45165	curl-leaf mountain mahogany/pinegrass/Idaho fescue	CELE3/CARU/FEID

This page intentionally left blank.

APPENDIX H: FUEL PHOTO REFERENCES AND CODES

Fuel Photo References

Code	Reference
1	Fischer, William C. 1981. **Photo Guide for Appraising Downed Woody Fuels in Montana Forests: Grand fir - Larch - Douglas-fir, Western Redcedar Cover Types**. USDA For. Serv. Gen. Tech. Rep. INT-96, 53 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
2	Fischer, William C. 1981. **Photo Guide for Appraising Downed Woody Fuels in Montana Forests: Interior Ponderosa Pine, Ponderosa Pine - Larch - Douglas-fir, Larch -Douglas-fir, and Interior Douglas-fir Cover Types**. USDA For. Serv. Gen. Tech. Rep. INT-97, 133 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
3	Fischer, William C. 1981. **Photo Guide for Appraising Downed Woody Fuels in Montana Forests: Lodgepole Pine and Engelmann Spruce-Subalpine fir Cover Types**. USDA For. Serv. Gen. Tech. Rep. INT-98, 143 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
4	Fischer, William C. 1981. **Photo Guides for Appraising Downed Woody Fuels in Montana Forests: How They Were Made**. USDA For. Serv. Res. Note INT-299, 12 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
5	Koski, Wayne H. and William C. Fischer. 1979. **Photo Series for Appraising Thinning Slash in North Idaho: Western Hemlock, Grand fir, and Western Redcedar Timber Types**. USDA For. Serv. Gen. Tech. Rep. INT-46, 50 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
6	Maxwell, Wayne G. and Franklin R. Ward. 1976. **Photo Series for Quantifying Forest Residues in the: Ponderosa Pine Type, Ponderosa Pine and Associated Species Type, Lodgepole Pine Type**. USDA For. Serv. Gen. Tech. Rep. PNW-52, 74 p. Pacific Northwest Range Exp. Stn., Portland, Oregon 97208.
10	Mackay, Douglas H. and Everett M. Stiger, Delman Goss, Byron Bonney. **Photo Series for Quantifying Forest Residues in: Douglas-fir, Engelmann Spruce Type, Limber Pine Type, Lodgepole Pine Type, Ponderosa Pine Type, Subalpine Fir Type for Eastern Montana**. USDA Forest Service Northern Region. 162 p.
11	Maxwell, Wayne G. 1982. **Photo Series for Quantifying Forest Residues in the Black Hills. Ponderosa Pine Type and Spruce Type**. USDA Forest Service Rocky Mountain Region. Report number A-89-6-82. 80 p.

Fuel Photo References (cont.)

Code	Reference
13	Wayne G. Maxwell, Franklin R. Ward. 1976. **Photo Series for Quantifying Forest Residues in the Coastal Douglas-fir-Hemlock type, Coastal Douglas-fir-Hardwood Type**. USDA Forest Service Gen. Tech. Rep. PNW-51. Northwest Forest and Range Experiment Station, Portland, Oregon.
17	Ottmar, Roger D., R.E. Vihnanek, and S.C. Wright 2000. **Stereo Photo Series for Quantifying Natural Fuels in Lodgepole Pine, Quaking Aspen, and Gambel Oak Types in the Rocky Mountains**.

Fuel Photo Codes

Fuel Photo Codes For Reference 1

3A	6A	9A	13A	16	18A	63	67	
4A	7A	10A	15	16A	19A	65		
5A	8A	11A	15A	17A	25	66		

Fuel Photo Codes For Reference 2

5	14A	28A	32	48	71	78	91	
7	17	29	40A	49	72	79	95	
8	18	29A	41A	56	73	80		
9	23	30	42	64	74	84		
12A	24	30A	42A	68	75	86		
13	27A	31	43	69	76	88		
14	28	31A	43A	70	77	89		

Fuel Photo Codes For Reference 3

1	12	24A	37	46	53	81	96	
1A	19	25A	38	46A	54	82	97	
2	20	26	39	47	55	83	98	
2A	20A	26A	40	47A	57	85		
3	21	27	41	48A	58	87		
4	21A	34A	44	49A	59	90		
6	22	35	44A	50	60	92		
10	22A	35A	45	51	61	93		
11	23A	36	45A	52	62	94		

Fuel Photo Codes For Reference 5

1WH1TH	4WH1TH	1GF1TH	4GF1TH	3WC1TH	6WC1TH
2WH1TH	5WH1TH	2GF1TH	1WC1TH	4WC1TH	7WC1TH
3WH1TH	6WH1TH	3GF1TH	2WC1TH	5WC1TH	

Fuel Photo Codes For Reference 6

1PP4CC	3PP4PC	2PP1TH	6PP1TH	4PP&ASSOC4PC	8PP&ASSOC4PC	3LP3PC
2PP4CC	4PP4PC	3PP1TH	1PP&ASSOC4PC	5PP&ASSOC4PC	1LP3CC	4LP3PC
1PP4PC	5PP4PC	4PP1TH	2PP&ASSOC4PC	6PP&ASSOC4PC	1LP3PC	5LP3PC
2PP4PC	1PP1TH	5PP1TH	3PP&ASSOC4PC	7PP&ASSOC4PC	2LP3PC	

Fuel Photo Codes For Reference 11

1PP1	1PP3	1SP3PC	2PP3PC	3PP2PC	4PP2PC	7PP1TH
1PP1PC	1PP3CC	2PP1TH	2PPSP3PC	3PP3PC	5PP1TH	
1PPITH	1PP3PC	2PP2	2SP3PC	3PPSP3PC	5PP2PC	
1PP2	1PPSP3PC	2PP2PC	3PP1TH	4PP1TH	6PP1TH	

Fuel Photo Codes For Reference 13

10DF4CC	2DF1TH	3DF3PC	4DF4CC	5DFHD4CC	7DF4CC	
1DF1TH	2DF3PC	3DF4CC	4DF4PC	5DFHD4PC	7DF4PC	
1DF3PC	2DF4CC	3DF4PC	4DFHD4CC	6DF3PC	7DFHD4CC	
1DF4CC	2DF4PC	3DFHD4CC	4DFHD4PC	6DF4CC	8DF4CC	
1DF4PC	2DFHD4CC	3DFHD4PC	5DF3PC	6DF4PC	8DF4PC	
1DFHD4CC	2DFHD4PC	4DF1TH	5DF4CC	6DFHD4CC	9DF4CC	
1DFHD4PC	3DF1TH	4DF3PC	5DF4PC	6DFHD4PC	9DF4PC	

Fuel Photo Codes For Reference 17

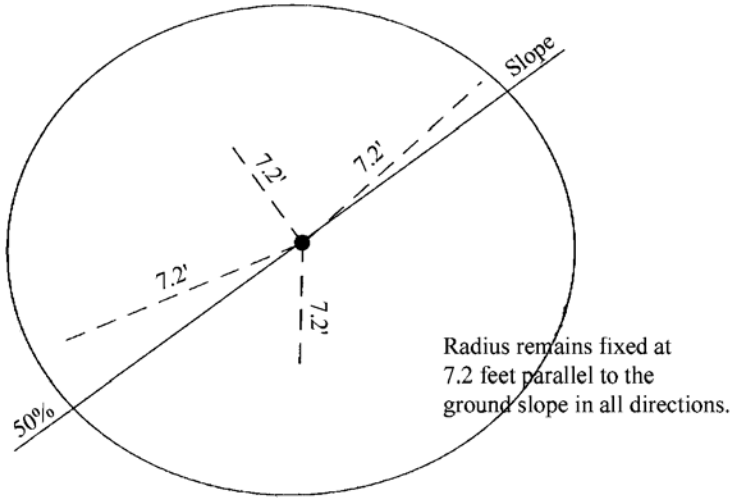
GO01	GO06	LP02	LP07	LP12	QA04	QA09
GO02	GO07	LP03	LP08	LP13	QA05	QA10
GO03	GO08	LP04	LP09	QA01	QA06	QA11
GO04	GO09	LP05	LP10	QA02	QA07	QA12
GO05	LP01	LP06	LP11	QA03	QA08	QA13

This page intentionally left blank.

APPENDIX I: FIXED RADIUS PLOT

1. Correct the fixed plot radius for slope percent using the "Circular Plot Radii Corrected for Slope" table and then measuring distances parallel to the ground line. This method always results in a circular plot on the slope.

   Example - 1/300 acre fixed plot on 50 percent slope. Corrected fixed plot radius is 7.2 feet.



Circular Plot Radii Corrected for Slope

	Plot Size in Acres					
SLOPE %	**1/300**	**1/100**	**1/50**	**1/20**	**1/10**	**1/5**
0-9	6.8	11.8	16.7	26.3	37.2	52.7
10-17	6.8	11.8	16.7	26.5	37.4	52.9
18-22	6.9	11.9	16.8	26.6	37.6	53.2
23-26	6.9	12.0	16.9	26.7	37.8	53.4
27-30	6.9	12.0	17.0	26.9	38.0	53.7
31-33	7.0	12.1	17.1	27.0	38.2	54.0
34-36	7.0	12.1	17.1	27.1	38.3	54.2
37-39	7.0	12.2	17.2	27.2	38.5	54.5
40-42	7.1	12.2	17.3	27.4	38.7	54.7
43-44	7.1	12.3	17.4	27.5	38.9	55.0
45-47	7.1	12.3	17.5	27.6	39.1	55.2
48-49	7.2	12.4	17.5	27.7	39.2	55.5
50-51	7.2	12.5	17.6	27.9	39.4	55.7
52-53	7.2	12.5	17.7	28.0	39.6	56.0

Circular Plot Radii Corrected for Slope (cont.)

	Plot Size in Acres					
SLOPE %	**1/300**	**1/100**	**1/50**	**1/20**	**1/10**	**1/5**
54-55	7.3	12.6	17.8	28.1	39.8	56.2
56-57	7.3	12.6	17.9	28.2	39.9	56.5
58-59	7.3	12.7	17.9	28.4	40.1	56.7
60-61	7.4	12.7	18.0	28.5	40.3	57.0
62-63	7.4	12.8	18.1	28.6	40.4	57.2
64-65	7.4	12.8	18.2	28.7	40.6	57.4
66-67	7.4	12.9	18.2	28.8	40.8	57.7
68-69	7.5	13.0	18.3	29.0	41.0	57.9
70	7.5	13.0	18.4	29.1	41.1	58.2
71-72	7.5	13.1	18.5	29.2	41.3	58.4
73-74	7.6	13.1	18.5	29.3	41.5	58.6
75	7.6	13.2	18.6	29.4	41.6	58.7
76-77	7.6	13.2	18.7	29.6	41.8	59.1
78-79	7.7	13.3	18.8	29.7	42.0	59.3
80	7.7	13.3	18.8	29.8	42.1	59.6
81-82	7.7	13.4	18.9	29.9	42.3	59.8
83	7.8	13.4	19.0	30.0	42.5	60.0
84-85	7.8	13.5	19.1	30.1	42.6	60.3
86	7.8	13.5	19.1	30.3	42.8	60.5
87-88	7.8	13.6	19.2	30.4	42.9	60.7
89	7.9	13.6	19.3	30.5	43.1	61.0
90-91	7.9	13.7	19.3	30.6	43.3	61.2
92	7.9	13.7	19.4	30.7	43.4	61.4
93-94	8.0	13.8	19.5	30.8	43.6	61.6
95	8.0	13.8	19.6	30.9	43.7	61.9
96-97	8.0	13.9	19.6	31.0	43.9	62.1
98	8.0	13.9	19.7	31.2	44.1	62.3
99-100	8.1	14.0	19.8	31.3	44.2	62.5
101	8.1	14.0	19.8	31.4	44.4	62.8
102	8.1	14.1	19.9	31.5	44.5	63.0
103-104	8.2	14.1	20.0	31.6	44.7	63.2
105	8.2	14.2	20.1	31.7	44.8	63.4
106-107	8.2	14.2	20.1	31.8	45.0	63.6
108	8.2	14.3	20.2	31.9	45.1	63.8
109	8.3	14.3	20.3	32.0	45.3	64.1
110-111	8.3	14.4	20.3	32.1	45.5	64.3
112	8.3	14.4	20.4	32.2	45.6	64.5
113	8.4	14.5	20.5	32.4	45.8	64.7
114-115	8.4	14.5	20.5	32.5	45.9	64.9
116	8.4	14.6	20.6	32.6	46.1	65.1

Circular Plot Radii Corrected for Slope (cont.)

	Plot Size in Acres					
SLOPE %	**1/300**	**1/100**	**1/50**	**1/20**	**1/10**	**1/5**
117	8.4	14.6	20.7	32.7	46.2	65.3
118-119	8.5	14.7	20.7	32.8	46.4	65.6
120	8.5	14.7	20.8	32.9	46.5	65.8
121	8.5	14.8	20.9	33.0	46.7	66.0
122	8.5	14.8	20.9	33.1	46.8	66.2
123-124	8.6	14.8	21.0	33.2	47.0	66.4
125	8.6	14.9	21.1	33.3	47.1	66.6
130	8.7	15.1	21.3	33.7	47.7	67.4
135	8.8	15.3	21.6	34.1	48.3	68.3
140	8.9	15.4	21.8	34.5	48.8	69.1
145	9.0	15.6	22.1	34.9	49.4	69.9
150	9.1	15.8	22.3	35.3	50.0	70.7

2. Determine the slope limiting distance to borderline trees by using the "Slope Correction Table" (the slope being corrected is the slope from plot center to the tree, not the overall plot slope.). Measure the distance parallel to the ground line to the borderline tree. This method always results in an oval plot on the slope. Following is a list of fixed plot sizes and the specific radius for each:

Plot Size	Plot Radius	Plot Size	Plot Radius	Plot Size	Plot Radius
1/1000	3.7 feet	1/250	7.4 feet	1/5	52.7 feet
1/500	5.3 feet	1/150	9.6 feet	1/4	58.9 feet
1/400	5.9 feet	1/100	11.8 feet	1/3	68.0 feet
1/300	6.8 feet	1/50	16.7 feet	1/2	83.3 feet
1/250	7.4 feet	1/20	26.3 feet	1	117.8 feet
1/200	8.3 feet	1/10	37.2 feet		

To determine the slope limiting distance, multiply the plot radius for the appropriate plot size by the appropriate slope correction factor.

Slope Correction Table

Percent of Slope	Degree of Slope	Correction Factor	Percent of Slope	Degree of Slope	Correction Factor	Percent of Slope	Degree of Slope	Correction Factor
0 to 9	0-6	1.00	78 to 79	38	1.27	117	49	1.54
10 to 17	7-10	1.01	80	39	1.28	118 to 119	50	1.55
18 to 22	11-12	1.02	81 to 82	39	1.29	120	50	1.56
23 to 26	13-14	1.03	83	40	1.30	121	50	1.57

Slope Correction Table (cont.)

