

# 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	209	Bristlecone pine
SAF	210	Interior Douglas-fir
SAF	211	White fir
SAF	216	Blue spruce
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	239	Pinyon - juniper
SAF	240	Arizona cypress
SAF	241	Western live oak
SAF	242	Mesquite
SAF	2018	Whitebark pine

## 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
SRM	109	Ponderosa pine - shrubland
SRM	110	Ponderosa pine - grassland
SRM	201	Blue oak woodland
SRM	203	Riparian woodland
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	215	Valley grassland
SRM	216	Montane meadows
SRM	217	Wetlands
SRM	301	Bluebunch wheatgrass - blue grama
SRM	303	Bluebunch wheatgrass - western wheatgrass
SRM	310	Needle-and-thread - blue grama
SRM	313	Tufted hairgrass - sedge
SRM	317	Bitterbrush - bluebunch wheatgrass
SRM	320	Black sagebrush - bluebunch wheatgrass
SRM	322	Curleaf mountain-mahogany - bluebunch wheatgrass
SRM	401	Basin big sagebrush
SRM	402	Mountain big sagebrush
SRM	403	Wyoming big sagebrush
SRM	405	Black sagebrush
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	Curleaf mountain-mahogany
SRM	416	True mountain-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	502	Grama - galleta
SRM	503	Arizona chapparal
SRM	504	Juniper - pinyon pine woodland
SRM	505	Grama - tobosa shrub
SRM	506	Creosotebush - bursage
SRM	507	Palo Verde - cactus
SRM	508	Creosotebush - tarbush
SRM	509	Oak - juniper woodland and mahogany-oak
SRM	601	Bluestem prairie
SRM	604	Bluestem - grama prairie
SRM	605	Sandsage prairie
SRM	606	Wheatgrass - bluestem - needlegrass
SRM	607	Wheatgrass - needlegrass
SRM	608	Wheatgrass - gama - needlegrass
SRM	609	Wheatgrass - gama
SRM	610	Wheatgrass
SRM	611	Blue grama - buffalograss
SRM	612	Sagebrush - grass
SRM	613	Fesque grassland
SRM	614	Crested wheatgrass
SRM	615	Wheatgrass - saltgrass - grama
SRM	701	Alkali sacaton - tobosagrass
SRM	702	Black grama - alkali sacaton
SRM	703	Black grama - sideoats grama
SRM	704	Blue grama - western wheatgrass
SRM	705	Blue grama - galleta
SRM	706	Blue grama - sideoats grama
SRM	707	Blue grama - sideoats grama - black grama
SRM	708	Bluestem - dropseed
SRM	709	Bluestem - grama
SRM	710	Bluestem prairie
SRM	711	Bluestem - Sacahuista prairie
SRM	712	Galleta - alkali sacaton
SRM	713	Grama - muhly - threeawn
SRM	714	Grama - bluestem
SRM	715	Grama - buffalograss
SRM	716	Grama - feathergrass
SRM	717	Little bluestem - Indiangrass - Texas wintergrass
SRM	718	Mesquite - grama
SRM	722	Sand sagebrush - mixed prairie

**Existing SRM Vegetation Codes (cont.)**

Ref.	Code	Description
SRM	724	Sideoats grama - New Mexico feathergrass - winterfat
SRM	725	Vine mesquite - alkali sacaton
SRM	727	Mesquite - buffalograss
SRM	728	Mesquite - granjeno - acacia
SRM	729	Mesquite
SRM	730	Sand shinnery oak
SRM	733	Juniper - oak
SRM	734	Mesquite - oak
SRM	735	Sideoats grama - sumac - juniper
SRM	801	Savanna
SRM	805	Riparian
SRM	809	Mixed hardwood and pine
SRM	916	Sedge - shrub tundra
SRM	917	Tall shrub swamp
SRM	919	Wet meadow tundra
SRM	921	Willow

## APPENDIX F: POTENTIAL VEGETATION REFERENCES

Code	Name	Author
201	<b>Plant Associations of Region Two: Potential Plant Communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas;</b> Edition 4.	USDA/FS Report R2-ECOL-87-2 Barry C. Johnston (1987)
202	<b>The Black Hills Community Inventory</b> prepared by the Nature Conservancy authors, Midwest Regional Office, Minneapolis, Minnesota.	Amanda G. McAdams, Don Faber-Langendoen, Diane A. Stutzman
203	<b>Riparian and Wetland Plant Communities of the Black Hills.</b> The Nature Conservancy. 12/2000	Hollis J. Marriott and Don Faber-Langendoen
204	<b>Forest Vegetation of the Gunnison and Parts of the Uncompahgre National Forests: A Preliminary Habitat Type Classification;</b> USDA /FS Gen.Tech.Rep. RM-163.	Vera Komarkova, Robert R. Alexander, and Barry C. Johnston (1988)
205	<b>Forest Vegetation on National Forests in the Rocky Mountain and Intermountain Regions: Habitat Types and Community Types;</b> USDA /FS Gen.Tech.Rep. RM-162.	Robert R. Alexander (1988)
206	<b>Ecological Types of the Upper Gunnison Basin.</b> Technical Report R2-RR-2001-01, 858pp. Lakewood, CO: USDA Forest Service, Rocky Mtn. Region. May 2001.	Johnson, Barry C., Laurie Huckaby, Terry J. Hughes and Joseph Pecor
207	<b>Forest Vegetation of the Medicine Bow National Forest in Southeast Wyoming: A Habitat Type Classification.</b> RM-271. USDA Forest Service.	Alexander, Robert R., Hoffman, George R., and Wirsing, John M. 1986
208	<b>Forest Vegetation of the Bighorn Mountains, Wyoming: A Habitat Type Classification.</b> RM-170. USDA Forest Service.	Hoffman, George R., and Alexander, Robert R. 1986.
209	<b>Forest Vegetation of the Arapaho and Roosevelt National Forests in Central Colorado: A Habitat Type Classification.</b> RM-266. 48p.	Karl Hess and Robert. R. Alexander
210	<b>Forest Vegetation of the White River National Forest in Western Colorado: a Habitat Type Classification.</b> USDA Forest Service Research Paper RM-249, 36 p. 1983	Hoffman, George R. and Robert Alexander
402	<b>Forest Habitat Types of Eastern Idaho-Western Wyoming.</b> Gen. Tech. Rep. INT-144. 1983. 122 p.	R. Steele, S.V. Cooper, D.M. Ondov, D.W. Roberts, and R.D. Pfister

# APPENDIX G: POTENTIAL VEGETATION CODES

## Reference Code 201

PV Code	Common Name	Scientific Name
001	white fir series	ABCO
00101	white fir-Douglas-fir/Rocky Mountain maple	ABCO-PSME/ACGL
001010	white fir-Douglas-fir/Rocky Mountain maple-Rocky Mountain maple	ABCO-PSME/ACGL-ACGL
001011	white fir-Douglas-fir/Rocky Mountain maple-creeping barberry	ABCO-PSME/ACGL-MARE11
001012	white fir-Douglas-fir/Rocky Mountain maple-rockspirea	ABCO-PSME/ACGL-HODU
001013	white fir-Douglas-fir/Rocky Mountain maple-thinleaf alder	ABCO-PSME/ACGL-ALINT
00102	white fir-Douglas-fir (sparse undergrowth)	ABCO-PSME (sparse)
00103	white fir-Douglas-fir/sprucefir fleabane	ABCO-PSME/EREX4
00104	white fir-Douglas-fir/Arizona fescue	ABCO-PSME/FEAR2
001040	white fir-Douglas-fir/Arizona fescue-Arizona fescue	ABCO-PSME/FEAR2-FEAR2
001041	white fir-Douglas-fir/Arizona fescue-Parry's oatgrass	ABCO-PSME/FEAR2-DAPA2
00105	white fir-Douglas-fir/Gambel oak	ABCO-PSME/QUGA
001050	white fir-Douglas-fir/Gambel oak-Gambel oak	ABCO-PSME/QUGA-QUGA
001052	white fir-Douglas-fir/Gambel oak/Arizona fescue	ABCO-PSME/QUGA/FEAR2
001053	white fir-Douglas-fir/Gambel oak/fragrant bedstraw	ABCO-PSME/QUGA/GATR3
001054	white fir-Douglas-fir/Gambel oak-Oregon boxleaf	ABCO-PSME/QUGA-PAMY
00109	white fir-Douglas-fir/kinnikinnick	ABCO-PSME/ARUV
00110	white fir-Douglas-fir/whortleberry	ABCO-PSME/VAMY2
00111	white fir-Douglas-fir/Saskatoon serviceberry	ABCO-PSME/AMAL2
00112	white fir-Douglas-fir/greenleaf manzanita	ABCO-PSME/ARPA6
00113	white fir-Douglas-fir/rockspirea	ABCO-PSME/HODU
00114	white fir-Douglas-fir/mountain snowberry	ABCO-PSME/SYOR2
00115	white fir-limber pine/Arizona fescue	ABCO-PIFL2/FEAR2
00116	white fir-Douglas-fir/common juniper	ABCO-PSME/JUCO6
00117	white fir-Douglas-fir/creeping barberry	ABCO-PSME/MARE11
001171	white fir-Douglas-fir/creeping barberry-common juniper	ABCO-PSME/MARE11-JUCO6
00118	white fir-Douglas-fir/mallow ninebark	ABCO-PSME/PHMA5
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
00202	subalpine fir/Fendler's meadow-rue	ABLA/THFE
00203	subalpine fir/creeping barberry	ABLA/MARE11
003	subalpine fir-Engelmann spruce series	ABLA-PIEN
00301	subalpine fir-Engelmann spruce/red baneberry	ABLA-PIEN/ACRU2
00302	subalpine fir-Engelmann spruce/heartleaf arnica	ABLA-PIEN/ARCO9
003020	subalpine fir-Engelmann spruce/heartleaf arnica-heartleaf arnica	ABLA-PIEN/ARCO9-ARCO9
003021	subalpine fir-Engelmann spruce/heartleaf arnica-timber milkvetch	ABLA-PIEN/ARCO9-ASMI9
003022	subalpine fir-Engelmann spruce/heartleaf arnica-russet buffaloberry	ABLA-PIEN/ARCO9-SHCA
003023	subalpine fir-Engelmann spruce/heartleaf arnica/Engelmann spruce	ABLA-PIEN/ARCO9/PIEN
00303	subalpine fir-Engelmann spruce/broadleaf arnica	ABLA-PIEN/ARLA8

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00304	subalpine fir-Engelmann spruce/creeping barberry	ABLA-PIEN/MARE11
003040	subalpine fir-Engelmann spruce/creeping barberry-creeping barberry	ABLA-PIEN/MARE11-MARE11
003041	subalpine fir-Engelmann spruce/creeping barberry-Oregon boxleaf	ABLA-PIEN/MARE11-PAMY
00305	subalpine fir-Engelmann spruce/bluejoint	ABLA-PIEN/CACA4
00306	subalpine fir-Engelmann spruce/tall fringed bluebells	ABLA-PIEN/MECI3
00307	subalpine fir-Engelmann spruce/Geyer's sedge	ABLA-PIEN/CAGE2
00308	subalpine fir-Engelmann spruce/sprucefir fleabane	ABLA-PIEN/EREX4
00309	subalpine fir-Engelmann spruce/common juniper	ABLA-PIEN/JUCO6
00310	subalpine fir-Engelmann spruce/twinflower	ABLA-PIEN/LIBO3
003100	subalpine fir-Engelmann spruce/twinflower-twinflower	ABLA-PIEN/LIBO3-LIBO3
003101	subalpine fir-Engelmann spruce/twinflower/grouse whortleberry	ABLA-PIEN/LIBO3/VASC
00311	subalpine fir-Engelmann spruce/moss species	ABLA-PIEN/2MOSS
00313	subalpine fir-Engelmann spruce/Oregon boxleaf	ABLA-PIEN/PAMY
003130	subalpine fir-Engelmann spruce/Oregon boxleaf-Oregon boxleaf	ABLA-PIEN/PAMY-PAMY
003131	subalpine fir-Engelmann spruce/Oregon boxleaf-Douglas-fir	ABLA-PIEN/PAMY-PSME
003132	subalpine fir-Engelmann spruce/Oregon boxleaf-gooseberry currant	ABLA-PIEN/PAMY-RIMO2
00315	subalpine fir-Engelmann spruce/Wheeler bluegrass	ABLA-PIEN/PONE2
00316	subalpine fir-Engelmann spruce/arrowleaf ragwort	ABLA-PIEN/SETR
00318	subalpine fir-Engelmann spruce/western meadow-rue	ABLA-PIEN/THOC
00319	subalpine fir-Engelmann spruce/thinleaf huckleberry	ABLA-PIEN/VAME
003190	subalpine fir-Engelmann spruce/thinleaf huckleberry-thinleaf huckleberry	ABLA-PIEN/VAME-VAME
003191	subalpine fir-Engelmann spruce/thinleaf huckleberry-grouse whortleberry	ABLA-PIEN/VAME-VASC
00320	subalpine fir-Engelmann spruce/whortleberry	ABLA-PIEN/VAMY2
003200	subalpine fir-Engelmann spruce/whortleberry-whortleberry	ABLA-PIEN/VAMY2-VAMY2
003201	subalpine fir-Engelmann spruce/whortleberry/Jacob's-ladder	ABLA-PIEN/VAMY2/POPU3
00321	subalpine fir-Engelmann spruce/grouse whortleberry	ABLA-PIEN/VASC
003210	subalpine fir-Engelmann spruce/grouse whortleberry-grouse whortleberry	ABLA-PIEN/VASC-VASC
003211	subalpine fir-Engelmann spruce/grouse whortleberry/whitebark pine	ABLA-PIEN/VASC/PIAL
003212	subalpine fir-Engelmann spruce/grouse whortleberry/Jacob's-ladder	ABLA-PIEN/VASC/POPU3
003213	subalpine fir-Engelmann spruce/grouse whortleberry/Geyer's sedge	ABLA-PIEN/VASC/CAGE2
003216	subalpine fir-Engelmann spruce/grouse whortleberry-russet buffaloberry	ABLA-PIEN/VASC-SHCA
003217	subalpine fir-Engelmann spruce/grouse whortleberry/heartleaf arnica	ABLA-PIEN/VASC/ARCO9
00322	subalpine fir-Engelmann spruce/currant	ABLA-PIEN/RIBES
003220	subalpine fir-Engelmann spruce/currant-currant	ABLA-PIEN/RIBES-RIBES
003221	subalpine fir-Engelmann spruce/currant/Fendler's meadow-rue	ABLA-PIEN/RIBES/THFE
00323	subalpine fir-Engelmann spruce/grayleaf willow	ABLA-PIEN/SAGL

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00324	subalpine fir-Engelmann spruce/thimbleberry	ABLA-PIEN/RUPA
003240	subalpine fir-Engelmann spruce/thimbleberry-thimbleberry	ABLA-PIEN/RUPA-RUPA
003241	subalpine fir-Engelmann spruce/thimbleberry-grouse whortleberry	ABLA-PIEN/RUPA-VASC
00325	subalpine fir-Engelmann spruce/white spirea	ABLA-PIEN/SPBE2
00326	subalpine fir-Engelmann spruce/Ross' sedge	ABLA-PIEN/CAR05
00327	subalpine fir-Engelmann spruce/Rocky Mountain maple	ABLA-PIEN/ACGL
00328	subalpine fir-Engelmann spruce/pinegrass	ABLA-PIEN/CARU
003280	subalpine fir-Engelmann spruce/pinegrass-pinegrass	ABLA-PIEN/CARU-CARU
003281	subalpine fir-Engelmann spruce/pinegrass-Oregon boxleaf	ABLA-PIEN/CARU-PAMY
00329	subalpine fir-Engelmann spruce/dwarf bilberry	ABLA-PIEN/VACA13
00330	subalpine fir-Douglas-fir/mallow ninebark	ABLA-PSME/PHMA5
004	Engelmann spruce series	PIEN
00401	Engelmann spruce/heartleaf arnica	PIEN/ARCO9
00402	Engelmann spruce/white marsh marigold	PIEN/CALE4
00403	Engelmann spruce/softleaf sedge	PIEN/CAD16
00405	Engelmann spruce-blue spruce/fragrant bedstraw	PIEN-PIPU/GATR3
00406	Engelmann spruce/moss	PIEN/2MOSS
00407	Engelmann spruce/common juniper	PIEN/JUCO6
00408	Engelmann spruce/twinflower	PIEN/LIBO3
00409	Engelmann spruce/mallow ninebark	PIEN/PHMA5
00413	Engelmann spruce/alpine clover	PIEN/TRDA2
00414	Engelmann spruce/grouse whortleberry	PIEN/VASC
004140	Engelmann spruce/grouse whortleberry-grouse whortleberry	PIEN/VASC-VASC
004141	Engelmann spruce/grouse whortleberry/American bistort	PIEN/VASC/POBI6
004142	Engelmann spruce/grouse whortleberry/silvery lupine	PIEN/VASC/LUAR3
004145	Engelmann spruce/grouse whortleberry/Jacob's-ladder	PIEN/VASC/POPU3
00415	Engelmann spruce/whortleberry	PIEN/VAMY2
004150	Engelmann spruce/whortleberry-whortleberry	PIEN/VAMY2-VAMY2
004151	Engelmann spruce/whortleberry/Jacob's-ladder	PIEN/VAMY2/POPU3
00416	Engelmann spruce/Thurber's fescue	PIEN/FETH
00417	Engelmann spruce-Douglas-fir/common juniper	PIEN-PSME/JUCO6
00418	Engelmann spruce/dwarf bilberry	PIEN/VACA13
005	white spruce series	PIGL
00501	white spruce/Peck's sedge	PIGL/CAPE11
00502	white spruce/common juniper	PIGL/JUCO6
00503	white spruce/twinflower	PIGL/LIBO3
005030	white spruce/twinflower-twinflower	PIGL/LIBO3-LIBO3
005031	white spruce/twinflower-grouse whortleberry	PIGL/LIBO3-VASC
005032	white spruce/twinflower-white spirea	PIGL/LIBO3-SPBE2
006	bluespruce series	PIPU
00601	blue spruce/Saskatoon serviceberry-redosier dogwood	PIPU/AMAL2-COSES
006010	blue spruce/Saskatoon serviceberry-redosier dogwood/Saskatoon serviceberry	PIPU/AMAL2-COSES/AMAL2
006011	blue spruce/Saskatoon serviceberry-redosier dogwood/redosier dogwood	PIPU/AMAL2-COSES/COSES
00602	blue spruce/heartleaf arnica	PIPU/ARCO9
00603	blue spruce/bluegrass	PIPU/POA



**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00604	blue spruce-Douglas-fir/twinflower	PIPU-PSME/LIBO3
006040	blue spruce-Douglas-fir/twinflower-twinflower	PIPU-PSME/LIBO3-LIBO3
006043	blue spruce-Douglas-fir/twinflower-common juniper	PIPU-PSME/LIBO3-JUCO6
00605	blue spruce/thinleaf alder	PIPU/ALINT
00606	blue spruce-Douglas-fir/dryspike sedge	PIPU-PSME/CAFO3
00607	blue spruce-Douglas-fir/sprucefir fleabane	PIPU-PSME/EREX4
00608	blue spruce-Douglas-fir/kinnikinnick	PIPU-PSME/ARUV
00609	blue spruce-Douglas-fir/Arizona fescue	PIPU-PSME/FEAR2
006090	blue spruce-Douglas-fir/Arizona fescue-Arizona fescue	PIPU-PSME/FEAR2-FEAR2
006091	blue spruce-Douglas-fir/Arizona fescue-Parry's oatgrass	PIPU-PSME/FEAR2-DAPA2
00610	blue spruce-Douglas-fir/creeping barberry	PIPU-PSME/MARE11
00611	blue spruce-Engelmann spruce/field horsetail	PIPU-PIEN/EQAR
00612	blue spruce-Douglas-fir/common juniper	PIPU-PSME/JUCO6
006120	blue spruce-Douglas-fir/common juniper-common juniper	PIPU-PSME/JUCO6-JUCO6
006121	blue spruce-Douglas-fir/common juniper/Geyer's sedge	PIPU-PSME-JUCO6/CAGE2
007	whitebark pine series	PIAL
00701	whitebark pine/Geyer's sedge	PIAL/CAGE2
007010	whitebark pine/Geyer's sedge-Geyer's sedge	PIAL/CAGE2-CAGE2
007011	whitebark pine/Geyer's sedge/lodgepole pine	PIAL/CAGE2/PICO
00702	whitebark pine/Ross' sedge	PIAL/CARO5
007020	whitebark pine/Ross' sedge-Ross' sedge	PIAL/CARO5-CARO5
007021	whitebark pine/Ross' sedge/lodgepole pine	PIAL/CARO5/PICO
00703	whitebark pine-limber pine/varileaf cinquefoil	PIAL-PIFL2/PODI2
00704	whitebark pine/Idaho fescue	PIAL/FEID
00705	whitebark pine/common juniper	PIAL/JUCO6
007050	whitebark pine/common juniper-common juniper	PIAL/JUCO6-JUCO6
007051	whitebark pine/common juniper/russet buffaloberry	PIAL/JUCO6/SHCA
00706	whitebark pine/grouse whortleberry	PIAL/VASC
008	bristlecone pine series	PIAR
00801	bristlecone pine/Thurber's fescue	PIAR/FETH
00802	bristlecone pine/Arizona fescue	PIAR/FEAR2
00803	bristlecone pine/alpine clover	PIAR/TRDA2
00804	bristlecone pine/gooseberry currant	PIAR/RIMO2
00805	bristlecone pine/common juniper	PIAR/JUCO6
009	lodgepole pine series	PICO
00901	lodgepole pine/kinnikinnick	PICO/ARUV
00903	lodgepole pine/Geyer's sedge	PICO/CAGE2
009030	lodgepole pine/Geyer's sedge-Geyer's sedge	PICO/CAGE2-CAGE2
009031	lodgepole pine/Geyer's sedge/Oregon boxleaf	PICO/CAGE2/PAMY
00905	lodgepole pine/common juniper	PICO/JUCO6
00907	lodgepole pine/Wheeler bluegrass	PICO/PONE2
00908	lodgepole pine/russet buffaloberry	PICO/SHCA
009080	lodgepole pine/russet buffaloberry-russet buffaloberry	PICO/SHCA-SHCA
009081	lodgepole pine/russet buffaloberry/Oregon boxleaf	PICO/SHCA/PAMY
00909	lodgepole pine/whortleberry	PICO/VAMY2
00910	lodgepole pine/grouse whortleberry	PICO/VASC
00911	lodgepole pine/Ross' sedge	PICO/CARO5
00912	lodgepole pine/dwarf bilberry	PICO/VACA13

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
010	limber pine series	PIFL2
01001	limber pine/bluebunch wheatgrass	PIFL2/PSSPS
01002	limber pine/purple reedgrass	PIFL2/CAPU
01003	limber pine/Idaho fescue	PIFL2/FEID
01004	limber pine/spike fescue	PIFL2/LEKI2
010040	limber pine/spike fescue-spike fescue	PIFL2/LEKI2-LEKI2
010041	limber pine/spike fescue/cutleaf anemone	PIFL2/LEKI2/PUPAM
010042	limber pine/spike fescue-prairie Junegrass	PIFL2/LEKI2-KOMA
01005	limber pine/common juniper	PIFL2/JUCO6
01006	limber pine/alpine clover	PIFL2/TRDA2
01007	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
01008	limber pine/creeping juniper	PIFL2/JUHO2
01009	limber pine/Thurber's fescue	PIFL2/FETH
01010	limber pine/chokecherry	PIFL2/PRVIV
011	ponderosa pine series	PIPO
01101	ponderosa pine-Rocky Mountain juniper/bluebunch wheatgrass	PIPO-JUSC2/PSSPS
01102	ponderosa pine/little bluestem-western wheatgrass	PIPO/SCSC-PASM
01103	ponderosa pine-juniper/blue grama	PIPO-JUNIP/BOGR2
01104	ponderosa pine/sideoats grama	PIPO/BOCU
01105	ponderosa pine/Geyer's sedge	PIPO/CAGE2
011050	ponderosa pine/Geyer's sedge-Geyer's sedge	PIPO/CAGE2-CAGE2
011051	ponderosa pine/Geyer's sedge/silvery lupine	PIPO/CAGE2/LUAR3
011052	ponderosa pine/Geyer's sedge/spearleaf stonecrop	PIPO/CAGE2/SELA
01106	ponderosa pine/Ross' sedge	PIPO/CARO5
01107	ponderosa pine/alderleaf mountain mahogany	PIPO/CEMO2
01108	ponderosa pine/timber oatgrass	PIPO/DAIN
01109	ponderosa pine/Arizona fescue	PIPO/FEAR2
011090	ponderosa pine/Arizona fescue-Arizona fescue	PIPO/FEAR2-FEAR2
011091	ponderosa pine/Arizona fescue-Parry's oatgrass	PIPO/FEAR2-DAPA2
011092	ponderosa pine/Arizona fescue-blue grama	PIPO/FEAR2-BOGR2
01110	ponderosa pine/Idaho fescue	PIPO/FEID
011100	ponderosa pine/Idaho fescue-Idaho fescue	PIPO/FEID-FEID
011101	ponderosa pine/Idaho fescue/greenleaf manzanita	PIPO/FEID/ARPA6
01111	ponderosa pine/spike fescue	PIPO/LEKI2
01112	ponderosa pine/common juniper	PIPO/JUCO6
01113	ponderosa pine/common juniper-common snowberry	PIPO/JUCO6-SYAL
01115	ponderosa pine-Rocky Mountain juniper/alderleaf mountain mahogany	PIPO-JUSC2/CEMO2
01117	ponderosa pine-Douglas-fir/mountain muhly	PIPO-PSME/MUMO
011170	ponderosa pine-Douglas-fir/mountain muhly-mountain muhly	PIPO-PSME/MUMO-MUMO
011171	ponderosa pine-Douglas-fir/mountain muhly/Fendler's ceanothus	PIPO-PSME/MUMO/CEFE
011172	ponderosa pine-Douglas-fir/mountain muhly/streambank wheatgrass	PIPO-PSME/MUMO/ELLAL
01118	ponderosa pine/twoneedle pinyon-Gambel oak	PIPO/PIED-QUGA
01119	ponderosa pine/mountain ninebark	PIPO/PHMO4
01120	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
01121	ponderosa pine/Gambel oak	PIPO/QUGA
011210	ponderosa pine/Gambel oak-Gambel oak	PIPO/QUGA-QUGA

