Chapter 6. Key to Ecological Types and Community Types

Definitions as Used in this Key

Other definitions can be found in the Glossary, or are defined when first used in the key

Term	Definition
Absent	There are no live plants of the species in the site, or < 0.01% cover
CT	Community Type
Codominant	Sharing dominance with other species in the tallest layer in the site
Dominant, dominated by	Having the greatest cover in the tallest layer present (in the order trees, shrubs, graminoids, forbs, ground cover). A tree species is dominant if it has cover >3× any shrub, graminoid, or forb species. A shrub species is dominant if it has cover >2× any graminoid or forb species.
Forb	An herbaceous plant (no wood above the soil surface) that is not a graminoid
Graminoid	A *Grass* or *Grasslike Plant*
Grass	A plant in the Grass Family, Poaceae (Gramineae)
Grasslike Plant	A plant in the Sedge Family, Cyperaceae, or the Rush Family, Juncaceae
Or	In logical sense: "One or the other or both"
Present (adjective)	There is at least one live plant of the species in the site that is > 0.01% cover (rounds to 0.0%)
Shrub	A woody plant that is not a tree
Shrub, medium	A shrub that is greater than 20 cm = 8 in tall, but less than 2 m = 6½ ft tall
Shrub, short	A woody shrub that is less than 10 cm = 4 in tall
Shrub, tall	A shrub that is greater than 2 m = 6½ ft tall
Sparse	Usually <5% for each species unless otherwise specified
Subshrub	A woody shrub that is less than 20 cm = 8 in tall
T	Trace, in very small quantities, <0.05% cover (rounds to 0.0% in tables)
Tree	A woody plant, at maturity greater than 2 m = 6½ ft tall, with a single bole (stem) just above the soil surface (by convention, includes Rocky Mountain juniper, that sometimes has more than one bole)
→	Leads to, used just before an ECOLOGICAL TYPE NAME
>, <	Greater than, less than
SMALL CAPITALS	Used for ECOLOGICAL TYPES NAMES

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A. GENERAL KEY

Numbers in [brackets] indicate where you might have come from in the key, so you can trace the key backwards if you wish.

1 [776] Bottomland communities. Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Soils are often Aquolls, Aquepts, Aquents, or Histosols ..... KEY C. BOTTOMLANDS (201)

1 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols ..... (2)

2 [1] Forested communities, with at least 10% cover of at least one forest tree species, of any size (fir*, Douglas-fir*, spruce*, pine*, aspen*, cottonwood*) ..... (3)

2 Forest tree species usually absent, sometimes sparse, <10% cover. Rocky Mountain juniper sometimes >10% cover, or absent ..... (4)

*. See Table after key for names of plant species.

3 [2, 8] Deciduous tree species, aspen or cottonwood, present with at least 10% cover (each). Conifer tree species absent or uncommonly up to 2% cover; Rocky Mountain juniper may be uncommonly up to 10% cover ..... KEY D. DECIDUOUS FORESTS (301)
3 At least one conifer forest tree species (fir, Douglas-fir, spruce, pine) present with at least 10% cover. Aspen or cottonwood may be abundant as well ..... KEY E. CONIFEROUS FORESTS (401)

4 [2] Site clearly above the upper tree limit (timberline), >11,500 ft and sometimes >12,000 ft. Plant community entirely herbaceous, of grasses, grasslike plants, forbs, or *very* short shrubs; the whole plant community is usually less than 10 cm = 4 in tall ..... KEY B. ALPINE (101)
4 Site clearly below the upper tree limit (timberline), or else plant community clearly taller than 10 cm (4 in). ..... (5)

5 [4] Short, sparse grasslands dominated by purple pinegrass, timber oatgrass, or tufted hairgrass. Exposed convex, rocky ridges, never riparian, above 10,500 ft ..... KEY B. ALPINE (101)
5 Never dominated by purple pinegrass, timber oatgrass, or tufted hairgrass (although one of them may be present). Site at various elevations, above or below 10,500 ft ..... (6)

6 [5] Dominated by willows or wet sedges (beaked or water sedges). Soils are often Aquolls, Aquepts, Aquents, or Histosols ..... KEY C. BOTTOMLANDS (201)
6 Willows and wet sedges usually not present, sometimes sparse (<5% cover each species). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols ..... (7)

7 [6] Dominated by Rocky Mountain juniper (>10% cover), usually the only tree species present. Occasionally Douglas-fir may be present up to 2% cover ..... → FD01. TREE JUNIPER–COARSE DARK SOILS–STEEP SOUTHERLY (402)
7 Rocky Mountain juniper absent or dominated by other tree species, sometimes >10% cover ..... (8)

8 [7] At least one tree species present and >5% cover ..... (3)
8 No tree species with as much as 5% cover ..... (9)

9 [8] Dominated by tall shrubs: serviceberry (Utah or Saskatoon), Rocky Mountain maple, or chokecherry. Other shrubs may be present as well ..... (605)
9 Dominated by other shrubs, graminoids, or forbs. Serviceberry, maple, or chokecherry may be present, but is always either <1% cover, or subordinate to other shrub species ..... (10)

10 [9] Dominated by one or more species of sagebrush (big, mountain, Wyoming, black, silver, or low). Sometimes bitterbrush is codominant ..... (652)
10 Sagebrush absent, or some other shrub dominant, or grasses or forbs dominant. Bitterbrush usually absent, sometimes up to 5% cover ..... (11)

11 [10] Dominated by shrub species other than serviceberry, maple, chokecherry, or sagebrush ..... KEY F. SHRUBLANDS (601)
11 Dominated by grasses, grasslike plants, or forbs ..... (12)

12 [11, 604] Site clearly above the upper tree limit (timberline), >11,500 ft and sometimes >12,000 ft. Plant community entirely herbaceous, of grasses, grasslike plants, forbs, or *very* short shrubs; the whole plant community is usually less than 10 cm = 4 in tall ..... KEY B. ALPINE (101)
12 Site clearly below the upper tree limit (timberline), or else plant community clearly taller than 10 cm = 4 in ..... (13)

13 [12] Short, sparse grasslands dominated by purple pinegrass, timber oatgrass, or tufted hairgrass. Exposed convex, rocky ridges, never riparian, above 10,500 ft ..... KEY B. ALPINE (101)
13 Never dominated by purple pinegrass, timber oatgrass, or tufted hairgrass (although one of them may be present). Site at various elevations, above or below 10,500 ft ..... KEY G. GRASSLANDS (801)

KEY B. ALPINE

Above timberline (upper tree limit). No tree species present at all, even short ones.
Soils are seldom deep, seldom true Mollisols, but are usually
the cold end of Cryic or Pergelic; organic matter often accumulates beyond what plants can make use of because of cold temperatures. Air temperature below freezing most nights.
Most sites are considerably affected by wind, either directly or through snow deposition.
Most sites are small to very small, often covering < 10 m² area

101 [4, 5, 12, 13] Dominated by purple pinegrass, >20% cover, and alpine fescue. Exposed convex, rocky ridges, never riparian, 10,500-12,500 ft, sometimes Subalpine ..... *Purple pinegrass-sparse alpine fescue*-sparse *tufted hairgrass* (CT GA10A)
101 Purple pinegrass usually absent, sometimes present and <5% cover. Various landforms, sometimes convex, rocky ridges .....(102)

102 [101] Timber oatgrass >5% cover. Shrubs all <5% cover, clearly subordinate to timber oatgrass. Exposed, gravelly, convex ridges, never riparian, 10,500-12,000 ft, sometimes Subalpine ....*Timber* oatgrass-*tufted hairgrass-sparse* (CT GA09A)
102 Timber oatgrass usually absent, sometimes up to 5% cover but then clearly subordinate to other graminoids.....(103)

103 [102] Dominated by willow shrubs greater than 20 cm = 8 in tall (usually grayleaf, planeleaf, or barrenground willows). Moist, protected hollows, depressions, bottoms, or bowls, below 12,500 ft.....(270)
103 Willow shrubs greater than 20 cm tall absent. Sometimes dominated by forb willows (snow willow, Arctic willow) that are less than 10 cm = 4 in tall. May be in moist, protected hollows, above or below 12,500 ft ....(104)

104 [103] Moist to wet sedges (cliff sedge, Pyrenees sedge, cloud sedge, or black alpine sedge) usually dominant, always >5% cover, often >70%. Wet streamsides or bogs .....(105)
104 Cloud sedge, Pyrenees sedge, cliff sedges, and black alpine sedge all absent, or rarely up to 2% cover....(106)

105 [104] Cliff sedge the leading graminoid, 6-80% cover .....→ AL08. CLIFF SEDGE
105 Pyrenees sedge, cloud sedge, black alpine sedge, or some other wet sedge the leading graminoid ....→ AL07. PYRENEES SEDGE-CLOUD SEDGE-BLACK ALPINE SEDGE

106 [104] Kobresia dominant, >30% cover. Little club-moss always present, >2% cover ....→ AL02. KOBRESIA/CURLY SEDGE-CLUB-MOSS
106 Kobresia less cover than some other species, sometimes absent, 0-10% cover. Little club-moss usually absent .....(107)

107 [106] Dominated by tufted hairgrass, alpine avens, silvertop sedge, ebony sedge, arctic bluegrass, or longleaf arnica. Alpine grasslands, on gentle slopes, often on broad, flat ridges with relatively deep soil (for alpine).....(108)
107 All of these species absent or minor, <5% cover each. Dominated by other species ..... (110)

108 [107] Cliff sedge the leading graminoid, 6-80% cover.....→ AL08. CLIFF SEDGE
108 Cliff sedge absent to minor, <5% cover.....(109)

109 [108] Sibbaldia prominent, >10% cover ..... → AL06. SIBBALDIA/ALPINE AVENS
109 Sibbaldia absent or minor, <5% cover .....→ AL05. TUFTED HAIRGRASS/ALPINE AVENS

110 [107] Kobresia-like sedge, Wheeler bluegrass, or Scribner wheatgrass dominant, >10% cover, and the leading graminoid .....→ AL03. Kobresia-LIKE SEDGE/ALPINE SANDWORT-ALPINE SAGEBRUSH
110 Kobresia-like sedge, Wheeler bluegrass, and Scribner wheatgrass all absent or minor, <5% cover .....(111)

111 [110] Curly sedge the leading graminoid, >5% cover..... → AL04. CURLY SEDGE/GREENLAND BLUEGRASS
111 Curly sedge absent or <5% cover, not the leading graminoid ..... (112)