Percent of Slope	Degree of Slope	Correction Factor	Percent of Slope	Degree of Slope	Correction Factor	Percent of Slope	Degree of Slope	Correction Factor
27 to 30	15-17	1.04	84 to 85	40	1.31	122	51	1.58
31 to 33	18	1.05	86	41	1.32	123 to 124	51	1.59
34 to 36	19-20	1.06	87 to 88	41	1.33	125	51	1.60
37 to 39	21	1.07	89	42	1.34	126	52	1.61
40 to 42	22	1.08	90 to 91	42	1.35	127 to 128	52	1.62
43 to 44	23	1.09	92	43	1.36	129	52	1.63
45 to 47	24	1.10	93 to 94	43	1.37	130	52	1.64
48 to 49	25-26	1.11	95	44	1.38	131	53	1.65
50 to 51	27	1.12	96 to 97	44	1.39	132 to 133	53	1.66
52 to 53	28	1.13	98	44	1.40	134	53	1.67
54 to 55	29	1.14	99 to 100	45	1.41	135	53	1.68
56 to 57	29	1.15	101	45	1.42	136	54	1.69
58 to 59	30	1.16	102	46	1.43	137 to 138	54	1.70
60 to 61	31	1.17	103 to104	46	1.44	139	54	1.71
62 to 63	32	1.18	105	46	1.45	140	54	1.72
64 to 65	33	1.19	106 to107	47	1.46	141	55	1.73
66 to 67	34	1.20	108	47	1.47	142 to 143	55	1.74
68 to 69	34	1.21	109	47	1.48	144	55	1.75
70	35	1.22	110 to 111	48	1.49	145	55	1.76
71 to 72	36	1.23	112	48	1.50	146	56	1.77
73 to 74	37	1.24	113	48	1.51	147	56	1.78
75	37	1.25	114 to 115	49	1.52	148 to 149	56	1.79
76 to 77	38	1.26	116	49	1.53	150	56	1.80

APPENDIX J: VARIABLE RADIUS PLOT

Table J-1: BAF 10 Plot Radii in Feet and Tenths of Feet from Plot Center to Face of Tree at DBH for 0% Slope

Inches	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5	13.5	13.8	14.1	14.4	14.6	14.9	15.2	15.4	15.7	16.0
6	16.2	16.5	16.8	17.1	17.3	17.6	17.9	18.1	18.4	18.7
7	19.0	19.2	19.5	19.8	20.0	20.3	20.6	20.9	21.1	21.4
8	21.7	21.9	22.2	22.5	22.7	23.0	23.3	23.6	23.8	24.1
9	24.4	24.6	24.9	25.2	25.5	25.7	26.0	26.3	26.5	26.8
10	27.1	27.4	27.6	27.9	28.2	28.4	28.7	29.0	29.2	29.5
11	29.8	30.1	30.3	30.6	30.9	31.1	31.4	31.7	32.0	32.2
12	32.5	32.8	33.0	33.3	33.6	33.9	34.1	34.4	34.7	34.9
13	35.2	35.5	35.7	36.0	36.3	36.6	36.8	37.1	37.4	37.6
14	37.9	38.2	38.5	38.7	39.0	39.3	39.5	39.8	40.1	40.3
15	40.6	40.9	41.2	41.4	41.7	42.0	42.2	42.5	42.8	43.1
16	43.3	43.6	43.9	44.1	44.4	44.7	45.0	45.2	45.5	45.8
17	46.0	46.3	46.6	46.8	47.1	47.4	47.7	47.9	48.2	48.5
18	48.7	49.0	49.3	49.6	49.8	50.1	50.4	50.6	50.9	51.2
19	51.5	51.7	52.0	52.3	52.5	52.8	53.1	53.3	53.6	53.9
20	54.2	54.4	54.7	55.0	55.2	55.5	55.8	56.1	56.3	56.6
21	56.9	57.1	57.4	57.7	58.0	58.2	58.5	58.8	59.0	59.3
22	59.6	59.8	60.1	60.4	60.7	60.9	61.2	61.5	61.7	62.0
23	62.3	62.6	62.8	63.1	63.4	63.6	63.9	64.2	64.5	64.7
24	65.0	65.3	65.5	65.8	66.1	66.3	66.6	66.9	67.2	67.4
25	67.7	68.0	68.2	68.5	68.8	69.1	69.3	69.6	69.9	70.1
26	70.4	70.7	70.9	71.2	71.5	71.8	72.0	72.3	72.6	72.8
27	73.1	73.4	73.7	73.9	74.2	74.5	74.7	75.0	75.3	75.6
28	75.8	76.1	76.4	76.6	76.9	77.2	77.4	77.7	78.0	78.3
29	78.5	78.8	79.1	79.3	79.6	79.9	80.2	80.4	80.7	81.0
30	81.2	81.5	81.8	82.1	82.3	82.6	82.9	83.1	83.4	83.7
31	83.9	84.2	84.5	84.8	85.0	85.3	85.6	85.8	86.1	86.4
32	86.7	86.9	87.2	87.5	87.7	88.0	88.3	88.6	88.8	89.1
33	89.4	89.6	89.9	90.2	90.4	90.7	91.0	91.3	91.5	91.8
34	92.1	92.3	92.6	92.9	93.2	93.4	93.7	94.0	94.2	94.5
35	94.8	95.1	95.3	95.6	95.9	96.1	96.4	96.7	96.9	97.2
36	97.5	97.8	98.0	98.3	98.6	98.8	99.1	99.4	99.7	99.9
37	100.2	100.5	100.7	101.0	101.3	101.6	101.8	102.1	102.4	102.6
38	102.9	103.2	103.4	103.7	104.0	104.3	104.5	104.8	105.1	105.3
39	105.6	105.9	106.2	106.4	106.7	107.0	107.2	107.5	107.8	108.0
40	108.3	108.6	108.9	109.1	109.4	109.7	109.9	110.2	110.5	110.8
41	111.0	111.3	111.6	111.8	112.1	112.4	112.7	112.9	113.2	113.5
42	113.7	114.0	114.3	114.5	114.8	115.1	115.4	115.6	115.9	116.2
43	116.4	116.7	117.0	117.3	117.5	117.8	118.1	118.3	118.6	118.9
44	119.2	119.4	119.7	120.0	120.2	120.5	120.8	121.0	121.3	121.6
45	121.9	122.1	122.4	122.7	122.9	123.2	123.5	123.8	124.0	124.3
46	124.6	124.8	125.1	125.4	125.7	125.9	126.2	126.5	126.7	127.0
47	127.3	127.5	127.8	128.1	128.4	128.6	128.9	129.2	129.4	129.7
48	130.0	130.3	130.5	130.8	131.1	131.3	131.6	131.9	132.2	132.4
49	132.7	133.0	133.2	133.5	133.8	134.0	134.3	134.6	134.9	135.1
50	135.4	135.7	135.9	136.2	136.5	136.8	137.0	137.3	137.6	137.8

Prepared by multiplying the BAF 10 Plot Radius Factor 2.708 * DBH
For example, if DBH = 14.3 inches, then 14.3 * 2.708 = 38.

Table J-2: BAF 20 Plot Radii in Feet and Tenths of Feet from Plot Center to Face of Tree at DBH for 0% Slope

Inches	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5	9.5	9.7	9.9	10.1	10.3	10.5	10.7	10.8	11.0	11.2
6	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	12.9	13.1
7	13.3	13.5	13.7	13.9	14.1	14.3	14.5	14.7	14.8	15.0
8	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.6	16.7	16.9
9	17.1	17.3	17.5	17.7	17.9	18.1	18.3	18.5	18.6	18.8
10	19.0	19.2	19.4	19.6	19.8	20.0	20.2	20.4	20.6	20.7
11	20.9	21.1	21.3	21.5	21.7	21.9	22.1	22.3	22.5	22.6
12	22.8	23.0	23.2	23.4	23.6	23.8	24.0	24.2	24.4	24.5
13	24.7	24.9	25.1	25.3	25.5	25.7	25.9	26.1	26.3	26.5
14	26.6	26.8	27.0	27.2	27.4	27.6	27.8	28.0	28.2	28.4
15	28.5	28.7	28.9	29.1	29.3	29.5	29.7	29.9	30.1	30.3
16	30.4	30.6	30.8	31.0	31.2	31.4	31.6	31.8	32.0	32.2
17	32.4	32.5	32.7	32.9	33.1	33.3	33.5	33.7	33.9	34.1
18	34.3	34.4	34.6	34.8	35.0	35.2	35.4	35.6	35.8	36.0
19	36.2	36.3	36.5	36.7	36.9	37.1	37.3	37.5	37.7	37.9
20	38.1	38.3	38.4	38.6	38.8	39.0	39.2	39.4	39.6	39.8
21	40.0	40.2	40.3	40.5	40.7	40.9	41.1	41.3	41.5	41.7
22	41.9	42.1	42.2	42.4	42.6	42.8	43.0	43.2	43.4	43.6
23	43.8	44.0	44.1	44.3	44.5	44.7	44.9	45.1	45.3	45.5
24	45.7	45.9	46.1	46.2	46.4	46.6	46.8	47.0	47.2	47.4
25	47.6	47.8	48.0	48.1	48.3	48.5	48.7	48.9	49.1	49.3
26	49.5	49.7	49.9	50.0	50.2	50.4	50.6	50.8	51.0	51.2
27	51.4	51.6	51.8	52.0	52.1	52.3	52.5	52.7	52.9	53.1
28	53.3	53.5	53.7	53.9	54.0	54.2	54.4	54.6	54.8	55.0
29	55.2	55.4	55.6	55.8	55.9	56.1	56.3	56.5	56.7	56.9
30	57.1	57.3	57.5	57.7	57.9	58.0	58.2	58.4	58.6	58.8
31	59.0	59.2	59.4	59.6	59.8	59.9	60.1	60.3	60.5	60.7
32	60.9	61.1	61.3	61.5	61.7	61.8	62.0	62.2	62.4	62.6
33	62.8	63.0	63.2	63.4	63.6	63.8	63.9	64.1	64.3	64.5
34	64.7	64.9	65.1	65.3	65.5	65.7	65.8	66.0	66.2	66.4
35	66.6	66.8	67.0	67.2	67.4	67.6	67.7	67.9	68.1	68.3
36	68.5	68.7	68.9	69.1	69.3	69.5	69.6	69.8	70.0	70.2
37	70.4	70.6	70.8	71.0	71.2	71.4	71.6	71.7	71.9	72.1
38	72.3	72.5	72.7	72.9	73.1	73.3	73.5	73.6	73.8	74.0
39	74.2	74.4	74.6	74.8	75.0	75.2	75.4	75.5	75.7	75.9
40	76.1	76.3	76.5	76.7	76.9	77.1	77.3	77.5	77.6	77.8
41	78.0	78.2	78.4	78.6	78.8	79.0	79.2	79.4	79.5	79.7
42	79.9	80.1	80.3	80.5	80.7	80.9	81.1	81.3	81.4	81.6
43	81.8	82.0	82.2	82.4	82.6	82.8	83.0	83.2	83.4	83.5
44	83.7	83.9	84.1	84.3	84.5	84.7	84.9	85.1	85.3	85.4
45	85.6	85.8	86.0	86.2	86.4	86.6	86.8	87.0	87.2	87.3
46	87.5	87.7	87.9	88.1	88.3	88.5	88.7	88.9	89.1	89.3
47	89.4	89.6	89.8	90.0	90.2	90.4	90.6	90.8	91.0	91.2
48	91.3	91.5	91.7	91.9	92.1	92.3	92.5	92.7	92.9	93.1
49	93.2	93.4	93.6	93.8	94.0	94.2	94.4	94.6	94.8	95.0
50	95.2	95.3	95.5	95.7	95.9	96.1	96.3	96.5	96.7	96.9

Prepared by multiplying the BAF 20 Plot Radius Factor 1.902 * DBH.
For example, if DBH = 14.3 inches, then 14.3 * 1.903 = 27.

Table J-3: BAF 30 Plot Radii in Feet and Tenths of Feet from Plot Center to Face of Tree at DBH for 0% Slope

Inches	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5	7.7	7.9	8.0	8.2	8.3	8.5	8.7	8.8	9.0	9.1
6	9.3	9.4	9.6	9.7	9.9	10.0	10.2	10.4	10.5	10.7
7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	12.1	12.2
8	12.4	12.5	12.7	12.8	13.0	13.1	13.3	13.5	13.6	13.8
9	13.9	14.1	14.2	14.4	14.5	14.7	14.8	15.0	15.2	15.3
10	15.5	15.6	15.8	15.9	16.1	16.2	16.4	16.5	16.7	16.9
11	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4
12	18.6	18.7	18.9	19.0	19.2	19.3	19.5	19.6	19.8	19.9
13	20.1	20.3	20.4	20.6	20.7	20.9	21.0	21.2	21.3	21.5
14	21.6	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	23.0
15	23.2	23.3	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6
16	24.7	24.9	25.0	25.2	25.4	25.5	25.7	25.8	26.0	26.1
17	26.3	26.4	26.6	26.7	26.9	27.1	27.2	27.4	27.5	27.7
18	27.8	28.0	28.1	28.3	28.4	28.6	28.8	28.9	29.1	29.2
19	29.4	29.5	29.7	29.8	30.0	30.1	30.3	30.5	30.6	30.8
20	30.9	31.1	31.2	31.4	31.5	31.7	31.8	32.0	32.2	32.3
21	32.5	32.6	32.8	32.9	33.1	33.2	33.4	33.5	33.7	33.9
22	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4
23	35.6	35.7	35.9	36.0	36.2	36.3	36.5	36.6	36.8	36.9
24	37.1	37.3	37.4	37.6	37.7	37.9	38.0	38.2	38.3	38.5
25	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	40.0
26	40.2	40.4	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6
27	41.7	41.9	42.1	42.2	42.4	42.5	42.7	42.8	43.0	43.1
28	43.3	43.4	43.6	43.8	43.9	44.1	44.2	44.4	44.5	44.7
29	44.8	45.0	45.1	45.3	45.5	45.6	45.8	45.9	46.1	46.2
30	46.4	46.5	46.7	46.8	47.0	47.2	47.3	47.5	47.6	47.8
31	47.9	48.1	48.2	48.4	48.5	48.7	48.9	49.0	49.2	49.3
32	49.5	49.6	49.8	49.9	50.1	50.2	50.4	50.6	50.7	50.9
33	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.3	52.4
34	52.6	52.7	52.9	53.0	53.2	53.3	53.5	53.6	53.8	54.0
35	54.1	54.3	54.4	54.6	54.7	54.9	55.0	55.2	55.3	55.5
36	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	57.0
37	57.2	57.4	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6
38	58.7	58.9	59.1	59.2	59.4	59.5	59.7	59.8	60.0	60.1
39	60.3	60.4	60.6	60.8	60.9	61.1	61.2	61.4	61.5	61.7
40	61.8	62.0	62.1	62.3	62.5	62.6	62.8	62.9	63.1	63.2
41	63.4	63.5	63.7	63.8	64.0	64.2	64.3	64.5	64.6	64.8
42	64.9	65.1	65.2	65.4	65.6	65.7	65.9	66.0	66.2	66.3
43	66.5	66.6	66.8	66.9	67.1	67.3	67.4	67.6	67.7	67.9
44	68.0	68.2	68.3	68.5	68.6	68.8	69.0	69.1	69.3	69.4
45	69.6	69.7	69.9	70.0	70.2	70.3	70.5	70.7	70.8	71.0
46	71.1	71.3	71.4	71.6	71.7	71.9	72.0	72.2	72.4	72.5
47	72.7	72.8	73.0	73.1	73.3	73.4	73.6	73.7	73.9	74.1
48	74.2	74.4	74.5	74.7	74.8	75.0	75.1	75.3	75.4	75.6
49	75.8	75.9	76.1	76.2	76.4	76.5	76.7	76.8	77.0	77.1
50	77.3	77.5	77.6	77.8	77.9	78.1	78.2	78.4	78.5	78.7

Prepared by multiplying the BAF 30 Plot Radius Factor 1.546 * DBH.
For example, if DBH = 14.3 inches, then 14.3 * 1.546 = 22.