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
011211	ponderosa pine/Gambel oak/Arizona fescue	PIPO/QUGA/FEAR2
011214	ponderosa pine/Gambel oak/common snowberry	PIPO/QUGA/SYAL
011215	ponderosa pine/Gambel oak/boxelder	PIPO/QUGA/ACNE2
01122	ponderosa pine/chokecherry	PIPO/PRVIV
011220	ponderosa pine/chokecherry-chokecherry	PIPO/PRVIV-PRVIV
011221	ponderosa pine/chokecherry/dryspike sedge	PIPO/PRVIV/CAFO3
011222	ponderosa pine/chokecherry-Saskatoon serviceberry	PIPO/PRVIV-AMAL2
011224	ponderosa pine/chokecherry-creeping barberry	PIPO/PRVIV-MARE11
011225	ponderosa pine/chokecherry-bur oak	PIPO/PRVIV-QUMA2
011226	ponderosa pine/chokecherry/big bluestem	PIPO/PRVIV/ANGE
01123	ponderosa pine/white spirea	PIPO/SPBE2
01124	ponderosa pine/common snowberry	PIPO/SYAL
011240	ponderosa pine/common snowberry-common snowberry	PIPO/SYAL-SYAL
011242	ponderosa pine/common snowberry/roughleaf ricegrass	PIPO/SYAL/ORAS
011243	ponderosa pine/common snowberry/creeping barberry	PIPO/SYAL/MARE11
01125	ponderosa pine/bluebunch wheatgrass	PIPO/PSSPS
011250	ponderosa pine/bluebunch wheatgrass-bluebunch wheatgrass	PIPO/PSSPS-PSSPS
011251	ponderosa pine/bluebunch wheatgrass/big sagebrush	PIPO/PSSPS/ARTR2
01126	ponderosa pine/sun sedge	PIPO/CAINH2
01127	ponderosa pine/blue grama	PIPO/BOGR2
011270	ponderosa pine/blue grama-blue grama	PIPO/BOGR2-BOGR2
011272	ponderosa pine/blue grama-sand bluestem	PIPO/BOGR2-ANHA
011273	ponderosa pine/blue grama/big sagebrush	PIPO/BOGR2/ARTR2
011274	ponderosa pine/blue grama/twoneedle pinyon	PIPO/BOGR2/PIED
01128	ponderosa pine/little bluestem	PIPO/SCSC
011280	ponderosa pine/little bluestem-little bluestem	PIPO/SCSC-SCSC
011281	ponderosa pine/little bluestem/wavyleaf oak	PIPO/SCSC/QUPA4
01129	ponderosa pine/greenleaf manzanita	PIPO/ARPA6
011290	ponderosa pine/greenleaf manzanita-greenleaf manzanita	PIPO/ARPA6-ARPA6
011291	ponderosa pine/greenleaf manzanita-alderleaf mountain mahogany	PIPO/ARPA6-CEMO2
01131	ponderosa pine/black sagebrush	PIPO/ARNO4
01132	ponderosa pine/curl-leaf mountain mahogany	PIPO/CELE3
01140	ponderosa pine/kinnikinnick	PIPO/ARUV
01150	ponderosa pine-Rocky Mountain juniper/western snowberry	PIPO-JUSC2/SYOC
01151	ponderosa pine/bur oak	PIPO/QUMA2
012	Douglas-fir series	PSME
01201	Douglas-fir/Rocky Mountain maple	PSME/ACGL
012010	Douglas-fir/Rocky Mountain maple-Rocky Mountain maple	PSME/ACGL-ACGL
012011	Douglas-fir/Rocky Mountain maple/Oregon boxleaf	PSME/ACGL/PAMY
012012	Douglas-fir/Rocky Mountain maple/mountain snowberry	PSME/ACGL/SYOR2
01202	Douglas-fir/heartleaf arnica	PSME/ARCO9
012020	Douglas-fir/heartleaf arnica-heartleaf arnica	PSME/ARCO9-ARCO9
012021	Douglas-fir/heartleaf arnica/timber milkvetch	PSME/ARCO9/ASMI9
01203	Douglas-fir/creeping barberry	PSME/MARE11
012030	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
012032	Douglas-fir/creeping barberry-common juniper	PSME/MARE11-JUCO6
01204	Douglas-fir/Ross' sedge	PSME/CARO5

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
01205	Douglas-fir/pinegrass	PSME/CARU
012050	Douglas-fir/pinegrass-pinegrass	PSME/CARU-CARU
012051	Douglas-fir/pinegrass/Oregon boxleaf	PSME/CARU/PAMY
012052	Douglas-fir/pinegrass-Idaho fescue	PSME/CARU-FEID
012053	Douglas-fir/pinegrass/ponderosa pine	PSME/CARU/PIPO
01206	Douglas-fir/Geyer's sedge	PSME/CAGE2
01207	Douglas-fir/alderleaf mountain mahogany	PSME/CEM02
01208	Douglas-fir/Idaho fescue	PSME/FEID
01209	Douglas-fir/fivepetal cliffbush	PSME/JAAM
01210	Douglas-fir/common juniper	PSME/JUCO6
01211	Douglas-fir/Oregon boxleaf	PSME/PAMY
01212	Douglas-fir/mallow ninebark	PSME/PHMA5
01213	Douglas-fir/mountain ninebark	PSME/PHM04
01214	Douglas-fir/Gambel oak	PSME/QUGA
012140	Douglas-fir/Gambel oak-Gambel oak	PSME/QUGA-QUGA
012141	Douglas-fir/Gambel oak/Arizona fescue	PSME/QUGA/FEAR2
01215	Douglas-fir/white spirea	PSME/SPBE2
012150	Douglas-fir/white spirea-white spirea	PSME/SPBE2-SPBE2
012151	Douglas-fir/white spirea/pinegrass	PSME/SPBE2/CARU
012153	Douglas-fir/white spirea/ponderosa pine	PSME/SPBE2/PIPO
01216	Douglas-fir/common snowberry	PSME/SYAL
01217	Douglas-fir/mountain snowberry	PSME/SYOR2
012170	Douglas-fir/mountain snowberry-mountain snowberry	PSME/SYOR2-SYOR2
012171	Douglas-fir/mountain snowberry-creeping barberry	PSME/SYOR2-MARE11
012172	Douglas-fir/mountain snowberry/Geyer's sedge	PSME/SYOR2/CAGE2
012173	Douglas-fir/mountain snowberry/spike fescue	PSME/SYOR2/LEK12
012174	Douglas-fir/mountain snowberry/bluebunch wheatgrass	PSME/SYOR2/PSSPS
01218	Douglas-fir/thinleaf huckleberry	PSME/VAME
01219	Douglas-fir/kinnikinnick-common juniper	PSME/ARUV-JUCO6
01220	Douglas-fir/greenleaf manzanita	PSME/ARPA6
01221	Douglas-fir/antelope bitterbrush	PSME/PUTR2
01222	Douglas-fir/Saskatoon serviceberry	PSME/AMAL2
01223	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
01233	Douglas-fir/Arizona fescue	PSME/FEAR2
01241	Douglas-fir/oceanspray	PSME/HODI
102	hophornbeam series	OSVI
10202	hophornbeam/fleshy hawthorn	OSVI/CRSU5
10203	hophornbeam-bur oak (sparse understory)	OSVI/QUMA2
103	narrowleaf cottonwood	POAN3
10301	narrowleaf cottonwood/Saskatoon serviceberry	POAN3/AMAL2
103010	narrowleaf cottonwood/Saskatoon serviceberry-Saskatoon serviceberry	POAN3/AMAL2-AMAL2
103011	narrowleaf cottonwood/Saskatoon serviceberry-boxelder	POAN3/AMAL2-ACNE2
10302	narrowleaf cottonwood/narrowleaf willow-water birch	POAN3/SAEX/BEOC2
10303	narrowleaf cottonwood/water birch-currant	POAN3/BEOC2-RIBES
10304	narrowleaf cottonwood/mountain ninebark-chokecherry	POAN3/PHM04-PRVIV
10305	narrowleaf cottonwood-Engelmann spruce/twinberry honeysuckle	POAN3-PIEN/LOINI
10306	narrowleaf cottonwood/thinleaf alder-redosier dogwood	POAN3/ALINT-COSES

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
104	plains cottonwood series	PODEM
10401	plains cottonwood/western snowberry-basin wildrye	PODEM/SYOC-LECI4
104010	plains cottonwood/western snowberry-basin wildrye/western snowberry	PODEM/SYOC-LECI4/SYOC
104011	plains cottonwood/western snowberry-basin wildrye/redosier dogwood	PODEM/SYOC-LECI4/COSES
10402	plains cottonwood-narrowleaf cottonwood/willow	PODEM-POAN3/SALIX
10403	plains cottonwood/willow	PODEM/SALIX
10404	plains cottonwood/American black currant	PODEM/RIAM2
10405	plains cottonwood/western snowberry-narrowleaf willow	PODEM/SYOC-SAEX
105	quaking aspen series	POTR5
10501	quaking aspen/Geyer's sedge	POTR5/CAGE2
10502	quaking aspen/beaked hazelnut	POTR5/COCO6
105020	quaking aspen/beaked hazelnut-beaked hazelnut	POTR5/COCO6-COCO6
105021	quaking aspen/beaked hazelnut/western brackenfern	POTR5/COCO6/PTAQ
105022	quaking aspen/beaked hazelnut/wild sarsaparilla	POTR5/COCO6/ARNU2
10503	quaking aspen/Thurber's fescue	POTR5/FETH
10504	quaking aspen/common cowparsnip	POTR5/HEMA80
10505	quaking aspen/Nevada pea	POTR5/LALAL3
10507	quaking aspen/silvery lupine	POTR5/LUAR3
10508	quaking aspen/common juniper	POTR5/JUCO6
10510	quaking aspen/western brackenfern	POTR5/PTAQ
10511	quaking aspen/mountain snowberry	POTR5/SYOR2
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE
105120	quaking aspen/Fendler's meadow-rue-Fendler's meadow-rue	POTR5/THFE-THFE
105121	quaking aspen/Fendler's meadow-rue-spreadfruit goldenbanner	POTR5/THFE-THDI4
105123	quaking aspen/Fendler's meadow-rue/stinging nettle	POTR5/THFE/URDI
10513	quaking aspen/Colorado false hellebore	POTR5/VETE4
10514	quaking aspen/big sagebrush	POTR5/ARTR2
10515	quaking aspen/Saskatoon serviceberry-chokecherry	POTR5/AMAL2-PRVIV
105150	quaking aspen/Saskatoon serviceberry-chokecherry-Saskatoon serviceberry	POTR5/AMAL2-PRVIV-AMAL2
105151	quaking aspen/Saskatoon serviceberry-chokecherry-Rocky Mountain maple	POTR5/AMAL2-PRVIV-ACGL
105152	quaking aspen/Saskatoon serviceberry-chokecherry-Gambel oak	POTR5/AMAL2-PRVIV-QUGA
105153	quaking aspen/Saskatoon serviceberry-chokecherry-Engelmann's aster	POTR5/AMAL2-PRVIV-EUEN
105154	quaking aspen/Saskatoon serviceberry-chokecherry/balsam poplar	POTR5/AMAL2-PRVIV/POBA2
10516	quaking aspen/snowbrush ceanothus	POTR5/CEVE
10517	quaking aspen/pinegrass	POTR5/CARU
10518	quaking aspen/licorice-root	POTR5/LIGUS
10519	quaking aspen/chokecherry	POTR5/PRVIV
105190	quaking aspen/chokecherry-chokecherry	POTR5/PRVIV-PRVIV
105191	quaking aspen/chokecherry-common snowberry	POTR5/PRVIV-SYAL
10520	quaking aspen/creeping barberry	POTR5/MARE11
10521	quaking aspen/kinnikinnick	POTR5/ARUV
10522	quaking aspen/Arizona fescue	POTR5/FEAR2
10523	quaking aspen/red elderberry	POTR5/SARA2

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
106	bur oak series	QUMA2
10601	bur oak/western snowberry	QUMA2/SYOC
106010	bur oak/western snowberry-western snowberry	QUMA2/SYOC-SYOC
106011	bur oak/western snowberry-quaking aspen	QUMA2/SYOC-POTR5
10603	bur oak/hazelnut	QUMA2/CORYL
107	green ash series	FRPE
10701	green ash/western snowberry	FRPE/SYOC
107010	green ash/western snowberry-western snowberry	FRPE/SYOC-SYOC
107011	green ash/western snowberry/prairie sandreed	FRPE/SYOC/CALO
10702	green ash/chokecherry	FRPE/PRVIV
107020	green ash/chokecherry-chokecherry	FRPE/PRVIV-PRVIV
107021	green ash/chokecherry/Sprengel's sedge	FRPE/PRVIV/CASP7
108	paper birch series	BEPA
10801	paper birch/beaked hazelnut	BEPA/COCO6
109	balsam poplar series	POBA2
10901	balsam poplar/redosier dogwood	POBA2/COSES
201	oneseed juniper series	JUMO
20101	oneseed juniper/sideoats grama	JUMO/BOCU
20102	oneseed juniper/blue grama	JUMO/BOGR2
20103	oneseed juniper/western wheatgrass	JUMO/PASM
202	Utah juniper series	JUOS
20201	Utah juniper-twoneedle pinyon/beardless wheatgrass	JUOS-PIED/PSSPI
20202	Utah juniper/big sagebrush	JUOS/ARTR2
20203	Utah juniper/alderleaf mountain mahogany-squaw-apple	JUOS/CEMO2-PERA4
202030	Utah juniper/alderleaf mountain mahogany-squaw-apple-alderleaf mountain mahogany	JUOS/CEMO2-PERA4-CEMO2
202031	Utah juniper/alderleaf mountain mahogany-squaw-apple-Wyoming big sagebrush	JUOS/CEMO2-PERA4-ARTRW8
20204	Utah juniper/Indian ricegrass	JUOS/ACHY
20205	Utah juniper/Fremont's mahonia	JUOS/MAFR3
20206	Utah juniper/saline wildrye	JUOS/LESA4
203	Rocky Mountain juniper series	JUSC2
20301	Rocky Mountain juniper/western wheatgrass	JUSC2/PASM
20302	Rocky Mountain juniper/big sagebrush	JUSC2/ARTR2
20303	Rocky Mountain juniper/bluebunch wheatgrass	JUSC2/PSSPS
20304	Rocky Mountain juniper/alderleaf mountain mahogany	JUSC2/CEMO2
20306	Rocky Mountain juniper/antelope bitterbrush	JUSC2/PUTR2
20307	Rocky Mountain juniper/littleseed ricegrass	JUSC2/PIMI7
204	twoneedle pinyon series	PIED
20401	twoneedle pinyon-Utah juniper/big sagebrush	PIED-JUOS/ARTR2
204010	twoneedle pinyon-Utah juniper/big sagebrush-big sagebrush	PIED-JUOS/ARTR2-ARTR2
204011	twoneedle pinyon-Utah juniper/big sagebrush/blue grama	PIED-JUOS/ARTR2/BOGR2
20402	twoneedle pinyon/blue grama	PIED/BOGR2
20403	twoneedle pinyon-Utah juniper/Utah serviceberry-alderleaf mountain mahogany	PIED-JUOS/AMUT-CEMO2
204030	twoneedle pinyon-Utah juniper/Utah serviceberry-alderleaf mountain mahogany-Utah serviceberry	PIED-JUOS/AMUT-CEMO2-AMUT
204031	twoneedle pinyon-Utah juniper/Utah serviceberry-alderleaf mountain mahogany-greenleaf manzanita	PIED-JUOS/AMUT-CEMO2-ARPA6

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
20404	twoneedle pinyon/Gambel oak	PIED/QUGA
20405	twoneedle pinyon-Utah juniper/antelope bitterbrush	PIED-JUOS/PUTR2
20406	twoneedle pinyon-Utah juniper/muttongrass	PIED-JUOS/POFE
20407	twoneedle pinyon-oneseed juniper/alderleaf mountain mahogany	PIED-JUMO/CEMO2
20408	twoneedle pinyon-oneseed juniper/Columbia needlegrass	PIED-JUMO/ACNEN2
20409	twoneedle pinyon-Utah juniper/alderleaf mountain mahogany	PIED-JUOS/CEMO2
204090	twoneedle pinyon-Utah juniper/alderleaf mountain mahogany-alderleaf mountain mahogany	PIED-JUOS/CEMO2-CEMO2
204091	twoneedle pinyon-Utah juniper/alderleaf mountain mahogany-Gambel oak	PIED-JUOS/CEMO2-QUGA
20410	twoneedle pinyon/black sagebrush	PIED/ARNO4
301	serviceberry series	AMELA
30101	serviceberry/mountain snowberry-big sagebrush	AMELA/SYOR2-ARTR2
301011	serviceberry/mountain snowberry-big sagebrush/bluebunch wheatgrass	AMELA/SYOR2-ARTR2/PSSPS
301012	serviceberry/mountain snowberry-big sagebrush/Letterman's needlegrass	AMELA/SYOR2-ARTR2/ACLE9
301013	serviceberry/mountain snowberry-big sagebrush/Thurber's fescue	AMELA/SYOR2-ARTR2/FETH
30102	serviceberry/Geyer's sedge	AMELA/CAGE2
30103	Saskatoon serviceberry-switchgrass/American vetch	AMAL2-PAVI2/VIAM
30104	serviceberry-antelope bitterbrush/bluebunch wheatgrass	AMELA-PUTR2/PSSPS
302	silver sagebrush series	ARCA13
30201	silver sagebrush/western wheatgrass	ARCA13/PASM
302011	silver sagebrush/western wheatgrass/green needlegrass	ARCA13/PASM/NAVI4
30202	silver sagebrush/Idaho fescue	ARCA13/FEID
30203	silver sagebrush/Thurber's fescue	ARCA13/FETH
30204	silver sagebrush-western snowberry/western wheatgrass	ARCA13-SYOC/PASM
303	sand sagebrush series	ARFI2
30301	sand sagebrush/sand bluestem	ARFI2/ANHA
30302	sand sagebrush/sand dropseed-blue grama	ARFI2/SPCR-BOGR2
304	little sagebrush series	ARAR8
30401	little sagebrush/bluebunch wheatgrass	ARAR8/PSSPS
30403	little sagebrush/Idaho fescue	ARAR8/FEID
305	big sagebrush series	ARTR2
30502	big sagebrush/bluebunch wheatgrass	ARTR2/PSSPS
30503	big sagebrush/rubber rabbitbrush	ARTR2/ERNAN5
30504	big sagebrush/Colorado wildrye	ARTR2/LEAM
30505	big sagebrush/basin wildrye	ARTR2/LECI4
30506	big sagebrush/Idaho fescue	ARTR2/FEID
305061	big sagebrush/Idaho fescue/sticky purple geranium	ARTR2/FEID/GEVI2
30507	big sagebrush/Thurber's fescue	ARTR2/FETH
30508	big sagebrush/spike fescue	ARTR2/LEKI2
30509	big sagebrush-antelope bitterbrush/streambank wheatgrass	ARTR2-PUTR2/ELLAL
30510	big sagebrush/Indian ricegrass	ARTR2/ACHY
305101	big sagebrush/Indian ricegrass-mountain snowberry	ARTR2/ACHY-SYOR2
30511	big sagebrush/Letterman's needlegrass	ARTR2/ACLE9
30512	big sagebrush/needle and thread	ARTR2/HECOC8
30514	big sagebrush-antelope bitterbrush/western wheatgrass	ARTR2-PUTR2/PASM

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
30515	big sagebrush-yellow rabbitbrush/lupine	ARTR2-CHV18/LUPIN
305170	big sagebrush/western wheatgrass	ARTR2/PASM
305171	big sagebrush/plains muhly	ARTR2/MUCU3
305172	big sagebrush/blue grama	ARTR2/BOGR2
30518	big sagebrush-mountain snowberry/basin wildrye	ARTR2-SYOR2/LECI4
30519	big sagebrush/sand dropseed	ARTR2/SPCR
305190	big sagebrush/blue grama	ARTR2/BOGR2
305191	big sagebrush/James' galleta	ARTR2/PLJA
306	threetip sagebrush series	ARTR4
30601	threetip sagebrush/Idaho fescue	ARTR4/FEID
30603	threetip sagebrush/Sandberg bluegrass	ARTR4/POSE
30604	threetip sagebrush/needle and thread	ARTR4/HECOC8
307	curl-leaf mountain mahogany series	CELE3
30701	curl-leaf mountain mahogany/bluebunch wheatgrass	CELE3/PSSPS
308	alderleaf mountain mahogany series	CEMO2
30801	alderleaf mountain mahogany/streambank wheatgrass	CEMO2/ELLAL
30802	alderleaf mountain mahogany/bluebunch wheatgrass	CEMO2/PSSPS
30803	alderleaf mountain mahogany/Idaho fescue	CEMO2/FEID
30804	alderleaf mountain mahogany-skunkbush sumac/sideoats grama	CEMO2-RHTR/BOCU
30805	alderleaf mountain mahogany/needle and thread	CEMO2/HECOC8
308051	alderleaf mountain mahogany/needle and thread/skunkbush sumac	CEMO2/HECOC8/RHTRT
30806	alderleaf mountain mahogany/Letterman's needlegrass	CEMO2/ACLE9
30807	alderleaf mountain mahogany/mountain muhly	CEMO2/MUMO
30808	alderleaf mountain mahogany-skunkbush sumac/big bluestem	CEMO2-RHTR/ANGE
310	eightpetal mountain-avens series	DROC
31002	eightpetal mountain-avens/pinegrass	DROC/CARU
310021	eightpetal mountain-avens/pinegrass/mountain stitchwort	DROC/CARU/MIBI9
31003	eightpetal mountain-avens/snow willow	DROC/SANI8
311	shrubby cinquefoil series	DAFL3
31101	shrubby cinquefoil/Idaho fescue	DAFL3/FEID
31102	shrubby cinquefoil/Thurber's fescue	DAFL3/FETH
31103	shrubby cinquefoil/Altai fescue	DAFL3/FEAL
31104	shrubby cinquefoil/tufted hairgrass	DAFL3/DECA18
31105	shrubby cinquefoil/matted saxifrage	DAFL3/SABRA2
312	antelope bitterbrush series	PUTR2
31201	antelope bitterbrush-big sagebrush/Idaho fescue	PUTR2-ARTR2/FEID
31202	antelope bitterbrush/mountain muhly	PUTR2/MUMO
31203	antelope bitterbrush/needle and thread	PUTR2/HECOC8
31204	antelope bitterbrush/bluebunch wheatgrass	PUTR2/PSSPS
31205	antelope bitterbrush-big sagebrush/bluebunch wheatgrass	PUTR2-ARTR2/PSSPS
313	Gambel oak series	QUGA
31301	Gambel oak/Saskatoon serviceberry	QUGA/AMAL2
313011	Gambel oak/Saskatoon serviceberry/creeping barberry	QUGA/AMAL2/MARE11
31302	Gambel oak/Utah serviceberry	QUGA/AMUT
31303	Gambel oak/alderleaf mountain mahogany	QUGA/CEMO2
31304	Gambel oak-chokecherry/Oregon boxleaf	QUGA-PRVIV/PAMY
313043	Gambel oak-chokecherry/Oregon boxleaf/redosier dogwood	QUGA-PRVIV/PAMY/COSES



**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
31305	Gambel oak/mountain snowberry	QUGA/SYOR2
313050	Gambel oak/mountain snowberry-mountain snowberry	QUGA/SYOR2-SYOR2
313054	Gambel oak/mountain snowberry/alderleaf mountain mahogany	QUGA/SYOR2/CEMO2
313055	Gambel oak/mountain snowberry/big sagebrush	QUGA/SYOR2/ARTR2
31306	Gambel oak/sun sedge	QUGA/CAINH2
31307	Gambel oak-chokecherry/Thurber's fescue	QUGA-PRVIV/FETH
314	willow series	SALIX
31401	diamondleaf willow/white marsh marigold	SAPL2/CALE4
31402	Geyer's willow-strapleaf willow/bluejoint	SAGE2-SALI/CACA4
314021	Geyer's willow-strapleaf willow/bluejoint/tufted hairgrass	SAGE2-SALI/CACA4/DECA18
31404	meadow willow/eastern marsh fern	SAPE5/THPA
31405	diamondleaf willow/water sedge	SAPL2/CAAQ
314051	diamondleaf willow/water sedge/tufted hairgrass	SAPL2/CAAQ/DECA18
31406	diamondleaf willow/mountain sedge	SAPL2/CASC12
31408	grayleaf willow-shortfruit willow/tufted hairgrass	SAGL-SABR/DECA18
314081	grayleaf willow-shortfruit willow/tufted hairgrass/Jacob's-ladder	SAGL-SABR/DECA18/POPU3
31409	grayleaf willow-strapleaf willow/sedge	SAGL-SALI/CAREX
31411	peachleaf willow-diamondleaf willow/white panicle aster	SAAM2-SAPL2/SYLAH6
31412	strapleaf willow-willow/bluegrass	SAEX-SALIX/POA
31413	Geyer's willow-willow/Northwest Territory sedge	SAGE2-SALIX/CAUT
31414	diamondleaf willow/tufted hairgrass	SAPL2/DECA18
31415	grayleaf willow/Ross' avens	SAGL/GEROT
31416	Geyer's willow/fowl bluegrass	SAGE2/POPA2
31417	Booth's willow-willow/Northwest Territory sedge	SABO2-SALIX/CAUT
31418	Booth's willow-willow/bluejoint	SABO2-SALIX/CACA4
31419	Wolf's willow/water sedge	SAWO/CAAQ
31420	Wolf's willow/Northwest Territory sedge	SAWO/CAUT
31421	Wolf's willow/bluejoint	SAWO/CACA4
31422	Wolf's willow/tufted hairgrass	SAWO/DECA18
31423	Wolf's willow/Virginia strawberry	SAWO/FRVI
31424	narrowleaf willow-willow/bluejoint-field horsetail	SAEX-SALIX/CACA4-EQAR
31425	yellow willow/field horsetail	SALU2/EQAR
31426	Drummond's willow/bluejoint	SADR/CACA4
31427	sageleaf willow-willow/water sedge	SACA4-SALIX/CAAQ
315	greasewood series	SAVE4
31501	greasewood-big sagebrush/western wheatgrass	SAVE4-ARTR2/PASM
31502	greasewood-Gardner's saltbrush/Sandberg bluegrass	SAVE4-ATGA/POSE
31504	greasewood/alkali sacaton	SAVE4/SPAI
31505	greasewood/basin wildrye	SAVE4/LECI4
31506	greasewood/bluebunch wheatgrass	SAVE4/PSSPS
31507	greasewood-shadscale saltbrush/slender wheatgrass	SAVE4-ATCO/ELTR7
316	mountain snowberry series	SYOR2
31601	mountain snowberry/Thurber's fescue	SYOR2/FETH
317	black sagebrush series	ARNO4
31701	black sagebrush/bluebunch wheatgrass	ARNO4/PSSPS
31702	black sagebrush/arrowleaf balsamroot	ARNO4/BASA3

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
318	little sagebrush series	ARARL
31801	little sagebrush/western wheatgrass	ARARL/PASM
31802	little sagebrush/bluebunch wheatgrass	ARARL/PSSPS
319	skunkbush sumac series	RHTRT
31901	skunkbush sumac/bluebunch wheatgrass	RHTRT/PSSPS
319011	skunkbush sumac/bluebunch wheatgrass-Idaho fescue	RHTRT/PSSPS-FEID
31902	skunkbush sumac/sand dropseed	RHTRT/SPCR
31903	skunkbush sumac/threadleaf sedge	RHTRT/CAFI
31904	skunkbush sumac/mountain muhly	RHTRT/MUMO
320	currant series	RIBES
32001	wax currant/Colorado blue columbine	RICE/AQCA2
32002	gooseberry currant/Jacob's-ladder	RIMO2/POPU3
32003	gooseberry currant/Idaho fescue	RIMO2/FEID
321	blackberry series	RUBUS
32101	grayleaf red raspberry/Colorado blue columbine	RUIDS2/AQCA2
32102	grayleaf red raspberry/littleflower alumroot	RUIDS2/HEPA10
322	blueberry series	VACCI
32201	grouse whortleberry-dwarf bilberry/mountain stitchwort	VASC-VACA13/MIBI9
32202	dwarf bilberry/pine dropseed	VACA13/BLTR
323	thinleaf alder series	ALINT
32301	thinleaf alder-water birch/willow	ALINT-BEOC2/SALIX
32302	thinleaf alder-dwarf birch/water sedge	ALINT-BENA/CAAQ
32303	thinleaf alder-Drummond's willow/field horsetail	ALINT-SADR/EQAR
32304	thinleaf alder/redosier dogwood	ALINT/COSES
324	saltbrush series	ATRIP
32401	fourwing saltbrush/blue grama	ATCA2/BOGR2
32402	fourwing saltbrush-shadscale saltbrush/alkali sacaton	ATCA2-ATCO/SPAI
32403	shadscale saltbrush-big sagebrush/bluebunch wheatgrass	ATCO-ARTR2/PSSPS
32404	fourwing saltbrush/needle and thread	ATCA2/HECOC8
32405	fourwing saltbrush/western wheatgrass-blue grama	ATCA2/PASM-BOGR2
32406	fourwing saltbrush-big sagebrush/western wheatgrass	ATCA2-ARTR2/PASM
32407	Gardner's saltbrush/western wheatgrass	ATGA/PASM
325	creeping juniper series	JUHO2
32501	creeping juniper/little bluestem	JUHO2/SCSC
325011	creeping juniper/little bluestem/shrubby cinquefoil	JUHO2/SCSC/DAFL3
32502	creeping juniper/sun sedge	JUHO2/CAINH2
325021	creeping juniper/sun sedge/bluebunch wheatgrass	JUHO2/CAINH2/PSSPS
326	western snowberry series	SYOC
32601	western snowberry/western wheatgrass	SYOC/PASM
327	chokecherry series	PRVIV
32701	chokecherry-western snowberry/western wheatgrass	PRVIV-SYOC/PASM
32702	chokecherry-mountain snowberry/slender wheatgrass	PRVIV-SYOR2/ELTR7
328	redosier dogwood series	COSES
32801	redosier dogwood/common cowparsnip	COSES/HEMA80
32802	redosier dogwood/twinberry honeysuckle	COSES/LOINI
32803	redosier dogwood/whitestem gooseberry	COSES/RIIN2
329	dwarf birch series	BENA
32901	dwarf birch/mountain sedge	BENA/CASC12
32902	dwarf birch/Jacob's-ladder	BENA/POPU3