112 [111] Dwarf bilberry prominent, >20% cover. Gravelly ridges in the lower alpine, 11,000-12,500 ft ....→ AL09. DWARF BILBERRY/VARILEAF CINQUEFOIL
112 Dwarf bilberry absent or very minor, <5% cover..... (113)

113 [112] Mountain dryad mats dominant, >40% cover. Gentle to steep soil creep slopes, where mats of vegetation are continually moving down slope.....→ AL13. MOUNTAIN DRYAD/CURLY SEDGE-ALPINE FESCUE
113 Mountain dryad absent ..... (114)

114 [113] One of the alpine clovers dominant (whiproot, Parry, or dwarf clover) >10%, the leading forb ..... (115)
114 Alpine clovers absent or minor, <5% ..... (117)

115 [114] Whiproot clover dominant, >30%..... → AL10. WHIPROOT CLOVER/ALPINE SANDWORT
115 Other plants dominant ..... (116)

116 [115] Parry clover or American bistort prominent, >10% cover, the leading forb..... ..... → AL11. PARRY CLOVER/TUFTED HAIRGRASS-BISTORT
116 Dwarf clover >5%, the leading forb..... → AL12. DWARF CLOVER/ALPINE SANDWORT

117 [114] Alpine forb mat willows (Arctic or snow willow) dominant, >5% cover. Sites where snow laid late into growing season ..... (118)
117 Alpine willows absent or very minor..... (119)

118 [117] Snow willow mats dominant, >50% cover ..... → AL14. SNOW WILLOW
118 Arctic willow mats dominant, >40% cover .....→ AL15. ARCTIC WILLOW

119 [117] Wet sites along streams, dominated by marsh-marigold or king's crown..... ..... → AL16. MARSH-MARIGOLD-KING'S CROWN RIPARIAN FORBLANDS
119 Very rocky slopes, rock cover >70%, vegetation not dominant..... → AL01. ALPINE ROCKY FORBLANDS

KEY C. BOTTOMLANDS

Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Most sites are affected by liquid water, either directly, through high seasonal water tables, or indirectly, through water-formed soils or snow accumulation. Soils are often Aquolls, Aquepts, Aquents, or Histosols. Although this key is called "bottomlands," some of the sites keyed here are not strictly in a bottom landform.

201 [1, 6, 404, 601, 605] Narrowleaf cottonwood present within the site (sometimes only in a gully within the site), sometimes dominant. Soils layered by water (Fluvaquentic). Floodplains and U-shaped draw bottoms ..... (202)
201 Narrowleaf cottonwood absent. Soils sometimes layered by water (Fluvaquentic), sometimes not. Sometimes in floodplains or U-shaped draw bottoms, sometimes not .....(217)

202 [201, 302] Cottonwood dominant or codominant, >10% cover, often >30% cover ..... (203)
202 Cottonwood minor, T-10% cover .....(210)

203 [202] Native blue spruce present, >2% cover, and usually reproducing. (Blue spruce has often been planted around ranches and other residences.) Flat to U-shaped terraces and floodplains, <8,900 ft, almost always by a perennial stream. Soils shallower, <80 cm deep, with sandy subsurface..... .....→ FR3. SPRUCE-COTTONWOOD–SANDY WET SOILS–TERRACES (203)
203 Native blue spruce usually absent, very rarely one isolated tree, always <0.05% cover, never reproducing. Sometimes flat to U-shaped terraces and floodplains, sometimes not by a perennial stream. Soils somewhat deeper, 40-300 cm deep..... (206)

204 [203] Swamp bluegrass conspicuous, >15% cover ....*Cottonwood-blue spruce-Kentucky bluegrass-Baltic rush* (CT FR3B)
204 Swamp bluegrass absent or <10% cover..... (205)

205 [204] Bluejoint reedgrass conspicuous, >15% cover. Kentucky bluegrass conspicuous, >10% cover. Swamp bluegrass absent.....*Blue spruce-cottonwood-alder-silvertop sedge-Kentucky bluegrass* (CT FR3A)
205 Bluejoint reedgrass absent to occasionally <15% cover. Kentucky bluegrass absent to <1% cover. Swamp bluegrass always present but <5% cover ....*Blue spruce-cottonwood-rose-sparse swamp bluegrass* (CT FR3C)

206 [203] Aspen dominant or codominant, >10% cover, usually >20% cover. ..... *Cottonwood-aspen-rose-Kentucky bluegrass* (CT FR2B)
206 Aspen usually absent, rarely minor, up to 5% cover ..... → FR1. COTTONWOOD/WILLOW–WATER-LAYERED SOILS–FLOODPLAINS (207)

207 [206] Narrowleaf cottonwood >35% cover, often >50% cover ..... (208)
207 Narrowleaf cottonwood absent or <30% cover ..... (210)

208 [207] Pacific willow present, often >10% cover. Swamp bluegrass present and >3% cover. Silvertop sedge or reedgrass sometimes >10% cover. Alder always present, T-25% cover..... *Cottonwood-Pacific willow-alder-swamp bluegrass* (CT FR1A)
208 Pacific willow usually absent, rarely up to 45% cover. Swamp bluegrass usually absent, sometimes up to 5% cover. Silvertop sedge absent or <20%. Reedgrass absent or <5%. Alder sometimes absent (but sometimes up to 80% cover) ..... (209)

209 [208] River hawthorn present and >30% cover. Cottonwood sometimes absent, 0-90% cover ..... *River hawthorn-rose-Kentucky bluegrass* (CT FR1B)
209 River hawthorn absent or <10% cover ..... *Cottonwood-rose-Kentucky bluegrass-bedstraw-dandelion* (CT FR1C)

210 [202, 207] River hawthorn present and >30% cover. Cottonwood sometimes absent, 0-90% cover ..... *River hawthorn-rose-Kentucky bluegrass* (CT FR1B)
210 River hawthorn absent or <10% cover ..... (211)

211 [201] Cottonwood present and >5% cover ..... (212)
211 Cottonwood absent or <5% cover ..... (214)

212 [211] Kentucky bluegrass absent or <10% cover ..... *Cottonwood-rose-snowberry-western wheatgrass* (CT FR1D)
212 Kentucky bluegrass conspicuous, >10% cover ..... (213)

213 [212] Cottonwood >6% cover, often >20% cover. Total willow cover 0-10%. Rose often >20% cover..... *Cottonwood-rose-Kentucky bluegrass-bedstraw-dandelion* (CT FR1C)
213 Cottonwood <10% cover, often <% cover. Total willow cover 5-65%. Rose never <20% cover ..... *Shrubby cinquefoil-sparse cottonwood-Kentucky bluegrass-Baltic rush* (CT FR1E)

214 [211] Alder conspicuous, >50% cover. Yellow willow >40% cover, total willow cover >60% ..... *Alder-yellow willow-Kentucky bluegrass-Baltic rush* (CT FR1F)
214 Alder absent or <10% cover. Yellow willow absent or <25%, willows absent or total willow cover up to 65%, usually <50%..... (215)

215 [214] Willows absent..... (216)
215 Willows present, total willow cover usually >5%. Shrubby cinquefoil present, usually >5% cover ..... *Shrubby cinquefoil-sparse cottonwood-Kentucky bluegrass-Baltic rush* (CT FR1E)

216 [215] Cottonwood present and >5% cover. Rose >5% cover ..... *Cottonwood-rose-snowberry-western wheatgrass* (CT FR1D)
216 Understory dominated by moist-site exotics or invaders, such as quackgrass, Baltic rush, Kentucky bluegrass, and dandelion. Cottonwood absent or <5% cover. Big sagebrush present, often >5% cover. Douglas rabbitbrush often present, sometimes >10% cover. Other prominent species may include dry grasses such as squirreltail, western wheatgrass, or muttongrass..... *Big sagebrush-quackgrass-Baltic rush-Kentucky bluegrass-dandelion* (CT FR1G)

217 [201] At least one forest tree species (fir, spruces, Douglas-fir, aspen, cottonwood) present and >10% cover, often dominant or codominant..... (218)
217 Forest tree species usually absent, occasionally up to 2% cover..... (239)

218 [217] Fir and spruces absent or very minor, <0.1% cover, none of them reproducing (Douglas-fir may occasionally be present up to 40% cover). Aspen usually dominant or codominant, >10% cover, often >25% ..... → FR2. ASPEN-COTTONWOOD–DEEP ALLUVIAL SOILS–FLOODPLAINS (219)
218 Fir and spruces dominant or codominant ..... (226)

219 [218, 745] Bluejoint reedgrass >20% cover. Swamp bluegrass always present, >10% cover. Kentucky bluegrass absent to <5% cover. Total willow cover >25% ..... *Aspen-reedgrass-swamp bluegrass-cow-parsnip-vetch* (CT FR2A)
219 Bluejoint reedgrass usually absent, sometimes <20% cover. Swamp bluegrass usually absent, sometimes up to 30% cover. Kentucky bluegrass usually >10% cover, rarely absent or <5%. Willows absent or sparse, sometimes up to 40% cover ..... (220)

220 [219] Baltic rush conspicuous, >30% cover. Kentucky bluegrass >60% cover ..... *Aspen-Kentucky bluegrass* (CT FR2C)
220 Baltic rush absent or <30% cover. Kentucky bluegrass sometimes absent, 0-100% cover ..... (221)

221 [220] Alder prominent, >10% cover, often >20% ..... (222)
221 Alder absent to very minor ..... (223)

222 [221] Exotic grasses such as smooth brome or field timothy prominent, >20% ..... *Aspen-Kentucky bluegrass* (CT FR2C)
222 Exotic grasses absent or minor ..... *Aspen-rose-Kentucky bluegrass-dandelion* (CT FR2D)

223 [221] Kentucky bluegrass prominent, >50% cover ..... (224)
223 Kentucky bluegrass absent or up to 40% cover ..... (225)

224 [223] Bush honeysuckle conspicuous, >10% cover .. *Aspen-rose-Kentucky bluegrass-dandelion* (CT FR2D)
224 Bush honeysuckle usually absent ..... *Aspen-rose-snowberry-Kentucky bluegrass-quackgrass-dandelion* (CT FR2F)

225 [223] Total sedges >5% cover. Oak absent ..... *Aspen-rose-Kentucky bluegrass-dandelion* (CT FR2D)
225 Sedges absent or total <3%. Oak often present ..... *Aspen-tree juniper-sparse dandelion-sparse rose* (CT FR2E)

226 [218] Fir, spruces, or lodgepole pine usually absent, rarely not reproducing, <0.1% cover. Douglas-fir is sometimes present up to codominant. Aspen dominant or codominant, >10% cover, often >30% .....(227)
226 Fir, one of the spruces, or lodgepole pine present and dominant or codominant, >15% cover. Douglas-fir is usually absent, but rarely up to 5% cover ..... (228)