Table J-4: BAF 40 Plot Radii in Feet and Tenths of Feet from Plot Center to Face of Tree at DBH for 0% Slope

Inches	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5	6.7	6.8	6.9	7.1	7.2	7.3	7.5	7.6	7.7	7.9
6	8.0	8.1	8.3	8.4	8.5	8.7	8.8	8.9	9.1	9.2
7	9.3	9.5	9.6	9.7	9.9	10.0	10.1	10.3	10.4	10.5
8	10.7	10.8	10.9	11.1	11.2	11.3	11.5	11.6	11.7	11.9
9	12.0	12.1	12.3	12.4	12.5	12.7	12.8	12.9	13.1	13.2
10	13.3	13.5	13.6	13.7	13.9	14.0	14.1	14.3	14.4	14.5
11	14.7	14.8	14.9	15.1	15.2	15.3	15.5	15.6	15.7	15.9
12	16.0	16.1	16.3	16.4	16.5	16.7	16.8	16.9	17.1	17.2
13	17.3	17.5	17.6	17.7	17.9	18.0	18.1	18.3	18.4	18.5
14	18.7	18.8	18.9	19.1	19.2	19.3	19.5	19.6	19.7	19.9
15	20.0	20.1	20.3	20.4	20.5	20.7	20.8	20.9	21.1	21.2
16	21.3	21.5	21.6	21.7	21.9	22.0	22.1	22.3	22.4	22.5
17	22.7	22.8	22.9	23.1	23.2	23.3	23.5	23.6	23.7	23.9
18	24.0	24.1	24.3	24.4	24.5	24.7	24.8	24.9	25.1	25.2
19	25.3	25.5	25.6	25.7	25.9	26.0	26.1	26.3	26.4	26.5
20	26.7	26.8	26.9	27.1	27.2	27.3	27.5	27.6	27.7	27.9
21	28.0	28.1	28.3	28.4	28.5	28.7	28.8	28.9	29.1	29.2
22	29.3	29.5	29.6	29.7	29.9	30.0	30.1	30.3	30.4	30.5
23	30.7	30.8	30.9	31.1	31.2	31.3	31.5	31.6	31.7	31.9
24	32.0	32.1	32.3	32.4	32.5	32.7	32.8	32.9	33.1	33.2
25	33.3	33.5	33.6	33.7	33.9	34.0	34.1	34.3	34.4	34.5
26	34.7	34.8	34.9	35.1	35.2	35.3	35.5	35.6	35.7	35.9
27	36.0	36.1	36.3	36.4	36.5	36.7	36.8	36.9	37.1	37.2
28	37.3	37.5	37.6	37.7	37.9	38.0	38.1	38.3	38.4	38.5
29	38.7	38.8	38.9	39.1	39.2	39.3	39.5	39.6	39.7	39.9
30	40.0	40.1	40.3	40.4	40.5	40.7	40.8	40.9	41.1	41.2
31	41.3	41.5	41.6	41.7	41.9	42.0	42.1	42.3	42.4	42.5
32	42.7	42.8	42.9	43.1	43.2	43.3	43.5	43.6	43.7	43.9
33	44.0	44.1	44.3	44.4	44.5	44.7	44.8	44.9	45.1	45.2
34	45.3	45.5	45.6	45.7	45.9	46.0	46.1	46.3	46.4	46.5
35	46.7	46.8	46.9	47.1	47.2	47.3	47.5	47.6	47.7	47.9
36	48.0	48.1	48.2	48.4	48.5	48.7	48.8	48.9	49.1	49.2
37	49.3	49.5	49.6	49.7	49.9	50.0	50.1	50.3	50.4	50.5
38	50.7	50.8	50.9	51.1	51.2	51.3	51.5	51.6	51.7	51.9
39	52.0	52.1	52.2	52.4	52.5	52.7	52.8	52.9	53.1	53.2
40	53.3	53.5	53.6	53.7	53.9	54.0	54.1	54.3	54.4	54.5
41	54.7	54.8	54.9	55.1	55.2	55.3	55.5	55.6	55.7	55.9
42	56.0	56.1	56.2	56.4	56.5	56.7	56.8	56.9	57.1	57.2
43	57.3	57.5	57.6	57.7	57.9	58.0	58.1	58.3	58.4	58.5
44	58.7	58.8	58.9	59.1	59.2	59.3	59.5	59.6	59.7	59.9
45	60.0	60.1	60.2	60.4	60.5	60.7	60.8	60.9	61.1	61.2
46	61.3	61.5	61.6	61.7	61.9	62.0	62.1	62.3	62.4	62.5
47	62.7	62.8	62.9	63.1	63.2	63.3	63.5	63.6	63.7	63.9
48	64.0	64.1	64.2	64.4	64.5	64.7	64.8	64.9	65.1	65.2
49	65.3	65.5	65.6	65.7	65.9	66.0	66.1	66.3	66.4	66.5
50	66.7	66.8	66.6	67.0	67.2	67.3	67.4	67.6	67.7	67.8

Prepared by multiplying the BAF 40 Plot Radius Factor 1.333 * DBH.
For Example if DBH = 14.3 inches, then 14.3 * 1.333 = 19.1 feet.

Table J-5: BAF 60 Plot Radii in Feet and Tenths of Feet from Plot Center to Face of Tree at DBH for 0% Slope

Inches	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5	5.4	5.5	5.6	5.7	5.8	5.9	6.1	6.2	6.3	6.4
6	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.4	7.5
7	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5
8	8.6	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6
9	9.7	9.8	9.9	10.1	10.2	10.3	10.4	10.5	10.6	10.7
10	10.8	10.9	11.0	11.1	11.2	11.4	11.5	11.6	11.7	11.8
11	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.8	12.9
12	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9
13	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0
14	15.1	15.2	15.4	15.5	15.6	15.7	15.8	15.9	16.0	16.1
15	16.2	16.3	16.4	16.5	16.6	16.8	16.9	17.0	17.1	17.2
16	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.1	18.2	18.3
17	18.4	18.5	18.6	18.7	18.8	18.9	19.0	19.1	19.2	19.3
18	19.5	19.6	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4
19	20.5	20.6	20.8	20.9	21.0	21.1	21.2	21.3	21.4	21.5
20	21.6	21.7	21.8	21.9	22.1	22.2	22.3	22.4	22.5	22.6
21	22.7	22.8	22.9	23.0	23.1	23.2	23.3	23.5	23.6	23.7
22	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.8
23	24.9	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8
24	25.9	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9
25	27.0	27.1	27.2	27.3	27.5	27.6	27.7	27.8	27.9	28.0
26	28.1	28.2	28.3	28.4	28.5	28.6	28.8	28.9	29.0	29.1
27	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.1	30.2
28	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2
29	31.3	31.5	31.6	31.7	31.8	31.9	32.0	32.1	32.2	32.3
30	32.4	32.5	32.6	32.8	32.9	33.0	33.1	33.2	33.3	33.4
31	33.5	33.6	33.7	33.8	33.9	34.1	34.2	34.3	34.4	34.5
32	34.6	34.7	34.8	34.9	35.0	35.1	35.2	35.3	35.5	35.6
33	35.7	35.8	35.9	36.0	36.1	36.2	36.3	36.4	36.5	36.6
34	36.8	36.9	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7
35	37.8	37.9	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8
36	38.9	39.0	39.1	39.2	39.3	39.5	39.6	39.7	39.8	39.9
37	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.8	40.9	41.0
38	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42.1
39	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	43.0	43.1
40	43.2	43.3	43.5	43.6	43.7	43.8	43.9	44.0	44.1	44.2
41	44.3	44.4	44.5	44.6	44.8	44.9	45.0	45.1	45.2	45.3
42	45.4	45.5	45.6	45.7	45.8	45.9	46.1	46.2	46.3	46.4
43	46.5	46.6	46.7	46.8	46.9	47.0	47.1	47.2	47.3	47.5
44	47.6	47.7	47.8	47.9	48.0	48.1	48.2	48.3	48.4	48.5
45	48.6	48.8	48.9	49.0	49.1	49.2	49.3	49.4	49.5	49.6
46	49.7	49.8	49.9	50.1	50.2	50.3	50.4	50.5	50.6	50.7
47	50.8	50.9	51.0	51.1	51.2	51.3	51.5	51.6	51.7	51.8
48	51.9	52.0	52.1	52.2	52.3	52.4	52.5	52.6	52.8	52.9
49	53.0	53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	53.9
50	54.1	54.2	54.3	54.4	54.5	54.6	54.7	54.8	54.9	55.0

Prepared by multiplying the BAF 60 Plot Radius Factor 1.081 * DBH.
For Example, if DBH = 14.3 inches, then 14.3 * 1.081 = 15.5 feet.

Table J-6: Limiting Distance to Face of Tree and Slope Correction Factors for Various Basal Area Factors

This table provides an expanded list of slope correction factors to the face of the tree for use with various basal area factors. To use the table, measure the slope and the distance from plot-center to the face of the tree at DBH. To obtain the corrected limiting distance to a tree multiply the trees DBH by the "combined factor" shown under the appropriate BAF heading.

% of	Slope Correction	"Combined Factor"					
Slope	Factor	5 BAF	10 BAF	15 BAF	20 BAF	30 BAF	40 BAF
1	1.00000	3.847	2.708	2.203	1.902	1.546	1.333
2	1.00020	3.848	2.709	2.203	1.902	1.546	1.333
3	1.00045	3.849	2.709	2.204	1.903	1.547	1.334
4	1.00080	3.850	2.710	2.205	1.904	1.547	1.334
5	1.00125	3.852	2.711	2.206	1.904	1.548	1.335
6	1.00180	3.854	2.713	2.207	1.905	1.549	1.335
7	1.00245	3.856	2.715	2.208	1.907	1.550	1.336
8	1.00319	3.859	2.717	2.210	1.908	1.551	1.337
9	1.00404	3.863	2.719	2.212	1.910	1.552	1.338
10	1.00499	3.866	2.722	2.214	1.911	1.554	1.340
11	1.00603	3.870	2.724	2.216	1.912	1.555	1.341
12	1.00717	3.875	2.727	2.219	1.916	1.557	1.343
13	1.00841	3.879	2.731	2.222	1.918	1.559	1.344
14	1.00975	3.884	2.734	2.224	1.921	1.567	1.346
15	1.01119	3.890	2.738	2.228	1.923	1.563	1.348
16	1.01272	3.896	2.742	2.231	1.926	1.566	1.350
17	1.01435	3.902	2.747	2.235	1.921	1.568	1.352
18	1.01607	3.909	2.752	2.238	1.933	1.571	1.354
19	1.01789	3.916	2.756	2.245	1.936	1.574	1.357
20	1.01980	3.923	2.762	2.245	1.940	1.577	1.359
21	1.02181	3.931	2.767	2.251	1.943	1.580	1.362
22	1.02391	3.939	2.773	2.256	1.947	1.583	1.365
23	1.02611	3.947	2.779	2.261	1.952	1.586	1.368
24	1.02840	3.956	2.785	2.266	1.956	1.590	1.371
25	1.03078	3.965	2.791	2.271	1.967	1.594	1.374
26	1.03325	3.975	2.798	2.276	1.965	1.597	1.377
27	1.03581	3.985	2.805	2.282	1.970	1.601	1.381
28	1.03846	3.995	2.812	2.288	1.975	1.605	1.384
29	1.04120	4.005	2.820	2.294	1.980	1.610	1.388
30	1.04403	4.016	2.827	2.300	1.986	1.614	1.392
31	1.04695	4.028	2.835	2.306	1.991	1.619	1.396
32	1.04995	4.039	2.843	2.313	1.997	1.623	1.400
33	1.05304	4.051	2.852	2.320	2.003	1.628	1.404
34	1.05622	4.063	2.960	2.327	2.009	1.633	1.408
35	1.05948	4.076	2.869	2.334	2.015	1.638	1.412
36	1.06283	4.089	2.878	2.341	2.022	1.643	1.417
37	1.06626	4.102	2.887	2.349	2.028	1.648	4.421
38	1.06977	4.115	2.897	2.357	2.035	1.654	1.426
39	1.07336	4.129	2.907	2.365	2.042	1.659	1.431
40	1.07703	4.143	2.917	2.373	2.049	1.665	1.436

Table J-6 (cont.)