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
330	Rocky Mountain maple series	ACGL
33001	Rocky Mountain maple/redosier dogwood	ACGL/COSES
331	twinberry honeysuckle series	LOINI
33101	twinberry honeysuckle/bluejoint	LOINI/CACA4
332	common juniper series	JUCO6
33201	common juniper-currant/Thurber's fescue	JUCO6-RIBES/FETH
333	rockspirea series	HODU
33301	rockspirea/Thurber's fescue	HODU/FETH
33302	rockspirea/wax currant	HODU/RICE
334	squaw apple series	PERA4
33401	squaw apple-mountain snowberry/creeping barberry	PERA4-SYOR2/MARE11
335	winterfat series	KRLA2
33501	winterfat/James' galleta	KRLA2/PLJA
401	western wheatgrass series	PASM
40101	western wheatgrass/blue grama	PASM/BOGR2
401011	western wheatgrass/blue grama-needle and thread	PASM/BOGR2-HECOC8
401012	western wheatgrass/blue grama-green needlegrass	PASM/BOGR2-NAVI4
40102	western wheatgrass/inland saltgrass	PASM/DISP
40103	western wheatgrass/needle spikerush	PASM/ELAC
40104	western wheatgrass/green needlegrass	PASM/NAVI4
40105	western wheatgrass/sun sedge	PASM/CAINH2
40106	western wheatgrass/threadleaf sedge	PASM/CAFI
402	bluebunch wheatgrass series	PSSPS
40204	bluebunch wheatgrass/Sandberg bluegrass	PSSPS/POSE
40206	bluebunch wheatgrass/muttongrass	PSSPS/POFE
40207	bluebunch wheatgrass/western wheatgrass	PSSPS/PASM
40208	bluebunch wheatgrass/blue grama	PSSPS/BOGR2
40209	bluebunch wheatgrass/sideoats grama	PSSPS/BOCU
40210	bluebunch wheatgrass/threadleaf sedge	PSSPS/CAFI
40211	bluebunch wheatgrass/needle and thread	PSSPS/HECOC8
403	big bluestem series	ANGE
40301	big bluestem-little bluestem	ANGE-SCSC
40302	big bluestem/Indiangrass	ANGE/SONU2
403021	big bluestem/Indiangrass-prairie cordgrass	ANGE/SONU2-SPPE
403022	big bluestem/Indiangrass-alkali sacaton	ANGE/SONU2-SPAI
40303	big bluestem/prairie dropseed	ANGE/SPHE
40304	big bluestem/Scribner's rosette grass	ANGE/DIOLS
404	sand bluestem series	ANHA
40401	sand bluestem/prairie sandreed	ANHA/CALO
404011	sand bluestem/needle and thread	ANHA/HECOC8
404012	sand bluestem/sand lovegrass	ANHA/ERTR3
404013	sand bluestem/little bluestem	ANHA/SCSC
405	little bluestem series	SCSC
40501	little bluestem-sideoats grama/threadleaf sedge	SCSC-BOCU/CAFI
40502	little bluestem/blue grama	SCSC/BOGR2
40503	little bluestem/threadleaf sedge	SCSC/CAFI
405031	little bluestem/threadleaf sedge-needle and thread	SCSC/CAFI-HECOC8
40504	little bluestem/hairy grama	SCSC/BOHI2
40505	little bluestem/needlegrass	SCSC/STIPA

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
406	sideoats grama series	BOCU
40601	sideoats grama/little bluestem	BOCU/SCSC
407	blue grama	BOGR2
40701	blue grama/western wheatgrass	BOGR2/PASM
407012	blue grama/western wheatgrass-buffalograss	BOGR2/PASM-BUDA
40704	blue grama/fourwing saltbrush	BOGR2/ATCA2
40705	blue grama/buffalograss	BOGR2/BUDA
40706	blue grama/sun sedge	BOGR2/CAINH2
40707	blue grama/winterfat	BOGR2/KRLA2
40708	blue grama/sideoats grama	BOGR2/BOCU
407081	blue grama/sideoats grama-alkali sacaton	BOGR2/BOCU-SPAI
40709	blue grama/slimstem muhly	BOGR2/MUFI
407091	blue grama/slimstem muhly-rubber rabbitbrush	BOGR2/MUFI-ERNAN5
407092	blue grama/slimstem muhly-Parry's rabbitbrush	BOGR2/MUFI-ERPAP10
40710	blue grama/needlegrass	BOGR2/STIPA
40711	blue grama/needle and thread	BOGR2/HECOC8
407111	blue grama/needle and thread-prairie sandreed	BOGR2/HECOC8-CALO
407112	blue grama/needle and thread-sun sedge	BOGR2/HECOC8-CAINH2
407113	blue grama/needle and thread-green needlegrass	BOGR2/HECOC8-NAV14
40712	blue grama/needleleaf sedge	BOGR2/CADU6
40713	blue grama/James' galleta	BOGR2/PLJA
407131	blue grama/James' galleta-hairy grama	BOGR2/PLJA-BOHI2
409	buffalograss series	BUDA
40901	buffalograss/western wheatgrass	BUDA/PASM
40902	buffalograss/sedge	BUDA/CAREX
410	bluejoint series	CACA4
41001	bluejoint/Sartwell's sedge	CACA4/CASA8
41002	bluejoint-mountain sedge/tall fringed bluebells	CACA4-CASC12/MECI3
411	prairie sandreed series	CALO
41102	prairie sandreed/needle and thread	CALO/HECOC8
411021	prairie sandreed/needle and thread-blue grama	CALO/HECOC8-BOGR2
41103	prairie sandreed/sand dropseed	CALO/SPCR
41104	prairie sandreed/blue grama	CALO/BOGR2
41105	prairie sandreed/sun sedge	CALO/CAINH2
412	sedge series	CAREX
41201	water sedge/Northwest Territory sedge	CAAQ/CAUT
412011	water sedge/Northwest Territory sedge-fewflower spikerush	CAAQ/CAUT-ELQU2
412012	water sedge/Northwest Territory sedge-water sedge	CAAQ/CAUT-CAAQ
41202	blackroot sedge/alpine clover	CAEL3/TRDA2
41203	pinegrass/mountain stitchwort	CARU/MIBI9
41204	pinegrass/alpine clover	CARU/TRDA2
41205	mountain sedge/white marsh marigold	CASC12/CALE4
412051	mountain sedge/white marsh marigold-ledge stonecrop	CASC12/CALE4-RHIN11
41206	water sedge/ elephanthead lousewort	CAAQ/PEGR2
41207	Arapaho sedge/mountain stitchwort	CAAR13/MIBI9
41208	sedge/alpine bistort	CAREX/POVI3
41209	blackroot sedge/oreoxis	CAEL3/OREOX
41210	dryspike sedge/Ross' avens	CAFO3/GEROT

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
41211	cloud sedge/arctic bluegrass	CAHA6/POAR2
412110	cloud sedge/arctic bluegrass-arctic bluegrass	CAHA6/POAR2-POAR2
412112	cloud sedge/arctic bluegrass-varileaf cinquefoil	CAHA6/POAR2-PODI2
41212	sedge/alpine bistort	CAREX/POVI3
41213	black alpine sedge/rush	CANI2/JUNCU
41214	globe sedge/moss campion	CAPE12/SIAC
41215	Nebraska sedge/water whorlgrass-rush	CANE2/CAAQ3-JUNCU
41216	pyrenean sedge/blackhead fleabane	CAPY3/ERME2
41217	mountain sedge/Ross' avens	CASC12/GEROT
41218	pyrenean sedge/moss	CAPY3/2MOSS
41219	sedge/tufted hairgrass	CAREX/DECA18
41220	Nebraska sedge/tufted hairgrass	CANE2/DECA18
41221	pinegrass/Siberian phlox	CARU/PHSI
41222	mountain sedge/tufted hairgrass	CASC12/DECA18
41223	mountain sedge/moss	CASC12/2MOSS
41224	spike sedge/alpine besseya	CANA2/BEAL
41225	pinegrass/Bellardi bog sedge	CARU/KOMY
41226	blackroot sedge/lesser spikemoss	CAEL3/SEDE2
41227	blackroot sedge/Ross' avens	CAEL3/GEROT
41228	Engelmann's sedge/snow willow	CAEN3/SANI8
41229	early sedge/water sedge	CAPR4/CAAQ
412291	early sedge/water sedge-fewflower spikerush	CAPR4/CAAQ-ELQU2
41230	water sedge/Hood's sedge	CAAQ/CAH05
41231	smallwing sedge/tufted hairgrass	CAMI7/DECA18
41232	mountain sedge/alpine bistort	CASC12/POVI3
413	timber oatgrass series	DAIN
41301	timber oatgrass/varileaf cinquefoil	DAIN/PODI2
413011	timber oatgrass/varileaf cinquefoil-creeping sibbaldia	DAIN/PODI2-SIPR
41302	timber oatgrass/tufted hairgrass	DAIN/DECA18
413021	timber oatgrass/tufted hairgrass/alpine oreoxis	DAIN/DECA18/ORAL
41303	timber oatgrass/Letterman's needlegrass	DAIN/ACLE9
414	Parry's oatgrass series	DAPA2
41401	Parry's oatgrass/Idaho fescue	DAPA2/FEID
41402	Parry's oatgrass/sun sedge	DAPA2/CAINH2
414021	Parry's oatgrass/sun sedge-little bluestem	DAPA2/CAINH2-SCSC
41403	Parry's oatgrass/arizona fescue	DAPA2/FEAR2
415	tufted hairgrass series	DECA18
41501	tufted hairgrass/white marsh marigold	DECA18/CALE4
415011	tufted hairgrass/white marsh marigold/plaintainleaf buttercup	DECA18/CALE4/RAAL
41502	tufted hairgrass/sedge	DECA18/CAREX
415020	tufted hairgrass/Nebraska sedge	DECA18/CANE2
415021	tufted hairgrass/water sedge	DECA18/CAAQ
415022	tufted hairgrass/sheep sedge	DECA18/CAIL
41503	tufted hairgrass/Ross' avens	DECA18/GEROT
41504	tufted hairgrass/Drummond's rush	DECA18/JUDR
41505	tufted hairgrass/slender wheatgrass	DECA18/ELTR7
416	inland saltgrass series	DISP
41601	inland saltgrass/western wheatgrass	DISP/PASM
41602	inland saltgrass/Nuttall's alkaligrass	DISP/PUNU2

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
41603	inland saltgrass/alkali sacaton-western wheatgrass	DISP/SPAI-PASM
416031	inland saltgrass/alkali sacaton-Pursh seepweed	DISP/SPAI-SUCA2
417	spikerush series	ELEOC
41701	common spikerush/sedge	ELPA3/CAREX
418	Colorado wildrye series	LEAM
41801	Colorado wildrye/wax currant	LEAM/RICE
419	Arizona fescue series	FEAR2
41902	Arizona fescue/mountain muhly	FEAR2/MUMO
41903	Arizona fescue/sun sedge	FEAR2/CAINH2
420	Idaho fescue series	FEID
42001	Idaho fescue/western wheatgrass	FEID/PASM
42002	Idaho fescue/obtuse sedge	FEID/CAOB4
42003	Idaho fescue/sticky purple geranium	FEID/GEVI2
42004	Idaho fescue/spike fescue	FEID/LEKI2
42005	Idaho fescue/silky lupine	FEID/LUSE4
42008	Idaho fescue/slender wheatgrass	FEID/ELTR7
420081	Idaho fescue/slender wheatgrass/scarlet gilia	FEID/ELTR7/IPAG
42010	Idaho fescue/bluebunch wheatgrass	FEID/PSSPS
420101	Idaho fescue/bluebunch wheatgrass-Columbia needlegrass	FEID/PSSPS-ACNEN2
42011	Idaho fescue/tufted hairgrass	FEID/DECA18
42012	Idaho fescue/spike trisetum	FEID/TRSP2
42013	Idaho fescue/sun sedge	FEID/CAINH2
422	Thurber's fescue series	FETH
42201	Thurber's fescue/Idaho fescue	FETH/FEID
42202	Thurber's fescue/American vetch-Nevada pea	FETH/VIAM-LALAL3
42203	Thurber's fescue/Arizona fescue	FETH/FEAR2
42204	Thurber's fescue/Parry's oatgrass	FETH/DAPA2
42205	Thurber's fescue/alpine oreoxis	FETH/ORAL
423	rush series	JUNCU
42301	mountain rush/sedge	JUBAM/CAREX
423011	mountain rush/Nebraska sedge	JUBAM/CANE2
423012	mountain rush/tufted hairgrass	JUBAM/DECA18
42302	Drummond's rush/sedge	JUDR/CAREX
42303	Drummond's rush/creeping sibbaldia	JUDR/SIPR
42304	mountain rush/inland saltgrass	JUBAM/DISP
424	bog sedge series	KOBRE
42401	Bellardi bog sedge/Ross' avens-pinegrass	KOMY/GEROT-CARU
42402	Bellardi bog sedge/alpine clover	KOMY/TRDA2
424020	Bellardi bog sedge/alpine clover-alpine clover	KOMY/TRDA2-TRDA2
424021	Bellardi bog sedge/alpine clover-alpine oreoxis	KOMY/TRDA2-ORAL
42403	Bellardi bog sedge/dwarf clover	KOMY/TRNA2
42404	Siberian bog sedge/alpine bistort	KOSI/POVI3
425	slimstem muhly series	MUFI
42501	slimstem muhly/prairie sagewort	MUFI/ARFR4
426	mountain muhly series	MUMO
42601	mountain muhly/pine dropseed	MUMO/BLTR
42602	mountain muhly/Arizona fescue	MUMO/FEAR2
42603	mountain muhly/streambank wheatgrass	MUMO/ELLAL
42604	mountain muhly/prairie bluebells	MUMO/MELA3

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
427	alpine timothy series	PHAL2
42701	alpine timothy/hairy sedge	PHAL2/CALA16
428	bluegrass series	POA
42801	Wheeler bluegrass/Letterman's needlegrass	PONE2/ACLE9
42803	arctic bluegrass/alpine bistort	POAR2/POVI3
429	alkali sacaton series	SPAI
42901	alkali sacaton/western wheatgrass	SPAI/PASM
42902	alkali sacaton/blue grama	SPAI/BOGR2
430	composite dropseed series	SPCOC2
43001	composite dropseed/little bluestem	SPCOC2/SCSC
431	needle and thread series	HECOC8
43102	needle and thread/streambank wheatgrass	HECOC8/ELLAL
43103	needle and thread/blue grama	HECOC8/BOGR2
431031	needle and thread/blue grama-sideoats grama	HECOC8/BOGR2-BOCU
431032	needle and thread/blue grama-porcupinegrass	HECOC8/BOGR2-HESP11
43104	needle and thread/threadleaf sedge	HECOC8/CAFI
43106	needle and thread/mountain muhly	HECOC8/MUMO
43107	needle and thread/needleleaf sedge	HECOC8/CADU6
43108	needle and thread/hairy grama	HECOC8/BOHI2
43109	needle and thread/sun sedge	HECOC8/CAINH2
431091	needle and thread/sun sedge-lesser spikemoss	HECOC8/CAINH2-SEDE2
431092	needle and thread/sun sedge-green needlegrass	HECOC8/CAINH2-NAVI4
43110	needle and thread/ebony sedge	HECOC8/CAEB
432	prairie dropseed series	SPHE
43201	prairie dropseed/sedge	SPHE/CAREX
43202	prairie dropseed/porcupinegrass	SPHE/HESP11
433	bulrush series	SCIRP
43301	chairmakers bulrush/sedge	SCAM6/CAREX
43302	bulrush/inland saltgrass	SCIRP/DISP
433021	bulrush/inland saltgrass-prairie cordgrass	SCIRP/DISP-SPPE
434	plains muhly series	MUCU3
43401	plains muhly/little bluestem	MUCU3/SCSC
435	altai fescue series	FEAL
43501	altai fescue/Idaho fescue	FEAL/FEID
436	porcupinegrass series	HESP11
43601	porcupinegrass/plains muhly	HESP11/MUCU3
43602	porcupinegrass/big bluestem	HESP11/ANGE
436021	porcupinegrass/big bluestem-little bluestem	HESP11/ANGE-SCSC
437	Nuttall's alkaligrass series	PUAI
43701	Nuttall's alkaligrass/seaside arrowgrass	PUAI/TRMA4
438	prairie cordgrass series	SPPE
43801	prairie cordgrass/bluejoint	SPPE/CACA4
439	purple reedgrass series	CAPU
43901	purple reedgrass/Morton's alpineoatgrass	CAPU/HEMO3
43902	purple reedgrass/glaucous bluegrass	CAPU/POGL
440	water whorlgrass series	CAAQ3
44001	water whorlgrass/water sedge	CAAQ3/CAAQ
441	James' galleta series	PLJA
44101	James' galleta/alkali sacaton	PLJA/SPAI

**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
501	alpine springbeauty series	CLME
50101	alpine springbeauty/arctic pearlwort	CLME/SASA
50102	alpine springbeauty/moss campion	CLME/SIAC
502	Ross' avens series	GEROT
50201	Ross' avens/arctic bluegrass	GEROT/POAR2
50203	Ross' avens/clover-tufted hairgrass	GEROT/TRIFO-DECA18
50205	Ross' avens/american bistort	GEROT/POBI6
50206	Ross' avens/alpine clover	GEROT/TRDA2
50207	Ross' avens/dwarf clover	GEROT/TRNA2
50208	Ross' avens/curly sedge	GEROT/CARU3
503	Porter's licorice-root series	LIPO
50301	Porter's licorice-root/lodgepole lupine	LIPO/LUPA8
50302	Porter's licorice-root/american vetch	LIPO/VIAM
504	Rocky Mountain nailwort	PAPU2
50401	Rocky Mountain nailwort/mountain stitchwort	PAPU2/MIBI9
505	willow series	SALIX
50501	arctic willow/Ross' avens	SAAR27/GEROT
505011	arctic willow/Ross' avens-creeping sibbaldia	SAAR27/GEROT-SIPR
505012	arctic willow/Ross' avens-mountain sedge	SAAR27/GEROT-CASC12
50502	snow willow/Ross' avens	SANI8/GEROT
50503	arctic willow/blackhead fleabane	SAAR27/ERME2
50504	snow willow/dwarf bilberry	SANI8/VACA13
50505	snow willow/Parry's clover	SAAR27/TRPA5
506	clover series	TRIFO
50601	alpine clover/spreading wheatgrass	TRDA2/ELSC4
50602	alpine clover/pinegrass	TRDA2/CARU
50603	dwarf clover/mountain stitchwort	TRNA2/MIBI9
506031	dwarf clover/mountain stitchwort-Rocky Mountain nailwort	TRNA2/MIBI9-PAPU2
50604	Parry's clover/Ross' avens	TRPA5/GEROT
50605	Parry's clover/alpine buttercup	TRPA5/RAAD
50606	alpine clover/mountain stitchwort	TRDA2/MIBI9
50607	dwarf clover/featherleaf fleabane	TRNA2/ERPI6
50608	Parry's clover/tufted hairgrass	TRPA5/DECA18
507	broadleaf cattail series	TYLA
50701	broadleaf cattail/broadleaf arrowhead	TYLA/SALA2
508	captiate valerian series	VACA3
50801	captiate valerian/Bering chickweed	VACA3/CEBE2
509	Rocky Mountain pussytoes series	ANME2
50901	Rocky Mountain pussytoes/arctic bluegrass	ANME2/POAR2
510	boreal sagebrush series	ARAR9
51001	boreal sagebrush/Parry's clover-mountain stitchwort	ARAR9/TRPA5-MIBI9
511	white marsh marigold series	CALE4
51101	white marsh marigold/redpod stonecrop	CALE4/RHRH4
512	heartleaf bittercress series	CACO6
51201	heartleaf bittercress/white marsh marigold	CACO6/CALE4
513	mountain thistle series	CISC3
51301	mountain thistle/Colorado blue columbine	CISC3/AQCA2
514	alumroot series	HEUCH
51401	bracted alumroot-littleflower alumroot/featherleaf fleabane	HEBR2-HEPA10/ERPI6



**Reference Code 201 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
515	tall fringed bluebells series	MECI3
51501	tall fringed bluebells/tufted hairgrass	MECI3/DECA18
516	sticky polemonium series	POVI
51601	sticky polemonium/silky phacelia-mountain thistle	POVI/PHSE-CISC3
51602	sticky polemonium/featherleaf fleabane	POVI/ERPI6
517	Parry's primrose series	PRPA
51701	Parry's primrose/tufted hairgrass	PRPA/DECA18
518	saxifrage series	SAXIF
51801	brook saxifrage/tufted hairgrass	SAOD2/DECA18
51802	goldbloom saxifrage/alpine fescue	SACH4/FEBR
51803	matted saxifrage/brittle bladderfern	SABRA2/CYFR2
519	ragwort series	SENEC
51901	arrowleaf ragwort/fernleaf licorice-root	SETR/LIFI
51902	arctic groundsel/varileaf phacelia	TEAT2/PHHE2
520	creeping sibbaldia series	SIPR
52001	creeping sibbaldia/mountain stitchwort-moss	SIPR/MIBI9-2MOSS
520011	creeping sibbaldia/mountain stitchwort-moss/arctic bluegrass	SIPR/MIBI9-2MOSS/POAR2
52002	creeping sibbaldia/Pyrenean sedge	SIPR/CAPY3
52004	creeping sibbaldia/ebony sedge	SIPR/CAEB
521	American globeflower series	TRLAA2
52101	American globeflower-fernleaf licorice-root/subalpine fleabane	TRLAA2-LIFI/ERPE3
522	seepweed series	SUAED
52201	seepweed/red swampfire	SUAED/SARU
522011	seepweed/red swampfire-Nuttall's alkaligrass	SUAED/SARU-PUAI
522012	seepweed/red swampfire-verrucose seapurslane	SUAED/SARU-SEVE2
523	oreoxis series	OREOX
52301	Baker's alpineparsley/arctic willow-lesser spikemoss	ORBA/SAAR27-SEDE2
524	Colorado false hellebore series	VETE4
52401	Colorado false hellebore/common cowparsnip	VETE4/HEMA80
525	phlox series	PHLOX
52501	Siberian phlox/alpine clover	PHSI/TRDA2
526	twinpod series	PHYSA2
52601	Avery Peak twinpod/Harrington's beardtongue	PHAL10/PEHA11
527	alpine smelowskia series	SMCA
52701	alpine smelowskia/field sagewort	SMCA/ARCAB4
528	buckwheat series	ERIOG
52801	Colorado buckwheat/nodding locoweed	ERCO11/OXDEF
529	Gordon's ivesia series	IVGO
52901	Gordon's ivesia/Fendler's sandwort	IVGO/ARFEF3

**Reference Code 202**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
CECX002003	blacktailed prairie dog town grassland complex	
CEGL000187	ponderosa pine/creeping barberry	PIPO/MARE11
CEGL000188	ponderosa pine/western wheatgrass	PIPO/PASM
CEGL000190	ponderosa pine/mountain ninebark	PIPO/PHMO4
CEGL000192	ponderosa pine/chokecherry	PIPO/PRVI
CEGL000201	ponderosa pine/little bluestem	PIPO/SCSC

**Reference Code 202 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
CEGL000203	ponderosa pine/common snowberry	PIPO/SYAL
CEGL000382	white spruce/twinflower	PIGL/LIBO3
CEGL000383	white spruce/grouse whortleberry	PIGL/VASC
CEGL000554	bur oak/sun sedge	QUMA2/CAINH2
CEGL000555	bur oak/hophornbeam	QUMA2/OSVI
CEGL000583	quaking aspen/beaked hazelnut	POTR5/COCO6
CEGL000596	quaking aspen/chokecherry	POTR5/PRVI
CEGL000597	quaking aspen/western brackenfern	POTR5/PTAQ
CEGL000607	quaking aspen/white spirea	POTR5/SPBE2
CEGL000628	boxelder/chokecherry	ACNE2/PRVI
CEGL000659	eastern cottonwood-peachleaf willow/narrowleaf willow	PODE3-SAAM2/SAEX
CEGL000660	eastern cottonwood/western snowberry	PODE3/SYOC
CEGL000747	Rocky Mountain juniper/littleseed ricegrass	JUSC2/PIMI7
CEGL000844	ponderosa pine/kinnikinnick	PIPO/ARUV
CEGL000849	ponderosa pine/sun sedge	PIPO/CAINH2
CEGL000859	ponderosa pine/common juniper	PIPO/JUCO6
CEGL000861	ponderosa pine/Rocky Mountain juniper	PIPO/JUSC2
CEGL000865	ponderosa pine/bluebunch wheatgrass	PIPO/PSSP6
CEGL000873	ponderosa pine/bur oak	PIPO/QUMA2
CEGL000878	ponderosa pine (scree slope)	PIPO
CEGL000947	peachleaf willow	SAAM2
CEGL001047	Wyoming big sagebrush/western wheatgrass	ARTRW8/PASM
CEGL001072	silver sagebrush/western wheatgrass	ARCA13/PASM
CEGL001086	alderleaf mountain mahogany/sideoats grama	CEMO2/BOCU
CEGL001093	black hawthorn-fireberry hawthorn	CRDO2-CRCH
CEGL001108	chokecherry	PRVI
CEGL001120	skunkbush sumac/bluebunch wheatgrass	RHTR/PSSP6
CEGL001131	western snowberry	SYOC
CEGL001161	water birch/redosier dogwood	BEOC2/COSE16
CEGL001173	Bebb willow	SABE2
CEGL001188	sageleaf willow/beaked sedge	SACA4/CARO6
CEGL001197	narrowleaf willow (temporarily flooded)	SAEX
CEGL001394	creeping juniper/little bluestem	JUHO2/SCSC
CEGL001477	prairie cordgrass-sedge (wet meadow)	SPPE-CAREX
CEGL001559	bluejoint (wet meadow)	CACA4
CEGL001583	wesern wheatgrass-green needlegrass	PASM-NAVI4
CEGL001681	little bluestem-grama/threadleaf sedge	SCSC-BOUTE/CAFI
CEGL001813	Nebraska sedge (wet meadow)	CANE2
CEGL001833	common spikerush (wet meadow)	ELPA3
CEGL001838	Baltic rush (wet meadow)	JUBA
CEGL002034	western wheatgrass-needle and thread	PASM-HECOC8
CEGL002037	needle and thread-blue grama-threadleaf sedge	HECOC8-BOGR2-CAFI
CEGL002055	ponderosa pine (limestone cliffs)	PIPO
CEGL002057	white spruce (alluvial)	PIGL
CEGL002079	paper birch/beaked hazelnut	BEPA/COCO6
CEGL002082	green ash-American elm/western snowberry	FRPE-ULAM/SYOC
CEGL002123	ponderosa pine/roughleaf ricegrass	PIPO/ORAS
CEGL002138	bur oak/chokecherry-western snowberry	QUMA2/PRVI-SYOC
CEGL002205	big bluestem-little bluestem	ANGE-SCSC