227 [226] Bottomland communities. Landforms are draws or floodplains. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, or U-shaped. Soils are usually Endoaquolls..... (230)
227 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols .....(301)

228 [226] Bottomland communities. Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Soils are often Aquolls, Aquepts, Aquents, or Histosols ..... (229)
228 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols .....(401)

229 [228] Red-osier dogwood present and subdominant or dominant, >20% cover, often >40%. V-shaped, narrow alluvial watercourses, slightly higher gradient (average 12%)..... → FR5. SPRUCE/RED-OSIER–MOIST SOILS–BOTTOMS (230)
229 Red-osier dogwood absent.....(231)

230 [227, 229, 773] Dominated by spruce (blue or Engelmann), >45% cover, sometimes codominated by subalpine fir. Horsetail prominent, >15% cover. Whitestem currant always present and >1% cover. Bluejoint reedgrass absent to prominent, 0-60%..... *Spruce-red-osier* (CT FR5A)
230 Trees absent or minor, up to 1% cover. Dominated by red-osier dogwood. Horsetail absent to <5% cover. Whitestem currant absent or <2% cover. Bluejoint reedgrass absent to minor, <5% cover ..... *Red-osier* (CT FR5B)

231 [229] Fir, one of the spruces, or lodgepole pine present and dominant or codominant, >15% cover.....(232)
231 Fir, spruces, or lodgepole pine usually absent, rarely not reproducing, <0.1% cover. Aspen dominant or codominant, >10% cover, often >30% .....(237)

232 [231] Blue spruce dominant, >20% cover, usually other trees absent or very minor. Elevation <9,200 ft ....*Blue spruce-alder-reedgrass-water sedge-horsetail* (CT FR4A)
232 Blue spruce absent or minor, <1% cover. Dominated by Engelmann spruce, lodgepole pine, or subalpine fir .....(233)

233 [232] Lodgepole pine dominant .....(234)
233 Lodgepole pine absent or abundant, other conifer tree species (fir, spruces) dominant .....(235)

234 [233] Bluejoint reedgrass usually absent, rarely <10% .....(401)
234 Bluejoint reedgrass conspicuous, >10% cover, often >20%.....*Aspen-reedgrass* (CT FR4D)

235 [233] Sum of wet forb cover of these five species (bittercress, cowbane, miterwort, arrowleaf groundsel, and twisted-stalk) >20%, and one of these five is usually the forb with the most cover. Bittercress always present, T-30% cover. Sum of cover of medium shrubs (honeysuckle, common juniper) 0-5% ....*Engelmann spruce-subalpine fir-bittercress-arrowleaf groundsel* (CT FR6A)
235 Sum of cover of the five listed wet forb species <20%; some other species is the forb with the most cover. Bittercress sometimes absent, 0-10% cover. Sum of cover of medium shrubs (honeysuckle, common juniper) >5% .....(236)

236 [235] Total forb cover <35% .....*Engelmann spruce-honeysuckle* (CT FR4C)
236 Total forb cover 35-85%.....*Engelmann spruce-honeysuckle-reedgrass* (CT FR4B)

237 [231] Trees and shrubs absent or very minor, dominance by wet graminoids or forbs. Usually wet patches within riparian spruce-aspen forests.....*Wet forbs* (CT FR6C)
237 Aspen dominant or codominant with other tree species. At least some shrub noticeable ..... (238)

238 [237] Fir or one of the spruces present in small quantities (T-2% cover). Douglas-fir absent..... .....*Aspen-reedgrass* (CT FR4D)
238 Fir and spruces completely absent. Douglas-fir sometimes present, sometimes absent ....*Aspen-alder-reedgrass-wet forbs* (CT FR6B)

239 [217] Total shrub cover <35% and no shrub species >15% cover, rarely shrubs absent..... (240)
239 Total shrub cover >35% or at least one medium-height shrub >15% .....(270)

240 [239] Total willow cover >15% .....(241)
240 Total willow cover <15%, sometimes willows absent ..... (249)

241 [240] Geyer willow >10% ..... (242)
241 Geyer willow absent or <10% .....(245)

242 [241] Elevation >9,500 ft. Planeleaf willow always present, 2-10% cover..... .....*Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)
242 Elevation <9,500 ft. Planeleaf willow absent .....(243)

243 [242] Either serviceberry willow present and >1% cover, or else >9,200 ft elevation ..... (244)
243 Serviceberry willow absent. Elevation <9,200 ft.... *Geyer willow-Kentucky bluegrass-dandelion* (CT RI1D)

244 [243] Dominated by (the leading shrub in cover is) Bebb willow or Geyer willow. Silver sagebrush usually absent, rarely <0.5% cover ....*Bebb-Geyer willows-shrubby cinquefoil-Baltic rush-dandelion-yarrow* (CT RI3C)
244 Dominated by shrubby cinquefoil or silver sagebrush, one of these >10% and the leading shrub in cover ....*Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)

245 [241] Planeleaf willow always present, 2-20% cover..... (246)
245 Planeleaf willow usually absent, sometimes minor, <1% cover .....(247)

246 [245] Planeleaf willow >10% cover..... *Water sedge-planeleaf willow-marsh-marigold* (CT RI4D)
246 Planeleaf willow 2-10% cover ....*Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)

247 [245] Blue willow the leading willow species, 5-70% cover .....*Blue willow-dandelion-sparse* (CT RI2D)
247 Blue willow usually absent, rarely <1% cover..... (248)

248 [247] Dominated by (the leading shrub in cover is) Bebb willow or Geyer willow. Silver sagebrush usually absent, rarely <0.5% cover..... ..... *Bebb-Geyer willows-shrubby cinquefoil-Baltic rush-dandelion-yarrow* (CT RI3C)
248 Dominated by shrubby cinquefoil or silver sagebrush, one of these >10% and the leading shrub in cover..... ..... *Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)

249 [240] Dominated by shrubby cinquefoil, silver sagebrush, or big sagebrush, one of these >10% and the leading shrub in cover..... (250)
249 Shrubby cinquefoil, silver sagebrush, and big sagebrush absent or <10%, or else some other shrub is the leading shrub in cover.....(255)

250 [249] Planeleaf willow present, 3-10% cover..... .....*Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)
250 Planeleaf willow absent or <1% cover.....(251)

251 [250] Willows absent ..... (252)
251 Geyer willow (at least) present and >1% cover..... ..... *Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)

252 [251, 287] Kentucky bluegrass prominent and >20% cover ..... (254)
252 Kentucky bluegrass absent or very minor, usually <5% cover. Shrubby cinquefoil the leading shrub (more cover than any others) ..... (253)

253 [252] Idaho fescue prominent, >10% cover, often >30%..... .....*Shrubby cinquefoil-Idaho fescue-yarrow* (CT RI6B)
253 Idaho fescue absent to <10% cover..... *Shrubby cinquefoil-dry grasses and forbs* (CT RI6C)

254 [252] Shrubby cinquefoil sharing dominance with one or more sagebrush species..... .....*Kentucky bluegrass-shrubby cinquefoil* (CT RI6A)
254 Sagebrush absent or minor, no sagebrush species >10% cover ....*Shrubby cinquefoil-Baltic rush-Kentucky bluegrass-tufted hairgrass* (CT RI1G)

255 [249] Willows absent or total willow cover <1%..... (258)
255 At least one willow species with cover >1% ..... (256)

256 [255] Planeleaf willow present, 3-20% cover .....(257)
256 Planeleaf willow absent or <1% cover..... *Geyer willow-Kentucky bluegrass-dandelion* (CT RI1D)

257 [256] Planeleaf willow >10% cover..... *Water sedge-planeleaf willow-marsh-marigold* (CT RI4D)
257 Planeleaf willow 3-10% cover.....*Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)

258 [255] Shrubby cinquefoil >10% cover..... (259)
258 Shrubby cinquefoil absent or <10% cover ..... (262)

259 [258] Idaho fescue or Thurber fescue present, T-50% cover ..... (260)
259 Idaho fescue and Thurber fescue absent ....*Shrubby cinquefoil-Baltic rush-Kentucky bluegrass-tufted hairgrass* (CT RI1G)

260 [259] Kentucky bluegrass prominent and >20% cover... *Kentucky bluegrass-shrubby cinquefoil* (CT RI6A)
260 Kentucky bluegrass absent or very minor, usually <5% cover. Shrubby cinquefoil the leading shrub (more cover than any others) .....(261)

261 [260] Idaho fescue prominent, >10% cover, often >30% ....*Shrubby cinquefoil-Idaho fescue-yarrow* (CT RI6B)
261 Idaho fescue absent to <10% cover..... *Shrubby cinquefoil-dry grasses and forbs* (CT RI6C)

262 [258] Water sedge, beaked sedge, buttercup, brooklime, tufted hairgrass, marsh-marigold, dock, or annual bluegrass dominant. Baltic rush absent. Kentucky bluegrass absent or dominated by wet sedges. Dandelion usually absent, sometimes <10% cover. Upper-Subalpine flat bowls, concave both ways, with gleyed soil, >9,500 ft ..... → RI9. SEDGE WETLAND–DEEP COLD GLEYED SOILS–CONCAVE WATER BOWLS (266)
262 Kentucky bluegrass usually present, often >30% cover. Baltic rush often present, often >20% cover. Montane benches, streamside terraces, or swales, <9,200 ft, usually <9,000 ft .....(263)

263 [262] Subsoil texture loamy-sandy: silty clay, silty clay loam, sandy clay, sandy loam, loamy sand, or sand. .....*Dandelion-Kentucky bluegrass-Baltic rush-moist sedges* (CT RI3F)
263 Subsoil texture clayey: clay, clay loam, or clay ..... (264)

264 [263] Big sagebrush prominent, 10-30% cover. Baltic rush absent. Kentucky bluegrass 10-60% cover ....*Big sagebrush-Kentucky bluegrass-yarrow-dandelion* (CT RI1H)
264 Big sagebrush absent to <2% cover. Baltic rush sometimes prominent, 0-90% cover. Kentucky bluegrass 10-100% cover.....(265)

265 [264] Dominated by tufted hairgrass, creeping spike-rush, quackgrass, Baltic rush, or muttongrass; one of those is the leading graminoid. Kentucky bluegrass 0-25% cover, sometimes absent..... .....*Baltic rush- quackgrass-dandelion-yarrow-Kentucky bluegrass-iris* (CT RI1K)
265 Dominated by Kentucky bluegrass or alkali bluegrass; one of these is the leading graminoid. Kentucky bluegrass always present, 10-100% cover .....*Kentucky bluegrass-Baltic rush-dry grasses* (CT RI1J)