% of Slope	Slope Correction Factor	"Combined Factor" 5 BAF	10 BAF	15 BAF	20 BAF	30 BAF	40 BAF
41	1.08079	4.158	2.927	2.381	2.056	1.671	1.441
42	1.08462	4.173	2.937	2.389	2.063	1.677	1.446
43	1.08853	4.188	2.948	2.398	2.070	1.683	1.451
44	1.09252	4.203	2.959	2.407	2.078	1.689	1.456
45	1.09659	4.219	2.970	2.416	2.086	1.695	1.462
46	1.10073	4.235	2.981	2.425	2.094	1.702	1.467
47	1.10494	4.251	2.992	2.434	2.102	1.708	1.473
48	1.10923	4.267	3.004	2.444	2.110	1.715	1.479
49	1.11360	4.284	3.016	2.453	2.118	1.723	1.484
50	1.11803	4.301	3.028	2.463	2.126	1.728	1.490
51	1.12254	4.318	3.040	2.473	2.135	1.735	1.496
52	1.12712	4.336	3.052	2.483	2.144	1.743	1.502
53	1.13177	4.354	3.065	2.493	2.153	1.750	1.509
54	1.13649	4.372	3.078	2.504	2.162	1.757	1.515
55	1.14127	4.390	3.091	2.514	2.171	1.764	1.521
56	1.14612	4.409	3.104	2.525	2.180	1.772	1.528
57	1.15104	4.428	3.117	2.536	2.189	1.780	1.534
58	1.15603	4.447	3.131	2.547	2.199	1.788	1.541
59	1.16108	4.467	3.144	2.558	2.208	1.795	1.548
60	1.16619	4.486	3.158	2.569	2.218	1.803	1.555
61	1.17137	4.506	3.172	2.581	2.228	1.811	1.561
62	1.17661	4.526	3.186	2.592	2.238	1.819	1.568
63	1.18191	4.547	3.201	2.604	2.248	1.827	1.575
64	1.18727	4.567	3.215	2.616	2.258	1.836	1.583
65	1.19269	4.588	3.230	2.627	2.268	1.844	1.590
66	1.19817	4.609	3.245	2.640	2.279	1.852	1.597
67	1.20370	4.631	3.260	2.652	2.289	1.861	1.605
68	1.20930	4.652	3.275	2.664	2.300	1.870	1.612
69	1.21949	4.691	3.302	2.687	2.319	1.885	1.626
70	1.22066	4.696	3.306	2.689	2.322	1.887	1.627
71	1.22642	4.718	3.321	2.702	2.333	1.896	1.635
72	1.23223	4.740	3.337	2.715	2.344	1.905	1.643
73	1.23810	4.763	3.353	2.728	2.355	1.914	1.650
74	1.24403	4.786	3.369	2.741	2.366	1.923	1.658
75	1.25000	4.809	3.385	2.754	2.378	1.933	1.666
76	1.25603	4.832	3.401	2.767	2.389	1.942	1.674
77	1.26210	4.855	3.418	2.780	2.401	1.951	1.682
78	1.26823	4.879	3.434	2.794	2.412	1.961	1.691
79	1.27440	4.903	3.451	2.808	2.424	1.970	1.699
80	1.28062	4.927	3.468	2.821	2.436	1.980	1.707
81	1.28690	4.951	3.485	2.835	2.448	1.990	1.715
82	1.29321	4.975	3.502	2.849	2.460	1.999	1.724
83	1.29958	4.999	3.519	2.863	2.472	2.009	1.732
84	1.30599	5.024	3.537	2.877	2.484	2.019	1.741
85	1.31244	5.049	3.554	2.891	2.496	2.029	1.749
86	1.31894	5.074	3.572	2.906	2.509	2.039	1.758
87	1.32548	5.099	3.589	2.920	2.521	2.049	1.767
88	1.33207	5.124	3.607	2.935	2.534	2.059	1.776
89	1.33870	5.150	3.625	2.949	2.546	2.070	1.784

Table J-6 (cont.)

% of	Slope Correction	"Combined Factor"					
Slope	**Factor**	**5 BAF**	**10 BAF**	**15 BAF**	**20 BAF**	**30 BAF**	**40 BAF**
90	1.34536	5.176	3.643	2.964	2.559	2.080	1.793
91	1.35207	5.201	3.661	2.979	2.572	2.090	1.802
92	1.35882	5.227	3.680	2.993	2.584	2.101	1.811
93	1.36561	5.254	3.698	3.008	2.597	2.111	1.820
94	1.37244	5.280	3.717	3.023	2.610	2.122	1.829
95	1.37931	5.306	3.735	3.039	2.623	2.132	1.839
96	1.38622	5.333	3.754	3.054	2.637	2.143	1.848
97	1.39316	5.359	3.773	3.069	2.650	2.154	1.857
98	1.40014	5.386	3.792	3.085	2.663	2.165	1.866
99	1.40716	5.413	3.811	3.100	2.676	2.175	1.876
100	1.41421	5.440	3.830	3.116	2.690	2.186	1.885
102	1.42843	5.495	3.868	3.147	2.717	2.208	1.904
103	1.43558	5.523	3.888	3.163	5.730	2.219	1.914
104	1.44278	5.550	3.907	3.178	2.744	2.231	1.923
105	1.45000	5.578	3.927	3.194	2.758	2.242	1.933
106	1.45726	5.606	3.946	3.210	2.772	2.253	1.943
107	1.46455	5.634	3.966	3.226	2.786	2.264	1.952
108	1.47187	5.662	3.986	3.243	2.799	2.276	1.962
109	1.47922	5.691	4.006	3.259	2.813	2.287	1.972
110	1.48661	5.719	4.026	3.275	2.828	2.298	1.982
111	1.49402	5.747	4.046	3.291	2.842	2.310	1.992
112	1.50147	5.776	4.066	3.308	2.856	2.321	2.001
113	1.50894	5.805	4.086	3.324	2.870	2.333	2.011
114	1.51644	5.834	4.107	3.341	2.884	2.344	2.021
115	1.52498	5.863	4.127	3.357	2.899	2.356	2.031
116	1.53154	5.892	4.147	3.374	2.913	2.368	2.042
117	1.53912	5.921	4.168	3.391	2.927	2.379	2.052
118	1.54674	5.950	4.189	3.407	2.942	2.391	2.062
119	1.55438	5.980	4.209	3.424	2.956	2.403	2.072
120	1.56205	6.000	4.230	3.441	2.971	2.415	2.082
121	1.56975	6.039	4.251	3.458	2.985	2.427	2.092
122	1.57747	6.069	4.272	3.475	3.000	2.439	2.103
123	1.58521	6.098	4.293	3.492	3.015	2.451	2.113
124	1.59298	6.128	4.314	3.509	3.030	2.463	2.123
125	1.60078	6.158	4.335	3.527	3.045	2.475	2.134
126	1.60860	6.188	4.356	3.544	3.060	2.487	2.144
127	1.61645	6.218	4.377	3.561	3.074	2.499	2.155
128	1.62432	6.249	4.399	3.578	3.089	2.511	2.165
129	1.63221	6.279	4.420	3.595	3.104	2.523	2.176
130	1.64012	6.310	4.441	3.613	3.120	2.536	2.186
131	1.64806	6.340	4.463	3.631	3.135	2.546	2.197
132	1.65602	4.370	4.485	3.648	3.150	2.560	2.207
133	1.66400	6.401	4.506	3.666	3.165	2.573	2.218
134	1.67200	6.432	4.528	3.683	3.180	2.585	2.229
135	1.68003	6.463	4.550	3.701	3.195	2.597	2.239
136	1.68808	6.494	4.571	3.719	3.211	2.261	2.250
137	1.69614	6.525	4.593	3.737	3.226	2.622	2.261
138	1.70423	6.556	4.615	3.754	3.241	2.635	2.272
139	1.71234	6.587	4.637	3.772	3.257	2.647	2.283

Table J-6 (cont.)

% of Slope	Slope Correction Factor	"Combined Factor" 5 BAF	10 BAF	15 BAF	20 BAF	30 BAF	40 BAF
140	1.72047	6.619	4.659	3.790	3.272	2.660	2.293
141	1.72861	6.650	4.681	3.808	3.288	2.672	2.304
142	1.73678	6.681	4.703	3.826	3.303	2.685	2.315
143	1.74497	6.713	4.725	3.844	3.319	2.698	2.326
144	1.75317	6.744	4.748	3.862	3.335	2.710	2.337
145	1.76139	6.776	4.770	3.880	3.350	2.723	2.348
146	1.76963	6.808	4.792	3.898	3.366	2.736	2.359
147	1.77789	6.840	4.815	3.917	3.382	2.749	2.370
148	1.78617	6.871	4.837	3.935	3.397	2.761	2.381
149	1.79446	6.903	4.859	3.953	3.413	2.774	2.392

This page intentionally left blank.

APPENDIX K: DAMAGE CATEGORIES, AGENTS, SEVERITY RATINGS, AND TREE PARTS

Damage Categories

Code	Description
10	General Insects
11	Bark Beetles
12	Defoliators
13	Chewing Insects
14	Sucking Insects
15	Boring Insects
16	Seed/Cone/Flower/Fruit Insects
17	Gallmaker Insects
18	Insect Predators
19	General Diseases
20	Biotic Damage
21	Root/Butt diseases
22	Stem Decays/Cankers
23	Parasitic/Epiphytic Plants
24	Decline Complexes/Dieback/Wilts
25	Foliage Diseases
26	Stem Rusts
27	Broom Rusts
30	Fire
40	Animal damage, source unknown
41	Wild animals
42	Domestic Animals
50	Abiotic Damage
60	Competition
70	Human Activities
71	Harvest
80	Multi-Damage (Insect-Disease)
90	Unknown
99	Physical Effects