**Reference Code 202 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
CEGL002228	Northern Great Plains Cattail-Bulrush marsh	TYPHA-SCIRP
CEGL002240	prairie dropseed-Richardson's needlegrass-timber oatgrass	SPHE-ACRI8-DAIN
CEGL002274	inland saltgrass-foxtail barley-alkali sacaton	DISP-HOJU-SPAI
CEGL002294	shale barren slopes	
CEGL002295	Black Hills granite/metamorphic rock outcrop	
CEGL002307	Black Hills talus	
CEGL002389	cattail (northern great plains cattail marsh)	TYPHA
CEGL002664	narrowleaf cottonwood/redosier dogwood	POAN3/COSE16
CEGL005257	sandstone dry Great Plains cliff sparse vegetation	
CEGL005261	redbeds (siltstone) rock outcrop	
CEGL005262	American mannagrass - fowl bluegrass (Black Hills streamside vegetation)	GLGR-POPA2
CEGL005263	western Great Plains streamside vegetation	
CEGL005283	igneous/metamorphic black hills butte sparse vegetation	

**Reference Code 203**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
CEGL000555	bur oak-hophornbeam	QUMA2-OSVI
CEGL000596	quaking aspen/chokecherry	POTR5/PRVI
CEGL000628	boxelder/chokecherry	ACNE2/PRVI
CEGL000659	eastern cottonwood-peachleaf willow/ narrowleaf willow floodplain	PODE3-SAAM2/SAEX
CEGL000660	eastern cottonwood/western snowberry floodplain	PODE3/SYOC
CEGL000947	peachleaf willow	SAAM2
CEGL001093	black hawthorn-fireberry hawthorn	CRD02-CRCH
CEGL001131	western snowberry	SYOC
CEGL001161	water birch/redosier dogwood	BEOC2/COSE16
CEGL001173	Bebb willow	SABE2
CEGL001188	sageleaf willow/beaked sedge	SACA4/CARO6
CEGL001197	narrowleaf willow	SAEX
CEGL001477	prairie cordgrass-sedge wet meadow	SPPE-CAREX
CEGL001559	bluejoint wet meadow	CACA4
CEGL001813	Nebraska sedge wet meadow	CANE2
CEGL001833	common spikerush wet meadow	ELPA3
CEGL001838	Baltic rush wet meadow	JUBA
CEGL002057	white spruce alluvial	PIGL
CEGL002079	paper birch/beaked hazelnut	BEPA/COCO6
CEGL002082	green ash-American elm/western snowberry	FRPE-ULAM/SYOC
CEGL002228	cattail-bulrush marsh	TYPHA-SCIRP
CEGL002274	alkali sacaton saline meadow	SPAI
CEGL002389	cattail marsh	TYPHA
CEGL002664	narrowleaf cottonwood/redosier dogwood	POAN3/COSE16
CEGL005262	American mannagrass-fowl bluegrass	GLGR-POPA2
CEGL005263	bulrush-fowl bluegrass	SCIRP-POPA2

## Reference Code 204

PV Code	Common Name	Scientific Name
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
00202	subalpine fir/grouse whortleberry	ABLA/VASC
00203	subalpine fir/whortleberry	ABLA/VAMY2
00204	subalpine fir/common juniper	ABLA/JUCO6
00205	subalpine fir/heartleaf arnica	ABLA/ARCO9
00206	subalpine fir/arrowleaf ragwort	ABLA/SETR
00207	subalpine fir/Jacob's-ladder	ABLA/POPU3
00208	subalpine fir/bluejoint	ABLA/CACA4
00211	subalpine fir/moss	ABLA/2MOSS
006	blue spruce series	PIPU
00601	blue spruce/Saskatoon serviceberry	PIPU/AMAL2
006090	blue spruce/Arizona fescue	PIPU/FEAR2
008	bristlecone pine series	PIAR
00801	bristlecone pine/Thurber's fescue	PIAR/FETH
00802	bristlecone pine/Arizona fescue	PIAR/FEAR2
00805	bristlecone pine/common juniper	PIAR/JUCO6
009	lodgepole pine series	PICO
00903	lodgepole pine/Geyer's sedge	PICO/CAGE2
00905	lodgepole pine/common juniper	PICO/JUCO6
00910	lodgepole pine/grouse whortleberry	PICO/VASC
010	limber pine series	PIFL2
01020	limber pine/matted saxifrage	PIFL2/SABRA2
011	ponderosa pine series	PIPO
01109	ponderosa pine/Arizona fescue	PIPO/FEAR2
01110	ponderosa pine/Idaho fescue	PIPO/FEID
012	Douglas-fir series	PSME
01206	Douglas-fir/Geyer's sedge	PSME/CAGE2
01208	Douglas-fir/Idaho fescue	PSME/FEID
01209	Douglas-fir/fivepetal cliffbush	PSME/JAAM
01211	Douglas-fir/Oregon boxleaf	PSME/PAMY
01217	Douglas-fir/mountain snowberry	PSME/SYOR2
01221	Douglas-fir/antelope bitterbrush	PSME/PUTR2
103	narrowleaf cottonwood series	POAN3
10306	narrowleaf cottonwood/gray alder-redosier dogwood	POAN3/ALIN2-COSES
105	quaking aspen series	POTR5
10503	quaking aspen/Thurber's fescue	POTR5/FETH
10510	quaking aspen/western brackenfern	POTR5/PTAQ
10511	quaking aspen/mountain snowberry	POTR5/SYOR2
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE
10515	quaking aspen/Saskatoon serviceberry-chokecherry	POTR5/AMAL2-PRVI
10521	quaking aspen/kinnikinnick	POTR5/ARUV
10522	quaking aspen/Arizona fescue	POTR5/FEAR2
202	Utah juniper series	JUOS
20210	Utah juniper/mountain snowberry	JUOS/SYOR2
313	Gambel oak series	QUGA
313010	Gambel oak/Saskatoon serviceberry	QUGA/AMAL2
313080	Gambel oak/chokecherry	QUGA/PRVI

## Reference Code 205

PV Code	Common Name	Scientific Name
00101	white fir/Rocky Mountain maple	ABCO/ACGL
001011	white fir/Rocky Mountain maple-creeping barberry	ABCO/ACGL-MARE11
001012	white fir/Rocky Mountain maple-rockspirea	ABCO/ACGL-HODU
001013	white fir/Rocky Mountain maple (riparian phase)	ABCO/ACGL
001014	white fir/Rocky Mountain maple-Rocky Mountain maple	ABCO/ACGL-ACGL
001015	white fir/Rocky Mountain maple-Oregon boxleaf	ABCO/ACGL-PAMY
001016	white fir-Douglas-fir/Rocky Mountain maple	ABCO-PSME/ACGL
00102	white fir/creeping barberry	ABCO/MARE11
001021	white fir/creeping barberry/New Mexico locust	ABCO/MARE11/RONE
001022	white fir/creeping barberry-common juniper	ABCO/MARE11-JUCO6
001023	white fir/creeping barberry-mountain snowberry	ABCO/MARE11-SYOR2
001024	white fir/creeping barberry-creeping barberry	ABCO/MARE11-MARE11
001025	white fir/creeping barberry (sparse)	ABCO/MARE11
00103	white fir/sprucefir fleabane	ABCO/EREX4
001031	white fir-Douglas-fir/sprucefir fleabane	ABCO-PSME/EREX4
00104	white fir/Arizona fescue	ABCO/FEAR2
001041	white fir/Arizona fescue-muttongrass	ABCO/FEAR2-POFE
001042	white fir/Arizona fescue-Gambel oak	ABCO/FEAR2-QUGA
001043	white fir-Douglas-fir/Arizona fescue	ABCO-PSME/FEAR2
001044	white fir/Arizona fescue-Arizona fescue	ABCO/FEAR2-FEAR2
00105	white fir/Gambel oak	ABCO/QUGA
001051	white fir/Gambel oak-screwleaf muhly	ABCO/QUGA-MUVI2
001052	white fir/Gambel oak-Arizona fescue	ABCO/QUGA-FEAR2
001053	white fir/Gambel oak-pine muhly	ABCO/QUGA-MUDU
001054	white fir/Gambel oak-rockspirea	ABCO/QUGA-HODU
001055	white fir/Gambel oak-Gambel oak	ABCO/QUGA-QUGA
001056	white fir-Douglas-fir/Gambel oak	ABCO-PSME/QUGA
00106	white fir/screwleaf muhly	ABCO/MUVI2
00108	white fir/bigtooth maple	ABCO/ACGR3
001081	white fir/bigtooth maple-rockspirea	ABCO/ACGR3-HODU
001082	white fir/bigtooth maple-bigtooth maple	ABCO/ACGR3-ACGR3
00109	white fir/kinnikinnick	ABCO/ARUV
00110	white fir/whortleberry	ABCO/VAMY2
00111	white fir/New Mexico locust	ABCO/RONE
001111	white fir/New Mexico locust (sparse)	ABCO/RONE
00112	white fir/beardless wildrye	ABCO/LETR5
001121	white fir-Douglas-fir/beardless wildrye	ABCO-PSME/LETR5
00113	white fir/Arizona walnut	ABCO/JUMA
00115	white fir/dryspike sedge	ABCO/CAFO3
00116	white fir (sparse)	ABCO
001161	white fir-Douglas-fir (sparse undergrowth)	ABCO-PSME (sparse)
00120	white fir/greenleaf manzanita	ABCO/ARPA6
00121	white fir/curl-leaf mountain mahogany	ABCO/CELE3
00122	white fir/rockspirea (scree forest)	ABCO/HODU
00123	white fir/common juniper	ABCO/JUCO6
00124	white fir/mallow ninebark	ABCO/PHMA5
00125	white fir/mountain snowberry	ABCO/SYOR2
00126	white fir/fragrant bedstraw (riparian forest)	ABCO/GATR3

**Reference Code 205(cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00127	white fir-Douglas-fir/Nevada pea	ABCO-PSME/LALAL3
00128	white fir/sweetcicely	ABCO/OSBE
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
002010	subalpine fir/Geyer's sedge-Geyer's sedge	ABLA/CAGE2-CAGE2
002011	subalpine fir/Geyer's sedge-big sagebrush	ABLA/CAGE2-ARTR2
002012	subalpine fir/Geyer's sedge-Douglas-fir	ABLA/CAGE2-PSME
00202	subalpine fir/grouse whortleberry	ABLA/VASC
002021	subalpine fir/grouse whortleberry-twinflower	ABLA/VASC-LIBO3
002022	subalpine fir/grouse whortleberry-whortleberry	ABLA/VASC-VAMY2
002023	subalpine fir/grouse whortleberry-Engelmann spruce	ABLA/VASC-PIEN
002024	subalpine fir/grouse whortleberry-thimbleberry	ABLA/VASC-RUPA
00203	subalpine fir/creeping barberry	ABLA/MARE11
002030	subalpine fir/creeping barberry-creeping barberry	ABLA/MARE11-MARE11
002031	subalpine fir/creeping barberry-gooseberry currant	ABLA/MARE11-RIMO2
002032	subalpine fir/creeping barberry-common juniper	ABLA/MARE11-JUCO6
002033	subalpine fir/creeping barberry-Douglas-fir	ABLA/MARE11-PSME
002034	subalpine fir/creeping barberry-Engelmann spruce	ABLA/MARE11-PIEN
002035	subalpine fir/creeping barberry-limber pine	ABLA/MARE11-PIFL2
002036	subalpine fir/creeping barberry-Geyer's sedge	ABLA/MARE11-CAGE2
00204	subalpine fir/common juniper	ABLA/JUCO6
00205	subalpine fir/heartleaf arnica	ABLA/ARCO9
002050	subalpine fir/heartleaf arnica-heartleaf arnica	ABLA/ARCO9-ARCO9
002051	subalpine fir/heartleaf arnica-timber milkvetch	ABLA/ARCO9-ASMI9
002052	subalpine fir/heartleaf arnica-russet buffaloberry	ABLA/ARCO9-SHCA
002053	subalpine fir/heartleaf arnica-Engelmann spruce	ABLA/ARCO9-PIEN
00206	subalpine fir/arrowleaf ragwort	ABLA/SETR
00207	subalpine fir/Jacob's-ladder	ABLA/POPU3
00211	subalpine fir/moss	ABLA/2MOSS
00213	subalpine fir/Oregon boxleaf	ABLA/PAMY
00220	subalpine fir/whortleberry	ABLA/VAMY2
002201	subalpine fir/whortleberry-twinflower	ABLA/VAMY2-LIBO3
002202	subalpine fir/whortleberry-thimbleberry	ABLA/VAMY2-RUPA
002203	subalpine fir/grayleaf willow	ABLA/SAGL
00240	subalpine fir/Sitka alder	ABLA/ALVIS
00245	subalpine fir/Rocky Mountain maple	ABLA/ACGL
002450	subalpine fir/Rocky Mountain maple-Rocky Mountain maple	ABLA/ACGL-ACGL
002451	subalpine fir/Rocky Mountain maple-Oregon boxleaf	ABLA/ACGL-PAMY
00260	subalpine fir/fragrant bedstraw	ABLA/GATR3
00261	subalpine fir/red baneberry	ABLA/ACRU2
00262	subalpine fir/bride's bonnet	ABLA/CLUN2
002621	subalpine fir/bride's bonnet-bride's bonnet	ABLA/CLUN2-CLUN2
002622	subalpine fir/bride's bonnet-wild sarsaparilla	ABLA/CLUN2-ARNU2
002623	subalpine fir/bride's bonnet-dwarf bilberry	ABLA/CLUN2-VACA13
002624	subalpine fir/bride's bonnet-common beargrass	ABLA/CLUN2-XETE
002625	subalpine fir/bride's bonnet-rusty menziesia	ABLA/CLUN2-MEFE
00263	subalpine fir/claspleaf twistedstalk	ABLA/STAM2
002630	subalpine fir/claspleaf twistedstalk-claspleaf twistedstalk	ABLA/STAM2-STAM2
002631	subalpine fir/claspleaf twistedstalk-Canby's licorice-root	ABLA/STAM2-LICA2
002632	subalpine fir/claspleaf twistedstalk-rusty menziesia	ABLA/STAM2-MEFE

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00264	subalpine fir/dwarf bilberry	ABLA/VACA13
002640	subalpine fir/dwarf bilberry-dwarf bilberry	ABLA/VACA13-VACA13
002641	subalpine fir/dwarf bilberry-Engelmann spruce	ABLA/VACA13-PIEN
00265	subalpine fir/bluejoint	ABLA/CACA4
002651	subalpine fir/bluejoint-bluejoint	ABLA/CACA4-CACA4
002652	subalpine fir/bluejoint-Canby's licorice-root	ABLA/CACA4-LICA2
002653	subalpine fir/bluejoint-fragrant bedstraw	ABLA/CACA4-GATR3
002654	subalpine fir/bluejoint-dwarf bilberry	ABLA/CACA4-VACA13
002655	subalpine fir/bluejoint-western Labrador tea	ABLA/CACA4-LEGL
00266	subalpine fir/twinflower	ABLA/LIBO3
002661	subalpine fir/twinflower-twinflower	ABLA/LIBO3-LIBO3
002662	subalpine fir/twinflower-common beargrass	ABLA/LIBO3-XETE
002663	subalpine fir/twinflower/grouse whortleberry	ABLA/LIBO3/VASC
00267	subalpine fir/rusty menziesia	ABLA/MEFE
002670	subalpine fir/rusty menziesia-rusty menziesia	ABLA/MEFE-MEFE
002671	subalpine fir/rusty menziesia-Idaho goldthread	ABLA/MEFE-COOC
002672	subalpine fir/rusty menziesia-Hitchcock's smooth woodrush	ABLA/MEFE-LUGLH
002673	subalpine fir/rusty menziesia-common beargrass	ABLA/MEFE-XETE
002674	subalpine fir/rusty menziesia-grouse whortleberry	ABLA/MEFE-VASC
00268	subalpine fir/Idaho goldthread	ABLA/COOC
00269	subalpine fir/common beargrass	ABLA/XETE
002690	subalpine fir/common beargrass-common beargrass	ABLA/XETE-XETE
002691	subalpine fir/common beargrass-thinleaf huckleberry	ABLA/XETE-VAME
002692	subalpine fir/common beargrass-grouse whortleberry	ABLA/XETE-VASC
002693	subalpine fir/common beargrass-Idaho goldthread	ABLA/XETE-COOC
002694	subalpine fir/common beargrass-Hitchcock's smooth woodrush	ABLA/XETE-LUGLH
00270	subalpine fir/sickletop lousewort	ABLA/PERA
002700	subalpine fir/sickletop lousewort-sickletop lousewort	ABLA/PERA-PERA
002701	subalpine fir/sickletop lousewort-Douglas-fir	ABLA/PERA-PSME
00271	subalpine fir/broadleaf arnica	ABLA/ARLA8
00272	subalpine fir/thinleaf huckleberry	ABLA/VAME
002721	subalpine fir/thinleaf huckleberry-grouse whortleberry	ABLA/VAME-VASC
002722	subalpine fir/thinleaf huckleberry-Oregon boxleaf	ABLA/VAME-PAMY
002723	subalpine fir/thinleaf huckleberry-thinleaf huckleberry	ABLA/VAME-VAME
00273	subalpine fir/white spirea	ABLA/SPBE2
00274	subalpine fir/Columbian monkshood	ABLA/ACCO4
00275	subalpine fir/pinegrass	ABLA/CARU
002750	subalpine fir/pinegrass-pinegrass	ABLA/CARU-CARU
002751	subalpine fir/pinegrass-Oregon boxleaf	ABLA/CARU-PAMY
00276	subalpine fir/sweetcicely	ABLA/OSBE
002760	subalpine fir/sweetcicely-sweetcicely	ABLA/OSBE-OSBE
002761	subalpine fir/sweetcicely-Oregon boxleaf	ABLA/OSBE-PAMY
00278	subalpine fir/burnet ragwort	ABLA/PASA12
002780	subalpine fir/burnet ragwort-burnet ragwort	ABLA/PASA12-PASA12
002781	subalpine fir/burnet ragwort-Douglas-fir	ABLA/PASA12-PSME
00279	subalpine fir/Ross' sedge	ABLA/CARO5
00281	subalpine fir/gooseberry currant	ABLA/RIMO2
002811	subalpine fir/gooseberry currant-gooseberry currant	ABLA/RIMO2-RIMO2
002812	subalpine fir/gooseberry currant-whitebark pine	ABLA/RIMO2-PIAL

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
002813	subalpine fir/gooseberry currant-Fendler's meadow-rue	ABLA/RIMO2-THFE
002814	subalpine fir/gooseberry currant-lodgepole pine	ABLA/RIMO2-PICO
002815	subalpine fir/gooseberry currant-spike trisetum	ABLA/RIMO2-TRSP2
002816	subalpine fir/gooseberry currant-aspen bluebells	ABLA/RIMO2-MEAR6
00283	subalpine fir/Hitchcock's smooth woodrush	ABLA/LUGLH
002830	subalpine fir/Hitchcock's smooth woodrush-Hitchcock's smooth woodrush	ABLA/LUGLH-LUGLH
002831	subalpine fir/Hitchcock's smooth woodrush-grouse whortleberry	ABLA/LUGLH-VASC
002832	subalpine fir/Hitchcock's smooth woodrush-rusty menziesia	ABLA/LUGLH-MEFE
00284	subalpine fir/devilsclub	ABLA/OPHO
00285	subalpine fir/rockspirea (scree forest)	ABLA/HODU
00286	subalpine fir/fivepetal cliffbush (scree forest)	ABLA/JAAM
00287	subalpine fir/yellowdot saxifrage (scree forest)	ABLA/SABR6
00288	subalpine fir/mallow ninebark	ABLA/PHMA5
00289	subalpine fir/common snowberry	ABLA/SYAL
00290	subalpine fir/Howell's marsh marigold	ABLA/CALEH2
00291	subalpine fir/western meadow-rue	ABLA/THOC
00292	subalpine fir/sprucefir fleabane	ABLA/EREX4
00293	subalpine fir/Nevada pea	ABLA/LALA3
00294	subalpine fir/tall fringed bluebells	ABLA/MECI3
00295	subalpine fir/thimbleberry	ABLA/RUPA
00296	subalpine fir/rock clematis	ABLA/CLCOC2
00297	subalpine fir/russet buffaloberry	ABLA/SHCA
00298	subalpine fir-whitebark pine/grouse whortleberry	ABLA-PIAL/VASC
00299	subalpine fir-whitebark pine	ABLA-PIAL
003	Subalpine fir-Engelmann spruce series	ABLA-PIEN
00302	subalpine fir-Engelmann spruce/heartleaf arnica	ABLA-PIEN/ARCO9
00305	subalpine fir-Engelmann spruce/bluejoint	ABLA-PIEN/CACA4
00307	subalpine fir-Engelmann spruce/Geyer's sedge	ABLA-PIEN/CAGE2
00309	subalpine fir-Engelmann spruce/common juniper	ABLA-PIEN/JUCO6
00311	subalpine fir-Engelmann spruce/moss species	ABLA-PIEN/2MOSS
00313	subalpine fir-Engelmann spruce/Oregon boxleaf	ABLA-PIEN/PAMY
00316	subalpine fir-Engelmann spruce/arrowleaf ragwort	ABLA-PIEN/SETR
00320	subalpine fir-Engelmann spruce/whortleberry	ABLA-PIEN/VAMY2
00321	subalpine fir-Engelmann spruce/grouse whortleberry	ABLA-PIEN/VASC
00323	subalpine fir-Engelmann spruce/grayleaf willow	ABLA-PIEN/SAGL
004	Engelmann spruce/mountain hemlock series	PIEN
00401	Engelmann spruce/heartleaf arnica	PIEN/ARCO9
00402	Engelmann spruce/white marsh marigold	PIEN/CALE4
00403	Engelmann spruce/softleaf sedge	PIEN/CADI6
00405	Engelmann spruce/fragrant bedstraw	PIEN/GATR3
00406	Engelmann spruce/moss	PIEN/2MOSS
004061	Engelmann spruce/revolute hypnum moss	PIEN/HYRE70
00407	Engelmann spruce/common juniper	PIEN/JUCO6
00408	Engelmann spruce/twinflower	PIEN/LIBO3
00409	Engelmann spruce/mallow ninebark	PIEN/PHMA5
00413	Engelmann spruce/alpine clover	PIEN/TRDA2
00414	Engelmann spruce/grouse whortleberry	PIEN/VASC



**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00415	Engelmann spruce/whortleberry	PIEN/VAMY2
004151	Engelmann spruce/whortleberry/Jacob's-ladder	PIEN/VAMY2/POPU3
00418	Engelmann spruce/dwarf bilberry	PIEN/VACA13
00430	Engelmann spruce/Rocky Mountain maple	PIEN/ACGL
00431	Engelmann spruce/sprucefir fleabane	PIEN/EREX4
00432	Engelmann spruce/beardless wildrye	PIEN/LETR5
00433	Engelmann spruce/Ross' avens	PIEN/GERO2
00434	Engelmann spruce/gooseberry currant	PIEN/RIMO2
00435	Engelmann spruce/bittercress ragwort	PIEN/PACA34
004350	Engelmann spruce/bittercress ragwort-subalpine fir	PIEN/PACA34-ABLAL
004351	Engelmann spruce/bittercress ragwort-white fir	PIEN/PACA34-ABCO
00441	Engelmann spruce/field horsetail	PIEN/EQAR
00442	Engelmann spruce/grayleaf willow	PIEN/SAGL
00443	Engelmann spruce-subalpine fir/grayleaf willow	PIEN-ABLA/SAGL
00444	Engelmann spruce/dryspike sedge	PIEN/CAFO3
00445	Engelmann spruce/bride's bonnet	PIEN/CLUN2
004450	Engelmann spruce/bride's bonnet-bride's bonnet	PIEN/CLUN2-CLUN2
004451	Engelmann spruce/bride's bonnet-dwarf bilberry	PIEN/CLUN2-VACA13
00446	Engelmann spruce/eltrot (riparian forest)	PIEN/HESP6
00447	Engelmann spruce/yellowdot saxifrage (scree forest)	PIEN/SABR6
00448	Engelmann spruce/arrowleaf ragwort	PIEN/SETR
004481	Engelmann spruce/arrowleaf ragwort-Engelmann spruce	PIEN/SETR-PIEN
004482	Engelmann spruce/arrowleaf ragwort-Douglas-fir	PIEN/SETR-PSME
00449	Engelmann spruce/starry false lily of the vally	PIEN/MAST4
00467	mountain hemlock/claspleaf twistedstalk	TSME/STAM2
004670	mountain hemlock/claspleaf twistedstalk-claspleaf twistedstalk	TSME/STAM2-STAM2
004671	mountain hemlockclaspleaf /twistedstalk-Hitchcock's smooth woodrush	TSME/STAM2-LUGLH
004672	mountain hemlock/claspleaf twistedstalk-rusty menziesia	TSME/STAM2-MEFE
00468	mountain hemlock/rusty menziesia	TSME/MEFE
004680	mountain hemlock/rusty menziesia-rusty menziesia	TSME/MEFE-MEFE
004681	mountain hemlock/rusty menziesia-Hitchcock's smooth woodrush	TSME/MEFE-LUGLH
004682	mountain hemlock/rusty menziesia-common beargrass	TSME/MEFE-XETE
00471	mountain hemlock/common beargrass	TSME/XETE
004710	mountain hemlock/common beargrass-common beargrass	TSME/XETE-XETE
004711	mountain hemlock/common beargrass-Hitchcock's smooth woodrush	TSME/XETE-LUGLH
004713	mountain hemlock/common beargrass-grouse whortleberry	TSME/XETE-VASC
00484	mountain hemlock/Hitchcock's smooth woodrush	TSME/LUGLH
004840	mountain hemlock/Hitchcock's smooth woodrush-Hitchcock's smooth woodrush	TSME/LUGLH-LUGLH
004841	mountain hemlock/Hitchcock's smooth woodrush-grouse whortleberry	TSME/LUGLH-VASC
004842	mountain hemlock/Hitchcock's smooth woodrush-rusty menziesia	TSME/LUGLH-MEFE
00485	mountain hemlock/bride's bonnet	TSME/CLUN2
004850	mountain hemlock/bride's bonnet-bride's bonnet	TSME/CLUN2-CLUN2
004851	mountain hemlock/bride's bonnet-rusty menziesia	TSME/CLUN2-MEFE
004852	mountain hemlock/bride's bonnet-common beargrass	TSME/CLUN2-XETE