266 [262] Water sedge >55% cover, usually >60%. Tufted hairgrass usually present, 0-45% cover. Total graminoid cover >115%.....*Water sedge-wet sedges and forbs* (CT FR9A)
266 Water sedge sometimes absent, always <60% cover, usually <45%. Tufted hairgrass usually absent or <15% cover, sometimes up to 95% cover. Total graminoid cover <115%.....(267)

267 [266] Beaked sedge dominant, >75% cover. Water sedge usually present in small quantities. All other species <5% cover each..... *Beaked sedge-water sedge* (CT FR9B)
267 Beaked sedge absent to <5% cover ..... (268)

268 [267] Teachers' sedge prominent, >15% cover. Total graminoid cover 45-90% ....*Teachers' sedge-water sedge-sparse planeleaf willow* (CT FR9D)
268 Teachers' sedge absent or very minor. Total graminoid cover either <45% or >90%..... (269)

269 [268] Total graminoid cover <45% ....*Water sedge-tufted hairgrass-annual bluegrass-moist forbs* (CT FR9E)
269 Total graminoid cover >90% ..... *Tufted hairgrass-reedgrass-water sedge* (CT FR9C)

270 [103, 239] Grayleaf willow >15% cover, often >50%. High-Subalpine willow carrs, >9,600 ft. Soils are Cryaquolls and Cryic Histosols .... → RI8. GRAYLEAF WILLOW/WATER SEDGE–DEEP COLD WET SOILS–HIGH CREEK BOTTOMS (271)
270 Grayleaf willow usually absent, if grayleaf willow is <20% then dominated by Wolf willow. Montane to subalpine, 7,800-11,000 ft.....(272)

271 [270] Water sedge conspicuous, >30% cover.....*Grayleaf willow-water sedge-tufted hairgrass* (CT RI8A)
271 Water sedge usually absent, sometimes up to 5% cover ....*Grayleaf-barrenground willows-moist forbs* (CT RI8B)

272 [270] Planeleaf willow, Wolf willow, or bog birch dominant, >5% cover, often >20%, one of these the leading shrub .....(273)
272 Planeleaf willow, Wolf willow, and bog birch usually absent, or rarely up to 10%, but none of them is the leading shrub .....(281)

273 [272] Wolf willow prominent, >5% cover, often >20% cover .....(274)
273 Wolf willow usually absent, or rarely <5% cover.....(275)

274 [273] Total graminoid cover >90%. Water sedge usually dominating the understory, >20% cover, often >40%. Total sedge cover 45-120% ..... *Wolf willow-water sedge* (CT RI5A)
274 Total graminoid cover <90%. Water sedge absent to codominant with other graminoids, 0-30% cover. Total sedge cover 2-80% ..... *Wolf-planeleaf willows-tufted hairgrass* (CT RI5B)

275 [273] Sedges and Baltic rush absent. Marsh-marigold present, >2% cover. Planeleaf willow nearly complete cover, >90% ..... *Planeleaf willow-sparse marsh-marigold-sparse bluebells* (CT RI7A)
275 Sedges or Baltic rush always present, either total sedge cover >5% (often >20%) or Baltic rush >60% cover ..... → RI4. PLANELEAF WILLOW/WATER SEDGE–COLD DEEP ALLUVIAL SOILS–BOTTOMS (276)

276 [275] Planeleaf willow dominant, >50% cover ..... (277)
276 Planeleaf willow <40% cover ..... (279)

277 [276] Water sedge prominent, >15% cover. Total wet sedge cover (water, beaked) >45% ..... *Planeleaf willow-taller willows-water sedge* (CT RI4A)
277 Water sedge always present, but <15% cover. Total wet sedge cover <45% ..... (278)

278 [277] Bog birch codominant with planeleaf willow, >10% cover ..... *Planeleaf willow-moist sedges-Baltic rush-moist forbs* (CT RI4C)
278 Bog birch absent to minor, <5% cover ..... *Planeleaf willow-marsh-marigold-water sedge* (CT RI4B)

279 [276] Planeleaf willow always present but <10% cover. Water sedge sometimes >40% cover ..... *Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)
279 Planeleaf willow >10% cover. Water sedge absent to abundant, but always <40% cover ..... (280)

280 [279] Bog birch codominant with planeleaf willow, >10% cover ..... *Planeleaf willow-moist sedges-Baltic rush-moist forbs* (CT RI4C)
280 Bog birch absent to minor, <5% cover ..... *Water sedge-planeleaf willow-marsh-marigold* (CT RI4D)

281 [272] Blue willow >5% cover, often >20% ..... (282)
281 Blue willow absent or <5% ..... (286)

282 [281] Blue willow 5-90% cover, dominant or rarely dominated by serviceberry willow ..... → RI2. BLUE WILLOW–DEEP ALLUVIAL SOILS–BOTTOMS (283)
282 Blue willow <15% cover, dominated by yellow willow ..... *Yellow willow-other willows-moist to dry grasses and forbs* (CT RI1C)

283 [282] Blue willow conspicuous, >10% cover, dominant or codominant with serviceberry willow, usually >10% cover ..... (284)
283 Blue willow conspicuous, >10% cover, dominant alone, no other tall willow species >2% cover, Serviceberry willow absent to <1% cover ..... (285)

284 [283] Bluejoint reedgrass prominent, >15% cover ..... *Blue willow-reedgrass-beaked sedge* (CT RI2A)
284 Bluejoint reedgrass usually absent or <15% cover ..... *Blue-serviceberry-Geyer willows-Kentucky bluegrass-moist forbs* (CT RI2B)

285 [283] Graminoids sparse; total graminoid cover <50% ..... *Blue willow-reedgrass-cow-parsnip* (CT RI2C)
285 Graminoids more prominent; total graminoid cover >80% ..... *Blue willow-dandelion-sparse* (CT RI2D)

286 [281] Dominated by shrubby cinquefoil, silver sagebrush, or big sagebrush, one of these >10% and the leading shrub in cover ..... (287)
286 Shrubby cinquefoil, silver sagebrush, and big sagebrush absent, <10% cover, or dominated by some other shrub ..... (291)

287 [286] Idaho fescue or Thurber fescue present, T-50% cover ..... (252)
287 Idaho fescue and Thurber fescue absent ..... (288)

288 [287] Willows absent ..... (289)
288 At least Geyer willow present and >0.5% cover, total willow cover 1-25% ..... *Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)

289 [288] Big sagebrush or silver sagebrush dominant or codominant, one or both of these species >10% .... (290)
289 Big sagebrush absent or sometimes <10%. Understory dominated by Kentucky bluegrass, quackgrass, tufted hairgrass, or Baltic rush ....*Shrubby cinquefoil-Baltic rush-Kentucky bluegrass-tufted hairgrass* (CT RI1G)

290 [289] Shrubby cinquefoil or bitterbrush present, T-35% cover. Understory dominated by Kentucky bluegrass and dry graminoids such as Arizona fescue, bottlebrush squirreltail, western wheatgrass, silvertop sedge, or pine needlegrass; at least one of these >10% cover ....*Kentucky bluegrass-sagebrush-cinquefoil* (CT RI3E)
290 Shrubby cinquefoil and bitterbrush both absent. Understory sparser, dominated by Kentucky bluegrass, the only graminoid >10% cover .....*Big sagebrush-Kentucky bluegrass-yarrow-dandelion* (CT RI1H)

291 [286] Yellow willow or Pacific willow >10%, dominant or codominant with Bebb willow, Geyer willow, or other tall willows..... (292)
291 Yellow willow and Pacific willow absent or <10%; if one of these is present, then it is clearly dominated (>5x cover) by some other tall willow..... (294)

292 [291] Total graminoid cover >100%. Bluejoint reedgrass, beaked sedge, water sedge, tufted hairgrass, Baltic rush, or swamp bluegrass conspicuous; at least one of these six species >20% cover.....(293)
292 Total graminoid cover <100%. Each of those six species absent or <20% cover..... .....*Yellow willow-other willows-moist to dry grasses and forbs* (CT RI1C)

293 [292] Serviceberry willow codominant, >20% cover. Alder always present, 1-35% cover. Silver sagebrush, rose, or honeysuckle prominent; at least one of these >10% ....*Geyer-serviceberry-yellow willows-alder-Kentucky bluegrass* (CT RI1E)
293 Serviceberry willow absent to very minor, <5% cover. Alder usually absent, sometimes <15% cover. Silver sagebrush, rose, and honeysuckle usually absent; none of these >10% ....*Yellow willow-Geyer willow-other willows-beaked sedge* (CT RI1A)

294 [291] Serviceberry willow present and >0.5% cover .....(295)
294 Serviceberry willow absent. Dominated by Geyer or Bebb willows .....(297)

295 [294] Serviceberry willow dominant or codominant, >20% cover ..... (296)
295 Serviceberry willow T-20% cover ....*Bebb-Geyer willows-shrubby cinquefoil-Baltic rush-dandelion-yarrow* (CT RI3C)

296 [295] Beaked sedge prominent in the understory, >15% cover, often >30% cover. Bluejoint reedgrass often prominent as well, 0-85% cover. The sum of these two is >50% cover ....*Serviceberry willow-beaked sedge* (CT RI3A)
296 Beaked sedge absent to <10% cover. Bluejoint reedgrass absent to <15% cover. The sum of these two is <20% .....*Serviceberry willow-shrubby cinquefoil-yarrow-dandelion* (CT RI3B)

297 [294] Beaked sedge prominent, >10% cover..... (298)
297 Beaked sedge absent or <10% cover..... *Geyer willow-Kentucky bluegrass-dandelion* (CT RI1D)

298 [297] Subsoils loamy. Beaked sedge sometimes absent, sometimes up to 25% cover ....*Bebb-Geyer willows-shrubby cinquefoil-Baltic rush-dandelion-yarrow* (CT RI3C)
298 Subsoils clayey. Beaked sedge always present, 10-55% cover..... *Geyer willow-beaked sedge* (CT RI1B)

KEY D. DECIDUOUS FORESTS

Forests dominated by the forest trees aspen or narrowleaf cottonwood – the only deciduous trees that are native in the Gunnison Basin

301 [3, 227] Bottomland communities. Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Soils are sometimes Aquolls, Aquepts, Aquents, or Histosols ..... KEY C. BOTTOMLANDS (201)
301 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols ..... (302)

302 [301] Narrowleaf cottonwood present ..... (202)
302 Narrowleaf cottonwood absent ..... (303)