Damage Agents

Category	Import.	Agent	Common Name	Scientific Name
10		**000**	**General Insects**	
SEVERITY RATING 1 = minor 2 = severe				
	I	001	Thrips	
	I	002	Tip moth	
	P	003	Wasp	
	I	007	Clerid beetle	*Cleridae*
	I	008	Weevil	*Curculionidae*
	I	011	Ant	*Formicidae*
	P	017	Bagworm moth	*Psychidae*
	P	019	Scarab	*Scarabaeidae*
	I	023	Wood wasps	*Siricidae spp.*
11		**000**	**Bark Beetles**	
SEVERITY RATING 1 = Unsuccessful bole attack: pitchout and beetle brood absent 2 = Strip attacks: galleries and brood present 3 = Successful current bole attack: galleries and brood present 4 = Topkill 5 = Successful attack last year 6 = Older dead				
	I	001	Roundheaded pine beetle	*Dendroctonus adjunctus*
	I	002	Western pine beetle	*Dendroctonus brevicomis*
	I	004	Jeffery pine beetle	*Dendroctonus jeffreyi*
	I	005	Lodgepole pine beetle	*Dendroctonus murrayanae*
	I	006	Mountain pine beetle	*Dendroctonus ponderosae*
	I	007	Douglas-fir beetle	*Dendroctonus pseudotsugae*
	I	009	Spruce beetle	*Dendroctonus rufipennis*
	I	012	Red turpentine beetle	*Dendroctonus valens*
	I	015	Western balsam bark beetle	*Dryocoetes confusus*
	P	016	Unknown	*Dryocoetes sechelti*
	I	019	Pinon ips	*Ips confusus*
	P	021	Sixspined ips	*Ips calligraphus*
	P	022	Emarginate ips	*Ips emarginatus*
	P	025	Arizona five-spined ips	*Ips lecontei*
	I	029	Pine engraver	*Ips pini*
	I	030	Ips engraver beetles	*Ips spp.*
	P	031	Unknown	*Ips tridens*
	P	032	Western ash bark beetle	*Leperisinus californicus*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
11 (cont.)		**000**	**Bark Beetles**	
	I	035	Cedar bark beetles	*Phloeosinus spp.*
	I	036	Western cedar bark beetle	*Phloeosinus punctatus*
	P	037	Tip beetles	*Pityogenes spp.*
	P	038	Douglas-fir twig beetle	*Pityophthorus pseudotsugae*
	P	039	Twig beetles	*Pityophthorus spp.*
	P	040	Foureyed spruce beetle	*Polygraphus rufipennis*
	P	041	Fir root bark beetle	*Pseudohylesinum granulatus*
	P	043	Douglas-fir pole beetle	*Pseudohylesinus nebulosus*
	I	045	Small European elm bark beetle	*Scolytus multistriatus*
	P	046	Spruce engraver	*Scolytus piceae*
	P	048	True fir bark beetles	*Scolytus spp.*
	P	049	Douglas-fir engraver	*Scolytus unispinosus*
	I	050	Fir engraver	*Scolytus ventralis*
		055	Spruce ips	*Ips pilifrons*
		056	Mexican pine beetle	*Dendroctonus mexicanus*
12		**000**	**Defoliators**	
SEVERITY RATING 1 = Light defoliation (1-25%), no topkill 2 = Light defoliation (1-25%), topkill ≤10% 3 = Light defoliation (1-25%), topkill >10% 4 = Moderate defoliation (26-75%), no topkill 5 = Moderate defoliation (26-75%), topkill ≤10% 6 = Moderate defoliation (26-75%), topkill >10% 7 = Heavy defoliation (76-100%), no topkill 8 = Heavy defoliation (76-100%), topkill ≤10% 9 = Heavy defoliation (76-100%), topkill >10%				
	P	001	Casebearer	
	P	002	Leaftier	
	P	003	Looper	
	I	004	Needleminer	
	I	005	Sawfly	
	P	006	Skeletonizer	
	P	009	Webworm	
	P	011	Western blackheaded budworm	*Acleris gloverana*
	P	013	Whitefly	*Aleyrodoidae*
	I	014	Fall cankerworm	*Alsophila pometaria*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
12 (cont.)		**000**	**Defoliators**	
	P	016	Mountain mahogany looper	*Anacamptodes clivinaria profanata*
	P	020	Western larch sawfly	*Anoplonyx occidens*
	I	023	Boxelder defoliator	*Archips negundanus*
	P	024	Oak leafroller	*Archips semiferana*
	P	025	Birch sawfly	*Arge pectoralis*
	I	033	Boxelder leafroller	*Caloptilia negundella*
	I	037	Large aspen tortrix	*Choristoneura conflictana*
	P	039	Sugar pine tortrix	*Choristoneura lambertiana*
	I	040	Western spruce budworm	*Choristoneura occidentalis*
	P	043	Aspen leaf beetle	*Chrysomela crotchi*
	P	044	Cottonwood leaf beetle	*Chrysomela scripta*
	P	045	Leafhopper	*Cicadellidae*
	I	047	Larch casebearer	*Coleophora laricella*
	I	049	Lodgepole needleminer	*Coleotechnites milleri*
	I	050	Ponderosa needleminer	*Coleotechnites spp.*
	I	052	Pandora moth	*Coloradia pandora*
	P	056	Dusky birch sawfly	*Croesus latitarsus*
	P	060	Spruce coneworm	*Dioryctria reniculelloides*
	I	066	White fir needleminer	*Epinotia meritana*
	I	069	Pine needleminer	*Exoteleia pinifoliella*
	P	072	Geometrid moth	*Geometridae*
	P	073	Leafblotch miner	*Gracillariidae*
	P	074	Spotted tussock moth	*Halisidota maculata*
	P	077	Brown day moth	*Hemileuca eglanterina*
	P	082	Fall webworm	*Hyphantria cunea*
	P	084	Gamble oak looper	*Lambdina punctat*
	P	087	Willow leafblotch miner	*Lithocolletis spp.*
	I	089	Gypsy moth	*Lymantria dispar*
	I	094	Western tent caterpillar	*Malacosoma californicum*
	I	096	Forest tent caterpillar	*Malacosoma disstria*
	P	099	Blister beetle	*Meloidae*
	I	116	Pine butterfly	*Neophasia menapia*
	P	121	Rusty tussock moth	*Orgyia antiqua*
	I	123	Douglas-fir tussock moth	*Orgyia pseudotsugata*
	P	124	Western tussock moth	*Orgyia vetusta*
	I	125	Spring cankerworm	*Paleacrita vernata*
	P	128	Pine tussock moth	*Parorgyia grisefacta*
	P	135	Aspen leafminer	*Phyllocnistis populiella*
	P	139	Larch sawfly	*Pristiphora erichsonii*
	P	140	Mountain-ash sawfly	*Pristiphora geniculata*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
12 (cont.)		**000**	**Defoliators**	
	P	141	Elm leaf beetle	*Pyrrhalta luteola*
	P	143	Giant silkworm moth	*Saturniidae*
	P	144	Redhumped caterpillar	*Schizura concinna*
	I	150	Spruce needleminer (west)	*Taniva albolineana*
	P	155	Leafroller/seed moth	*Tortricidae*
	P	156	Willow defoliation	*Tortricidae*
	I	160	Pine needle sheathminer	*Zelleria haimbachi*
	I	178	Western oak looper	*Lambdina fiscellaria somniaria*
	I	181	Tent caterpillar	*Malacosoma spp.*
		190	Hickory tussock moth	*Halisidota caryae*
		191	Pin oak sawfly	*Caliroa lineata*
		192	Palmerworm	*Dichomeris ligulella*
		193	Pitch pine looper	*Lambdina athasaria pellucidaria*
		194	Red pine sawfly	*Neodiprion nanulus nanulus*
		195	Pine tip moth	*Argyrotaenia pinatubana*
		196	Baldcypress leafroller	*Archips goyerana*
		197	Winter moth	*Operophtera*
		198	Basswood thrips	*Neohydatothrips*
		199	Noctuid moth	*Xylomyges simplex (walker)*
		200	Pyralid moth	*Palpita magniferalis*
		201	Pacific silver fir budmoth	*Zeiraphera sp. destitutana*
13		**000**	**Chewing Insects**	
SEVERITY RATING 1 = Minor: bottlebrush or shortened leaders, 0-2 forks on stem, OR <20% of branches affected 2 = Severe: 3 or more forks on bole, OR 20% or more branches affected, OR terminal leader dead				
	P	001	Grasshopper	
	P	006	Cicadas	*Cicadidae*
	P	008	Cutworms	*Euxoa excellens*
	P	021	Ponderosa pine tip moth	*Rhyacionia zozana*
	P	022	Pine needle weevil	*Scythropus spp.*
		030	Adana tip moth	*Rhyacionia adana*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
14		**000**	**Sucking Insects**	
SEVERITY RATING 1 = Minor: bottlebrush or shortened leaders, 0-2 forks on stem, OR <20% of branches affected 2 = Severe: 3 or more forks on bole, OR 20% or more branches affected, OR terminal leader dead				
	P	001	Scale insect	
	P	002	Western larch woolly aphid	*Adelges oregonensis*
	P	003	Balsam woolly adelgid	*Adelges piceae*
	I	006	Aphid	*Aphididae*
	P	008	Western pine spittlebug	*Aphrophora permutata*
	I	012	Pine needle scale	*Chionaspis pinifoliae*
	P	014	Giant conifer aphids	*Cinara spp.*
	P	017	Spruce aphid	*Elatobium abietinum*
	P	018	Woolly apple aphid	*Eriosoma lanigerum*
	P	024	Honeysuckle aphids	*Hyadaphis tataricae*
	P	026	Lecanium scale	*Lecanium spp.*
	I	028	Oystershell scale	*Lepidosaphes ulmi*
	I	029	Pinyon needle scale	*Matsucoccus acalyptus*
	P	035	Treehoopers	*Membracidae*
	I	039	Black pineleaf scale	*Nuculaspis californica*
	I	040	Spruce spider mite	*Oligonychus ununquis*
	P	043	Maple aphids	*Periphyllus spp.*
	P	050	Mealybug	*Pseudococcidae*
	P	054	Spruce mealybug	*Puto sandini*
		069	Elm scurfy scale	*Chionaspis americana*
15		**000**	**Boring Insects**	
SEVERITY RATING 1 = Minor: bottlebrush or shortened leaders, 0-2 forks on stem, OR <20% of branches affected 2 = Severe: 3 or more forks on bole, OR 20% or more branches affected, OR terminal leader dead				
	P	001	Shoot borer	
	P	002	Termite	
	P	003	Ponderosa pine bark borer	*Acanthocinus princeps*
	I	004	Bronze birch borer	*Agrilus anxius*
	P	006	Bronze poplar borer	*Agrilus liragus*
	P	007	Carpenter bees	*Apidae*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
15 (cont.)	I	008	Flatheaded borer	*Buprestidae*
	I	009	Golden buprestid	*Buprestis aurulenta*
	P	010	Carpenter ants	*Camponotus spp.*
	P	011	Gouty pitch midge	*Cecidomyia piniinopis*
	I	013	Roundheaded borer	*Cerambycidae*
	P	018	Carpenterworm moths	*Cossidae*
	I	019	Poplar and willow borer	*Cryptorphynchus lapathi*
	P	021	Douglas-fir twig weevil	*Cylindrocopturus furnissi*
	P	027	Ponderous borer	*Ergates spiculatus*
	I	029	Western pine shoot borer	*Eucosma sonomana*
	I	030	Eucosma species	*Eucosma spp.*
	P	035	Powderpost beetle	*Lyctidae*
	I	039	Locust borer	*Megacyllene robiniae*
	I	041	Flatheaded fir borer	*Melanophila drummondi*
	I	042	Whitespotted sawyer	*Monochamus scutellatus*
	P	044	Western ash borer	*Neoclytus conjunctus*
	P	050	White pine weevil	*Pissodes strobi*
	I	051	Lodgepole terminal weevil	*Pissodes terminalis*
	P	052	Ambrosia beetles	*Platypus spp.*
	P	057	Lilac borer	*Podosesia syringae*
	P	060	Western subterranean termite	*Reticulitermes hesperus*
	I	064	Western pine tip moth	*Rhyacionia bushnelli*
	I	068	Poplar borer	*Saperda calcarata*
	I	070	Saperda shoot borer	*Saperda spp.*
	P	071	Clearwing moths	*Sesiidae*
	I	073	Roundheaded fir borer	*Tetropium abietis*
	P	076	Douglas-fir pitch moth	*Vespamima novaroensis*
	I	077	Sequoia pitch moth	*Vespamima sequoia*
		087	Emerald ash borer	*Agrilus planipennis*
16		**000**	**Seed/Cone/Flower/Fruit Insects**	
SEVERITY RATING 1 = minor 2 = severe				
	I	001	Douglas-fir cone moth	*Barbara colfaxiana*
	P	002	Lodgepole cone beetle	*Conophthorus contortae*
	P	003	Limber pine cone beetle	*Conophthorus flexilis*
	P	004	Mountain pine cone beetle	*Conophthorus monticolae*
	P	005	Ponderosa pine cone beetle	*Conophthorus ponderosae*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
16 (cont.)		**000**	**Seed/Cone/Flower/Fruit Insects**	
	P	010	Douglas-fir cone midge	*Contarinia oregonensis*
	I	015	Fir coneworm	*Dioryctria abietivorella*
	P	017	Pine coneworm	*Dioryctria auranticella*
	P	019	Ponderosa twig moth	*Dioryctria ponderosae*
	P	020	unknown	*Dioryctria pseudotsugella*
	P	021	Dioryctria moths	*Dioryctria spp.*
	P	022	Lodgepole cone moth	*Eucosma rescissoriana*
	P	023	Seed chalcid	*Eurytomidae*
	P	025	Cone maggot	*Hylemya anthracina*
	P	027	Ponderosa pine seed worm/moth	*Laspeyresia piperana*
	I	028	Spruce seed moth	*Laspeyresia youngana*
	P	029	Boxelder bug	*Leptocoris trivittatus*
	P	031	Western conifer seed bug	*Leptoglossus occidentalis*
	P	034	Spruce seed chalcid	*Megastigmus piceae*
	P	035	Ponderosa pine seed chalcid	*Megastigmus albifrons*
	P	036	Fir seed chalcid	*Megastigmus pinus*
	P	037	Douglas-fir seed chalcid	*Megastigmus spermotrophs*
	P	042	Coneworm	*Phycitidae*
	P	043	Harvester ants	*Pogonomyrmex spp.*
		049	Prairie tent caterpillar	*Malacosoma lutescens*
		050	Jack pine tip beetle	*Conophthorus banksianae*
17		**000**	**Gallmaker Insects**	
SEVERITY RATING 1 = minor 2 = severe				
	I	003	Cooley spruce gall adelgid	*Adelges cooleyi*
	P	007	Douglas-fir needle gall midge	*Contarinia pseudotsugae*
	P	010	Hackberry nipplegall maker	*Pachypsylla celtidismamma*
	P	013	Gall aphid	*Phylloxeridae*
	P	018	Gouty pitch midge	*Cedidomyia piniinopsis*
	I	019	Spider mites	*Oligonychus spp.*
18		**000**	**Insect Predators**	
SEVERITY RATING 1 = minor 2 = severe				
	P	001	Lacewing	
	P	002	Blackbellied clerid	*Enoclerus lecontei*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
18 (cont.)		**000**	**Insect Predators**	
	P	003	Redbellied clerid	*Enoclerus sphegeus*
	P	004	unknown	*Formica rufa*
	P	005	Western yellowjacket	*Vespula pennsylvanica*
19		**000**	**General Diseases**	
SEVERITY RATING 1 = minor 2 = severe				
20		**000**	**Biotic Damage**	
SEVERITY RATING 1 = minor 2 = severe				
	N	001	Damping off	
	N	002	Gray mold	*Botrytis cinerea*
21		**000**	**Root/Butt Diseases**	
SEVERITY RATING for trees 1 = Tree within 30 feet of tree with deteriorating crown, tree with diagnostic symptoms or signs, or tree killed by root disease 2 = Pathogen (sign) or diagnostic symptom detected - no crown deterioration 3 = Crown deterioration detected - no diagnostic symptoms or signs 4 = Both crown deterioration and diagnostic signs symptoms detected 5 = Bleeding present on bole 6 = Bleeding present on bole and adjacent mortality present 7 = Laboratory confirmed Sudden Oak Death				
SEVERITY RATING for Setting Level G2 = Minor evidence of RDS on plot G3 = RDS present, canopy reduction less then 20% G4 = RDS present, canopy reduction 20-30 % G5 = RDS present, canopy reduction 30-50% G6 = RDS present, canopy reduction 50-57%, most ground area infested G7 = RDS present, 76+% canopy reduction G8 = Entire area infested with RDS, one or very few susceptible overstory trees G9 = Entire area infested with RDS, no susceptible overstory trees present				
	I	001	Armillaria root disease	*Armillaria spp.*
	I	004	Brown crumbly rot	*Fomitopsis pinicola*
	I	007	White mottled rot	*Ganoderma applanatum*
	P	008	Ganoderma rot of hardwoods	*Ganoderma lucidum*
	P	009	Ganoderma rot of conifers	*Ganoderma tsugae*
	I	010	Annosus root disease	*Heterobasidion annosum*
	I	012	Tomentosus root disease	*Inonotus tomentosus*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
21 (cont.)		**000**	**Root/Butt Disease**	
	N	013	Charcoal root rot	*Macrophomina phaseolina*
	I	014	Black stain root disease	*Ophiostoma wageneri*
	I	015	Schweinitzii butt rot	*Phaeolus schweinitzii*
	N	018	Phytophthora root rot	*Phytophthora cinnamomi*
	N	022	Pythium root rot	*Pythium spp.*
	P	024	Crown gall	*Agrobacterium tumefaciens*
	P	027	Brown cubical rot	*Laetiporus sulphureus*
22		**000**	**Stem Decays/Cankers**	
SEVERITY RATING 0 = 0-4% rotten 1 = 5-15% rotten 2 = 16-25% rotten 3 = 26-35% rotten 4 = 36-45% rotten 5 = 46-55% rotten 6 = 56-65% rotten 7 = 66-75% rotten 8 = 76-85% rotten 9 = 86-100% rotten				
	I	006	Black knot of cherry	*Apiosporina morbosa*
	I	007	Atropellis canker	*Atropellis piniphila*
	I	012	Black canker of aspen	*Ceratocystis fimbriata*
	I	025	Cryptosphaeria canker of aspen	*Cryptosphaeria populina*
	I	026	Cytospora canker of fir	*Cytospora abietis*
	I	028	Rust-red stringy rot	*Echinodontium tinctorium*
	I	029	Sooty-bark canker	*Encoelia pruinosa*
	N	034	Scleroderris canker	*Gremmeniella abietina*
	P	035	Amelanchier rust	*Gymnosporangium harknessianum*
	P	036	Cedar apple rust	*Gymnosporangium juniperi-virginianae*
	I	038	Hypoxylon canker of aspen	*Hypoxylon mammatum*
	I	047	Red ring rot	*Phellinus pini*
	I	048	Aspen trunk rot	*Phellinus tremulae*
	I	057	Cytospora canker of aspen	*Cytospora chrysosperma*
	P	058	Dothichiza canker	*Dothichiza populae*
	I	059	Red belt fungus	*Fomitopsis pinicola*
	I	060	Leucocytospora canker of spruce	*Leucocytospora kunzei*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
22 (cont.)		**000**	**Stem Decays/Canker**	
	I	061	Sooty bark canker	*Phibalis singulare*
	P	064	Tinder fungus	*Fomes fomentarius*
	I	066	Pinyon black stain	*Leptographium wagnerii*
	P	068	False tinder fungus	*Phellinus igniarius*
	P	071	Oyster mushroom	*Pleurotus ostreatus*
		074	Cedar brown pocket rot	*Poria sericeomollis*
		075	Lachnellula canker	*Lachnellula flavovirens*
		076	Strumella canker	*Strumella coryneoidea*
		077	Phomopsis blight	*Phomopsis juniperovora*
		078	Fusarium canker of yellow poplar	*Fusarium solani*
		079	Sterile conk of maple and beech	*Inonotus glomeratus*
		080	Canker of spruce	*Aleurodiscus spp.*
		081	Birch conk	*Piptoporus betulinusai*
		082	Canker	*Discocainia treleasei*
23		**000**	**Parasitic/Epiphytic Plants**	
SEVERITY RATING 1 = Hawksworth tree DMR rating = 1; light infection 2 = Hawksworth tree DMR rating = 2; light infection 3 = Hawksworth tree DMR rating = 3; medium infection 4 = Hawksworth tree DMR rating = 4; medium infection 5 = Hawksworth tree DMR rating = 5; heavy infection 6 = Hawksworth tree DMR rating = 6; heavy infection				
	I	005	White fir dwarf mistletoe	*Arceuthobium abietinumf. sp. concoloris*
	I	006	Lodgepole pine dwarf mistletoe	*Arceuthobium americanum*
	I	008	Western dwarf mistletoe	*Arceuthobium campylopodum*
	I	009	Limber pine dwarf mistletoe	*Arceuthobium cyanocarpum*
	I	010	Pinyon dwarf mistletoe	*Arceuthobium divaricatum*
	I	011	Douglas-fir dwarf mistletoe	*Arceuthobium douglasii*
	I	013	Larch dwarf mistletoe	*Arceuthobium laricis*
	I	017	Southwestern dwarf mistletoe	*Arceuthobium vaginatum subsp. crytopodum*
	I	021	Red fir dwarf mistletoe	*Arceuthobium abietinumf. sp. magnificae*
	I	022	Juniper true mistletoe	*Phoradendron juniperum*
		030	Elm phloem necrosis	*Mycoplasma*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
24		**000**	**Decline Complexes/ Dieback/Wilts**	
SEVERITY RATING 1 = Minor: minor crown symptoms 2 = Severe: severe crown symptoms				
	P	004	Ash decline/yellows	
	P	011	Larch decline	
	I	017	True fir pest complex	
	P	018	Western X disease	
	P	019	Pinewood nematode	*Bursaphelenchus xylophilus*
25		**000**	**Foliage Diseases**	
SEVERITY RATING 1 = Minor: <20% of foliage affected or <20% of crown in brooms 2 = Severe: >20% of foliage affected or >20% of crown in brooms				
	I	009	True fir needlecast	
	P	011	Cercospora blight of juniper	*Cercospora sequoiae*
	I	014	Ink spot of aspen	*Ciborinia whetzelii*
	P	015	Pine needle rust	*Coleosporium spp.*
	I	022	Elytroderma disease	*Elytroderma deformans*
	P	027	Brown felt blight	*Herpotrichia juniper*
	P	029	Hardwood anthracnose	*Kabatiella apocrypta*
	P	031	Spruce needle cast	*Lirula macrospora*
	P	033	White pine needle cast	*Lophodermella arcuata*
	I	034	Lophodermella needle cast	*Lophodermella spp.*
	I	035	Lophodermium needle cast	*Lophodermium spp.*
	I	036	Marssonina blight	*Marssonina populi*
	I	037	Melampsora rusts	*Melampsora medusa*
	P	039	Larch needle cast	*Meria laricis*
	P	040	Dothistroma needle blight	*Mycosphaerella pini*
	P	041	Brown felt blight of pines	*Neopeckia coulteri*
	P	042	Snow blight	*Phacidum abietis*
	I	050	Douglas-fir needle cast	*Rhabdocline spp.*
	P	055	Septoria leaf spot	*Septoria alnifolia*
	I	056	Septoria leaf spot and canker	*Septoria musiva*
	P	057	Sirococcus tip blight	*Sirococcus conigenus*
	P	058	Diplodia blight	*Sphaeropsis sapinea*
	P	059	Leaf blister of oak	*Taphrina caerulescens*
	I	060	Venturia leaf blight of maple	*Venturia acerina*
	I	061	Shepherd's crook	*Venturia tremulae*
	P	062	Dothistroma needle blight	*Dothistroma septospora*
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
	I	064	Broom rust	*Chrysomyxa arctostaphyli*
	P	065	Spruce needle rust	*Chrysomyxa weirii*
	P	067	Spruce needle cast	*Lophodermium picea*
	P	068	Hardwood leaf rusts	*Melampsora spp.*
	P	071	Spruce needle cast	*Rhizosphaera pini*
	I	073	Shephards crook	*Venturia populina*
		074	Delphinella shoot blight	*Delphinella abietis*
		075	Tar spot	*Rhytisma acerinum*
26		**000**	**Stem Rusts**	
SEVERITY RATING 1 = Branch infections located greater than 2 feet from tree bole 2 = Branch infections located between 6 inches and 2 feet from tree bole 3 = Bole infections or branch infections located within 6 inches of bole 4 = Topkill				
	I	001	White pine blister rust	*Cronartium ribicola*
	I	002	Western gall rust	*Peridermium harknessii*
	I	003	Stalactiform blister rust	*Cronartium coleosporioides*
	I	004	Comandra blister rust	*Cronartium comandrae*
	P	005	Pinyon blister rust	*Cronartium occidentale*
	P	011	Bethuli rust	*Peridermium bethuli*
	I	012	Limb rust	*Peridermium filamentosum*
		013	Southern cone rust	*Cronartium strobilinum*
27		**000**	**Broom Rusts**	
SEVERITY RATING 1 = Minor: <20% of crown in brooms 2 = Severe >20% of crown in brooms				
	I	001	Spruce broom rust	*Chrysomyxa arctostaphyli*
	P	002	Incense cedar broom rust	*Gymnosporangium libocedri*
	P	003	Juniper broom rust	*Gymnosporangium nidus-avis*
	I	004	Fir broom rust	*Melampsorella caryophyllacearum*
30		**000**	**Fire**	
SEVERITY RATING 1 = minor 2 = severe				
		031	Wild-fire	
		032	Human caused fire	
		033	Crown fire damage	
		034	Ground fire damage	
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
40		**000**	**Animal damage, source unknown**	
SEVERITY RATING 1 = minor 2 = severe				
41		**000**	**Wild Animals**	
SEVERITY RATING 1 = Minor: <20% of crown affected, bole damage is <50% circumference 2 = Severe: >20% of crown affected, bole damage is >50% circumference, upper 1/3 of crown is killed 4 = Earthworms are present 5 = Earthworms are absent				
	I	001	Bear	
	I	002	Beaver	
	I	003	Big game (deer)	
	I	004	Mice or voles	
	I	005	Pocket gophers	
	I	006	Porcupines	
	I	007	Rabbits or hares	
	I	008	Sapsucker	
	I	009	Squirrels	
	I	010	Woodpeckers	
	I	011	Moose	
		012	Elk	
		013	Deer	
		014	Feral pigs	
		015	Mountain beaver	
		016	Deer or elk	
		017	Earthworm	*Lumbricidae*
42		**000**	**Domestic Animals**	
SEVERITY RATING 1 = Minor <20% of crown affected, bole damage is <50% circumference 2 = Severe: >20% of crown affected, bole damage is >50% circumference, upper 1/3 of crown is killed				
	I	001	Cattle	
	I	002	Goats	
	I	003	Horses	
	I	004	Sheep	
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
50		**000**	**Abiotic Damage**	
SEVERITY RATING 1 = Minor: <20% of crown affected, bole damage is <50% circumference 2 = Severe: >20% of crown affected, bole damage is >50% circumference, upper 1/3 of crown is killed				
	I	001	Air pollutants	
	I	002	Chemical	
	I	003	Drought	
	I	004	Flooding/high water	
	I	005	Frost	
	I	006	Hail	
	I	007	Heat	
	I	008	Lightning	
	I	009	Nutrient imbalances	
	I	010	Radiation	
	I	011	Snow/ice	
	I	013	Wind-tornado	
	I	014	Winter injury	
	I	015	Avalanche	
	I	016	Mud-land slide	
	I	017	Volcano	
		018	Other geologic events	
		019	Mechanical (non-human caused)	
60		**000**	**Competition**	
SEVERITY RATING 1 = Minor: tree slightly deformed and has some live, terminal growth 2 = Severe: tree extremely deformed or has no live terminal, growth severely reduced relative to neighbor				
70		**000**	**Human Activities**	
SEVERITY RATING 1 = minor 2 = severe				
	I	001	Herbicides	
	I	003	Imbedded objects	
	I	004	Improper planting technique	
	I	005	Land clearing	
	I	006	Land use conversion	
	I	007	Logging damage	
	I	008	Mechanical	
	I	009	Pesticides	
	I	010	Roads	
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	Scientific Name
70 (cont.)		**000**	**Human Activities**	
	I	011	Soil compaction	
	I	012	Suppression	
	I	013	Vehicle damage	
	I	014	Road salt	
71		**000**	**Harvest**	
SEVERITY RATING 1 = minor 2 = severe				
80		**000**	**Multi-Damage (Insect/Disease)**	
SEVERITY RATING 801 = minor 802 = severe				
	I	001	Aspen defoliation	
	I	002	Subalpine fir mortality	
		004	Pinion pine decline	
90		000	Unknown	
SEVERITY RATING 0 = 0 – 9% affected 1 = 10 – 19% affected 2 = 20 – 29% affected 3 = 30 – 39% affected 4 = 40 - 49% affected 5 = 50 - 59% affected 6 = 60 - 69% affected 7 = 70 - 79% affected 8 = 80 - 89% affected 9 = 90 - 100% affected				