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
005	grand fir series	ABGR
00501	western red cedar series	THPL
00502	western hemlock series	TSHE
00503	white spruce/twinflower	PIGL/LIBO3
00504	white spruce/grouse whortleberry	PIGL/VASC
00505	grand fir/white spirea	ABGR/SPBE2
00506	grand fir/mallow ninebark	ABGR/PHMA5
005061	grand fir/mallow ninebark-Idaho goldthread	ABGR/PHMA5-COOC
005062	grand fir/mallow ninebark-mallow ninebark	ABGR/PHMA5-PHMA5
00510	grand fir/common beargrass	ABGR/XETE
005101	grand fir/common beargrass-Idaho goldthread	ABGR/XETE-COOC
005102	grand fir/common beargrass-thinleaf huckleberry	ABGR/XETE-VAME
005103	grand fir/common beargrass-common beargrass	ABGR/XETE-XETE
00511	grand fir/Idaho goldthread	ABGR/COOC
00515	grand fir/thinleaf huckleberry	ABGR/VAME
00516	grand fir/British Columbia wildginger	ABGR/ASCA2
005161	grand fir/British Columbia wildginger-British Columbia wildginger	ABGR/ASCA2-ASCA2
005162	grand fir/British Columbia wildginger-rusty menziesia	ABGR/ASCA2-MEFE
005163	grand fir/British Columbia wildginger-Pacific yew	ABGR/ASCA2-TABR2
00520	grand fir/bride's bonnet	ABGR/CLUN2
005201	grand fir/bride's bonnet-bride's bonnet	ABGR/CLUN2-CLUN2
005203	grand fir/bride's bonnet-common beargrass	ABGR/CLUN2-XETE
005204	grand fir/bride's bonnet-mallow ninebark	ABGR/CLUN2-PHMA5
005205	grand fir/bride's bonnet-rusty menziesia	ABGR/CLUN2-MEFE
005206	grand fir/bride's bonnet-Pacific yew	ABGR/CLUN2-TABR2
00525	grand fir/Rocky Mountain maple	ABGR/ACGL
005251	grand fir/Rocky Mountain maple-Rocky Mountain maple	ABGR/ACGL-ACGL
005252	grand fir/Rocky Mountain maple-mallow ninebark	ABGR/ACGL-PHMA5
00529	grand fir/arrowleaf ragwort	ABGR/SETR
00530	western red cedar/bride's bonnet	THPL/CLUN2
005301	western red cedar/bride's bonnet-bride's bonnet	THPL/CLUN2-CLUN2
005302	western red cedar/bride's bonnet-wild sarsaparilla	THPL/CLUN2-ARNU2
005303	western red cedar/bride's bonnet-rusty menziesia	THPL/CLUN2-MEFE
005304	western red cedar/bride's bonnet-common beargrass	THPL/CLUN2-XETE
005305	western red cedar/bride's bonnet-Pacific yew	THPL/CLUN2-TABR2
00540	western red cedar/common ladyfern	THPL/ATFI
005401	western red cedar/common ladyfern-northern maidenhair	THPL/ATFI-ADPE
005402	western red cedar/common ladyfern-common ladyfern	THPL/ATFI-ATFI
00545	western red cedar/British Columbia wildginger	THPL/ASCA2
005451	western red cedar/British Columbia wildginger-British Columbia wildginger	THPL/ASCA2-ASCA2
005452	western red cedar/British Columbia wildginger-rusty menziesia	THPL/ASCA2-MEFE
005453	western red cedar/British Columbia wildginger-Pacific yew	THPL/ASCA2-TABR2
00550	western red cedar/devilsclub	THPL/OPHO
00555	western red cedar/western oakfern	THPL/GYDR
00560	western red cedar/northern maidenhair	THPL/ADPE
00562	western red cedar/Oregon boxleaf	THPL/PAMY

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00565	western hemlock/western oakfern	TSHE/GYDR
00570	western hemlock/bride's bonnet	TSHE/CLUN2
005701	western hemlock/bride's bonnet-bride's bonnet	TSHE/CLUN2-CLUN2
005702	western hemlock/bride's bonnet-wild sarsaparilla	TSHE/CLUN2-ARNU2
005703	western hemlock/bride's bonnet-rusty menziesia	TSHE/CLUN2-MEFE
005704	western hemlock/bride's bonnet-common beargrass	TSHE/CLUN2-XETE
00571	western hemlock/Oregon boxleaf	TSHE/PAMY
00575	western hemlock/British Columbia wildginger	TSHE/ASCA2
005751	western hemlock/British Columbia wildginger-wild sarsaparilla	TSHE/ASCA2-ARNU2
005752	western hemlock/British Columbia wildginger-rusty menziesia	TSHE/ASCA2-MEFE
005753	western hemlock/British Columbia wildginger-British Columbia wildginger	TSHE/ASCA2-ASCA2
00579	western hemlock/rusty menziesia	TSHE/MEFE
00580	grand fir/dwarf bilberry	ABGR/VACA13
00585	grand fir/pinegrass	ABGR/CARU
00590	grand fir/twinflower	ABGR/LIBO3
005901	grand fir/twinflower-twinflower	ABGR/LIBO3-LIBO3
005902	grand fir/twinflower-common beargrass	ABGR/LIBO3-XETE
005903	grand fir/twinflower-thinleaf huckleberry	ABGR/LIBO3-VAME
00591	grand fir/Oregon boxleaf	ABGR/PAMY
00592	grand fir/wild sarsaparilla	ABGR/ARNU2
006	blue spruce series	PIPU
00601	blue spruce/Saskatoon serviceberry-redosier dogwood/Geyer's sedge	PIPU/AMAL2-COSES/CAGE2
006010	blue spruce/redosier dogwood (riparian forest)	PIPU/COSES
006011	blue spruce/Saskatoon serviceberry (riparian forest)	PIPU/AMAL2
006012	blue spruce/creeping barberry-mountain snowberry	PIPU/MARE11-SYOR2
00602	blue spruce/heartleaf arnica (riparian forest)	PIPU/ARCO9
00603	blue spruce/bluegrass	PIPU/POA
00604	blue spruce-Douglas-fir/twinflower	PIPU-PSME/LIBO3
0060401	blue spruce/twinflower	PIPU/LIBO3
00605	blue spruce/thinleaf alder	PIPU/ALINT
00606	blue spruce/dryspike sedge	PIPU/CAFO3
00607	blue spruce/sprucefir fleabane	PIPU/EREX4
006071	blue spruce/sprucefir fleabane-sprucefir fleabane	PIPU/EREX4-EREX4
006072	blue spruce/sprucefir fleabane-ponderosa pine	PIPU/EREX4-PIPO
006073	blue spruce-Engelmann spruce/sprucefir fleabane	PIPU-PIEN/EREX4
00608	blue spruce-Douglas-fir/kinnikinnick	PIPU-PSME/ARUV
006080	blue spruce/kinnikinnick	PIPU/ARUV
00609	blue spruce/Arizona fescue	PIPU/FEAR2
00610	blue spruce/creeping barberry	PIPU/MARE11
006101	blue spruce/creeping barberry-creeping barberry	PIPU/MARE11-MARE11
00611	blue spruce/field horsetail	PIPU/EQAR
00612	blue spruce/common juniper	PIPU/JUCO6
006120	blue spruce-Douglas-fir/common juniper	PIPU-PSME/JUCO6
00613	blue spruce/bittercress ragwort	PIPU/PACA34
006131	blue spruce-engelmann spruce/bittercress ragwort	PIPU-PIEN/PACA34
00620	blue spruce/Kentucky bluegrass (riparian forest)	PIPU/POPR

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
00621	blue spruce/bluebunch wheatgrass	PIPU/PSSPS
00622	blue spruce/Virginia strawberry	PIPU/FRVIG2
00623	blue spruce-Douglas-fir	PIPU-PSME
006231	blue spruce-Douglas-fir/sharpleaf valerian	PIPU-PSME/VAAC
007	whitebark pine series	PIAL
00701	whitebark pine/Geyer's sedge	PIAL/CAGE2
00702	whitebark pine/Ross' sedge	PIAL/CAR05
007020	whitebark pine/Ross' sedge-Ross' sedge	PIAL/CAR05-CAR05
007021	whitebark pine/Ross' sedge/lodgepole pine	PIAL/CAR05/PICO
00704	whitebark pine/Idaho fescue	PIAL/FEID
00705	whitebark pine/common juniper	PIAL/JUC06
007050	whitebark pine/common juniper-common juniper	PIAL/JUC06-JUC06
007051	whitebark pine/common juniper/russet buffaloberry	PIAL/JUC06/SHCA
00706	whitebark pine/grouse whortleberry	PIAL/VASC
00708	whitebark pine-subalpine fir	PIAL-ABLA
00786	subalpine larch-subalpine fir	LALY-ABLA
008	bristlecone pine series	PIAR
00801	bristlecone pine/Thurber's fescue	PIAR/FETH
00802	bristlecone pine/Arizona fescue	PIAR/FEAR2
00803	bristlecone pine/alpine clover	PIAR/TRDA2
00804	bristlecone pine/gooseberry currant (scree forest)	PIAR/RIM02
00805	bristlecone pine/common juniper	PIAR/JUC06
009	lodgepole pine series	PICO
00901	lodgepole pine/kinnikinnick	PICO/ARUV
00903	lodgepole pine/Geyer's sedge	PICO/CAGE2
00905	lodgepole pine/common juniper	PICO/JUC06
00908	lodgepole pine/russet buffaloberry	PICO/SHCA
00909	lodgepole pine/whortleberry	PICO/VAMY2
00910	lodgepole pine/grouse whortleberry	PICO/VASC
00911	lodgepole pine/Ross' sedge	PICO/CAR05
00912	lodgepole pine/dwarf bilberry	PICO/VACA13
00913	lodgepole pine/thinleaf huckleberry	PICO/VAME
00920	lodgepole pine/bluejoint	PICO/CACA4
00921	lodgepole pine/pinegrass	PICO/CARU
00922	lodgepole pine/Idaho fescue	PICO/FEID
00923	lodgepole pine/heartleaf arnica	PICO/ARCO9
00925	lodgepole pine/common beargrass	PICO/XETE
00926	lodgepole pine/creeping barberry	PICO/MARE11
00927	lodgepole pine/twinflower	PICO/LIB03
00928	lodgepole pine/antelope bitterbrush	PICO/PUTR2
00929	lodgepole pine/white spirea	PICOSPBE2
010	limber pine series	PIFL2
01001	limber pine/bluebunch wheatgrass	PIFL2/PSSPS
01002	limber pine/purple reedgrass	PIFL2/CAPU
01003	limber pine/Idaho fescue	PIFL2/FEID
010032	limber pine/Idaho fescue-Idaho fescue	PIFL2/FEID-FEID
010033	limber pine/Idaho fescue-Altai fescue	PIFL2/FEID-FEAL
01004	limber pine/spike fescue	PIFL2/LEKI2
01005	limber pine/common juniper	PIFL2/JUC06

**Reference Code 205(cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
01006	limber pine/alpine clover	PIFL2/TRDA2
01007	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
01008	limber pine/kinnikinnick	PIFL2/ARUV
01009	limber pine/creeping barberry	PIFL2/MARE11
01010	limber pine/yellowdot saxifrage	PIFL2/SABR2
01011	limber pine/matted saxifrage	PIFL2/SABRA2
01012	limber pine/Great Basin bristlecone pine	PIFL2/PILO
011	ponderosa pine series	PIPO
01104	ponderosa pine/common juniper-sideoats grama	PIPO/JUCO6-BOCU
01105	ponderosa pine/Geyer's sedge	PIPO/CAGE2
01106	ponderosa pine/Ross' sedge	PIPO/CARO5
01109	ponderosa pine/Arizona fescue	PIPO/FEAR2
011090	ponderosa pine/Arizona fescue-Arizona fescue	PIPO/FEAR2-FEAR2
011091	ponderosa pine/Arizona fescue-Parry's oatgrass	PIPO/FEAR2-DAPA2
011092	ponderosa pine/Arizona fescue-blue grama	PIPO/FEAR2-BOGR2
011093	ponderosa pine/Arizona fescue-Gambel oak	PIPO/FEAR2-QUGA
01110	ponderosa pine/Idaho fescue	PIPO/FEID
011100	ponderosa pine/Idaho fescue-Idaho fescue	PIPO/FEID-FEID
011101	ponderosa pine/Idaho fescue-greenleaf manzanita	PIPO/FEID-ARPA6
011102	ponderosa pine/Idaho fescue-big sagebrush	PIPO/FEID-ARTR2
011103	ponderosa pine/Idaho fescue-ponderosa pine	PIPO/FEID-PIPO
011104	ponderosa pine/Idaho fescue-Altai fescue	PIPO/FEID-FEAL
01111	ponderosa pine/spike fescue	PIPO/LEKI2
01112	ponderosa pine/common juniper	PIPO/JUCO6
01117	ponderosa pine-Douglas-fir/mountain muhly	PIPO-PSME/MUMO
01118	ponderosa pine-twoneedle pinyon/Gambel oak	PIPO-PIED/QUGA
01119	ponderosa pine/mountain ninebark	PIPO/PHMO4
01120	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
011200	ponderosa pine/antelope bitterbrush-antelope bitterbrush	PIPO/PUTR2-PUTR2
011201	ponderosa pine/antelope bitterbrush-bluebunch wheatgrass	PIPO/PUTR2-PSSPS
011202	ponderosa pine/antelope bitterbrush-Idaho fescue	PIPO/PUTR2-FEID
01121	ponderosa pine/Gambel oak	PIPO/QUGA
011210	ponderosa pine/Gambel oak-Gambel oak	PIPO/QUGA-QUGA
011211	ponderosa pine/Gambel oak-Arizona fescue	PIPO/QUGA-FEAR2
011212	ponderosa pine/Gambel oak-Geyer's sedge	PIPO/QUGA-CAGE2
011213	ponderosa pine/Gambel oak-mountain snowberry	PIPO/QUGA-SYOR2
011214	ponderosa pine/Gambel oak-blue grama	PIPO/QUGA-BOGR2
011215	ponderosa pine/Gambel oak-longtongue muhly	PIPO/QUGA-MULO
011216	ponderosa pine/Gambel oak-little bluestem	PIPO/QUGA-SCSC
011217	ponderosa pine/Gambel oak-twoneedle pinyon	PIPO/QUGA-PIED
01122	ponderosa pine/chokecherry	PIPO/PRVI
011220	ponderosa pine/chokecherry-chokecherry	PIPO/PRVI-PRVI
011221	ponderosa pine/chokecherry-russet buffaloberry	PIPO/PRVI-SHCA
01123	ponderosa pine/white spirea	PIPO/SPBE2
01124	ponderosa pine/common snowberry	PIPO/SYAL
011240	ponderosa pine/common snowberry-common snowberry	PIPO/SYAL-SYAL
011241	ponderosa pine/common snowberry-arrowleaf balsamroot	PIPO/SYAL-BASA3
011242	ponderosa pine/common snowberry-roughleaf ricegrass	PIPO/SYAL-ORAS
011243	ponderosa pine/common snowberry-creeping barberry	PIPO/SYAL-MARE11

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
01125	ponderosa pine/bluebunch wheatgrass	PIPO/PSSPS
01126	ponderosa pine/sun sedge	PIPO/CAINH2
01127	ponderosa pine/blue grama	PIPO/BOGR2
011270	ponderosa pine/blue grama-blue grama	PIPO/BOGR2-BOGR2
011272	ponderosa pine/blue grama-sand bluestem	PIPO/BOGR2-ANHA
011273	ponderosa pine/blue grama-big sagebrush	PIPO/BOGR2-ARTR2
011274	ponderosa pine/blue grama-twoneedle pinyon	PIPO/BOGR2-PIED
011275	ponderosa pine/blue grama-Gambel oak	PIPO/BOGR2-QUGA
011277	ponderosa pine/blue grama-canyon grape	PIPO/BOGR2-VIAR2
01128	ponderosa pine/silverleaf oak	PIPO/QUHY
011330	ponderosa pine/mountain muhly	PIPO/MUMO
011340	ponderosa pine/screwleaf muhly	PIPO/MUVI2
011341	ponderosa pine/screwleaf muhly-Gambel oak	PIPO/MUVI2-QUGA
011342	ponderosa pine/screwleaf muhly-screwleaf muhly	PIPO/MUVI2-MUVI2
011343	ponderosa pine/screwleaf muhly-blue grama	PIPO/MUVI2-BOGR2
011350	ponderosa pine/Indian ricegrass	PIPO/ACHY
01136	ponderosa pine/gray oak	PIPO/QUGR3
011360	ponderosa pine/gray oak-mountain muhly	PIPO/QUGR3-MUMO
011361	ponderosa pine/gray oak-longtongue muhly	PIPO/QUGR3-MULO
011362	ponderosa pine/gray oak-gray oak	PIPO/QUGR3-QUGR3
01137	ponderosa pine/wavyleaf oak	PIPO/QUPA4
011370	ponderosa pine/wavyleaf oak-wavyleaf oak	PIPO/QUPA4-QUPA4
011371	ponderosa pine/wavyleaf oak-pine muhly	PIPO/QUPA4-MUDU
011372	ponderosa pine/wavyleaf oak-longtongue muhly	PIPO/QUPA4-MULO
011390	ponderosa pine/screwleaf muhly-Arizona fescue	PIPO/MUVI2-FEAR2
011391	ponderosa pine/screwleaf muhly-Arizona fescue/blue grama	PIPO/MUVI2- FEAR2/BOGR2
011410	ponderosa pine/Arizona white oak	PIPO/QUAR
0114100	ponderosa pine/Arizona white oak-Arizona white oak	PIPO/QUAR-QUAR
0114101	ponderosa pine/Arizona white oak-blue grama	PIPO/QUAR-BOGR2
011430	ponderosa pine/netleaf oak	PIPO/QURU4
011440	ponderosa pine/Emory oak	PIPO/QUEM
011500	ponderosa pine (rockland)	PIPO
01151	ponderosa pine/bur oak	PIPO/QUMA2
01160	ponderosa pine/mallow ninebark	PIPO/PHMA5
01161	ponderosa pine/whitestem gooseberry (scree forest)	PIPO/RIIN2
01162	ponderosa pine/mountain snowberry	PIPO/SYOR2
01163	ponderosa pine/bluestem	PIPO/ANDRO2
01164	ponderosa pine/muttongrass	PIPO/POFE
01165	ponderosa pine/Kentucky bluegrass	PIPO/POPR
01166	ponderosa pine (riparian forest)	PIPO
01167	ponderosa pine/needle and thread	PIPO/HECOC8
01168	ponderosa pine/western needlegrass	PIPO/ACOCO
01169	ponderosa pine (cinder soils)	PIPO
012	Douglas-fir series	PSME
01201	Douglas-fir/Rocky Mountain maple	PSME/ACGL
012010	Douglas-fir/Rocky Mountain maple-Rocky Mountain maple	PSME/ACGL-ACGL
012011	Douglas-fir/Rocky Mountain maple-Oregon boxleaf	PSME/ACGL-PAMY
012012	Douglas-fir/Rocky Mountain maple-mountain snowberry	PSME/ACGL-SYOR2

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
01202	Douglas-fir/heartleaf arnica	PSME/ARCO9
012020	Douglas-fir/heartleaf arnica-heartleaf arnica	PSME/ARCO9-ARCO9
012021	Douglas-fir/heartleaf arnica-timber milkvetch	PSME/ARCO9-ASMI9
01203	Douglas-fir/creeping barberry	PSME/MARE11
012030	Douglas-fir/creeping barberry-creeping barberry	PSME/MARE11-MARE11
012032	Douglas-fir/creeping barberry-common juniper	PSME/MARE11-JUCO6
012033	Douglas-fir/creeping barberry-mountain snowberry	PSME/MARE11-SYOR2
012034	Douglas-fir/creeping barberry-Geyer's sedge	PSME/MARE11-CAGE2
012035	Douglas-fir/creeping barberry-ponderosa pine	PSME/MARE11-PIPO
01204	Douglas-fir/Ross' sedge	PSME/CARO5
01205	Douglas-fir/pinegrass	PSME/CARU
012050	Douglas-fir/pinegrass-pinegrass	PSME/CARU-CARU
012051	Douglas-fir/pinegrass-Oregon boxleaf	PSME/CARU-PAMY
012052	Douglas-fir/pinegrass-Idaho fescue	PSME/CARU-FEID
012053	Douglas-fir/pinegrass-ponderosa pine	PSME/CARU-PIPO
012054	Douglas-fir/pinegrass-bluebunch wheatgrass	PSME/CARU-PSSPS
012055	Douglas-fir/pinegrass-kinnikinnick	PSME/CARU-ARUV
01206	Douglas-fir/Geyer's sedge	PSME/CAGE2
012061	Douglas-fir/Geyer's sedge-Geyer's sedge	PSME/CAGE2-CAGE2
012062	Douglas-fir/Geyer's sedge-mountain snowberry	PSME/CAGE2-SYOR2
012064	Douglas-fir/Geyer's sedge-ponderosa pine	PSME/CAGE2-PIPO
01207	Douglas-fir/alderleaf mountain mahogany	PSME/CEMO2
01208	Douglas-fir/Idaho fescue	PSME/FEID
012081	Douglas-fir/Idaho fescue-Idaho fescue	PSME/FEID-FEID
012082	Douglas-fir/Idaho fescue-ponderosa pine	PSME/FEID-PIPO
01209	Douglas-fir/fivepetal cliffbush	PSME/JAAM
01210	Douglas-fir/bluebunch wheatgrass	PSME/PSSPS
01211	Douglas-fir/Oregon boxleaf	PSME/PAMY
012111	Douglas-fir/Oregon boxleaf-Geyer's sedge	PSME/PAMY-CAGE2
01212	Douglas-fir/mallow ninebark	PSME/PHMA5
012121	Douglas-fir/mallow ninebark-mallow ninebark	PSME/PHMA5-PHMA5
012122	Douglas-fir/mallow ninebark-pinegrass	PSME/PHMA5-CARU
012123	Douglas-fir/mallow ninebark-starry false lily of the vally	PSME/PHMA5-MAST4
012124	Douglas-fir/mallow ninebark-ponderosa pine	PSME/PHMA5-PIPO
012125	Douglas-fir/mallow ninebark-Douglas-fir	PSME/PHMA5-PSME
012126	Douglas-fir/mallow ninebark-Oregon boxleaf	PSME/PHMA5-PAMY
01213	Douglas-fir/mountain ninebark	PSME/PHMO4
01214	Douglas-fir/Gambel oak	PSME/QUGA
012140	Douglas-fir/Gambel oak-Gambel oak	PSME/QUGA-QUGA
012141	Douglas-fir/Gambel oak-Arizona fescue	PSME/QUGA-FEAR2
012142	Douglas-fir/Gambel oak-screwleaf muhly	PSME/QUGA-MUVI2
012143	Douglas-fir/Gambel oak-rockspirea	PSME/QUGA-HODU
01215	Douglas-fir/white spirea	PSME/SPBE2
012150	Douglas-fir/white spirea-white spirea	PSME/SPBE2-SPBE2
012151	Douglas-fir/white spirea-pinegrass	PSME/SPBE2-CARU
012153	Douglas-fir/white spirea-ponderosa pine	PSME/SPBE2-PIPO
01217	Douglas-fir/mountain snowberry	PSME/SYOR2
01220	Douglas-fir/greenleaf manzanita	PSME/ARPA6
01221	Douglas-fir/antelope bitterbrush	PSME/PUTR2

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
01223	Douglas-fir/curl-leaf mountain mahogany	PSME/CELE3
01230	Douglas-fir/Altai fescue	PSME/FEAL
01231	Douglas-fir/kinnikinnick	PSME/ARUV
01232	Douglas-fir/fringed brome	PSME/BRCI2
01233	Douglas-fir/Arizona fescue	PSME/FEAR2
01234	Douglas-fir/mountain muhly	PSME/MUMO
012350	Douglas-fir/screwleaf muhly	PSME/MUVI2
012351	Douglas-fir-southwestern white pine/screwleaf muhly	PSME-PIST3/MUVI2
01236	Douglas-fir/silverleaf oak	PSME/QUHY
01239	Douglas-fir/bigtooth maple	PSME/ACGR3
01241	Douglas-fir/rockspirea (scree forest)	PSME/HODU
01243	Douglas-fir/Arizona white oak	PSME/QUAR
01250	Douglas-fir/dwarf bilberry	PSME/VACA13
01276	ponderosa pine/blue grama-little bluestem	PIPO/BOGR2-SCSC
01280	Douglas-fir/thinleaf huckleberry	PSME/VAME
01281	Douglas-fir/thinleaf huckleberry-thinleaf huckleberry	PSME/VAME-VAME
01282	Douglas-fir/thinleaf huckleberry-kinnikinnick	PSME/VAME-ARUV
01283	Douglas-fir/thinleaf huckleberry-common beargrass	PSME/VAME-XETE
0129	Douglas-fir/twinflower	PSME/LIBO3
01290	Douglas-fir/twinflower-twinflower	PSME/LIBO3-LIBO3
01291	Douglas-fir/twinflower-common snowberry	PSME/LIBO3-SYAL
01292	Douglas-fir/twinflower-pinegrass	PSME/LIBO3-CARU
01293	Douglas-fir/twinflower-thinleaf huckleberry	PSME/LIBO3-VAME
01310	Douglas-fir/common snowberry	PSME/SYAL
01311	Douglas-fir/common snowberry-bluebunch wheatgrass	PSME/SYAL-PSSPS
01312	Douglas-fir/common snowberry-pinegrass	PSME/SYAL-CARU
01313	Douglas-fir/common snowberry-common snowberry	PSME/SYAL-SYAL
01314	Douglas-fir/common snowberry-ponderosa pine	PSME/SYAL-PIPO
01315	Douglas-fir/common juniper	PSME/JUCO6
01375	Douglas-fir/sweetcicely	PSME/OSBE
01376	Douglas-fir/rock clematis	PSME/CLCOC2
01377	Douglas-fir/netleaf oak	PSME/QURU4
01378	Douglas-fir (sparse)	PSME
032	Apache pine series	PIEN2
032020	Apache pine/Arizona white oak	PIEN2/QUAR
032030	Apache pine/silverleaf oak	PIEN2/QUHY
032040	Apache pine/Emory oak	PIEN2/QUEM
032050	Apache pine/netleaf oak	PIEN2/QURU4
033	chihuahuan pine series	PILE
033010	chihuahuan pine/pinyon ricegrass	PILE/PIFI
033020	chihuahuan pine/Arizona white oak	PILE/QUAR
033030	chihuahuan pine/silverleaf oak	PILE/QUHY
033040	chihuahuan pine/pointleaf manzanita	PILE/ARPU5
033050	chihuahuan pine/Emory oak	PILE/QUEM
033060	chihuahuan pine/Toumey oak	PILE/QUTO2
034	southwestern white pine series	PIST3
03401	southwestern white pine/Arizona fescue	PIST3/FEAR2
105	quaking aspen series	POTR5
10501	quaking aspen/Geyer's sedge	POTR5/CAGE2