303 [302] One of the conifer forest tree species (Douglas-fir, spruces, fir, lodgepole pine, ponderosa pine, bristlecone pine) >0.5% cover, usually reproducing ..... (401)
303 Conifer forest tree species usually absent, rarely <0.5% cover. Dominated by aspen ..... (304)

304 [303] Thurber fescue >5% cover ..... (305)
304 Thurber fescue absent or <5% cover ..... (310)

305 [304] Pachistima or kinnikinnick >5% cover; or timber oatgrass or Oregon-grape >10% cover; or subalpine fir present in trace amounts ..... (306)
305 Pachistima usually absent, rarely <2% cover. Kinnikinnick usually absent, rarely <5% cover. Oregon grape usually absent, occasionally <10% cover. Timber oatgrass and subalpine fir absent ..... "CLIMAX" ASPEN TYPES (310)

306 [305] Timber oatgrass >10%. Gentle slopes, >10,000 ft ..... *Aspen-Engelmann spruce-timber oatgrass-Thurber fescue* (CT FL04A)
306 Timber oatgrass absent or very minor, <1% ..... (307)

307 [306] Pachistima common, >5% cover, often >15% ..... *Aspen-pachistima-rose-elk sedge-brome-lupine* (CT FD09F)
307 Pachistima absent or <5% cover ..... (308)

308 [307] Common juniper always present and >1% cover, often >5%. Kinnikinnick often >5% cover ..... (309)
308 Common juniper absent. Kinnikinnick never >5% cover ..... *Aspen-elk sedge-strawberry* (CT FL05F)

309 [308] Lodgepole pine present in small quantities, >5% cover ..... *Aspen-elk sedge-Thurber fescue-kinnikinnick-common juniper* (CT FD12G)
309 Lodgepole pine absent ..... *Aspen-common juniper-elk sedge-Thurber fescue* (CT FD12H)

310 [304, 305] Saskatoon serviceberry usually >1% cover. Sometimes serviceberry missing or <1% cover, in which case Thurber fescue absent. Elevations 8,000-9,700 ft ..... → FM1. ASPEN/SERVICEBERRY–DEEP DARK SOILS (311)
310 Saskatoon serviceberry absent or rarely <2% cover. Sometimes serviceberry is 1-2% cover, in which case Thurber fescue is >20% cover ..... (314)

311 [310] Serviceberry >25% cover ..... *Aspen-Saskatoon serviceberry* (CT FM1A)
311 Serviceberry absent or <25%, often <15% ..... (312)

312 [311] Serviceberry absent or <2% cover ..... *Aspen-snowberry-wheatgrass* (CT FM1C)
312 Serviceberry >2% cover, often >5% ..... (313)

313 [312] Rose prominent, >3% cover. Common juniper absent or <4% cover ..... *Aspen-rose-sparse serviceberry-elk sedge-brome* (CT FM1B)
313 Rose absent to <3% cover. Common juniper evident, >4% cover ..... *Aspen-common juniper-snowberry-sparse serviceberry* (CT FM1D)

314 [310] Thurber fescue >3% cover, often >10%. Blue wildrye usually absent, rarely up to 15% cover ..... → FM2. ASPEN/THURBER FESCUE–DEEP DARK SOILS (315)
314 Thurber fescue absent or uncommonly up to 2%. Blue wildrye sometimes conspicuous, sometimes absent, 0-75% cover..... → FM3. ASPEN/MEADOW-RUE-PEAVINE–DEEP DARK CLAY SOILS (324)

315 [310, 314] Total graminoid cover >150%..... (316)
315 Total graminoid cover <150%..... (317)

316 [315] Elk sedge always present, >20% cover..... *Aspen-Thurber fescue-elk sedge-dandelion* (CT FM2A)
316 Elk sedge usually absent, sometimes <5% ..... *Aspen-Thurber fescue-yarrow-dandelion* (CT FM2C)

317 [315] Elk sedge usually absent, sometimes <5% ..... *Aspen-Thurber fescue-yarrow-dandelion* (CT FM2C)
317 Elk sedge always present, 5-80%..... (318)

318 [317] Elk sedge >40%. Total graminoid cover >90% ..... (319)
318 Elk sedge <40%. Total graminoid cover 20-210% ..... (320)

319 [318] Thurber fescue >40% cover..... *Aspen-snowberry-Thurber fescue-elk sedge-Kentucky bluegrass-forbs* (CT FM2B)
319 Thurber fescue <40% cover..... *Aspen-elk sedge-Thurber fescue-yarrow* (CT FM2D)

320 [318] Thurber fescue >40% cover..... (321)
320 Thurber fescue <40% cover..... (323)

321 [320] Elk sedge >30% cover..... (322)
321 Elk sedge absent to <10% cover..... (323)

322 [321] Kentucky bluegrass absent or <5% cover..... *Aspen-Thurber fescue-elk sedge-yarrow* (CT FM2E)
322 Kentucky bluegrass prominent, >15% cover ..... *Aspen-snowberry-Thurber fescue-elk sedge-Kentucky bluegrass-forbs* (CT FM2B)

323 [320, 321] Total graminoid cover >90%..... *Aspen-elk sedge-Thurber fescue-yarrow* (CT FM2D)
323 Total graminoid cover <90% ..... *Aspen-Thurber fescue-elk sedge-yarrow* (CT FM2E)

324 [314] Blue wildrye prominent, >20% cover. Osha present, often >10% cover. Vetch sometimes absent..... *Aspen-osha-blue wildrye-elk sedge-geranium-brome-dense* (CT FM3A)
324 Blue wildrye absent to <10% cover. Osha absent to <5% cover. Vetch always present, 1-20% cover ..... *Aspen-peavine-yarrow-dense grasses and forbs* (CT FM3B)

KEY E. CONIFEROUS FORESTS

Forests dominated by subalpine fir, Engelmann spruce, blue spruce, lodgepole pine, Douglas-fir, ponderosa pine, limber pine, bristlecone pine, or Rocky Mountain juniper

401 [3, 228, 234, 303, 697] Dominated by Rocky Mountain juniper (>10% cover), usually the only tree species present. Occasionally Douglas-fir may be present up to 2% cover ..... → FD01. TREE JUNIPER–COARSE DARK SOILS–STEEP SOUTHERLY (402)
401 Dominated by another conifer forest tree (fir, spruce, Douglas-fir, pine), at least one of these >10% cover. Sometimes Rocky Mountain juniper may be present as well..... (404)

402 [7, 401] Rocky Mountain juniper cover >45%. Littleseed ricegrass always present and >2% cover. Indian ricegrass (ACHY) <1% cover ..... *Tree juniper-muttongrass-sedge-littleseed ricegrass* (CT FD01A)
402 Rocky Mountain juniper cover <45%. Littleseed ricegrass absent or <2% cover. Indian ricegrass >1% cover ..... (403)

403 [402] Big sagebrush subdominant, >10% cover. Blue grama >15% cover..... *Tree juniper-blue grama-sagebrush* (CT FD01B)
403 Big sagebrush <10% cover. Blue grama absent or <5% cover..... *Tree juniper-sagebrush-Indian ricegrass* (CT FD01C)

404 [401, 698] Bottomland communities. Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Soils are often Aquolls, Aquepts, Aquents, or Histosols ..... KEY C. BOTTOMLANDS (201)
404 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols ..... (405)

405 [404] Subalpine fir or Engelmann spruce absent, or each <5% cover and dominated by other trees. Limber pine usually absent, sometimes <1% cover, dominated by other trees ..... (406)
405 Subalpine fir, Engelmann spruce, or limber pine present and at least one of these >10% cover ..... (542)

406 [405] Douglas-fir absent, or <5% cover and dominated by other trees ..... (407)
406 Douglas-fir present and at least 5% cover ..... (505)

407 [406] Bristlecone pine >20% cover, dominant in a sparse, slow-growing forest. Dry, cold, non-northerly slopes in deep rainshadows in the eastern and southeastern parts of the Gunnison Basin ..... (408)
407 Bristlecone pine usually absent, rarely up to 20% cover. Sometimes dry, cold slopes, sometimes not ... (411)

408 [407] Thurber fescue absent. Arizona fescue always present, 3-25% cover. Soil surface very gravelly, coarse on surface averaging >40% cover. Somewhat lower elevations, 9,400-10,400 ft .... → FD04. BRISTLECONE PINE/CURRANT-ARIZONA FESCUE–COLD SOILS–SOUTHEASTERLY (409)
408 Thurber fescue present, 1-50% cover. Arizona fescue usually absent, sometimes present up to 10% cover. Soil surface much less coarse, averaging 10% cover. Somewhat higher elevations, 10,000-12,000 ft .... *Bristlecone pine-Thurber fescue* (CT FD05A)

409 [408] Parry oatgrass >5% cover. Arizona fescue *and* mountain muhly both >20% cover. Total graminoid cover >50%... *Bristlecone pine-mountain muhly-Arizona fescue-wax currant-Parry oatgrass* (CT FD04A)
409 Parry oatgrass 0-5% cover. Arizona fescue and mountain muhly both present, but one or both <20% cover. Total graminoid cover <50% ..... (410)

410 [409] Wax currant usually >5%, always >2% cover. Parry oatgrass absent or <1% cover .... *Bristlecone pine-wax currant-Arizona fescue* (CT FD04B)
410 Wax currant absent or <5% cover. Parry oatgrass >2% cover .... *Bristlecone pine-Arizona fescue-mountain muhly* (CT FD04C)

411 [407] Ponderosa pine >25% cover, other conifer trees usually absent to very minor, <1%. Aspen is sometimes present up to 30% cover ..... (412)
411 Ponderosa pine usually <25% cover; sometimes ponderosa pine is >25% cover, but then another conifer tree species (Douglas-fir, spruces) is codominant to dominant over ponderosa pine. Commonly dominated by lodgepole pine ..... (416)

412 [411] Bitterbrush present and >1% cover. Somewhat shallower soils, average 58 cm deep. Somewhat lower elevations, 8,300-9,400 ft ....→ FD03. PONDEROSA PINE/BITTERBRUSH–DARK SOILS WITH NO CLAY LAYER (413)
412 Bitterbrush absent. Somewhat deeper soils, average 83 cm deep .... → FD02. PONDEROSA PINE/ARIZONA FESCUE–LIGHT-COLORED CLAY SOILS (415)

413 [412] Ponderosa pine canopy >45% cover. Arizona fescue always present and >10% cover .... *Ponderosa pine-bitterbrush-sagebrush-Arizona fescue* (CT FD03A)
413 Ponderosa pine canopy <45% cover. Arizona fescue absent or <10% cover ..... (414)