Category	Import.	Agent	Common Name	How to Code Severity (in actual %)
99			**Physical Effects**	
		001	Broken top	% of original height that is missing. For example, if a tree was originally 100 feet high, but 15 feet of the top is broken or missing, enter "15" in the severity code.
		002	Dead top	% of total tree height that is dead
		003	Limby (large limbs top to bottom)	% of total tree height with many limbs/knots
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	How to Code Severity (in actual %)
99 (cont.)			**Physical Effects**	
		004	Forked top	% of total tree height above fork
		005	Forked below merch top	% of the total length of the bole affected
		006	Crook or sweep	% of total tree height, which contains the crook or sweep
		007	Checks, bole cracks	% of total tree height, which contains a crack or check
		008	Foliage discoloration	% of foliage discolored
		009	Mortality (for plantation surveys only)	1 = dead tree
		010	Lack of seed source (for plantation surveys only)	If present, 100%
		011	Poor planting stock source (for plantation surveys only)	If present, 100%
		012	Poor growth/fading/foliage is yellowing and loss of needles is occurring	1 = minor (reduced growth) 2 = severe (affecting survival)
		013	Total board foot volume loss	% of total board foot volume loss
		014	Total cubic foot volume loss	% of total cubic foot volume loss
		015	Bark removal	% of tree circumference missing bark
		016	Foliage loss	1 = minor 2 = severe
		017	Sunscald	1 = minor 2 = severe
		018	Uproot	1 = uprooted tree
		019	Scorched foliage	% of foliage scorched
		020	Scorched bark	% of bark scorched
		021	Dieback source (for plantation surveys only)	1 = minor 2 = severe
		022	Poor crown form	1 = minor 2 = severe
		023	Severe forking	% of bole covered with forks
		026	Open wound	% of bole or trunk affected using the height and width of the wound. For example, if a tree is 100 feet tall and the wound covers 15 feet of the bole, enter a value of "15."
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Damage Agents (cont.)

Category	Import.	Agent	Common Name	How to Code Severity (in actual %)
99 (cont.)			**Physical Effects**	
		031	Broken or dead branches	% of branches broken or dead
		033	Damaged shoots, buds, or foliage (for plantation surveys only)	1 = minor 2 = severe
		034	Excessively deformed sapling	% of sapling deformed
		036	Fire scar	% of bole covered by fire scar
		037	Leaning tree	% lean from vertical
		038	Charred bark	Not recorded unless cambium is killed from heating
Importance (column 2) Key: I = most important, P = present, N = nursery pest				

Tree Parts

Code	Description
UN	Unspecified
TO	Top
FO	Foliar (crown)
LI	Limb
BO	Bole, other than Top or Base
BA	Base
RO	Roots
WT	Whole Tree
TT	Top Third of Crown
MT	Middle Third of Crown
BT	Bottom Third of Crown

APPENDIX L: ACCURACY STANDARDS

Settings Measurements

Field	Tolerance
Project Name	No Errors
Region	No Errors
Proclaimed Forest	No Errors
District	No Errors
Location	No Errors
Stand Number	No Errors
Ownership	No Errors
State	No Errors
County	No Errors
Administrative Forest	No Errors
Date	No Errors
Photo ID	No Errors
Exam Level	No Errors
Exam Purpose	No Errors
Stratum	No Errors
Existing Vegetation Composition Type	No Errors
Potential Vegetation Reference	No Errors
Potential Vegetation	No Errors
Structure	No Errors
Capable Growing Area	± 10 Percent
Fuel Model	No Errors
Elevation	± 2 Contour Intervals
Aspect	± 45 degrees
Slope	± 10 Percent
Slope Position	± 1 class
Acres	No Errors
Radial Growth Interval	No Errors
Radial Growth Interval #2	No Errors
Height Growth Interval	No Errors
Fuel Photo Reference	No Errors
Precision Protocol	No Errors
Examiner	No Errors
Stand Remarks	No Errors
Damage Category	No Errors
Damage Agent	No Errors
Damage Severity	No Errors
Species of Management Interest	No Errors
Sketch Map and Traverse Notes	

Sample Design Criteria

Field	Tolerance
Form Type	
Selection Method Type	No Errors
Sample Expansion Factor	No Errors
Plots Installed	No Errors
Sub population Filter	No Errors
Starting Azimuth	No Errors
Sample Design Remarks	No Errors
Selection Criteria Number	No Errors
Sub pop Variable	No Errors
Sub pop Minimum Value	No Errors
Sub pop Maximum Value	No Errors

Plot Data

Field	Tolerance
Plot Number	No Errors
Plot Latitude	No Errors
Plot Longitude	No Errors
Capable Grow Area	± 10 Percent
Plot Aspect	± 45°
Plot Slope	± 10 Percent
Slope Position	± 1 Class
Slope Horizontal Shape	± 1 Class
Slope Vertical Shape	± 1 Class
Plot Elevation	± 2 Contour Intervals
Existing Vegetation	No Errors
Potential Vegetation	Accurate to series understory union and phases
Plot History	No Errors
Plot History Date	Year required if field 12 is other than code 10 or blank
Fuel Model	No Errors
Residual Descriptive Code	No Errors
Distance to Seed wall	± 100 feet
Plot Remarks	

Tree Data

Field	Tolerance
Plot Number	No Errors
Tag ID Number	No Errors
Tree Status	No Errors allowed in recognizing and coding down trees
Site/Growth Trees	No Errors
Tree Species	No Errors
Tree Count	Height Range / Diameter Range / Trees on Point / Tolerance *All / All / 0 / 0 trees ≤0.5 feet / / 1-5 / ± 2 trees ≤0.5 feet / / 6+ / ± 50% >0.5 feet / <0.5 in. / 1-5 / ± 1 tree >0.5 feet / <0.5 in / 6+ / ± 20% All / .5" - breakpoint d.b.h / 1-5 / ± 1 tree All / .5" - breakpoint d.b.h. / 6+ / ± 10% All / breakpoint d.b.h. + / 1+ / 0 trees *There is no tolerance for recording a tree when none are actually present in any of the above size classes. The recording of a fixed plot tree when none are present will result in a single discrepancy. The recording of a variable plot tree when none are present will result in an unacceptable unit. 1/ Grouping criteria are standardized to facilitate stand exam contract inspection and payment. However, distinguishing characteristics other than tree class, species, and size class may warrant individual tree recording or more refined grouping criteria. Such characteristics include age, crown ratio, crown class, or incidence of damage.
Number Stems	No Errors
DBH/DRC	No Errors <.5 inch ± .1 Inch .5 inch - 13.9 inches ± .2 Inch 14.0 inches - 23.9 inches ± .3 Inch 24.0 inches - 34.9 inches ± .5 Inch 35.0 inches + ± .1 Inch Borderline variable plot trees ± 1 Inch Estimated DRC
Height	± 10 %
Height to Crown	± 10 %

Tree Data (cont.)