**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
10502	quaking aspen/beaked hazelnut	POTR5/COCO6
105021	quaking aspen/beaked hazelnut/western brackenfern	POTR5/COCO6/PTAQ
105022	quaking aspen/beaked hazelnut/wild sarsaparilla	POTR5/COCO6/ARNU2
10503	quaking aspen/Thurber's fescue	POTR5/FETH
105031	quaking aspen/Thurber's fescue-Geyer's sedge	POTR5/FETH-CAGE2
10504	quaking aspen/common cowparsnip	POTR5/HEMA80
10505	quaking aspen/Nevada pea	POTR5/LALAL3
10507	quaking aspen/silvery lupine	POTR5/LUAR3
10508	quaking aspen/common juniper	POTR5/JUCO6
105081	quaking aspen/common juniper/Geyer's sedge	POTR5/JUCO6-CAGE2
105082	quaking aspen/common juniper-silvery lupine	POTR5/JUCO6-LUAR3
105083	quaking aspen/common juniper-timber milkvetch	POTR5/JUCO6-ASMI9
10510	quaking aspen/western brackenfern	POTR5/PTAQ
10511	quaking aspen/mountain snowberry	POTR5/SYOR2
105111	quaking aspen/mountain snowberry-tall forb phase	POTR5/SYOR2-2FORB
105112	quaking aspen/mountain snowberry-pinegrass	POTR5/SYOR2-CARU
105113	quaking aspen/mountain snowberry-Fendler's meadow-rue	POTR5/SYOR2-THFE
105114	quaking aspen/mountain snowberry-Thurber's fescue	POTR5/SYOR2-FETH
105115	quaking aspen/mountain snowberry-Ross' sedge	POTR5/SYOR2-CARO5
105116	quaking aspen/mountain snowberry-mule-ears	POTR5/SYOR2-WYAM
105117	quaking aspen/mountain snowberry-California brome	POTR5/SYOR2-BRCA5
105118	quaking aspen/mountain snowberry-Kentucky bluegrass	POTR5/SYOR2-POPR
105119	quaking aspen/mountain snowberry-Geyer's sedge	POTR5/SYOR2-CAGE2
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE
105120	quaking aspen/Fendler's meadow-rue-Fendler's meadow-rue	POTR5/THFE-THFE
105121	quaking aspen/Fendler's meadow-rue-Geyer's sedge	POTR5/THFE-CAGE2
105122	quaking aspen/Fendler's meadow-rue-subalpine larkspur	POTR5/THFE-DEBA2
105123	quaking aspen/Fendler's meadow-rue-Porter's licorice-root	POTR5/THFE-LIPO
10513	quaking aspen/Colorado false hellebore	POTR5/VETE4
10514	quaking aspen/big sagebrush	POTR5/ARTR2
10515	quaking aspen/Saskatoon serviceberry	POTR5/AMAL2
105151	quaking aspen/Saskatoon serviceberry-chokecherry	POTR5/AMAL2-PRVIV
105152	quaking aspen/Saskatoon serviceberry-Fendler's meadow-rue	POTR5/AMAL2-THFE
105153	quaking aspen/Saskatoon serviceberry-tall forb	POTR5/AMAL2-2FORB
105154	quaking aspen/Saskatoon serviceberry-western brackenfern	POTR5/AMAL2-PTAQ
105155	quaking aspen/Saskatoon serviceberry-mountain snowberry/tall forb	POTR5/AMAL2-SYOR2/2FORB
105156	quaking aspen/Saskatoon serviceberry-mountain snowberry/Fendler's meadow-rue	POTR5/AMAL2-SYOR2/THFE
105157	quaking aspen/Saskatoon serviceberry-mountain snowberry/pinegrass	POTR5/AMAL2-SYOR2/CARU
105158	quaking aspen/Saskatoon serviceberry-mountain snowberry/California brome	POTR5/AMAL2-SYOR2/BRCA5
10517	quaking aspen/pinegrass	POTR5/CARU
10520	quaking aspen/creeping barberry	POTR5/MARE11
10521	quaking aspen/kinnikinnick	POTR5/ARUV
10522	quaking aspen/Arizona fescue	POTR5/FEAR2
10523	quaking aspen/red elderberry	POTR5/SARA2
10540	quaking aspen/blue wildrye	POTR5/ELGL

**Reference Code 205 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
10541	quaking aspen/bluejoint	POTR5/CACA4
10542	quaking aspen/California brome	POTR5/BRCA5
10543	quaking aspen/California false hellebore	POTR5/VECA2
10544	quaking aspen/dryspike sedge	POTR5/CAFO3
10545	quaking aspen/dwarf bilberry	POTR5/VACA13
10546	quaking aspen/eltrot	POTR5/HESP6
10547	quaking aspen/fringed brome	POTR5/BRCI2
10548	quaking aspen/gooseberry currant (riparian forest)	POTR5/RIMO2
10549	quaking aspen/Kentucky bluegrass	POTR5/POPR
10550	quaking aspen/mountain ninebark	POTR5/PHMO4
10551	quaking aspen/mule-ears	POTR5/WYAM
10552	quaking aspen/needle and thread	POTR5/HECOC8
10553	quaking aspen/nodding ragwort	POTR5/SEBIB
105531	quaking aspen/nodding ragwort	POTR5/SEBI2
10554	quaking aspen/Porter's licorice-root	POTR5/LIPO
10555	quaking aspen/Rocky Mountain maple (riparian forest)	POTR5/ACGL
10556	quaking aspen/Ross' sedge	POTR5/CARO5
10557	quaking aspen/russet buffaloberry	POTR5/SHCA
10558	quaking aspen/Scouler's willow	POTR5/SASC
10559	quaking aspen/spreadfruit goldenbanner	POTR5/THDI4
10560	quaking aspen/tall forb	POTR5/2FORB
10561	quaking aspen/thimbleberry	POTR5/RUPA
10562	quaking aspen/timber milkvetch	POTR5/ASMI9
10563	quaking aspen/twinberry honeysuckle	POTR5/LOIN5
10564	quaking aspen/water birch	POTR5/BEOC2
10565	quaking aspen/whortleberry	POTR5/VAMY2
10570	quaking aspen-blue spruce	POTR5-PIPU
10575	quaking aspen-Douglas-fir/common juniper	POTR5-PSME/JUCO6
10576	quaking aspen-Douglas-fir/mountain snowberry	POTR5-PSME/SYOR2
10577	quaking aspen-Douglas-fir/pinegrass	POTR5-PSME/CARU
10578	quaking aspen-Douglas-fir/Saskatoon serviceberry	POTR5-PSME/AMAL2
10579	quaking aspen-limber pine	POTR5-PIFL2
10580	quaking aspen-lodgepole pine/common juniper	POTR5-PICO/JUCO6
10581	quaking aspen-lodgepole pine/Fendler's meadow-rue	POTR5-PICO/THFE
10582	quaking aspen-lodgepole pine/Geyer's sedge	POTR5-PICO/CAGE2
10583	quaking aspen-lodgepole pine/mountain snowberry	POTR5-PICO/SYOR2
10585	quaking aspen-ponderosa pine	POTR5-PIPO
10586	quaking aspen-white fir/greenleaf manzanita	POTR5-ABCO/ARPA6
10587	quaking aspen-white fir/Kentucky bluegrass	POTR5-ABCO/POPR
10588	quaking aspen-white fir/mountain snowberry	POTR5-ABCO/SYOR2
10590	quaking aspen-subalpine fir/common juniper	POTR5-ABLA/JUCO6
10591	quaking aspen-subalpine fir/Geyer's sedge	POTR5-ABLA/CAGE2
10592	quaking aspen-subalpine fir/Fendler's meadow-rue	POTR5-ABLA/THFE
10593	quaking aspen-subalpine fir/mountain snowberry	POTR5-ABLA/SYOR2
105931	quaking aspen-subalpine fir/mountain snowberry/tall forb	POTR5- ABLA/SYOR2/2FORB
105932	quaking aspen-subalpine fir/mountain snowberry/Fendler's meadow-rue	POTR5- ABLA/SYOR2/THFE

**Reference Code 202 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
105933	quaking aspen-subalpine fir/mountain snowberry/California brome	POTR5-ABLA/SYOR2/BRCA5
10594	quaking aspen-subalpine fir/Ross' sedge	POTR5-ABLA/CARO5
10595	quaking aspen-subalpine fir/russet buffaloberry	POTR5-ABLA/SHCA
10596	quaking aspen-subalpine fir/Saskatoon serviceberry	POTR5-ABLA/AMAL2
10597	quaking aspen-subalpine fir/tall forb	POTR5-ABLA/2FORB

**Reference Code 206**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
AL01	forb (alpine, rocky)	2FORB
AL02	Bellardi bog sedge/curly sedge-lesser spikemoss	KOMY/CARU3-SEDE2
AL03	blackroot sedge/twinflower sandwort-alpine sagebrush	CAEL3/MIOB2-ARSC
AL04	curly sedge/glaucous bluegrass	CARU3/POGL
AL05	tufted hairgrass/Ross' avens	DECA18/GEROT
AL06	creeping sibbaldia/Ross' avens	SIPR/GEROT
AL07	Pyrenean sedge-cloud sedge-black alpine sedge	CAPYP-CAHA6-CANI2
AL08	mountain sedge	CASC12
AL09	dwarf bilberry/varileaf cinquefoil	VACA13/PODI2
AL10	alpine clover/twinflower sandwort	TRDA2/MIOB2
AL11	Parry's clover/tufted hairgrass-alpine bistort	TRPA5/DECA18-POVI3
AL12	dwarf clover/twinflower sandwort	TRNA2/MIOB2
AL13	eightpetal mountain-avens/curly sedge-Colorado fescue	DROC/CARU3-FEBRC
AL14	snow willow	SANI8
AL15	arctic willow	SAAR27
AL16	white marsh marigold-ledge stonecrop (riparian forbland)	CALEL8/RHIN11
FD01	Rocky Mountain juniper/littleseed ricegrass	JUSC2/PIMI7
FD01A	Rocky Mountain juniper/muttongrass-sedge-littleseed ricegrass	JUSC2/POFE-CAREX-PIMI7
FD01B	Rocky Mountain juniper/blue grama-big sagebrush	JUSC2/BOGR2-ARTR2
FD01C	Rocky Mountain juniper/big sagebrush-Indian ricegrass	JUSC2/ARTR2-ACHY
FD02	ponderosa pine/Arizona fescue	PIPO/FEAR2
FD02A	ponderosa pine/Arizona fescue-mountain muhly	PIPO/FEAR2-MUMO
FD02B	ponderosa pine/Arizona fescue-big sagebrush (sparse)	PIPO/FEAR2-ARTR2
FD03	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
FD03A	ponderosa pine/antelope bitterbrush-big sagebrush-Arizona fescue	PIPO/PUTR2-ARTR2-FEAR2
FD03B	ponderosa pine/antelope bitterbrush-big sagebrush-muttongrass	PIPO/PUTR2-ARTR2-POFE
FD03C	ponderosa pine/antelope bitterbrush-muttongrass (sparse)	PIPO/PUTR2-POFE
FD04	bristlecone pine/wax currant-Arizona fescue-mountain muhly-Parry's oatgrass	PIAR/RICE-FEAR2-MUMO-DAPA2
FD04A	bristlecone pine/wax currant-Arizona fescue-mountain muhly-Parry's oatgrass	PIAR/RICE-FEAR2-MUMO-DAPA2
FD04B	bristlecone pine/wax currant-Arizona fescue	PIAR/RICE-FEAR2
FD04C	bristlecone pine/Arizona fescue-mountain muhly	PIAR/FEAR2-MUMO
FD05	bristlecone pine/Thurber's fescue	PIAR/FETH
FD05A	bristlecone pine/Thurber's fescue/graminoids	PIAR/FETH/2GRAM
FD06	Douglas-fir/wax currant-Arizona fescue	PSME/RICE-FEAR2
FD06A	Douglas-fir/Arizona fescue	PSME/FEAR2

**Reference Code 206 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
FD06B	ponderosa pine-Douglasfir/wax currant-Arizona fescue	PIPO-PSME/RICE-FEAR2
FD06C	Douglas-fir/wax currant-Arizona fescue-big sagebrush	PSME/RICE-FEAR2-ARTR2
FD06D	Douglas-fir/wax currant/grass	PSME/RICE/2GRAM
FD06E	Douglas-fir-Rocky Mountain juniper/sparse wax currant-Wheeler bluegrass	PSME-JUSC2/RICE-PONE2
FD06F	Douglas-fir/Arizona fescue (sparse)	PSME/FEAR2
FD06G	Douglas-fir/sparse wax currant	PSME/RICE
FD08	Douglas-fir/Saskatoon serviceberry	PSME/AMAL2
FD08A	Douglas-fir/Saskatoon serviceberry-roundleaf snowberry-muttongrass	PSME/AMAL2-SYRO-POFE
FD08B	Douglas-fir-quaking aspen-common juniper/Saskatoon serviceberry-Thurber's fescue-Geyer's sedge	PSME-POTR5-JUCO6/AMAL2-FETH-CAGE2
FD08C	Douglas-fir-Rocky Mountain maple/rose-roundleaf snowberry	PSME-ACGL/ROSA5-SYRO
FD08D	quaking aspen/Saskatoon serviceberry-common juniper-roundleaf snowberry-northern bedstraw	POTR5/AMAL2-JUCO6-SYRO-GABO2
FD08E	Douglas-fir/Saskatoon serviceberry-Geyer's sedge-creeping barberry	PSME/AMAL2-CAGE2-MARE11
FD08F	Douglas-fir/Saskatoon serviceberry-creeping barberry-sparse roundleaf snowberry	PSME/AMAL2-MARE11-SYRO
FD08G	quaking aspen-common juniper/Saskatoon serviceberry-Geyer's sedge-sparse roundleaf snowberry	POTR5-JUCO6/AMAL2-CAGE2-SYRO
FD08H	lodgepole pine-quaking aspen-Douglas-fir/Saskatoon serviceberry-kinnikinnick-Geyer's sedge	PICO-POTR5-PSME/AMAL2-ARUV-CAGE2
FD09	Douglas-fir/Oregon boxleaf	PSME/PAMY
FD09A	Douglas-fir-quaking aspen-common juniper/Oregon boxleaf-Geyer's sedge	PSME-POTR5-JUCO6/PAMY-CAGE2
FD09B	Douglas-fir-common juniper/Oregon boxleaf-creeping barberry	PSME-JUCO6/PAMY-MARE11
FD09C	lodgepole pine/dwarf bilberry	PICO/VACA13
FD09D	lodgepole pine-quaking aspen-common juniper/Oregon boxleaf-Geyer's sedge-heartleaf arnica	PICO-POTR5-JUCO6/PAMY-CAGE2-ARCO9
FD09E	quaking aspen-Douglas-fir-common juniper/Oregon boxleaf-rose-Geyer's sedge	POTR5-PSME-JUCO6/PAMY-ROSA5-CAGE2
FD09F	quaking aspen/Oregon boxleaf-rose-Geyer's sedge-fringed brome-silvery lupine	POTR5/PAMY-ROSA5-CAGE2-BRCIC3-LUAR3
FD10	Douglas-fir/antelope bitterbrush	PSME/PUTR2
FD11	Douglas-fir/Geyer's sedge	PSME/CAGE2
FD12	Douglas-fir/Thurber's fescue	PSME/FETH
FD13	Douglas-fir/kinnikinnick	PSME/ARUV
FD14	Douglas-fir-lodgepole pine/russet buffaloberry	PSME-PICO/SHCA
FD15	blue spruce/Arizona fescue	PIPU/FEAR2
FD16	blue spruce-Engelmann spruce/kinnikinnick	PIPU-PIEN/ARUV
FD17	lodgepole pine/dryspike sedge	PICO/CAFO3
FD18	lodgepole pine/whortleberry	PICO/VAMYO
FD19	lodgepole pine (sparse)	PICO
FL01	subalpine fir-Douglas-fir/Oregon boxleaf	ABLAL-PSME/PAMY
FL02	subalpine fir/twinflower	ABLAL/LIBO3

**Reference Code 206 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
FL03	subalpine fir-Engelmann spruce/Oregon boxleaf	ABLAL-PIEN/PAMY
FL04A	Engelmann spruce-quaking aspen/Thurber's fescue-timber oatgrass	PIEN-POTR5/FETH-DAIN
FL04B	subalpine fir-Engelmann spruce/dwarf bilberry	ABLA-PIEN/VACA13
FL05	subalpine fir-Engelmann spruce/Geyer's sedge	ABLAL-PIEN/CAGE2
FL06	subalpine fir-Engelmann spruce/moss	ABLAL-PIEN/2MOSS
FL07	subalpine fir-Engelmann spruce/russet buffaloberry	ABLAL-PIEN/SHCA
FL08	Engelmann spruce/gooseberry currant	PIEN/RIMO2
FL09	subalpine fir-Engelmann spruce/whortleberry	ABLAL-PIEN/VAMYO
FL10	subalpine fir-Engelmann spruce/grayleaf willow	ABLAL-PIEN/SAGL
FL11	limber pine/common juniper	PIFL2/JUCO6
FM1	quaking aspen/Saskatoon serviceberry-roundleaf snowberry	POTR5/AMAL2-SYRO
FM2	quaking aspen/Thurber's fescue	POTR5/FETH
FM3	quaking aspen/Fendler's meadow-rue-Nevada pea	POTR5/THFE-LALAL3
FR1	narrowleaf cottonwood/Pacific willow-fowl bluegrass	POAN3/SALUL-POPA2
FR2	quaking aspen-narrowleaf cottonwood/bluejoint	POTR5-POAN3/CACA4
FR3	blue spruce-narrowleaf cottonwood/thinleaf alder-dryspike sedge	PIPU-POAN3/ALINT-CAFO3
FR4	blue spruce-Engelmann spruce/twinberry honeysuckle-bluejoint	PIPU-PIEN/LOINI-CACA4
FR5	blue spruce-Engelmann spruce/redosier dogwood	PIPU-PIEN/COSES
FR6	subalpine fir-Engelmann spruce/arrowleaf ragwort-tall fringed bluebells-heartleaf bittercress	ABLAL-PIEN/SETR-MECI3-CACO6
GA01	Indian ricegrass/needle and thread-blue grama	ACHY/HECO26-BOGR2
GA02	Arizona fescue/pingue rubberweed	FEAR2/HYRIR
GA03	Arizona fescue/mountain muhly-slimstem muhly	FEAR2/MUMO-MUFI
GA04	Thurber's fescue/Arizona fescue	FETH/FEAR2
GA05	Thurber's fescue/Idaho fescue	FETH/FEID
GA06	Thurber's fescue/Fendler's meadow-rue-American vetch-Geyer's sedge	FETH/THFE-VIAM-CAGE2
GA07	Porter's licorice-root/Fendler's meadow-rue	LIPO/THFE
GA08	Idaho fescue/slender wheatgrass	FEID/ELTR7
GA09	timber oatgrass/tufted hairgrass	DAIN/DECA18
GA10	purple reedgrass/spreading wheatgrass	CAPU/ELSC4
RI1	yellow willow/Northwest Territory sedge	SALU2/CAUT
RI2	Drummond's willow/bluejoint-Northwest Territory sedge	SADR/CACA4-CAUT
RI3	park willow/Northwest Territory sedge	SAMO2/CAUT
RI4	diamondleaf willow/water sedge	SAPL2/CAAQ
RI5	Wolf's willow-diamondleaf willow/water sedge	SAWO-SAPL2/CAAQ
RI6	shrubby cinquefoil/Idaho fescue	DAFL3/FEID
RI7	diamondleaf willow/white marsh marigold	SAPL2/CALEL8
RI8	grayleaf willow-shortfruit willow/water sedge	SAGL-SABR/CAAQ
RI9	water sedge-Northwest Territory sedge/tufted hairgrass	CAAQ-CAUT/DECA18
SA1	Utah serviceberry/White Mountain sedge-sun sedge	AMUT/CAGE-CAINH2
SA2	Utah serviceberry-alderleaf mountain mahogany/dryland sedge-sun sedge	AMUT-CEMO2/CAGE-CAINH2
SA3	Utah serviceberry-Saskatoon serviceberry-Gambel oak/White Mountain sedge-Geyer's sedge	AMUT-AMAL2-QUGA/CAGE-CAGE2
SA4	Saskatoon serviceberry-Utah serviceberry/green needlegrass-spike fescue	AMAL2-AMUT/NAVIA4-LEKI2

**Reference Code 206 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
SA5	Saskatoon serviceberry/Geyer's sedge	AMAL2/CAGE2
SA6	Saskatoon serviceberry/Thurber's fescue	AMAL2/FETH
SA7	oceanspray-common juniper-shrubby cinquefoil-skunkbush sumac-wax currant-American red raspberry	HOD1-JUCO6-DAFL3-RHTR- RICE-RUID
SB1	Wyoming big sagebrush/Indian ricegrass	ARTRW8/ACHY
SB2	black sagebrush/muttongrass-pine needlegrass	ARNO4/POFE-ACPI2
SB3	black sagebrush/Arizona fescue	ARNO4/FEAR2
SS1	big sagebrush/muttongrass-pine needlegrass	ARTR2/POFE-ACPI2
SS2	antelope bitterbrush-big sagebrush/needle and thread-pine needlegrass	PUTR2-ARTR2/HECO26- ACPI2
SS3	big sagebrush/Parry's oatgrass-Arizona fescue	ARTR2/DAPA2-FEAR2
SS4	big sagebrush/Arizona fescue	ARTR2/FEAR2
SS5	antelope bitterbrush-big sagebrush/Parry's oatgrass-Arizona fescue	PUTR2-ARTR2/DAPA2- FEAR2
SS6	antelope bitterbrush-big sagebrush/Arizona fescue	PUTR2-ARTR2/FEAR2
SU1	mountain big sagebrush/Thurber's fescue-Arizona fescue	ARTRV/FETH-FEAR2
SU2	mountain big sagebrush/Thurber's fescue-Idaho fescue	ARTRV/FETH-FEID
SU3	mountain big sagebrush/Idaho fescue	ARTRV/FEID
SU4	little sagebrush/Perry's oatgrass-Idaho fescue	ARAR8/DAPA2-FEID
SU5	little sagebrush-mountain big sagebrush/Parry's oatgrass- Idaho fescue	ARAR8-ARTRV/DAPA2- FEID
SU6	little sagebrush/Parry's oatgrass-Thurber's fescue-Idaho fescue	ARAR8/DAPA2-FETH-FEID
SU7	silver sagebrush/Thurber's fescue-Idaho fescue	ARCA13/FETH-FEID

**Reference Code 207**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
00202	subalpine fir/grouse whortleberry	ABLA/VASC
00211	subalpine fir/moss	ABLA/2MOSS
009	lodgepole pine series	PICO
00903	lodgepole pine/Geyer's sedge	PICO/CAGE2
00905	lodgepole pine/common juniper	PICO/JUCO6
00908	lodgepole pine/russet buffaloberry	PICO/SHCA
00910	lodgepole pine/grouse whortleberry	PICO/VASC
00911	lodgepole pine/Ross' sedge	PICO/CARO5
010	limber pine series	PIFL2
01004	limber pine/spike fescue	PIFL2/LEKI2
01005	limber pine/common juniper	PIFL2/JUCO6
011	ponderosa pine series	PIPO
01105	ponderosa pine/Geyer's sedge	PIPO/CAGE2
01106	ponderosa pine/Ross' sedge	PIPO/CARO5
01140	ponderosa pine/kinnikinnick	PIPO/ARUV
012	Douglas-fir series	PSME
105	quaking aspen series	POTR5
10501	quaking aspen/Geyer's sedge	POTR5/CAGE2
105010	quaking aspen/Geyer's sedge	POTR5/CAGE2
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE
10517	quaking aspen/pinegrass	POTR5/CARU

**Reference Code 207 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
11050	ponderosa pine/Geyer's sedge	PIPO/CAGE2
11060	ponderosa pine/Ross' sedge	PIPO/CAR05
11400	ponderosa pine/kinnikinnick	PIPO/ARUV
203	Rocky Mountain juniper series	JUSC2
2110	subalpine fir/moss	ABLA/2MOSS
313	Gambel oak series	QUGA
323	thinleaf alder	ALINT
41070	limber pine/common juniper	PIFL2/JUCO6
41080	limber pine/spike fescue	PIFL2/LEKI2
41730	subalpine fir/grouse whortleberry	ABLA/VASC
41790	subalpine fir/Geyer's sedge	ABLA/CAGE2
41940	lodgepole pine/grouse whortleberry	PICO/VASC
41955	lodgepole pine/Geyer's sedge	PICO/CAGE2
41960	lodgepole pine/common juniper	PICO/JUCO6
41970	lodgepole pine/Ross' sedge	PICO/CAR05
41975	lodgepole pine/russet buffaloberry	PICO/SHCA
42006	quaking aspen/pinegrass	POTR5/CARU
42007	quaking aspen/Fendler's meadow-rue	POTR5/THFE

**Reference Code 208**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
002	subalpine fir series	ABLA
00202	subalpine fir/grouse whortleberry	ABLA/VASC
00205	subalpine fir/heartleaf arnica	ABLA/ARCO9
00212	subalpine fir/russet buffaloberry	ABLA/SHCA
004	Engelmann spruce series	PIEN
00414	Engelmann spruce/grouse whortleberry	PIEN/VASC
009	lodgepole pine series	PICO
00901	lodgepole pine/kinnikinnick	PICO/ARUV
00910	lodgepole pine/grouse whortleberry	PICO/VASC
011	ponderosa pine series	PIPO
01110	ponderosa pine/Idaho fescue	PIPO/FEID
01112	ponderosa pine/common juniper	PIPO/JUCO6
01119	ponderosa pine/mountain ninebark	PIPO/PHMO4
01123	ponderosa pine/white spirea	PIPO/SPBE2
01125	ponderosa pine/bluebunch wheatgrass	PIPO/PSSPS
012	Douglas-fir series	PSME
01203	Douglas-fir/creeping barberry	PSME/MARE11
012032	Douglas-fir/creeping barberry-common juniper	PSME/MARE11-JUCO6
01213	Douglas-fir/mountain ninebark	PSME/PHMO4
105	quaking aspen series	POTR5
10507	quaking aspen/silvery lupine	POTR5/LUAR3
105070	quaking aspen/silvery lupine	POTR5/LUAR3
11120	ponderosa pine/common juniper	PIPO/JUCO6
11190	ponderosa pine/mountain ninebark	PIPO/PHMO4
11230	ponderosa pine/white spirea	PIPO/SPBE2
12130	Douglas-fir/mountain ninebark	PSME/PHMO4
41130	ponderosa pine/bluebunch wheatgrass	PIPO/PSSPS

**Reference Code 208 (cont.)**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
41140	ponderosa pine/Idaho fescue	PIPO/FEID
41395	Douglas-fir/creeping barberry	PSME/MARE11
41485	Engelmann spruce/grouse whortleberry	PIEN/VASC
41730	subalpine fir/grouse whortleberry	ABLA/VASC
41780	subalpine fir/heartleaf arnica	ABLA/ARCO9
41940	lodgepole pine/grouse whortleberry	PICO/VASC
41956	lodgepole pine/kinnikinnick	PICO/ARUV
999	subalpine fir/russet buffaloberry	ABLA/SHCA

**Reference Code 209**

<b>PV Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
00202	subalpine fir/grouse whortleberry	ABLA/VASC
00206	subalpine fir/arrowleaf ragwort	ABLA/SETR
00208	subalpine fir/bluejoint	ABLA/CACA4
004	Engelmann spruce series	PIEN
00413	Engelmann spruce/alpine clover	PIEN/TRDA2
006	blue spruce series	PIPU
00602	blue spruce/heartleaf arnica	PIPU/ARCO9
008	bristlecone pine series	PIAR
00803	bristlecone pine/alpine clover	PIAR/TRDA2
009	lodgepole pine series	PIAR
00903	lodgepole pine/Geyer's sedge	PICO/CAGE2
00905	lodgepole pine/common juniper	PICO/JUCO6
00908	lodgepole pine/russet buffaloberry	PICO/SHCA
00910	lodgepole pine/grouse whortleberry	PICO/VASC
010	limber pine series	PIFL2
01002	limber pine/purple reedgrass	PIFL2/CAPU
01005	limber pine/common juniper	PIFL2/JUCO6
01006	limber pine/alpine clover	PIFL2/TRDA2
011	ponderosa pine series	PIPO
01106	ponderosa pine/Ross' sedge	PIPO/CARO5
01107	ponderosa pine/alderleaf mountain mahogany	PIPO/CEMO2
01111	ponderosa pine/spike fescue	PIPO/LEKI2
01120	ponderosa pine/antelope bitterbrush	PIPO/PUTR2
01133	ponderosa pine/mountain muhly	PIPO/MUMO
012	Douglas-fir series	PSME
01204	Douglas-fir/Ross' sedge	PSME/CARO5
01206	Douglas-fir/Geyer's sedge	PSME/CAGE2
01209	Douglas-fir/fivepetal cliffbush	PSME/JAAM
01213	Douglas-fir/mountain ninebark	PSME/PHMO4
103	narrowleaf cottonwood	POAN3
10302	narrowleaf cottonwood/narrowleaf willow	POAN3/SAEX
105	quaking aspen series	POTR5
10501	quaking aspen/Geyer's sedge	POTR5/CAGE2
10503	quaking aspen/Thurber's fescue	POTR5/FETH
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE



**Reference Code 209 (cont.)**

PV Code	Common Name	Scientific Name
203	Rocky Mountain juniper series	JUSC2
20302	Rocky Mountain juniper/big sagebrush	JUSC2/ARTR2
20304	Rocky Mountain juniper/alderleaf mountain mahogany	JUSC2/CEMO2
20306	Rocky Mountain juniper/antelope bitterbrush	JUSC2/PUTR2

**Reference Code 210**

PV Code	Common Name	Scientific Name
002	subalpine fir series	ABLA
00201	subalpine fir/Geyer's sedge	ABLA/CAGE2
00202	subalpine fir/grouse whortleberry	ABLA/VASC
00603	blue spruce/bluegrass	PIPU/POA
011	ponderosa pine series	PIPO
012	Douglas-fir series	PSME
01211	Douglas-fir/Oregon boxleaf	PSME/PAMY
105	quaking aspen series	POTR5
10501	quaking aspen/Geyer's sedge	POTR5/CAGE2
10510	quaking aspen/western brackenfern	POTR5/PTAQ
10511	quaking aspen/mountain snowberry	POTR5/SYOR2
10512	quaking aspen/Fendler's meadow-rue	POTR5/THFE
10546	quaking aspen/eltrot	POTR5/HESP6
204	twoneedle pinyon series	PIED
31305	Gambel oak/mountain snowberry	QUGA/SYOR2

**Reference Code 402**

PV Code	Common Name	Scientific Name
010	limber pine series	PIFL2
050	limber pine/Idaho fescue	PIFL2/FEID
051	limber pine/Idaho fescue-Idaho fescue	PIFL2/FEID-FEID
060	limber pine/curl-leaf mountain mahogany	PIFL2/CELE3
070	limber pine/common juniper	PIFL2/JUCO6
080	limber pine/spike fescue	PIFL2/LEK12
200	Douglas-fir series	PSME
220	Douglas-fir/Idaho fescue	PSME/FEID
221	Douglas-fir/Idaho fescue-Idaho fescue	PSME/FEID-FEID
260	Douglas-fir/mallow ninebark	PSME/PHMA5
265	Douglas-fir/mallow ninebark-Douglas-fir	PSME/PHMA5-PSME
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/VACA1 3
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/sicketop 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/CAR05
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/CAR05
402	896	whitebark pine/Ross' sedge-lodgepole pine	PIAL/CAR05-PICO
402	897	whitebark pine/Ross' sedge-Ross' sedge	PIAL/CAR05-CAR05
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



# APPENDIX H: FUEL PHOTO REFERENCES AND CODES

## Fuel Photo References

Code	Reference
2	Fischer, William C. 1981. <b>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.</b> USDA For. Serv. Gen. Tech. Rep. INT-97, 133 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
3	Fischer, William C. 1981. <b>Photo Guide for Appraising Downed Woody Fuels in Montana Forests: Lodgepole Pine and Engelmann Spruce-Subalpine Fir Cover Types.</b> USDA For. Serv. Gen. Tech. Rep. INT-98, 143 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.
6	Maxwell, Wayne G. and Franklin R. Ward. 1976. <b>Photo Series for Quantifying Forest Residues in the: Ponderosa Pine Type, Ponderosa Pine and Associated Species Type, Lodgepole Pine Type.</b> USDA For. Serv. Gen. Tech. Rep. PNW-52, 74 p. Pacific Northwest Range Exp. Stn., Portland, Oregon 97208.
8	Maxwell, Wayne G. and Ward, Franklin R. <b>Photo Series for Quantifying Natural Forest Residues in Common Vegetation Types of the Pacific Northwest.</b> USDA For. Serv. Gen Tech Rept. PNW-105. Pacific Northwest Forest and Range Expt. Stn., Portland, OR. 1980. 229 p.
11	Maxwell, Wayne G. 1982. <b>Photo Series for Quantifying Forest Residues in the Black Hills. Ponderosa Pine Type and Spruce Type.</b> USDA Forest Service Rocky Mountain Region. Report number A-89-6-82. 80 p.
12	Anonymous. <b>Photo Series For Quantifying Forest Residues in the Southwestern Region.</b> USDA Forest Service Southwest Region. Albuquerque, NM. Date Unknown. 227 p.
17	Ottmar, Roger D., R.E. Vihnanek, and C.S. Wright. 2000. <b>Stereo Photo Series for Quantifying Natural Fuels in Lodgepole Pine, Quaking Aspen, and Gambel Oak Types in the Rocky Mountains.</b>
20	USDA Forest Service Rocky Mountain Region. <b>Photo Series for Quantifying Forest Residues in the: Black Hills Ponderosa Pine Type and Spruce Type.</b> 1990. Report Number A-89-1-90. 78 p.
32	Popp, John B.; Lundquist, John E. 2006. <b>Photo Series for Quantifying Forest Residues in Managed lands of the Medicine Bow National Forest.</b> Gen. tech. Rep. RMRS-GTR-172. Fort Collins, CO: United States Department of agriculture, Forest Service, rocky Mountain research Station. 105 p

## Fuel Photo Codes

### 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 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 8

1BR	1LP3	1SA2	2JU2	2PP3	3LP3	4DF4	5PP4
1DF2	1MC2	1SA3	2LP1	2PP4	3MC2	4DFHD4	6DF4
1DF3	1MC3	1SA4	2LP2	2SA1	3MC3	4LP2	6PP3
1DF4	1MC4	2BR	2LP3	2SA2	3PP&ASSOC3	4PP&ASSOC3	6PP4
1DFHD3	1PP&ASSOC3	2DF2	2MC2	2SA3	3PP&ASSOC4	4PP2	7DF4
1DFHD4	1PP&ASSOC4	2DF3	2MC3	2SA4	3PP1	4PP3	7PP3
1GR	1PP1	2DF4	2MC4	3DF4	3PP2	4PP4	7PP4
1HD2	1PP2	2DFHD3	2PP&ASSOC3	3DFHD3	3PP3	5DF4	8PP3
1JU2	1PP3	2DFHD4	2PP&ASSOC4	3DFHD4	3PP4	5DFHD4	8PP4
1LP1	1PP4	2GR	2PP1	3LP1	3SA1	5PP&ASSOC3	
1LP2	1SA1	2HD2	2PP2	3LP2	3SA3	5PP3	

### Fuel Photo Codes For Reference 11

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



**Fuel Photo Codes For Reference 12**

1AZPPSPPRE01	1PP2(PNW-105)	2PP&ASSOC3	2PP4(PNW-105)	3PP3(PNW-105)	4PP4
1AZPPSPPRE02	1PP2PC	2PP&ASSOC4	2PPSP3PC	3PP4	4PP4PC
1AZPPSPPRE03	1PP3	2PP1	2SP3PC	3PP4PC	4WF3
1AZPPSPPRE04	1PP3(BH)	2PP1TH	3MC2	3PP4(PNW-105)	5PP&ASSOC3
1JU2	1PP3(PNW-105)	2PP1TH(BH)	3MC3	3PPSP3PC	5PP1TH
1MC2	1PP3CC	2PP2	3PP&ASSOC3	3WF2	5PP1TH(BH)
1MC3	1PP3PC	2PP2(BH)	3PP&ASSOC4	3WF3	5PP2PC
1PP&ASSOC3	1PP4	2PP2(PNW-105)	3PP1	4PP&ASSOC3	5PP3
1PP&ASSOC4	1PP4PC	2PP2PC	3PP1TH	4PP1TH	5PP4PC
1PP1	1PP4(PNW-105)	2PP3CC	3PP1TH(BH)	4PP1TH(BH)	6PP1TH
1PP1(BH)	1PPSP3PC	2PP3PC	3PP2	4PP2	6PP1TH(BH)
1PP1TH	1SP3PC	2PP3	3PP2(PNW-105)	4PP2(PNW-105)	6PP3
1PP1TH(BH)	2JU2	2PP3(PNW-105)	3PP2PC	4PP2PC	7PP1TH
1PP2	2MC2	2PP4	3PP3PC	4PP3	7PP1TH(BH)
1PP2(BH)	2MC3	2PP4PC	3PP3	4PP3(PNW-105)	7PP3
					8PP3

**Fuel Photo Codes For Reference 17**

G001	G006	LP02	LP07	LP12	QA04	QA09
G002	G007	LP03	LP08	LP13	QA05	QA10
G003	G008	LP04	LP09	QA01	QA06	QA11
G004	G009	LP05	LP10	QA02	QA07	QA12
G005	LP01	LP06	LP11	QA03	QA08	QA13

**Fuel Photo Codes For Reference 20**

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

**Fuel Photo Codes For Reference 32**

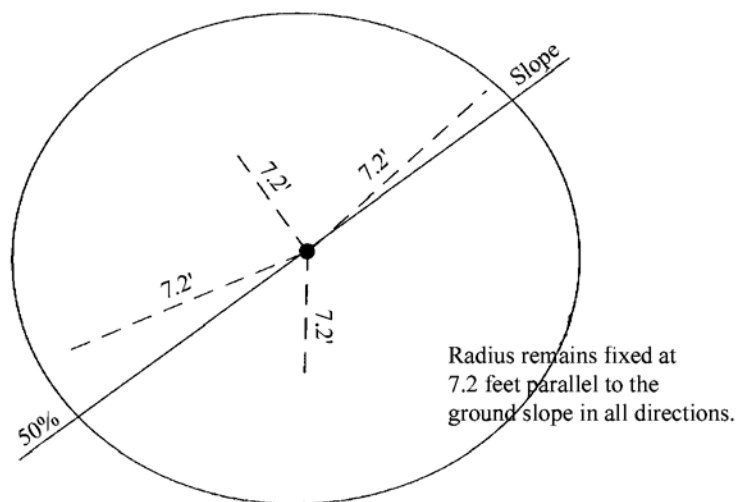
56	58	63	31	59	78
51	45	92	76	48	13
28	19	2	83	15	64
97	79	71	55	41	21
95	22	1	102	12	
91	49	100	73	54	
89	93	74	67	85	

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# 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

SLOPE %	Plot Size in Acres					
	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
54-55	7.3	12.6	17.8	28.1	39.8	56.2

**Circular Plot Radii Corrected for Slope (cont.)**

SLOPE %	Plot Size in Acres					
	1/300	1/100	1/50	1/20	1/10	1/5
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

***Circular Plot Radii Corrected for Slope (cont.)***

SLOPE %	Plot Size in Acres					
	1/300	1/100	1/50	1/20	1/10	1/5
116	8.4	14.6	20.6	32.6	46.1	65.1
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
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 to 104	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 to 107	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  $1.333 * \text{DBH}$ .

For Example if  $\text{DBH} = 14.3$  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  $1.081 * \text{DBH}$ .

For Example, if  $\text{DBH} = 14.3$  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	Slope Correction Factor	Combined 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: Limiting Distance to Face of Tree and Slope Correction Factors for Various Basal Area Factors (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	1.21499	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

**Table J-6: Limiting Distance to Face of Tree and Slope Correction Factors for Various Basal Area Factors (cont.)**

% of Slope	Slope Correction Factor	Combined Factor					
		5 BAF	10 BAF	15 BAF	20 BAF	30 BAF	40 BAF
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
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

**Table J-6: Limiting Distance to Face of Tree and Slope Correction Factors for Various Basal Area Factors (cont.)**

% of Slope	Slope Correction Factor	Combined Factor					
		5 BAF	10 BAF	15 BAF	20 BAF	30 BAF	40 BAF
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
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





# 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	Agent	Common Name	Scientific Name
<b>10</b>	<b>000</b>	<b>General Insects</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Thrips	
	002	Tip moth	
	003	Wasp	
	007	Clerid beetle	<i>Cleridae</i>
	008	Weevil	<i>Curculionidae</i>
	011	Ant	<i>Formicidae</i>
	017	Bagworm moth	<i>Psychidae</i>
	019	Scarab	<i>Scarabaeidae</i>
	023	Wood wasps	<i>Siricidae spp.</i>
<b>11</b>	<b>000</b>	<b>Bark Beetles</b>	
<b><u>SEVERITY RATING</u></b>			
1 = Unsuccessful bole attack: pitchout & 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			
	001	Roundheaded pine beetle	<i>Dendroctonus adjunctus</i>
	002	Western pine beetle	<i>Dendroctonus brevicomis</i>
	005	Lodgepole pine beetle	<i>Dendroctonus murrayanae</i>
	006	Mountain pine beetle	<i>Dendroctonus ponderosae</i>
	007	Douglas-fir beetle	<i>Dendroctonus pseudotsugae</i>
	009	Spruce beetle	<i>Dendroctonus rufipennis</i>
	011	Black turpentine beetle	<i>Dendroctonus terebrans</i>
	012	Red turpentine beetle	<i>Dendroctonus valens</i>
	015	Western balsam bark beetle	<i>Dryocoetes confusus</i>
	017	Ash bark beetles	<i>Hylesinus spp.</i>
	018	Native elm bark beetle	<i>Hylurgopinus rufipes</i>
	019	Pinon ips	<i>Ips confusus</i>
	021	Sixspined ips	<i>Ips calligraphus</i>
	025	Arizona five-spined ips	<i>Ips lecontei</i>
	029	Pine engraver	<i>Ips pini</i>
	030	Ips engraver beetles	<i>Ips spp.</i>
	031	unknown	<i>Ips tridens</i>
	032	Western ash bark beetle	<i>Leperisinus californicus</i>
	037	Tip beetles	<i>Pityogenes spp.</i>
	038	Douglas-fir twig beetle	<i>Pityophthorus pseudotsugae</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>11 (cont.)</b>	<b>000</b>	<b>Bark Beetles</b>	
	039	Twig beetles	<i>Pityophthorus spp.</i>
	040	Foureyed spruce beetle	<i>Polygraphus rufipennis</i>
	042	unknown	<i>Pseudohylesinus dispar</i>
	043	Douglas-fir pole beetle	<i>Pseudohylesinus nebulosus</i>
	045	Small European elm bark beetle	<i>Scolytus multistriatus</i>
	046	Spruce engraver	<i>Scolytus piceae</i>
	048	True fir bark beetles	<i>Scolytus spp.</i>
	049	Douglas-fir engraver	<i>Scolytus unispinosus</i>
	050	Fir engraver	<i>Scolytus ventralis</i>
	051	Striped ambrosia beetle	<i>Tryachykele lineatum</i>
	055	Spruce ips	<i>Ips pilifrons</i>
	056	Mexican pine beetle	<i>Dendroctonus mexicanus</i>
<b>12</b>	<b>000</b>	<b>Defoliators</b>	
<b>SEVERITY RATING</b>			
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%			
	001	Casebearer	
	002	Leaftier	
	003	Looper	
	004	Needleminer	
	005	Sawfly	
	006	Skeletonizer	
	007	Larger elm leaf beetle	<i>Monocesta coryli</i>
	008	Spanworm	
	009	Webworm	
	011	Western blackheaded budworm	<i>Acleris gloverana</i>
	014	Fall cankerworm	<i>Alsophila pomataria</i>
	015	Alder flea beetle	<i>Altica ambiens</i>
	018	Oak worms	<i>Anisota spp.</i>
	019	Orange-striped oakworm	<i>Anisota senatoria</i>
	021	Fruit tree leafroller	<i>Archips argyrospila</i>
	022	Uglynest caterpillar	<i>Archips cerasivorana</i>
	023	Boxelder defoliator	<i>Archips negundanus</i>
	024	Oak leafroller	<i>Archips semiferana</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>12 (cont.)</b>	<b>000</b>	<b>Defoliators</b>	
	025	Birch sawfly	<i>Arge pectoralis</i>
	029	Oak skeletonizer	<i>Bucculatrix ainliella</i>
	035	Spruce webspinning sawfly	<i>Cephalcia fascipennis</i>
	036	Two-year budworm	<i>Choristoneura biennis</i>
	037	Large aspen tortrix	<i>Choristoneura conflictana</i>
	038	Spruce budworm	<i>Choristoneura fumiferana</i>
	039	Sugar pine tortrix	<i>Choristoneura lambertiana</i>
	040	Western spruce budworm	<i>Choristoneura occidentalis</i>
	041	Jack pine budworm	<i>Choristoneura pinus</i>
	043	Aspen leaf beetle	<i>Chrysomela crotchii</i>
	044	Cottonwood leaf beetle	<i>Chrysomela scripta</i>
	045	Leafhopper	<i>Cicadellidae</i>
	046	Poplar tentmaker	<i>Clostera inclusa</i>
	049	Lodgepole needleminer	<i>Coleotechnites milleri</i>
	050	Ponderosa needleminer	<i>Coleotechnites spp.</i>
	051	Black Hills pandora moth	<i>Coloradia doris</i>
	052	Pandora moth	<i>Coloradia pandora</i>
	053	Sycamore lace bug	<i>Corythucha ciliata</i>
	054	Lace bugs	<i>Corythucha spp.</i>
	055	Oak leaftier	<i>Croesia semipurpurana</i>
	057	Walnut caterpillar	<i>Datana integerrima</i>
	058	Yellownecked caterpillar	<i>Datana ministra</i>
	059	Walkingstick	<i>Diapheromera femorata</i>
	060	Spruce coneworm	<i>Dioryctria reniculelloides</i>
	061	Introduced pine sawfly	<i>Diprion similis</i>
	062	Greenstriped mapleworm	<i>Dryocampa rubicunda</i>
	063	Spruce needleminer (east)	<i>Endothenia albolineana</i>
	064	Elm spanworm	<i>Ennomos subsignaris</i>
	066	White fir needleminer	<i>Epinotia meritana</i>
	068	Browntail moth	<i>Euproctis chrysorrhoea</i>
	069	Pine needleminer	<i>Exoteleia pinifoliella</i>
	070	Birch leafminer	<i>Fenusa pusilla</i>
	071	Elm leafminer	<i>Fenusa ulmi</i>
	072	Geometrid moth	<i>Geometridae</i>
	073	Leafblotch miner	<i>Gracillariidae</i>
	074	Spotted tussock moth	<i>Halisidota maculata</i>
	075	Pale tussock moth	<i>Halisidota tessellaris</i>
	076	Hesperiid moth	<i>Hasora choromus</i>
	077	Brown day moth	<i>Hemileuca eglanterina</i>
	078	Buck moth	<i>Hemileuca maia</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>12 (cont.)</b>	<b>000</b>	<b>Defoliators</b>	
	079	Saddled prominent	<i>Heterocampa guttivitta</i>
	080	Variable oakleaf caterpillar	<i>Heterocampa manteo</i>
	081	Cherry scallop shell moth	<i>Hydria prunivorata</i>
	082	Fall webworm	<i>Hyphantria cunea</i>
	084	unknown	<i>Lambdina punctat</i>
	085	Tent caterpillar moth	<i>Lasiocampidae</i>
	086	Satin moth	<i>Leucoma salicis</i>
	087	Willow leafblotch miner	<i>Lithocolletis spp.</i>
	088	Aspen blotchminer	<i>Lithocolletis tremuloidiella</i>
	089	Gypsy moth	<i>Lymantria dispar</i>
	090	Cottonwood leafminers	<i>Lyonetia spp.</i>
	093	Eastern tent caterpillar	<i>Malacosoma americanum</i>
	094	Western tent caterpillar	<i>Malacosoma californicum</i>
	096	Forest tent caterpillar	<i>Malacosoma disstria</i>
	097	Southwestern tent caterpillar	<i>Malacosoma incurvum</i>
	099	Blister beetle	<i>Meloidae</i>
	101	Juniper sawfly	<i>Monoctenus fulvus</i>
	102	Willow sawfly	<i>Nematus spp.</i>
	104	Lodgepole sawfly	<i>Neodiprion burkei</i>
	105	Blackheaded pine sawfly	<i>Neodiprion excitans</i>
	106	Pine infesting sawflies	<i>Neodiprion fulviceps</i>
	107	Redheaded pine sawfly	<i>Neodiprion lecontei</i>
	109	Ponderosa pine sawfly	<i>Neodiprion mundus</i>
	110	White pine sawfly	<i>Neodiprion pinetum</i>
	111	Jack pine sawfly	<i>Neodiprion pratti banksianae</i>
	113	European pine sawfly	<i>Neodiprion sertifer</i>
	116	Pine butterfly	<i>Neophasia menapia</i>
	119	Locust leafminer	<i>Odontota dorsalis</i>
	121	Rusty tussock moth	<i>Orgyia antiqua</i>
	122	Whitemarked tussock moth	<i>Orgyia leucostigma</i>
	123	Douglas-fir tussock moth	<i>Orgyia pseudotsugata</i>
	124	Western tussock moth	<i>Orgyia vetusta</i>
	125	Spring cankerworm	<i>Paleacrita vernata</i>
	126	Black citrus swallowtail butterfly	<i>Papilio polytes</i>
	128	Pine tussock moth	<i>Parorgyia griseifacta</i>
	130	Half-wing geometer	<i>Phigalia titea</i>
	131	Phoberia moth	<i>Phoberia atomaris</i>
	135	Aspen leafminer	<i>Phyllocnistis populiella</i>
	136	Yellowheaded spruce sawfly	<i>Pikonema alaskensis</i>
	137	Tenlined June beetle	<i>Polyphylla decemlineata</i>
	138	Japanese beetle	<i>Popillia japonica</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>12 (cont.)</b>	<b>000</b>	<b>Defoliators</b>	
	141	Elm leaf beetle	<i>Pyrrhalta luteola</i>
	143	Giant silkworm moth	<i>Saturniidae</i>
	144	Redhumped caterpillar	<i>Schizura concinna</i>
	145	Redbanded thrips	<i>Selenothrips rubrocinctus</i>
	147	Maple leafroller	<i>Sparganothis acerivorana</i>
	148	Redhumped oakworm	<i>Symmerista canicosta</i>
	149	Orangehumped mapleworm	<i>Symmerista leucitys</i>
	150	Spruce needleminer (west)	<i>Taniva albolineana</i>
	151	Maple webworm	<i>Tetralopha asperatella</i>
	152	Pine webworm	<i>Tetralopha robustella</i>
	154	Bagworm	<i>Thyridopteryx ephemeraeformis</i>
	155	Leafroller/seed moth	<i>Tortricidae</i>
	156	Willow defoliation	<i>Tortricidae</i>
	158	Spruce bud moth	<i>Zeiraphera canadensis</i>
	160	Pine needle sheathminer	<i>Zelleria haimbachi</i>
	162	Cottonwood leaf beetle	<i>Chrysomela spp.</i>
	164	Saddle-backed looper	<i>Ectropis crepuscularia</i>
	165	Leaf roller	<i>Epinotia solandriana</i>
	168	Green-striped looper	<i>Melanoplophia imitata</i>
	169	Willow leaf blotchminer	<i>Micrurapteryx salicifoliella</i>
	170	unknown	<i>Neodiprion autmnalis</i>
	171	Pinon sawfly	<i>Neodiprion edulicolus</i>
	172	unknown	<i>Neodiprion gilletti</i>
	173	unknown	<i>Neodiprion ventralis</i>
	174	Pine looper	<i>Phaeoura mexicanaria</i>
	175	unknown	<i>Zadiprion rohweri</i>
	176	unknown	<i>Zadiprion townsendi</i>
	177	Douglas-fir budmoth	<i>Zeiraphera hesperiana</i>
	178	Western oak looper	<i>Lambdina fiscellaria somniaria</i>
	190	Hickory tussock moth	<i>Halisidota caryae</i>
	191	Pin oak sawfly	<i>Caliroa lineata</i>
	192	Palmerworm	<i>Dichomeris ligulella</i>
	193	Pitch pine looper	<i>Lambdina athasaria pellucidaria</i>
	194	Red pine sawfly	<i>Neodiprion nanulus nanulus</i>
	195	Pine tip moth	<i>Argyrotaenia pinatubana</i>
	196	Baldcypress leafroller	<i>Archips goyerana</i>
	197	Winter moth	<i>Operophtera</i>
	198	Basswood thrips	<i>Neohydatothrips</i>
	199	Noctuid moth	<i>Xylomyges simplex (walker)</i>
	200	Pyralid moth	<i>Palpita magniferalis</i>
	201	Pacific silver fir budmoth	<i>Zeiraphera sp. destitutana</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>13</b>	<b>000</b>	<b>Chewing Insects</b>	
<b>SEVERITY RATING</b>			
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			
	001	Grasshopper	
	002	Shorthorn grasshoppers	<i>Acrididae</i>
	003	Black cutworm	<i>Agrotis ipsilon</i>
	005	Clearwinged grasshopper	<i>Camnula pellucida</i>
	006	Cicadas	<i>Cicadidae</i>
	007	Eurytomids	<i>Eurytoma spp.</i>
	008	Cutworms	<i>Euxoa excellens</i>
	012	Periodical cicada	<i>Magicicada septendecim</i>
	013	Migratory grasshopper	<i>Melanoplus sanguinipes</i>
	014	Valley grasshopper	<i>Oedaleonotus enigma</i>
	015	Strawberry root weevil	<i>Otiorhynchus ovatus</i>
	020	Northern pitch twig moth	<i>Petrova albicapitana</i>
	021	Ponderosa pine tip moth	<i>Rhyacionia zozana</i>
	022	Pine needle weevil	<i>Scythropus spp.</i>
	026	Ash plant bug	<i>Tropidosteptes amoenus</i>
	027	Shorthorned grasshopper	<i>Valanga nigricornis</i>
	028	Pitch-eating weevil	<i>Pachylobius picivorus</i>
	030	Adana tip moth	<i>Rhyacionia adana</i>
<b>14</b>	<b>000</b>	<b>Sucking Insects</b>	
<b>SEVERITY RATING</b>			
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			
	001	Scale insect	
	006	Aphid	<i>Aphididae</i>
	007	Pine spittlebug	<i>Aphrophora parallela</i>
	008	Western pine spittlebug	<i>Aphrophora permutata</i>
	009	Saratoga spittlebug	<i>Aphrophora saratogensis</i>
	010	Spittlebug	<i>Cercopidae</i>
	011	Wax scale	<i>Ceroplastes spp.</i>
	012	Pine needle scale	<i>Chionaspis pinifoliae</i>
	014	Giant conifer aphids	<i>Cinara spp.</i>
	015	White pine aphid	<i>Cinara strobi</i>
	026	Lecanium scale	<i>Lecanium spp.</i>
	017	Spruce aphid	<i>Elatobium abietinum</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>14 (cont.)</b>	<b>000</b>	<b>Sucking Insects</b>	
	018	Woolly apple aphid	<i>Eriosoma lanigerum</i>
	019	Striped mealybug	<i>Ferrisia vergata</i>
	022	Pine thrips	<i>Gnophothrips spp.</i>
	024	Honeysuckle aphids	<i>Hyadaphis tataricae</i>
	027	Common falsepsit scale	<i>Lecanodiaspis prosopidis</i>
	028	Oystershell scale	<i>Lepidosaphes ulmi</i>
	029	Pinyon needle scale	<i>Matsucoccus acalyptus</i>
	030	Ponderosa pine twig scale	<i>Matsucoccus bisetosus</i>
	031	Pine twig scale	<i>Matsucoccus californicus</i>
	032	Ponderosa pine scale	<i>Matsucoccus degeneratus</i>
	034	Prescott scale	<i>Matsucoccus vexillorum</i>
	035	Treehoopers	<i>Membracidae</i>
	039	Black pineleaf scale	<i>Nuculaspis californica</i>
	040	Spruce spider mite	<i>Oligonychus ununquis</i>
	041	Twig girdler	<i>Oncideres cingulata</i>
	043	Maple aphids	<i>Periphyllus spp.</i>
	044	Spruce bud scale	<i>Physokermes piceae</i>
	046	Pine leaf adelgid	<i>Pineus pinifoliae</i>
	047	White pine adelgid	<i>Pineus spp.</i>
	048	Pine bark adelgid	<i>Pineus strobi</i>
	049	Root aphid	<i>Prociphilus americanus</i>
	050	Mealybug	<i>Pseudococcidae</i>
	051	Cottony maple scale	<i>Pulvinaria innumerabilis</i>
	052	Fir mealybug	<i>Puto cupressi</i>
	053	Douglas-fir mealybug	<i>Puto profusus</i>
	054	Spruce mealybug	<i>Puto sandini</i>
	055	Hemispherical scale	<i>Saissetia coffeae</i>
	056	Woolly pine needle aphid	<i>Schizolachnus piniradiatae</i>
	057	Steatococcus scale	<i>Steatococcus samaraius</i>
	058	Pear thrips	<i>Taeniothrips inconsequens</i>
	061	Pine tortoise scale	<i>Toumeyella parvicornis</i>
	063	Birch aphid	<i>Euceraphis betulae</i>
	069	Elm scurfy scale	<i>Chionaspis americana</i>
<b>15</b>	<b>000</b>	<b>Boring Insects</b>	
<b>SEVERITY RATING</b>			
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			
	001	Shoot borer	
	002	Termite	