414 [413] Ponderosa pine canopy 25-45% cover. Muttongrass <20% cover .... *Ponderosa pine-sagebrush-bitterbrush-muttongrass* (CT FD03B)
414 Ponderosa pine canopy <25% cover. Muttongrass >20% cover .... *Ponderosa pine-muttongrass-sparse bitterbrush* (CT FD03C)

415 [412] Arizona fescue always present and >15% cover. Mountain muhly sometimes >20% cover. Total graminoid cover >30% ..... *Ponderosa pine-Arizona fescue-mountain muhly* (CT FD02A)
415 Arizona fescue absent or <10% cover. Mountain muhly always <20% cover. Total graminoid cover <30%... ..... *Ponderosa pine-big sagebrush-sparse* (CT FD02B)

416 [411] Serviceberry >5% cover ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-elk sedge-sparse serviceberry* (CT FD08H)
416 Serviceberry usually absent, rarely <2% cover ..... (417)

417 [416] Pachistima >5% cover ..... (418)
417 Pachistima absent or <5% cover ..... (426)

418 [417] Buffaloberry >5% ..... (419)
418 Buffaloberry absent or <5% ..... (422)

419 [418] Subalpine fir or Engelmann spruce present and >0.5% cover ..... (420)
419 Subalpine fir and Engelmann spruce usually absent, rarely <0.5% cover ..... (421)

420 [419] Aspen present and >5% cover ..... *Lodgepole pine-aspen-sparse Engelmann spruce-buffaloberry-common juniper-elk sedge* (CT FL07C)
420 Aspen absent ..... (CT FL07B)

421 [419] Kinnikinnick present and >5% cover ..... *Lodgepole pine-buffaloberry-kinnikinnick* (CT FD14F)
421 Kinnikinnick usually absent ..... *Lodgepole pine-buffaloberry-common juniper-rose* (CT FD14E)

422 [418] Pachistima 5-15% cover ..... (423)
422 Pachistima 20-50% cover ..... *Lodgepole pine-aspen-common juniper-pachistima-elk sedge* (CT FL01C)

423 [422] Dwarf bilberry >10% cover ..... *Lodgepole pine-dwarf bilberry* (CT FD09C)
423 Dwarf bilberry absent or <5% cover ..... (424)

424 [423] Pachistima >10% cover ..... (425)
424 Pachistima 5-10% cover *Lodgepole pine-aspen-common juniper-pachistima-elk sedge-arnica* (CT FD09D)

425 [424] Aspen codominant, >25% cover ..... *Aspen-lodgepole pine-elk sedge-pachistima-common juniper* (CT FL03C)
425 Aspen absent to minor, <15% cover ..... *Lodgepole pine-Engelmann spruce-subalpine fir-pachistima-common juniper* (CT FL03B)

426 [417] Bitterbrush >5% cover ..... (427)
426 Bitterbrush usually absent, sometimes <5% cover ..... (428)

427 [426] Total graminoid cover >20% ..... *Lodgepole pine-Douglas-fir-sagebrush-elk sedge-bluegrass* (CT FD10F)
427 Total graminoid cover 0-20% ..... *Lodgepole pine-bitterbrush-kinnikinnick-common juniper-sparse* (CT FD10G)

428 [426] Buffaloberry >5% cover ..... (429)
428 Buffaloberry absent or <5% cover ..... (437)

429 [428] Subalpine fir or Engelmann spruce present and >0.5% cover. Douglas-fir always absent ..... → FL07. FIR-SPRUCE/BUFFALOBERRY–COLD LIGHT-COLORED SOILS (430)
429 Subalpine fir and Engelmann spruce both absent; if rarely they are present up to 1% cover, then Douglas-fir >50%, dominant ..... → FD14. DOUGLAS-FIR/BUFFALOBERRY–LIGHT-COLORED SANDY COLD SOILS–NORTHERLY (432)

430 [429] Aspen present and >5%, but clearly subordinate to lodgepole pine ..... *Lodgepole pine-aspen-sparse Engelmann spruce-buffaloberry-common juniper-elk sedge* (CT FL07C)
430 Aspen absent or isolated stems, <2% cover ..... (431)

431 [430] Subalpine fir present and >0.5%, but clearly subordinate to lodgepole pine ..... *Lodgepole pine-buffaloberry-common juniper-Rocky Mtn. whortleberry* (CT FL07A)
431 Subalpine fir absent ..... *Lodgepole pine-Engelmann spruce-buffaloberry-Rocky Mtn. whortleberry* (CT FL07B)

432 [429, 537] Douglas-fir >55%, dominant. Aspen (or sometimes lodgepole pine) present but subordinate to Douglas-fir ..... *Douglas-fir-aspen-buffaloberry-sparse common juniper* (CT FD14A)
432 Douglas-fir absent or <50%, subordinate to lodgepole pine..... (433)

433 [432] Aspen present, usually >1%, often >10% ..... (434)
433 Aspen absent ..... (436)

434 [433] Douglas-fir present and usually >10%.....
.....*Lodgepole pine-Douglas-fir-buffaloberry-kinnikinnick* (CT FD14B)
434 Douglas-fir absent..... (435)

435 [434] Kinnikinnick >20% cover.....*Lodgepole pine-aspen-kinnikinnick-buffaloberry* (CT FD14C)
435 Kinnikinnick <20% .....
.....*Lodgepole pine-sparse aspen-buffaloberry-common juniper-Rocky Mtn. whortleberry* (CT FD14D)

436 [433] Kinnikinnick present and >5%, usually >10%.....
.....*Lodgepole pine-buffaloberry-kinnikinnick* (CT FD14F)
436 Kinnikinnick absent .....*Lodgepole pine-buffaloberry-common juniper-rose* (CT FD14E)

437 [428] Thurber fescue >5% cover..... (438)
437 Thurber fescue absent or <5% cover..... (456)

438 [437] Blue spruce dominant or codominant, >25% cover. Deep rainshadow climates ..... (439)
438 Blue spruce usually absent. If blue spruce is sometimes present, then it is clearly dominated by other conifer trees. Usually outside deep rainshadow climates..... (440)

439 [438] Arizona fescue >15% cover. Patchy forest, with grassland patches between tree islands.....
.....*Aspen-blue spruce-Arizona fescue-patchy* (CT FD15A)
439 Arizona fescue minor, <10% cover. Nearly closed canopy forest, often mixed Engelmann spruce-blue spruce .....*Blue spruce-aspen-kinnikinnick* (CT FD16A)

440 [438] Mountain gooseberry >5% cover. High Subalpine, very cold, just below timberline, >11,500 ft.....
...*Lodgepole pine-sparse Engelmann spruce-Rocky Mtn. whortleberry-mountain gooseberry* (CT FL08B)
440 Mountain gooseberry absent. Usually <11,500 ft.....(441)

441 [440] Rocky Mountain whortleberry >5% cover, often >10% .....
..... *Lodgepole pine-Rocky Mtn. whortleberry-elk sedge* (CT FL09C)
441 Rocky Mountain whortleberry absent or <5% cover ..... (442)

442 [441] Subalpine fir or Engelmann spruce present, >0.05% cover ..*Aspen-elk sedge-strawberry* (CT FL05F)
442 Subalpine fir and Engelmann spruce both absent.....
..... → FD12. DOUGLAS-FIR/THURBER FESCUE–COLD DARK SOILS–GENTLE (443)

443 [442, 538] Thurber fescue >40%..... (444)
443 Thurber fescue <40%..... (450)

444 [443] Elk sedge present, >40%..... (445)
444 Elk sedge absent or <40%..... (448)

445 [444] Parry oatgrass conspicuous, >10% cover.....*Douglas-fir-elk sedge-Thurber fescue* (CT FD12B)
445 Parry oatgrass absent or rarely <5%..... (446)

446 [445] Lodgepole pine present, >10%.....
.....*Aspen-sparse lodgepole pine-common juniper-elk sedge-Thurber fescue* (CT FD12D)
446 Lodgepole pine absent or rarely <10% .....(447)

447 [446] Douglas-fir present, subdominant to (uncommonly) dominant, >5% cover.....
.....*Aspen-Douglas-fir-Thurber fescue-elk sedge* (CT FD12A)
447 Douglas-fir absent or rarely <5% cover .....
.....*Aspen-elk sedge-Thurber fescue-kinnikinnick-common juniper* (CT FD12G)

448 [444] Ponderosa pine present and >10% cover.....
.....*Aspen-ponderosa pine-Douglas-fir-Thurber fescue-elk sedge-snowberry* (CT FD12F)
448 Ponderosa pine absent ..... (449)

449 [448] Douglas-fir present, subdominant to (uncommonly) dominant, >5% cover.....
.....*Aspen-Douglas-fir-Thurber fescue-elk sedge* (CT FD12A)
449 Douglas-fir absent or rarely <5% cover.....
..... *Aspen-elk sedge-Thurber fescue-kinnikinnick-common juniper* (CT FD12G)

450 [443] Lodgepole pine present and >10%.....(451)
450 Lodgepole pine absent or <10%.....(452)

451 [450] Thurber fescue <10% .....
..... *Aspen-lodgepole pine-common juniper-kinnikinnick-elk sedge-sparse Thurber fescue* (CT FD12J)
451 Thurber fescue >10% .....
..... *Aspen-sparse lodgepole pine-common juniper-elk sedge-Thurber fescue* (CT FD12D)

452 [450] Ponderosa pine present and >10% cover.....
.....*Aspen-ponderosa pine-Douglas-fir-Thurber fescue-elk sedge-snowberry* (CT FD12F)
452 Ponderosa pine absent.....(453)

453 [452] Parry oatgrass conspicuous, >10% cover..... *Douglas-fir-elk sedge-Thurber fescue* (CT FD12B)
453 Parry oatgrass absent.....(454)

454 [453] Douglas-fir subdominant or dominant, >20% cover.....
..... *Douglas-fir-aspen-common juniper-snowberry-elk sedge-Thurber fescue* (CT FD12E)
454 Douglas-fir absent or <10% cover .....(455)

455 [455] Douglas-fir always present but <10% cover.....
.....*Aspen-sparse Douglas-fir-elk sedge-Thurber fescue* (CT FD12C)
455 Douglas-fir absent.....*Aspen-common juniper-elk sedge-Thurber fescue* (CT FD12H)

456 [437] Twinflower present and >5% cover.....(457)
456 Twinflower usually absent, very rarely <3% cover..... (458)