Field	Tolerance
Radial Growth	± 1/20 inch
Radial Growth #2	± 1/20 inch
Height Growth	± 1 foot trees >6 feet ± 0.1 foot trees ≤6 feet
Tree Age	± 10% (Based on actual tree ring count at breast height for trees ≥ 3.0" DBH otherwise based on total age recorded.)
Crown Ratio	± 10 %
Crown Class	No Errors
Crown width	No Errors
Wildlife Use	No Errors
Log/Snag Decay	No Errors
Cone Serotiny	No Errors
Damage Category	No Errors

Damage Category	Damage Category Description	Tolerance
11	Bark Beetles	No misses on live trees with a severity of 2 or greater.
12	Defoliators	No misses on live trees with a severity of 3 or greater.
13-17	Other Insects	No misses of shoot moths or weevils on live trees.
21	Root/Butt Diseases	No misses on live trees with a severity of 2 or greater.
22	Stem Decays/Cankers	No misses on live trees with a severity of 3 or greater.
25	Foliage Diseases	No misses on Elytroderma on live trees.
41-42	Animal Damage	No misses on live trees with terminal leader damage or with greater than 1/4 of bole circumference affected.
50	Abiotic Damage	No misses on wind, snow, or ice bending, breakage, or bole cracks and frost damage to shoots on trees less than 1-inch diameter and lightning.
70	Human Damage	No misses on live trees for logging damage or fire if the damage affects greater than 1/4 of the bole circumference or if an open wound is in contact with the ground.

Damage Agent	
Damage Part	

Tree Data (cont.)

Damage Category	Damage Category Description	Tolerance
Damage Severity		
Tree Remarks		

Ground Surface Cover

Field	Tolerance
Plot Number	No Errors
Cover Type	No Errors
Cover Percent	± 10 Percent

Vegetation Composition

Field	Tolerance
Plot Number	No Errors
Live /Dead	No Errors
Layer	No Errors
Life form	No Errors
Species	No Error in species level identification for dominant, common or community type indicator plants. No plant name can be repeated within a layer.
Minimum Height	± 10% of Height
Average Height	± 10% of Height
Maximum Height	± 10% of Height
Canopy Cover	± 10 Percent
Average Diameter	No Errors
Maturity	No Errors
Cover Remarks	
User Field	

Down Woody

Field	Tolerance
Plot Number	No Errors
First Duff	± 1/2 inch
Second Duff	± 1/2 inch
Fuel Depth	No Errors
Twigs 0 - .24	± 40%
Twigs .25 - .99	± 30%
Branch 1.0 - 2.99	± 20%
Volume 1	
Weight 1	
Volume 2	
Weight 2	
Volume 3	
Weight 3	
Volume 4	
Weight 4	
Piece Count	No missed pieces
Decay Class	No Errors
Diameter	± 1 inch on measurements
Piece Length	No Errors

APPENDIX M: GLOSSARY OF TERMS

Term	Definition
Aspect	A position facing or commanding a given direction; exposure. Aspect is the compass direction of the prevailing slope with respect to true north.
Azimuth	A horizontal angular measure from true north to an object of interest.
Basal Area	The cross-sectional area of the stem or stems of a plant or of all plants in a stand, generally expressed as square units per unit area. For trees, measured at 4.5 feet above ground, for forbs and grasses, measured at the root crown.
Bole Length	The straight-line distance measured parallel to the main bole of a tree, from its base to its tip.
Breast Height	A point located on the uphill side of the main stem, by measuring 4.5 feet along the uphill side of the bole from ground level or the predominant root collar. Preclude slight, non-compacted litter accumulations when establishing breast height.
CALVEG	Classification and Assessment with LANDSAT of Visible Ecological Groupings. It is a California-wide system for classifying vegetative and non-vegetative cover types. The primary cover type relates to life form and uses a 3-character alpha code.
Canopy Cover	The percent of a fixed area covered by the crown of an individual plant species or delimited by the vertical projection of its outermost perimeter; small openings in the crown are included.
Compacted Live Crown Ratio	The percent of the total height of the tree that supports a full, live crown. For trees that have uneven length crowns, occularly transfer lower branches to fill holes in the upper portions of the crown, until a full, even crown is created.
Compartment	A land area, usually between 3,000 and 8,000 acres, easily identified on the ground by physical features. A compartment is comparable in size to a sub-watershed, or landscape management unit. It is used as a convenience for maintaining stand records and planning vegetation management projects.
Crown Class	The relative position of the tree or shrub crown with respect to the competing vegetation around it. Crown class for each tree or shrub is judged in the context of its immediate environment, that its, those trees or shrubs which are competing for sunlight with the subject tree or shrub.
Crown Length	The vertical distance from the top of the leader to the base of the crown, measured to the lowest live branch-whorl with live branches in at least 3 quadrants, and continuous with the main crown.
Crown Ratio	The ratio of compacted live crown length to bole length. Lengths are measured parallel to the bole from the base of the tree to the tip.
DEM	Digital Elevation Model. USGS geographic elevation data distributed in raster form. Digital representation of the shape of the earth's surface. Typically, digital elevation data consists of arrays of values that represent topographic elevations measured at equal intervals on the Earth's surface.

Glossary of Terms (cont.)

Term	Definition
Diameter	The length of a straight-line segment passing through the center of an item and terminating at its periphery.
Diameter at Breast Height (DBH)	A measure at breast height (4.5 feet), outside bark, of the tree bole, perpendicular to the tree bole.
Diameter at Root Collar (DRC)	The straight line passing through the center of a cross section of a bole measured at the root collar of a shrub or tree.
Down Log	Stem material (conifer or hardwood) that is lying on the ground. If a stem material is leaning more than 45 degrees from vertical, is not self-supporting, and/or in contact with the ground, it is considered a down log.
Down Woody Material	Woody pieces of trees and shrubs that have been uprooted (no longer supporting growth) or severed from their root system, not self-supporting, and are lying on the ground.
Duff Layer	Duff is the fermentation and humus layer of the forest floor. It does not include the freshly cast material in the litter layer. The top of the duff is where needles, leaves, and other cast-off vegetative material have noticeably begun to decompose. Individual particles usually will be bound by fungi mycelium. When moss is present, the top of the duff is just below the green portion of the moss. The bottom of the duff is the start of the soil ("A" horizon).
Elevation	Vertical distance from a datum, usually mean sea level, to a point or object on the earth's surface. Not to be confused with altitude, which refers to points above the earth's surface.
Fuel Bed	The fuel bed is the accumulation of dead, woody residue on the forest floor. It begins at the top of the duff layer and above. It includes litter, dead limbwood and bolewood from tree species, as well as dead material from shrub, herbaceous, and grass species.
Fuel Model	Mathematical descriptions of fuel properties (e.g., fuel load and fuel depth) that are used as inputs to calculations of fire danger indices and fire behavior potential.
GPS	Global Positioning System. A network of radio-emitting satellites deployed by the U.S. Department of Defense. Ground-based GPS receivers can automatically derive accurate surface coordinates for all kinds of GIS, mapping, and surveying data collection.
Ground Level	The forest floor, made up by soil and duff layer. It does not include unincorporated woody debris that may rise above the ground line. In reference to a point of measure, it is the highest point of the ground touching the base of the object being referenced.
Group Talley	A count of one or more items of the same type or species and recorded as a single line entry.
Growth	A measure of the increase in growth layers for a specified time frame.
Height Growth	The increase in height over a set period of time.
Intersect Diameter	Measurement of diameter at a point where the sampling plane intersects the geometric center of the object being tallied. No adjustment is made for stem irregularities at the point of intersection.

Glossary of Terms (cont.)

Term	Definition
Lean (Tree)	The deflection from vertical, > 15 degrees of a straight line passing through the geometric center of the base and top of the main stem.
Length	The measurement of the extent of something along its greatest dimension.
Life Form	Species and individuals that are grouped into classes on the basis of their similarities in structure and function. A growth form that displays an obvious relationship to important environmental factors.
Limiting Distance	A comparative measurement between the subplot radius and the distance from the subplot center to the center of the object. The comparison is used to determine whether the object is IN or OUT of the fixed area subplot. **IN** - The object is "in" if the measured distance is equal to or less than the subplot radius. **OUT** - The object is "out" if the measured distance is greater than the subplot radius.
Live Crown Length	The straight-line distance measured parallel to the main bole of a tree, from the top of the live crown to the base of the live crown.
Ownership	The identification of the legal owner/administrator on both the surface and subsurface estates.
Plant Species	The major subdivision of a genus or subgenus of a plant being described or measured.
Plot Configuration	The size and shape of the sampling unit (plot) and the spatial arrangement of subplots within that unit.
Plot	A sub-sample of a plot or stand exam. This is the unit on which data are recorded to individual trees, snags, logs, understory vegetation, and fuels. Data can be collected on either a fixed area or variable radius area.
Proclaimed Forest	Units of the National Forest System as originally proclaimed or designated by Congress.
Quadratic Mean Diameter	The diameter of the tree of average basal area.
Radial Growth Increment	The increase in tree radius over a period of time at breast height, or occasionally at the base.
Random Sample	Any method of sample selection based on the theory of probability (degree of certainty). At any stage of the operation of selection, the probability of any set of units being selected must be known. It is the only method that can provide a measure of precision of the estimate.
Reconciliation Code	A code used to reflect the status of an individually tallied item with regards to previous surveys.
Slope	A deviation from the horizontal.
Species	A code that represents a fundamental category of taxonomic classification of an organism.
Stand	A spatially continuous group of trees and associated vegetation having similar structures and growing under similar soil and climatic conditions.

Glossary of Terms (cont.)

Term	Definition
Stand Exam Grid	Basic data collection method for stand exams. It consists of a set of plots, separated by equal distances on a grid pattern. The lines of the grid (transects) are oriented in cardinal directions. There is a predetermined distance between plots. The number of transects and grid plots will vary depending upon the size and shape of the stand.
Stratified Sample	A method of sampling forest resources where stands or polygons of similar properties are lumped into strata. This improves the efficiency of an inventory by reducing the variability within a given population. The less variability there is within a strata, the fewer samples will need to be taken to achieve a statistically valid result.
Stratum	A group of stands within a condition class; similar characteristics such as forest type, tree size class, and canopy density.
Stump	The woody base of a tree remaining in contact with the soil after the trunk or main stem has been severed at a point less than 4.5 feet above ground height (measured on the uphill side).
Tree	A woody perennial plant, typically large, with a single well-defined stem carrying a more or less definite crown.
Tree Age	Total age of the above ground stem of a tree (not age of the root stock or the total age from seed). Total age is usually the annual ring count to the pith of the tree at breast height plus an estimate of the number of years it took the tree to reach breast height.

APPENDIX N: FUEL MODELS

The original 13 fuel models are from "**Aids to Determining Fuel Models for Estimating Fire Behavior**," Hal E. Anderson, INT-122, 1982. The remaining fuel models are from "Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model" by Joe H. Scott and Robert E. Burgan. RMRS –GTR-153. June 2005.

Fuel Model	Fuel Model Code	Fuel Model Name	Fuel Type	Model Set	Fuel 1-Hr	Fuel 10-Hr	Fuel 100-Hr	Fuel Bed Depth
1		Short grass (1 foot)	Grass and grass-dominated	Original 13	0.74	0	0	1
2		Timber (grass and understory)	Grass and grass-dominated	Original 13	2	1	0.500	1
3		Tall grass (2.5 feet)	Grass and grass-dominated	Original 13	3.01	0	0	2.50
4		Chaparral (6 feet)	Chaparral and shrub fields	Original 13	5.01	4.010	2	6
5		Brush (2 feet)	Chaparral and shrub fields	Original 13	1	0.500	0	2
6		Dormant brush, hardwood slash	Chaparral and shrub fields	Original 13	1.50	2.500	2	2.50
7		Southern rough	Chaparral and shrub fields	Original 13	1.13	1.870	1.500	2.50
8		Closed timber litter	Timber litter	Original 13	1.50	1	2.500	0.20
9		Hardwood litter	Timber litter	Original 13	2.92	0.410	0.150	0.20
10		Timber (litter and understory)	Timber litter	Original 13	3.01	2	5.010	1
11		Light logging slash	Slash	Original 13	1.50	4.51	5.510	1
12		Medium logging slash	Slash	Original 13	4.01	14.03	16.53	2.30
13		Heavy logging slash	Slash	Original 13	7.01	23.04	28.05	3
91	NB1	Urban/Developed	Nonburnable	Scott and Burgan	0	0	0	0
92	NB2	Snow/Ice	Nonburnable	Scott and Burgan	0	0	0	0
93	NB3	Agricultural	Nonburnable	Scott and Burgan	0	0	0	0
98	NB4	Open Water	Nonburnable	Scott and Burgan	0	0	0	0
99	NB5	Bare Ground	Nonburnable	Scott and Burgan	0	0	0	0
101	GR1	Short, Sparse Dry Climate Grass (Dynamic)	Grass	Scott and Burgan	0.10	0	0	0.40
102	GR2	Low Load, Dry Climate Grass (Dynamic)	Grass	Scott and Burgan	0.10	0	0	1

Fuel Models (cont.)

Fuel Model	Fuel Model Code	Fuel Model Name	Fuel Type	Model Set	Fuel 1-Hr	Fuel 10-Hr	Fuel 100-Hr	Fuel Bed Depth
103	GR3	Low Load, Very Coarse, Humid Climate Grass (Dynamic)	Grass	Scott and Burgan	0.10	0.40	0	2
104	GR4	Moderate Load, Dry Climate Grass (Dynamic)	Grass	Scott and Burgan	0.25	0	0	2
105	GR5	Low Load, Humid Climate Grass (Dynamic)	Grass	Scott and Burgan	0.40	0	0	1.50
106	GR6	Moderate Load, Humid Climate Grass (Dynamic)	Grass	Scott and Burgan	0.10	0	0	1.50
107	GR7	High Load, Dry Climate Grass (Dynamic)	Grass	Scott and Burgan	1	0	0	3
108	GR8	High Load, Very Coarse, Humid Climate Grass (Dynamic)	Grass	Scott and Burgan	0.50	1	0	4
109	GR9	Very High Load, Humid Climate Grass (Dynamic)	Grass	Scott and Burgan	1	1	0	5
121	GS1	Low Load, Dry Climate Grass-Shrub (Dynamic)	Grass-Shrub	Scott and Burgan	0.20	0	0	0.90
122	GS2	Moderate Load, Dry Climate Grass-Shrub (Dynamic)	Grass-Shrub	Scott and Burgan	0.50	0.500	0	1.50
123	GS3	Moderate Load, Humid Climate Grass-Shrub (Dynamic)	Grass-Shrub	Scott and Burgan	0.30	0.250	0	1.80
124	GS4	High Load, Humid Climate Grass-Shrub (Dynamic)	Grass-Shrub	Scott and Burgan	1.90	0.300	0.100	2.10
141	SH1	Low Load, Dry Climate Shrub (Dynamic)	Shrub	Scott and Burgan	0.25	0.250	0	1
142	SH2	Moderate Load, Dry Climate Shrub	Shrub	Scott and Burgan	1.35	2.400	0.750	1
143	SH3	Moderate Load, Humid Climate Shrub	Shrub	Scott and Burgan	0.45	3	0	2.40
144	SH4	Low Load, Humid Climate Timber-Shrub	Shrub	Scott and Burgan	0.85	1.150	0.200	3
145	SH5	High Load, Dry Climate Shrub	Shrub	Scott and Burgan	3.60	2.100	0	6

Fuel Models (cont.)