**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>15 (cont.)</b>	<b>000</b>	<b>Boring Insects</b>	
	003	Ponderosa pine bark borer	<i>Acanthocinus princeps</i>
	004	Bronze birch borer	<i>Agrilus anxius</i>
	005	Twolined chestnut borers	<i>Agrilus bilineatus</i>
	006	Bronze poplar borer	<i>Agrilus liragus</i>
	007	Carpenter bees	<i>Apidae</i>
	008	Flatheaded borer	<i>Buprestidae</i>
	009	Golden buprestid	<i>Buprestis aurulenta</i>
	010	Carpenter ants	<i>Camponotus spp.</i>
	017	Pitted ambrosia beetle	<i>Corthylus punctatissimus</i>
	011	Gouty pitch midge	<i>Cecidomyia piniinopis</i>
	013	Roundheaded borer	<i>Cerambycidae</i>
	014	Flatheaded apple tree borer	<i>Chrysobothris femorata</i>
	016	Columbian timber beetle	<i>Corthylus columbianus</i>
	018	Carpenterworm moths	<i>Cossidae</i>
	019	Poplar and willow borer	<i>Cryptorhynchus lapathi</i>
	020	Pine reproduction weevil	<i>Cylindrocopturus eatoni</i>
	021	Douglas-fir twig weevil	<i>Cylindrocopturus furnissi</i>
	022	Zimmerman pine moth	<i>Dioryctria zimmermani</i>
	023	Oak twig pruners	<i>Elaphidionoides spp.</i>
	024	Twig pruner	<i>Elaphidionoides villosus</i>
	025	Lesser cornstalk borer	<i>Elasmopalpus lignosellus</i>
	026	Red oak borer	<i>Enaphalodes rufulus</i>
	027	Ponderous borer	<i>Ergates spiculatus</i>
	028	Eastern pine shoot borer	<i>Eucosma gloriola</i>
	029	Western pine shoot borer	<i>Eucosma sonomana</i>
	030	Eucosma species	<i>Eucosma spp.</i>
	031	Sugar maple borer	<i>Glycobius speciosus</i>
	033	Pine root collar weevil	<i>Hylobius radialis</i>
	036	Tarnished plant bug	<i>Lygus lineolaris</i>
	037	Unknown	<i>Magdalis spp.</i>
	039	Locust borer	<i>Megacyllene robiniae</i>
	040	California flathead borer	<i>Melanophila californica</i>
	041	Flatheaded fir borer	<i>Melanophila drummondi</i>
	042	Whitespotted sawyer	<i>Monochamus scutellatus</i>
	043	Redheaded ash borer	<i>Neoclytus acuminatus</i>
	044	Western ash borer	<i>Neoclytus conjunctus</i>
	047	Northern pine weevil	<i>Pissodes approximates</i>
	048	unknown	<i>Pissodes dubius</i>
	050	White pine weevil	<i>Pissodes strobi</i>
	051	Lodgepole terminal weevil	<i>Pissodes terminalis</i>
	052	Ambrosia beetles	<i>Platypus spp.</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>15 (cont.)</b>	<b>000</b>	<b>Boring Insects</b>	
	053	Cottonwood borer	<i>Plectrodera scalator</i>
	055	Pine gall weevil	<i>Podapion gallicola</i>
	056	Ash borer	<i>Podesesia syringae fraxini</i>
	057	Lilac borer	<i>Podosesia syringae</i>
	058	Carpenterworm	<i>Prionoxystus robiniae</i>
	063	European pine shoot moth	<i>Rhyacionia buoliana</i>
	064	Western pine tip moth	<i>Rhyacionia bushnelli</i>
	065	Nantucket pine tip moth	<i>Rhyacionia frustrana</i>
	066	Lodgepole pine tip moth	<i>Rhyacionia montana</i>
	067	Southwestern pine tip moth	<i>Rhyacionia neomexicana</i>
	068	Poplar borer	<i>Saperda calcarata</i>
	069	Roundheaded appletree borer	<i>Saperda candida</i>
	070	Saperda shoot borer	<i>Saperda spp.</i>
	071	Clearwing moths	<i>Sesiidae</i>
	073	Roundheaded fir borer	<i>Tetropium abietis</i>
	076	Douglas-fir pitch moth	<i>Vespamima novaroensis</i>
	087	Emerald ash borer	<i>Agilus planipennis</i>
<b>16</b>	<b>000</b>	<b>Seed/Cone/Flower/Fruit Insects</b>	
<b>SEVERITY RATING</b>			
1 = minor			
2 = severe			
	001	Douglas-fir cone moth	<i>Barbara colfaxiana</i>
	002	Lodgepole cone beetle	<i>Conophthorus contortae</i>
	003	Limber pine cone beetle	<i>Conophthorus flexilis</i>
	004	Mountain pine cone beetle	<i>Conophthorus monticolae</i>
	005	Ponderosa pine cone beetle	<i>Conophthorus ponderosae</i>
	008	White pine cone beetle	<i>Conophthorus coniperda</i>
	010	Douglas-fir cone midge	<i>Contarinia oregonensis</i>
	011	Cone scale midge	<i>Contarinia washingtonensis</i>
	014	Spruce bud midge	<i>Dasineura swaini</i>
	015	Fir coneworm	<i>Dioryctria abietivorella</i>
	017	Pine coneworm	<i>Dioryctria auranticella</i>
	019	Ponderosa twig moth	<i>Dioryctria ponderosae</i>
	020	unknown	<i>Dioryctria pseudotsugella</i>
	021	Dioryctria moths	<i>Dioryctria spp.</i>
	022	Lodgepole cone moth	<i>Eucosma rescissoriana</i>
	023	Seed chalcid	<i>Eurytomidae</i>
	025	Cone maggot	<i>Hylemya anthracina</i>
	027	Ponderosa pine seed worm/moth	<i>Laspeyresia piperana</i>
	028	Spruce seed moth	<i>Laspeyresia youngana</i>
	029	Boxelder bug	<i>Leptocoris trivittatus</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>16 (cont.)</b>	<b>000</b>	<b>Seed/Cone/Flower/Fruit Insects</b>	
	030	Leaffooted pine seed bug	<i>Leptoglossus corculus</i>
	031	Western conifer seed bug	<i>Leptoglossus occidentalis</i>
	033	unknown	<i>Megastigmus lasiocarpae</i>
	034	Spruce seed chalcid	<i>Megastigmus piceae</i>
	035	Ponderosa pine seed chalcid	<i>Megastigmus albifrons</i>
	036	Fir seed chalcid	<i>Megastigmus pinus</i>
	037	Douglas-fir seed chalcid	<i>Megastigmus spermatrophs</i>
	040	Roundheaded cone borer	<i>Paratimia conicola</i>
	042	Coneworm	<i>Phycitidae</i>
	043	Harvester ants	<i>Pogonomyrmex spp.</i>
	045	Fir cone maggot	<i>Strobilomyia abietis</i>
	046	Spruce cone maggot	<i>Strobilomyia anthracina</i>
	048	Coneworm	<i>Hylemia spp.</i>
	049	Prairie tent caterpillar	<i>Malacosoma lutescens</i>
	050	Jack pine tip beetle	<i>Conophthorus banksianae</i>
<b>17</b>	<b>000</b>	<b>Gallmaker Insects</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Birch budgall mite	<i>Aceria rudis</i>
	003	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>
	004	Horned oak gall	<i>Callirhytis cornigera</i>
	005	Gouty oak gall	<i>Callirhytis quercuspunctata</i>
	006	Gall midge	<i>Cecidomyiidae</i>
	007	Douglas-fir needle gall midge	<i>Contarinia pseudotsugae</i>
	008	Gall mite	<i>Eriophyidae</i>
	009	Spruce gall midge	<i>Mayetiola piceae</i>
	010	Hackberry nipplegall maker	<i>Pachypsylla celtidismamma</i>
	012	Leaf stem gall adelgid	<i>Phylloxera caryaecaulis</i>
	013	Gall aphid	<i>Phylloxeridae</i>
	015	Psyllid	<i>Psyllidae</i>
	018	Gouty pitch midge	<i>Cecidomyia piniinopsis</i>
	019	Spider mites	<i>Oligonychus spp.</i>
<b>18</b>	<b>000</b>	<b>Insect Predators</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Lacewing	
	002	Blackbellied clerid	<i>Enoclerus lecontei</i>
	003	Redbellied clerid	<i>Enoclerus sphegeus</i>
	004	unknown	<i>Formica rufa</i>
	005	Western yellowjacket	<i>Vespula pennsylvanica</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>19</b>	<b>000</b>	<b>General Diseases</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
<b>20</b>	<b>000</b>	<b>Biotic Damage</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Damping off	
	002	Gray mold	<i>Botrytis cinerea</i>
<b>21</b>	<b>000</b>	<b>Root/Butt Diseases</b>	
<b><u>SEVERITY RATING for trees</u></b>			
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			
<b><u>SEVERITY RATING for Setting Level</u></b>			
G2 = Minor evidence of RDS on plot			
G3 = RDS present, canopy reduction less than 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			
	001	Armillaria root disease	<i>Armillaria spp.</i>
	002	Yellow stringy rot	<i>Corticium galactimum</i>
	004	Brown crumbly rot	<i>Fomitopsis pinicola</i>
	006	Fusarium root rot	<i>Fusarium spp.</i>
	007	White mottled rot	<i>Ganoderma applanatum</i>
	008	Ganoderma rot of hardwoods	<i>Ganoderma lucidum</i>
	009	Ganoderma rot of conifers	<i>Ganoderma tsugae</i>
	010	Annosus root disease	<i>Heterobasidion annosum</i>
	011	Circinatus root rot	<i>Inonotus circinatus</i>
	012	Tomentosus root disease	<i>Inonotus tomentosus</i>
	014	Black stain root disease	<i>Ophiostoma wagneri</i>
	015	Schweinitzii butt rot	<i>Phaeolus schweinitzii</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>21 (cont.)</b>	<b>000</b>	<b>Root/Butt Diseases</b>	
	022	Pythium root rot	<i>Pythium spp.</i>
	024	Crown gall	<i>Agrobacterium tumefaciens</i>
	026	Yellow pitted rot	<i>Hericium abietis</i>
	027	Brown cubical rot	<i>Laetiporus sulphureus</i>
<b>22</b>	<b>000</b>	<b>Stem Decays/Cankers</b>	
<b>SEVERITY RATING</b>			
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			
	001	Heart rot	
	002	Stem rot	
	003	Sap rot	
	004	Slime flux	
	005	Virus	
	006	Black knot of cherr	<i>Apiosporina morbosa</i>
	007	Atropellis canker	<i>Atropellis piniphila</i>
	008	Siberian elm canker	<i>Botryodiplodia hypodermia</i>
	009	Botryosphaeria canker	<i>Botryosphaeria ribis</i>
	012	Black canker of aspen	<i>Ceratocystis fimbriata</i>
	024	Gray-brown saprot	<i>Cryptoporus volvatus</i>
	025	Cryptosphaeria canker of aspen	<i>Cryptosphaeria populina</i>
	026	Cytospora canker of fir	<i>Cytospora abietis</i>
	027	Western red rot	<i>Dichomitus squalens</i>
	028	Rust-red stringy rot	<i>Echinodontium tinctorium</i>
	029	Sooty-bark canker	<i>Encoelia pruinosa</i>
	034	Scleroderris canker	<i>Gremmeniella abietina</i>
	035	Amelanchier rust	<i>Gymnosporangium harknessianum</i>
	036	Cedar apple rust	<i>Gymnosporangium juniperi-virginianae</i>
	038	Hypoxylon canker of aspen	<i>Hypoxylon mammatum</i>
	039	Canker rot of oak	<i>Inonotus hispidus</i>
	043	Nectria canker	<i>Nectria galligena</i>
	044	Ash heart rot	<i>Pereniporia fraxinophila</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>22 (cont.)</b>	<b>000</b>	<b>Stem Decays/Cankers</b>	
	047	Red ring rot	<i>Phellinus pini</i>
	048	Aspen trunk rot	<i>Phellinus tremulae</i>
	051	Phomopsis canker	<i>Phomopsis spp.</i>
	055	Thyronectria canker	<i>Thyronectria austro-americana</i>
	057	Cytospora canker of aspen	<i>Cytospora chrysosperma</i>
	058	Dothichiza canker	<i>Dothichiza populae</i>
	059	Red belt fungus	<i>Fomitopsis pinicola</i>
	061	Sooty bark canker	<i>Phialis singulare</i>
	062	Brown heartrot	<i>Fomitopsis Officinalis</i>
	063	unknown	<i>Coniophora puteana</i>
	064	Tinder fungus	<i>Fomes fomentarius</i>
	066	Pinyon black stain	<i>Leptographium wagnerii</i>
	067	unknown	<i>Phellinus hartigii</i>
	068	False tinder fungus	<i>Phellinus igniarius</i>
	069	Robustus conk	<i>Phellinus robustus</i>
	070	Yellow cap fungus	<i>Pholiota spp.</i>
	071	Oyster mushroom	<i>Pleurotus ostreatus</i>
	072	White ring rot	<i>Poria albipellucida</i>
	074	Cedar brown pocket rot	<i>Poria sericeomollis</i>
	075	Lachnellula canker	<i>Lachnellula flavovirens</i>
	076	Strumella canker	<i>Strumella coryneoidea</i>
	077	Phomopsis blight	<i>Phomopsis juniperovora</i>
	078	Fusarium canker of yellow poplar	<i>Fusarium solani</i>
	079	Sterile conk of maple and beech	<i>Inonotus glomeratus</i>
	080	Canker of spruce	<i>Aleurodiscus spp.</i>
	081	Birch conk	<i>Piptoporus betulinusai</i>
	082	Canker	<i>Discocainia treleasei</i>
<b>23</b>	<b>000</b>	<b>Parasitic/Epiphytic Plants</b>	
<b>SEVERITY RATING</b>			
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			
7 = Vine damage: less than 50% of crown involved			
8 = Vine damage: 50% or more of crown involved			
	001	Mistletoe	
	002	Parasitic plants	
	003	Vine damage	
	006	Lodgepole pine dwarf mistletoe	<i>Arceuthobium americanum</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>23 (cont.)</b>	<b>000</b>	<b>Parasitic/Epiphytic Plants</b>	
	008	Western dwarf mistletoe	<i>Arceuthobium campylopodum</i>
	009	Limber pine dwarf mistletoe	<i>Arceuthobium cyanocarpum</i>
	010	Pinyon dwarf mistletoe	<i>Arceuthobium divaricatum</i>
	011	Douglas-fir dwarf mistletoe	<i>Arceuthobium douglasii</i>
	017	Southwestern dwarf mistletoe	<i>Arceuthobium vaginatum subsp. cryptopodum</i>
	020	True mistletoe	
	022	Juniper true mistletoe	<i>Phoradendron juniperum</i>
<b>24</b>	<b>000</b>	<b>Decline Complexes/Dieback/Wilts</b>	
<b><u>SEVERITY RATING</u></b>			
1 = Minor: minor crown symptoms			
2 = Severe: severe crown symptoms			
	004	Ash decline/yellows	
	005	Birch dieback	
	007	Complex	
	008	Decline	
	012	Looper; abiotic complex	
	013	Maple decline	
	014	Oak decline	
	016	Sprout dieback	
	017	True fir pest complex	
	019	Pinewood nematode	<i>Bursaphelenchus xylophilus</i>
	021	Oak wilt	<i>Ceratocystis fagacearum</i>
	022	Dutch elm disease	<i>Ceratocystis ulmi</i>
	023	Bacterial wetwood	<i>Erwinia nimipressuralis</i>
	027	Wetwood	
	030	Elm phloem necrosis	<i>Mycoplasma</i>
<b>25</b>	<b>000</b>	<b>Foliage Diseases</b>	
<b><u>SEVERITY RATING</u></b>			
1 = Minor: <20% of foliage affected or <20% of crown in brooms			
2 = Severe: >20% of foliage affected or >20% of crown in brooms			
	001	Blight	
	002	Broom rust	
	003	Juniper blights	
	004	Leaf spots	
	005	Needlecast	
	006	Powdery mildew	
	009	True fir needlecast	
	011	Cercospora blight of juniper	<i>Cercospora sequoiae</i>
	014	Ink spot of aspen	<i>Ciborinia whetzellii</i>

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
25 (cont.)	000	<b>Foliage Diseases</b>	
	015	Pine needle rust	<i>Coleosporium spp.</i>
	016	Anthracnose on Russian olive	<i>Colletotrichum spp.</i>
	017	Coronado limb rust	<i>Cronartium arizonicum</i>
	018	Leaf shothole	<i>Cylindrosporium spp.</i>
	022	Elytroderma disease	<i>Elytroderma deformans</i>
	023	Fire blight	<i>Erwinia amylovora</i>
	024	Walnut anthracnose	<i>Gnomonia leptostyla</i>
	025	Anthracnose	<i>Gnomonia spp.</i>
	027	Brown felt blight	<i>Herpotrichia juniperi</i>
	029	Hardwood anthracnose	<i>Kabatiella apocrypta</i>
	030	Cone damage	<i>Lasiodiplodia spp.</i>
	031	Spruce needle cast	<i>Lirula macrospora</i>
	032	Fir needle cast	<i>Lirula spp.</i>
	033	White pine needle cast	<i>Lophodermella arcuata</i>
	034	Lophodermella needle cast	<i>Lophodermella spp.</i>
	035	Lophodermium needle cast	<i>Lophodermium spp.</i>
	036	Marssonina blight	<i>Marssonina populi</i>
	037	Melampsora rusts	<i>Melampsora medusae</i>
	040	Dothistroma needle blight	<i>Mycosphaerella pini</i>
	041	Brown felt blight of pines	<i>Neopeckia coulteri</i>
	042	Snow blight	<i>Phacidium abietis</i>
	043	Swiss needle cast	<i>Phaeocryptopus gaumannii</i>
	044	Phoma blight	<i>Phoma spp.</i>
	045	Phyllosticta leaf spot	<i>Phyllosticta spp.</i>
	048	Ash rust	<i>Puccinia sparganioides</i>
	049	Fir needle rust	<i>Pucciniastrum spp.</i>
	050	Douglas-fir needle cast	<i>Rhabdocline spp.</i>
	051	Rhizoctonia needle blight	<i>Rhizoctonia spp.</i>
	052	Rhizophaeria needle cast	<i>Rhizophaeria spp.</i>
	054	Brown spot needle blight	<i>Scirrhia acicola</i>
	055	Septoria leaf spot	<i>Septoria alnifolia</i>
	056	Septoria leaf spot and canker	<i>Septoria musiva</i>
	057	Sirococcus tip blight	<i>Sirococcus conigenus</i>
	058	Diplodia blight	<i>Sphaeropsis sapinea</i>
	059	Leaf blister of oak	<i>Taphrina caerulescens</i>
	060	Venturia leaf blight of maple	<i>Venturia acerina</i>
	061	Shepherd's crook	<i>Venturia tremulae</i>
	062	Dothistroma needle blight	<i>Dothistroma septospora</i>
	064	Broom rust	<i>Chrysomyxa arctostaphyli</i>
	065	Spruce needle rust	<i>Chrysomyxa weirii</i>



**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>25 (cont.)</b>	<b>000</b>	<b>Foliage Diseases</b>	
	067	Spruce needle cast	<i>Lophodermium picea</i>
	068	Hardwood leaf rusts	<i>Melampsora spp.</i>
	071	Spruce needle cast	<i>Rhizosphaera pini</i>
	072	Sirococcus shoot blight	<i>Sirococcus strobilinus</i>
	073	Shephards crook	<i>Venturia populina</i>
	074	Delphinella shoot blight	<i>Delphinella abietis</i>
	075	Tar spot	<i>Rhytisma acerinum</i>
<b>26</b>	<b>000</b>	<b>Stem Rusts</b>	
<b>SEVERITY RATING</b>			
1 = Branch infections located greater than 2 feet from tree bole			
2 = Branch infections located between 6 inches and 2 feet from treebole			
3 = Bole infections or branch infections located within 6 inches of bole			
4 = Topkill			
	001	White pine blister rust	<i>Cronartium ribicola</i>
	002	Western gall rust	<i>Peridermium harknessii</i>
	003	Stalactiform blister rust	<i>Cronartium coleosporioides</i>
	004	Comandra blister rust	<i>Cronartium comandrae</i>
	005	Pinyon blister rust	<i>Cronartium occidentale</i>
	006	Eastern gall rust	<i>Cronartium quercuum</i>
	011	Bethuli rust	<i>Peridermium bethuli</i>
	012	Limb rust	<i>Peridermium filamentosum</i>
	013	Southern cone rust	<i>Cronartium strobilinum</i>
<b>27</b>	<b>000</b>	<b>Broom Rusts</b>	
<b>SEVERITY RATING</b>			
1 = Minor: <20% of crown in brooms			
2 = Severe >20% of crown in brooms			
	001	Spruce broom rust	<i>Chrysomyxa arctostaphyli</i>
	003	Juniper broom rust	<i>Gymnosporangium nidus-avis</i>
	004	Fir broom rust	<i>Melampsorella caryophyllacearum</i>
<b>30</b>	<b>000</b>	<b>Fire</b>	
<b>SEVERITY RATING</b>			
1 = minor            2 = severe			
	031	Wild-fire	
	032	Human caused fire	
	033	Crown fire damage	
	034	Ground fire damage	

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>40</b>	<b>000</b>	<b>Animal Damage, source unknown</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor                      2 = severe			
<b>41</b>	<b>000</b>	<b>Wild Animals</b>	
<b><u>SEVERITY RATING</u></b>			
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			
	001	Bear	
	002	Beaver	
	003	Big game (deer)	
	004	Mice or voles	
	005	Pocket gophers	
	006	Porcupines	
	007	Rabbits or hares	
	008	Sapsucker	
	009	Squirrels	
	010	Woodpeckers	
	011	Moose	
	012	Elk	
	013	Deer	
	014	Feral pigs	
	015	Mountain beaver	
	016	Deer or elk	
	17	Earthworm	<i>Lumbricidae</i>
<b>42</b>	<b>000</b>	<b>Domestic Animals</b>	
<b><u>SEVERITY RATING</u></b>			
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			
	001	Cattle	
	002	Goats	
	003	Horses	
	004	Sheep	

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>50</b>	<b>000</b>	<b>Abiotic Damage</b>	
<b><u>SEVERITY RATING</u></b>			
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			
	001	Air pollutants	
	002	Chemical	
	003	Drought	
	004	Flooding/high water	
	005	Frost	
	006	Hail	
	007	Heat	
	008	Lightning	
	009	Nutrient imbalances	
	010	Radiation	
	011	Snow/ice	
	013	Wind-tornado	
	014	Winter injury	
	015	Avalanche	
	016	Mud-land slide	
	018	Other geologic events	
	019	Mechanical (non-human caused)	
<b>60</b>	<b>000</b>	<b>Competition</b>	
<b><u>SEVERITY RATING</u></b>			
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 neighbors			
<b>70</b>	<b>000</b>	<b>Human Activities</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Herbicides	
	003	Imbedded objects	
	004	Improper planting technique	
	005	Land clearing	
	006	Land use conversion	
	007	Logging damage	
	008	Mechanical	
	009	Pesticides	
	010	Roads	
	011	Soil compaction	
	012	Suppression	

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>70 (cont.)</b>	<b>000</b>	<b>Human Activities</b>	
	013	Vehicle damage	
	014	Road salt	
<b>71</b>	<b>000</b>	<b>Harvest</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
<b>80</b>	<b>000</b>	<b>Multi-Damage (Insect/Disease)</b>	
<b><u>SEVERITY RATING</u></b>			
1 = minor			
2 = severe			
	001	Aspen defoliation	
	002	Subalpine fir mortality	
	004	Pinion pine decline	
<b>90</b>	<b>000</b>	<b>Unknown</b>	
<b><u>SEVERITY RATING</u></b>			
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			
<b>99</b>		<b>Physical Effects</b>	
	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
	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

**Damage Agents (cont.)**

Category	Agent	Common Name	Scientific Name
<b>99 (cont.)</b>	<b>000</b>	<b>Physical Effects</b>	
	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 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."
	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

## 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	Diameter	Trees		
	<u>Range</u>	<u>Range</u>	<u>on Point</u>	<u>Tolerance</u>	
	*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	
	<p>*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.</p> <p>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.</p>				
	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 %				
Radial Growth	± 1/20 inch				
Radial Growth #2	± 1/20 inch				

**Tree Data (cont.)**

<b>Field</b>	<b>Tolerance</b>	
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	
<b>Damage Category</b>	<b>Damage Category Description</b>	<b>Tolerance</b>
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		
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	

***Down Woody (cont.)***

<b>Field</b>	<b>Tolerance</b>
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, ocularly 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 is, 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.)**

<b>Term</b>	<b>Definition</b>
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.)**

<b>Term</b>	<b>Definition</b>
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 <b>IN</b> or <b>OUT</b> of the fixed area subplot.  <b>IN</b> - The object is "in" if the measured distance is equal to or less than the subplot radius. <b>OUT</b> - 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.)***

<b>Term</b>	<b>Definition</b>
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

**Fuel Models (cont.)**

<b>Fuel Model</b>	<b>Fuel Model Code</b>	<b>Fuel Model Name</b>	<b>Fuel Type</b>	<b>Model Set</b>	<b>Fuel 1-Hr</b>	<b>Fuel 10-Hr</b>	<b>Fuel 100-Hr</b>	<b>Fuel Bed Depth</b>
102	GR2	Low Load, Dry Climate Grass (Dynamic)	Grass	Scott and Burgan	0.10	0	0	1
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
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

**Fuel Models (cont.)**

<b>Fuel Model</b>	<b>Fuel Model Code</b>	<b>Fuel Model Name</b>	<b>Fuel Type</b>	<b>Model Set</b>	<b>Fuel 1-Hr</b>	<b>Fuel 10-Hr</b>	<b>Fuel 100-Hr</b>	<b>Fuel Bed Depth</b>
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
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, is 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.
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.

**Detailed Description of the Fuel Models (cont.)**

Code	Detailed Description
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.
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.

**Detailed Description of the Fuel Models (cont.)**

<b>Code</b>	<b>Detailed Description</b>
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.
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.

**Detailed Description of the Fuel Models (cont.)**

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