457 [456] Dominated by subalpine fir, Engelmann spruce, and lodgepole pine.....
.....*Lodgepole pine-Rocky Mtn. whortleberry-elk sedge* (CT FL09C)
457 Dominated by lodgepole pine. Subalpine fir and Engelmann spruce absent or very minor, <1% cover.....
.....*Lodgepole pine-aspen-common juniper-whortleberry-kinnikinnick-twinflower* (CT FL02C)

458 [456] Rocky Mountain whortleberry conspicuous, >10% cover .....(459)
458 Rocky Mountain whortleberry absent or <10% cover..... (463)

459 [458] Mountain gooseberry >5% cover. High Subalpine, very cold, just below timberline, >11,500 ft.....
...*Lodgepole pine-sparse Engelmann spruce-Rocky Mtn. whortleberry-mountain gooseberry* (CT FL08B)
459 Mountain gooseberry absent. Usually <11,500 ft..... (460)

460 [459] Cold, dry slopes, very well drained, with much gravel on the surface. Subalpine fir and Engelmann spruce usually absent, sometimes very minor, <0.05% cover .....
.....→ FD18. LODGEPOLE PINE/WHORTLEBERRY–COLD LIGHT-COLORED SOILS (461)
460 Cold, moister slopes, not very well drained, with less gravel on the surface. Subalpine fir or Engelmann spruce present..... (462)

461 [460] Aspen codominant with lodgepole pine. Aspen >15% cover.....
..... *Lodgepole pine-aspen-Rocky Mtn. whortleberry-elk sedge* (CT FD18A)
461 Aspen absent or <10% .....*Lodgepole pine-Rocky Mtn. whortleberry* (CT FD18B)

462 [460] Aspen codominant, >15% cover.....
.....*Lodgepole pine-aspen-elk sedge-Rocky Mtn. whortleberry* (CT FL09B)
462 Aspen absent or minor, <10% cover.....*Lodgepole pine-Rocky Mtn. whortleberry-elk sedge* (CT FL09C)

463 [458] Kinnikinnick >10% cover ..... (464)
463 Kinnikinnick absent or <10% cover ..... (481)

464 [463] Blue spruce or Engelmann spruce >3% cover. Deep rainshadow climates ..... → FD16. BLUE-ENGELMANN SPRUCES/KINNIKINNICK–LIGHT-COLORED SOILS–NORTHERLY (465)
464 Blue spruce absent. Engelmann spruce usually absent, rarely <1% cover ..... → FD13. DOUGLAS-FIR/KINNIKINNICK-COLD TO MODERATELY COLD (467)

465 [464. 570] Aspen dominant over Engelmann spruce ..... *Aspen-Engelmann spruce-Idaho fescue-kinnikinnick* (CT FD16B)
465 Spruce or lodgepole pine dominant ..... (466)

466 [465] Spruce (blue or Engelmann) dominant over aspen. Lodgepole pine absent or <1% ..... *Blue spruce-aspen-kinnikinnick* (CT FD16A)
466 Lodgepole pine >40%. Spruce <20% ..... *Lodgepole pine-aspen-sparse spruce-common juniper-kinnikinnick-elk sedge* (CT FD16C)

467 [464, 539] Aspen dominant over (greater cover than) other trees, >40% cover, often >55% ..... (468)
467 Aspen dominated by other trees, <35% ..... (476)

468 [467] Douglas-fir present, >1% ..... (469)
468 Douglas-fir absent or <1% ..... (473)

469 [468] Douglas-fir >20%, codominant with aspen ..... (470)
469 Douglas-fir 1-20% ..... (471)

470 [469] Lodgepole pine dominant or codominant, >20% ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13C)
470 Lodgepole pine absent or <20% ..... *Aspen-Douglas-fir-common juniper-kinnikinnick-Oregon-grape-rose-elk sedge* (CT FD13A)

471 [469] Lodgepole pine dominant or codominant, >20%. Douglas-fir present ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13C)
471 Lodgepole pine absent or <20%. Douglas-fir absent or rarely <15% ..... (472)

472 [471] Lodgepole pine absent ..... *Aspen-sparse Douglas-fir-kinnikinnick-rose-elk sedge* (CT FD13B)
472 Lodgepole pine present, 1-35% *Aspen-lodgepole pine-kinnikinnick-common juniper-elk sedge* (CT FD13D)

473 [468] Lodgepole pine absent ..... *Aspen-sparse Douglas-fir-kinnikinnick-rose-elk sedge* (CT FD13B)
473 Lodgepole pine present, >1%, often >30% ..... (474)

474 [473] Douglas-fir absent ..... *Aspen-lodgepole pine-kinnikinnick-common juniper-elk sedge* (CT FD13D)
474 Douglas-fir present, Trace to 15% cover ..... (475)

475 [474] Lodgepole pine dominant, >40%. Aspen absent ..... *Lodgepole pine-sparse Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13F)
475 Lodgepole pine subdominant under aspen or Douglas-fir ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13C)

476 [467] Lodgepole pine dominant, >30% ..... (477)
476 Douglas-fir dominant, >20% ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13C)

477 [476] Aspen and Douglas-fir both absent ..... (478)
477 Either aspen or Douglas-fir present and >1% ..... (479)

478 [477] Douglas-fir >25%, often >40%. Elk sedge absent. Ross sedge present and >1% ..... *Lodgepole pine-kinnikinnick-Ross sedge* (CT FD13J)
478 Douglas-fir 30-55%. Elk sedge >10%. Ross sedge >5% ..... *Lodgepole pine-kinnikinnick-Oregon-grape-elk sedge-Ross sedge* (CT FD13H

479 [477] Aspen absent or <1% ..... *Lodgepole pine-sparse Douglas-fir-kinnikinnick-common juniper-elk sedge* (CT FD13F)
479 Aspen >1%, often >10% ..... (480)

480 [479] Kinnikinnick >20% cover..... *Lodgepole pine-aspen-kinnikinnick-common juniper-elk sedge* (CT FD13E)
480 Kinnikinnick <20% cover ..... *Lodgepole pine-aspen-kinnikinnick-elk sedge* (CT FD13G)

481 [463] Arizona fescue conspicuous, >5% cover ..... → FD15. BLUE SPRUCE/ARIZONA FESCUE–DARK CLAY SOILS–EASTERLY (482)
481 Arizona fescue usually absent..... (483)

482 [481] Aspen >40%, codominant with blue spruce (20-40%)..... *Aspen-blue spruce-Arizona fescue-patchy* (CT FD15A)
482 Aspen absent to minor, <10%..... *Blue spruce-Arizona fescue-patchy* (CT FD15B)

483 [481] Silvertop sedge >3% cover. Dominated by lodgepole pine, other trees minor, on glacial moraines around Taylor Park ..... *Lodgepole pine-silvertop sedge* (CT FD17A)
483 Silvertop sedge usually absent. If silvertop sedge is sometimes present, then other tree species are dominant or codominant with lodgepole pine. Soil parent not glacial..... (484)

484 [483] Elk sedge absent..... (485)
484 Elk sedge present, usually >5% cover.....(487)

485 [484] Total live cover >125%. At least one understory (non-tree) species >15% cover..... *Lodgepole pine-Engelmann spruce-subalpine fir-pachistima-common juniper* (CT FL03B)
485 Total live cover <100%. All understory species <15% cover ..... → FD19. LODGEPOLE PINE/SPARSE (486)

486 [485] Kinnikinnick present and >1%. Oregon-grape sometimes absent . *Lodgepole pine-sparse* (CT FD19B)
486 Kinnikinnick absent. Oregon-grape always present, T-10% ..... *Lodgepole pine-sparse Oregon-grape* (CT FD19A)

487 [484] Pachistima >5% cover..... *Lodgepole pine-aspen-common juniper-pachistima-elk sedge-arnica* (CT FD09D)
487 Pachistima usually absent, rarely <5% cover ..... (488)

488 [487] Subalpine fir or Engelmann spruce present in adjacent or nearby stands at the same elevation, Douglas-fir absent there. Elevation >10,000 ft..... → FL05. FIR-SPRUCE/ELK SEDGE–COLD LIGHT-COLORED CLAY SOILS–GENTLE (489)
488 Douglas-fir present in adjacent or nearby stands at the same elevation; subalpine fir usually absent there. Elevation <10,200 ft ..→ FD11. DOUGLAS-FIR/ELK SEDGE–COLD TO MODERATELY COLD–GENTLE TO STEEP (495)

489 [488] Engelmann spruce >70% cover, dominant over other trees..... *Engelmann spruce-aspen-elk sedge* (CT FL05A)
489 Engelmann spruce absent or <70% cover, subordinate to other trees ..... (490)

490 [489] Subalpine fir present and reproducing, >5% cover. Big sagebrush absent or <10% cover .....(491)
490 Subalpine fir absent or <5% cover. Big sagebrush (ARTR2) sometimes >10% cover ..... (492)

491 [490] Common juniper usually absent, but rarely up to 10%. Subalpine fir always present but <15% cover . ..... *Aspen-Engelmann spruce-subalpine fir-elk sedge* (CT FL05B)
491 Common juniper always present, 5-30%. Subalpine fir usually absent, but sometimes up to 40% ..... *Aspen-lodgepole pine-Engelmann spruce-common juniper-elk sedge-rose* (CT FL05C)

492 [490] Lodgepole pine >60% cover, dominant over other trees. Aspen absent or <10% cover ..... *Lodgepole pine-Engelmann spruce-elk sedge-strawberry* (CT FL05E)
492 Lodgepole pine <60% cover, usually subordinate to other trees. Aspen usually >20%, rarely absent... (493)

493 [492] Big sagebrush prominent, >10% cover.....*Lodgepole pine-elk sedge-kinnikinnick* (CT FL05D)
493 Big sagebrush absent or <10%..... (494)

494 [493] Engelmann spruce >5%. Common juniper always present, 5-35% cover ..... *Aspen-lodgepole pine-Engelmann spruce-common juniper-elk sedge-rose* (CT FL05C)
494 Engelmann spruce absent or <5% cover. Common juniper <10% cover ..... *Lodgepole pine-Engelmann spruce-elk sedge-strawberry* (CT FL05E)

495 [488, 539] Douglas-fir >20%, dominant over (more cover than) other trees. Lodgepole pine absent or <15%. Aspen absent or subordinate to Douglas-fir. ..... (496)
495 Douglas-fir subordinate to either aspen or lodgepole pine. Either aspen >35% or lodgepole pine >20%(499)

496 [495] Aspen absent. Elk sedge <30%. Douglas-fir <70%.....(497)
496 Either aspen >10% or elk sedge >30% or Douglas-fir >60% ..... (498)