Fuel Model	Fuel Model Code	Fuel Model Name	Fuel Type	Model Set	Fuel 1-Hr	Fuel 10-Hr	Fuel 100-Hr	Fuel Bed Depth
146	SH6	Low Load, Humid Climate Shrub	Shrub	Scott and Burgan	2.90	1.450	0	2
147	SH7	Very High Load, Dry Climate Shrub	Shrub	Scott and Burgan	3.50	5.300	2.200	6
148	SH8	High Load, Humid Climate Shrub	Shrub	Scott and Burgan	2.05	3.400	0.850	3
149	SH9	Very High Load, Humid Climate Shrub (Dynamic)	Shrub	Scott and Burgan	4.50	2.450	0	4.40
161	TU1	Low Load, Dry Climate Timber-Grass-Shrub (Dynamic)	Timber-Understory	Scott and Burgan	0.20	0.900	1.500	0.60
162	TU2	Moderate Load, Humid Climate Timber-Shrub	Timber-Understory	Scott and Burgan	0.95	1.800	1.250	1
163	TU3	Moderate Load, Humid Climate Timber-Grass-Shrub (Dynamic)	Timber-Understory	Scott and Burgan	1.10	0.150	0.250	1.30
164	TU4	Dwarf Conifer With Understory	Timber-Understory	Scott and Burgan	4.50	0	0	0.50
165	TU5	Very High Load, Dry Climate Timber-Shrub	Timber-Understory	Scott and Burgan	4	4	3	1
181	TL1	Low Load Compact Conifer Litter	Timber Litter	Scott and Burgan	1	2.200	3.600	0.20
182	TL2	Low Load Broadleaf Litter	Timber Litter	Scott and Burgan	1.40	2.300	2.200	0.200
183	TL3	Moderate Load Conifer Litter	Timber Litter	Scott and Burgan	0.50	2.200	2.800	0.30
184	TL4	Small Downed Logs	Timber Litter	Scott and Burgan	0.50	1.500	4.200	0.40
185	TL5	High Load Conifer Litter	Timber Litter	Scott and Burgan	1.15	2.500	4.400	0.60
186	TL6	Moderate Load Broadleaf Litter	Timber Litter	Scott and Burgan	2.40	1.200	1.200	0.30
187	TL7	Large Downed Logs	Timber Litter	Scott and Burgan	0.30	1.400	8.100	0.40
188	TL8	Long-Needle Litter	Timber Litter	Scott and Burgan	5.80	1.400	1.100	0.30
189	TL9	Very High Load Broadleaf Litter	Timber Litter	Scott and Burgan	6.65	3.300	4.150	0.60
201	SB1	Low Load Activity Fuel	Slash-Blowdown	Scott and Burgan	1.50	3	11	1
202	SB2	Moderate Load Activity Fuel or Low Load Blowdown	Slash-Blowdown	Scott and Burgan	4.50	4.250	4	1

Fuel Models (cont.)

Fuel Model	Fuel Model Code	Fuel Model Name	Fuel Type	Model Set	Fuel 1-Hr	Fuel 10-Hr	Fuel 100-Hr	Fuel Bed Depth
203	SB3	High Load Activity Fuel or Moderate Load Blowdown	Slash-Blowdown	Scott and Burgan	5.50	2.750	3	1.20
204	SB4	High Load Blowdown	Slash-Blowdown	Scott and Burgan	5.25	3.500	5.250	2.70

Detailed Description of the Fuel Models

Code	Detailed Description
1	Contains fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Generally less than one-third of the area contains shrubs or timber. Grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations. Annual and perennial grasses are included in this fuel model
2	Herbaceous material with litter and dead-down stem wood from the open shrub or timber overstory. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area. Stand may include clumps and may include pinyon-juniper
3	Stands are tall, averaging about three feet, but considerable variation may occur. Approximately one-third or more of the stand is considered dead and cured. May include cultivated grains that have not been harvested, tall prairie, and marshland grasses
4	Stands of mature shrubs, 6 feet or more tall such as California mixed chaparral, the high pocosin along the east coast, the pine barrens of New Jersey, or the closed jack pine stands of the north-central states. Besides flammable foliage, stand may contain dead woody material. May contain a deep litter layer.
5	Shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood qualify: laurel, vine maple, alder, or even chaparral, manzanita, or chamise.
6	The shrubs are older, but not as tall as model 4, nor do they contain as much fuel as model 4. This model covers a broad range of shrub conditions: intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. May include hardwood slash that has cured. Pinyon-juniper shrub lands may be represented.
7	Stands of shrubs are generally between 2 and 6 feet high. Palmetto-galliberry understory, with a pine overstory, are typical. Low pocosin may be represented. Black spruce shrub combinations in Alaska may also be represented.
8	Contains closed canopy stands of short needle conifers or hardwoods that have leafed out. The compact litter layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present. Representative conifer types are white pine, lodgepole pine, spruce, fir, and larch.
9	Both long-needle conifer stands and hardwood stands, especially the oak-hickory types, are typical. Closed stands of long-needled pine like ponderosa, Jeffrey, red pines, or southern pine plantations are grouped in this model. May contain concentrations of dead-down woody material.

Detailed Description of the Fuel Models (cont.)

Code	Detailed Description
10	Dead-down fuels include quantities of 3-inch or larger limb wood resulting from over maturity or natural events that create a large load of dead material on the forest floor. Any forest type may be considered if heavy down material is present; examples are insect- or disease-ridden stands, wind thrown stands, overmature situations with deadfall, and aged light thinning or partial cut slash.
11	Contains slash and herbaceous material intermixed with slash. Light partial cuts or thinning operations in mixed conifer stands, hardwood stands, and southern pine harvests are considered. Clearcuts generally produce more slash than represented here. The less than 3-inch material load is less than 12 tons per acre. The greater than 3 inch is represented by not more than 10 pieces, 4 inches in diameter, along a 50 foot transect
12	The visual impression is dominated by slash and much of it is less than 3 inches in diameter. The fuels are well distributed. Heavily thinned conifer stands; clearcuts, and medium or heavy partial cuts are represented. The material larger than 3 inches is represented by encountering 11 pieces, 6 inches in diameter along a 50 foot transect
13	There is a continuous layer of slash. Large quantities of material larger than 3 inches are present. Clearcuts and heavy partial cuts in mature and over mature stands are depicted where the slash load is dominated by the greater than 3 inch diameter material. Fuels less than 3 inches are generally only 10 percent of the total load. May include situations where the slash still has “red” needles attached.
91	Land covered by urban and suburban development. The area must not support wildland fire spread. In some cases the area may experience structural fire losses during a wildland fire incident; however, structure ignition in those cases is either house-to-house or by firebrands, neither of which is directly modeled using fire behavior fuel models. If sufficient vegetation surrounds structures such that wildland fire spread is possible, then choose a fuel model appropriate for the wildland vegetation.
92	Land covered by permanent snow and ice. Areas covered by seasonal snow and ice can be mapped to two different fuels models.
93	Agricultural land maintained in a nonburnable condition; examples include irrigated annual crops, mowed or tilled orchards, and so forth. However, there are many agricultural areas that are not kept in a non burnable condition. For example, grass is often allowed to grow beneath vines or orchard trees, and wheat or similar crops are allowed to cure before harvest; in those cases use a different fuel model.
98	Land covered by open bodies of water such as lakes, rivers and oceans
99	Land devoid of enough fuel to support wildland fire spread. Such areas include gravel pits, arid deserts with little vegetation, sand dunes, rock outcroppings, beaches and so forth.
101	The primary carrier of fire is sparse grass, though small amounts of fine fuel may be present. The grass is generally short, either naturally or by grazing, and may be sparse or discontinuous. The moisture extraction is indicative of a dry climate fuelbed, but may also be applied in high-extinction moisture fuelbeds because in both cases predicted spread rate and flame length are low compare to other grass models.
102	The primary carrier of fire is grass, though small amounts of fine dead fuel may be present. Load is greater than 101, and fuelbed may be more continuous. Shrubs, if present, do not affect fire behavior.
103	The primary carrier of fire is continuous, coarse, humid-climate grass. Grass and herb fuel load is relatively light; fuelbed depth is about 2 feet. Shrubs are not present in significant quantity to affect fire behavior.

Detailed Description of the Fuel Models (cont.)

Code	Detailed Description
104	The primary carrier of fire is continuous, dry-climate grass. Load and depth are greater than 102; fuelbed depth is about 2 feet.
105	The primary carrier of fire is humid-climate grass. Load is greater than 103 but depth is lower, about 1-2 feet.
106	The primary carrier of fire is continuous humid-climate grass. Load is greater than 105 but depth is about the same. Grass is less coarse than 105
107	The primary carrier of fire is continuous dry-climate grass. Load and depth are greater than 104. Grass is about 3 feet tall.
108	The primary carrier of fire is continuous, very coarse, humid-climate grass. Load and depth are greater than 106. Spread rate and flame length can be extreme if grass is fully cured.
109	The primary carrier of fire is dense, tall, humid-climate grass. Load and depth are greater than 108, about 6 feet tall. Spread rate and flame length can be extreme if grass is fully or mostly cured.
121	The primary carrier of fire is grass and shrubs combined. Shrubs are about 1 foot high, grass load is low. Spread rate is moderate; flame length is low. Moisture of extinction is low.
122	The primary carrier of fire is grass and shrubs combined. Shrubs are 1 to 3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction is low.
123	The primary carrier of fire is grass and shrubs combined. Moderate grass/shrub load, average grass/shrub depth less than 2 feet. Spread rate is high; flame length moderate. Moisture of extinction is high.
124	The primary carrier of fire is grass and shrubs combined. Heavy grass/shrub load, depth greater than 2 feet. Spread rate high; flame length very high. Moisture of extinction is high.
141	The primary carrier of fire is woody shrubs and shrub litter. Low shrub fuel load, fuelbed about 1 foot; some grass may be present. Spread rate is very low; flame length very low.
142	The primary carrier of fire is woody shrubs and shrub litter. Moderate fuel load (higher than 141), depth about 1 foot, no grass fuel present. Spread rate is very low; flame length low.
143	The primary carrier of fire is woody shrubs and shrub litter. Moderate shrub load, possibly with pine overstory or herbaceous fuel, fuel bed depth 2 to 3 feet. Spread rate is low; flame length low.
144	The primary carrier of fire is woody shrubs and shrub litter. Low to moderate shrub and litter load, possibly with pine overstory, fuel bed depth about 3 feet. Spread rate is high; flame length moderate.
145	The primary carrier of fire is woody shrubs and shrub litter. Heavy shrub load, depth 4-6 feet. Spread rate very high; flame length very high. Moisture of extinction is high.
146	The primary carrier of fire is woody shrubs and shrub litter. Dense shrubs, little or no herbaceous fuel, fuelbed depth about 2 feet. Spread rate is high; flame length high.
147	The primary carrier of fire is woody shrubs and shrub litter. Very heavy shrub load, depth 4 to 6 feet. Spread rate lower than 146, but flame length similar. Spread rate is high, flame length is very high.

Detailed Description of the Fuel Models (cont.)

Code	Detailed Description
148	The primary carrier of fire is woody shrubs and shrub litter. Dense shrubs, little or no herbaceous fuel, fuelbed depth about 3 feet. Spread rate is high; flame length high.
149	The primary carrier of fire is woody shrubs and shrub litter. Dense, finely branched shrubs with significant fine dead fuel, about 4-6 feet tall; some herbaceous fuel may be present. Spread rate is high; flame length very high.
161	The primary carrier of fire is low load of grass and/or shrub with litter. Spread rate is low; flame length is low.
162	The primary carrier of fire is moderate litter load with shrub component. High extinction moisture. Spread rate is moderate; flame length is low.
163	The primary carrier of fire is moderate forest litter with grass and shrub components. High extinction moisture. Spread rate is high; flame length is moderate.
164	The primary carrier of fire is short conifer trees with grass or moss understory. Spread rate is moderate; flame length is moderate.
165	The primary carrier of fire is heavy forest litter with a shrub or small tree understory. Spread rate is moderate; flame length is moderate.
181	The primary carrier of fire is compact forest litter. Light to moderate load, fuels 1 to 2 inches deep. May be used to represent a recently burned forest. Spread rate is very low; flame length is very low.
182	The primary carrier of fire is broadleaf (hardwood) litter. Low load, compact broadleaf litter. Spread rate is very low; flame length is very low.
183	The primary carrier of fire is moderate load conifer litter, light load of coarse fuels. Spread rate is very low; flame length low.
184	The primary carrier of fire is moderate load of fine litter and coarse fuels. Includes small diameter downed logs. Spread rate is low; flame length low.
185	The primary carrier of fire is high load of fine litter; light slash or mortality fuel. Spread rate is low; flame length low.
186	The primary carrier of fire is moderate load broadleaf litter, less compact than 182. Spread rate is very moderate; flame length is low.
187	The primary carrier of fire is heavy load of forest litter, includes large diameter downed logs. Spread rate low; flame length low.
188	The primary carrier of fire is moderate load long-needle pine litter, may include small amount of herbaceous load. Spread rate is moderate; flame length low.
189	The primary carrier of fire is very high load, fluffy broadleaf litter. This can also be used to represent heavy needle-drape. Spread rate is very moderate; flame length moderate.
201	The primary carrier of fire is light dead and down activity fuel. Fine fuel load is 10 to 20 t/ac weighted towards fuels 1 to 3 inch diameter class; depth is less than 1 foot. Spread rate is moderate; flame length moderate.
202	The primary carrier of fire is moderate dead and down activity fuel or light blowdown. Fine fuel load is 7 to 12 t/ac, evenly distributed across 0 to 0.25, 0.25 to 1, and 1 to 3 inch diameter classes, depth is about 1 foot. Blowdown is scattered, with many trees still standing. Spread rate is moderate; flame length moderate.
203	The primary carrier of fire is heavy dead and down activity fuel or moderate blowdown. Fine fuel load is 7 to 12 t/ac, weighted toward 0 to 0.25 inch diameter class, depth is more than 1 foot. Blowdown is moderate; trees compacted to near the ground. Spread rate is high; flame length high.

Detailed Description of the Fuel Models (cont.)

Code	Detailed Description
204	The primary carrier of fire is heavy blowdown fuel. Blowdown id total, fuelbed is not compacted, most foliage and fine fuel still attached to blowdown. Spread rate is very high; flame length very high.