497 [496] Elk sedge <15%..... *Douglas-fir-sparse snowberry-sparse elk sedge* (CT FD11G)
497 Elk sedge >20%.....*Douglas-fir-snowberry-elk sedge* (CT FD11C)

498 [496] Aspen >10%, subordinate to Douglas-fir (>20%). Elk sedge >30%..... .....*Douglas-fir-aspen-elk sedge-sparse snowberry-sparse Oregon-grape* (CT FD11B)
498 Aspen absent or <10%. Douglas-fir >35% ..... *Douglas-fir-elk sedge* (CT FD11A)

499 [495] Aspen >45%, often >60%, dominant over other trees. Lodgepole pine usually absent, but sometimes up to 15%. Douglas-fir absent or conspicuous, 0-35%. Elk sedge >15% ..... (500)
499 Aspen absent to <45%. Lodgepole pine >30%, often >50%, dominant over other trees. Elk sedge minor to conspicuous, 5-80% ..... (502)

500 [499] Douglas-fir >10%, subordinate to aspen. Elk sedge >70%..... .....*Aspen-Douglas-fir-common juniper-elk sedge* (CT FD11D)
500 Douglas-fir absent or rarely <10%. Aspen >35%, dominant.....(501)

501 [500] Elk sedge 15-45% ....*Aspen-snowberry-common juniper-Kentucky bluegrass-elk sedge-dandelion* (CT FD11F)
501 Elk sedge 45-95% .....*Aspen-elk sedge* (CT FD11E)

502 [499] Douglas-fir present and >1%, clearly subordinate to lodgepole pine and/or aspen. ..... (503)
502 Douglas-fir absent..... (504)

503 [502] Elk sedge >35% ..... *Lodgepole pine-Douglas-fir-aspen-elk sedge* (CT FD11H)
503 Elk sedge <25% .....*Lodgepole pine-Douglas-fir-elk sedge* (CT FD11L)

504 [502] Elk sedge >20%. Lodgepole pine 30-50% .....*Lodgepole pine-elk sedge* (CT FD11J)
504 Elk sedge <20%. Lodgepole pine 35-70%..... *Lodgepole pine-Oregon-grape-elk sedge* (CT FD11K)

505 [406] Blue spruce codominant, >15% cover. Arizona fescue >5% cover ....*Aspen-blue spruce-Arizona fescue-patchy* (CT FD15A)
505 Blue spruce absent or minor. Arizona fescue absent or abundant..... (506)

506 [505] Ocean-spray, Arizona fescue, or wax currant evident, >1% cover. Dry Douglas-fir forests with gravelly or cobbly soils on steep slopes ....→ FD06. DOUGLAS-FIR/WAX CURRANT-ARIZONA FESCUE–COARSE THIN-DARK SOILS–STEEP (507)
506 Ocean-spray, Arizona fescue, and wax currant absent or each of these <1% cover. Dry to moist forests ....(513)

507 [506] Wax currant absent to <5% cover. Arizona fescue >15% cover, often >25%. Douglas-fir >50% cover.. .....*Douglas-fir-Arizona fescue* (CT FD06A)
507 Wax currant absent to >30% cover. Arizona fescue usually <15% cover, always <25%. Douglas-fir 10-75% cover ..... (508)

508 [507] Wax currant >10% cover .....*Douglas-fir-wax currant-sagebrush-Arizona fescue* (CT FD06C)
508 Wax currant <10% cover..... (509)

509 [508] Arizona fescue >15% cover. Ponderosa pine >20% cover, sometimes dominating Douglas-fir..... ..... *Ponderosa pine-Douglas-fir-Arizona fescue-wax currant* (CT FD06B)
509 Arizona fescue <15% cover. Ponderosa pine absent to <10% cover.....(510)

510 [509] Wheeler bluegrass (PONE2) present and >1% cover. Ocean-spray present and >1% cover .... *Douglas-fir-tree juniper-Wheeler bluegrass-sparse wax currant* (CT FD06E)
510 Wheeler bluegrass usually absent, but rarely up to 5% cover. Ocean-spray usually absent, but sometimes present. Wheeler bluegrass and ocean-spray never present together .....(511)

511 [510] Arizona fescue present and >1%.....*Douglas-fir-sparse Arizona fescue* (CT FD06F)
511 Arizona fescue usually absent, always <1% ..... (512)

512 [511] Douglas-fir >40% cover .....*Douglas-fir-sparse wax currant-grasses* (CT FD06D)
512 Douglas-fir <40% cover .....*Douglas-fir-sparse wax currant* (CT FD06G)

513 [506] Saskatoon serviceberry or Rocky Mountain maple present, usually >1%..... ..... → FD08. DOUGLAS-FIR/SERVICEBERRY–STEEP NORTHERLY (514)
513 Saskatoon serviceberry and Rocky Mountain maple both absent ..... (521)

514 [513] Serviceberry >25% cover. Aspen absent or <25% cover .... *Douglas-fir-serviceberry-snowberry-muttongrass* (CT FD08A)
514 Serviceberry usually <25% cover, always <30%. Aspen often present, 0-90% cover..... (515)

515 [514] Serviceberry 10-30% cover. Aspen conspicuous, dominating Douglas-fir, usually >40% cover. Douglas-fir >1% cover, usually >10%. Maple usually absent ....*Douglas-fir-aspen-common juniper-serviceberry-Thurber fescue-elk sedge* (CT FD08B)
515 Serviceberry 0-20% cover, often absent or <10%. Aspen absent or conspicuous. Maple absent or present ... . (516)

516 [515] Lodgepole pine present and >25% cover..... ..... *Lodgepole pine-aspen-Douglas-fir-kinnikinnick-elk sedge-sparse serviceberry* (CT FD08H)
516 Lodgepole pine usually absent, in any case <25% cover ..... (517)

517 [516] Aspen >40% cover. Douglas-fir inconspicuous, <1% cover. Serviceberry >10% cover ....*Aspen-serviceberry-common juniper-snowberry-bedstraw* (CT FD08D)
517 Without the above combination of characteristics.....(518)

518 [517] Maple the dominant tall shrub, 2-40% cover..... *Douglas-fir-maple-rose-snowberry* (CT FD08C)
518 Maple absent or <1% cover.....(519)

519 [518] Elk sedge absent to <5% cover. Aspen absent or <0.5% cover ....*Douglas-fir-sparse serviceberry-Oregon-grape-sparse snowberry* (CT FD08F)
519 Elk sedge conspicuous, >15%. Aspen conspicuous or absent ..... (520)

520 [519] Aspen dominant over Douglas-fir ....*Aspen-common juniper-elk sedge-sparse serviceberry-sparse snowberry* (CT FD08G)
520 Douglas-fir dominant over aspen ....*Douglas-fir-sparse serviceberry-elk sedge-Oregon-grape* (CT FD08E)

521 [513] Bitterbrush >5% cover or big sagebrush >10% cover .... → FD10. DOUGLAS-FIR/BITTERBRUSH–GENTLE SLOPES (522)
521 Bitterbrush usually absent, sometimes <5%. Big sagebrush usually absent, sometimes <10%..... (531)

522 [521] Parry oatgrass present and >1% .... *Douglas-fir-ponderosa pine-sagebrush-bitterbrush-common juniper* (CT FD10A)
522 Parry oatgrass absent or <1% .....(523)

523 [522] Bitterbrush >20%. Ponderosa pine >10% .....(524)
523 Bitterbrush <20%. Ponderosa pine absent to 25%, often <10% .....(525)

524 [523] Four trees: ponderosa, lodgepole, aspen, Douglas-fir. Ponderosa pine >10%, aspen >25%. Bottlebrush squirreltail >20% ..... *Aspen-ponderosa pine-lodgepole pine-Douglas-fir-bitterbrush-common juniper-elk sedge* (CT FD10B)
524 Two trees: lodgepole pine and aspen both absent. Ponderosa pine >5%, Douglas-fir >20%. Bottlebrush squirreltail absent to <20% ..... *Ponderosa pine-Douglas-fir-bitterbrush-sagebrush* (CT FD10C)

525 [523] Elk sedge >20% ..... (526)
525 Elk sedge <20% ..... (529)

526 [525] Douglas-fir >25%, dominant over other trees ..... (527)
526 Either Douglas-fir <25% or other trees dominant ..... (528)

527 [526] Bitterbrush >5% ..... *Douglas-fir-ponderosa pine-common juniper-bitterbrush-sagebrush-elk sedge* (CT FD10D)
527 Bitterbrush absent or <5% ..... *Sagebrush-sparse conifers-muttongrass* (CT FD10H)

528 [526] Dominated by lodgepole pine. Sagebrush 0-20% ..... *Lodgepole pine-Douglas-fir-sagebrush-elk sedge-bluegrass* (CT FD10F)
528 Mixed stands of aspen-ponderosa-Douglas-fir, no one of these >15%. Lodgepole pine absent. Sagebrush 5-20% cover ..... *Sparse Douglas-fir-sagebrush-bitterbrush-muttongrass* (CT FD10J)

529 [525] Mixed stands of aspen-ponderosa-Douglas-fir, no one of these >15%. Lodgepole pine absent ..... *Sparse Douglas-fir-sagebrush-bitterbrush-muttongrass* (CT FD10J)
529 Either lodgepole pine or ponderosa pine >20% ..... (530)

530 [529] Ponderosa pine dominant, >15% ..... *Ponderosa pine-Douglas-fir-bitterbrush* (CT FD10E)
530 Lodgepole pine dominant, >25% ..... *Lodgepole pine-bitterbrush-kinnikinnick-common juniper-sparse* (CT FD10G)

531 [521] Pachistima usually >5% cover. Buffaloberry usually absent; if sometimes buffaloberry >5% cover, then pachistima >20% cover. Northerly slopes ..... (540)
531 Pachistima usually absent, sometimes <5% cover ..... (537)

532 [540] Douglas-fir dominant, >60% cover. Aspen absent or <2% cover. Lodgepole pine absent ..... *Douglas-fir-common juniper-pachistima-Oregon-grape* (CT FD09B)
532 Douglas-fir 0-75% cover, usually <60%. Aspen sometimes dominant. Lodgepole pine often present or dominant ..... (533)

533 [532] Lodgepole pine >25%, dominant over Douglas-fir and/or aspen. Douglas-fir or aspen sometimes absent ..... (534)
533 Lodgepole pine absent or <10% ..... (535)

534 [533] Dwarf bilberry conspicuous as a short shrub, >15% cover *Lodgepole pine-dwarf bilberry* (CT FD09C)
534 Dwarf bilberry absent .. *Lodgepole pine-aspen-common juniper-pachistima-elk sedge-arnica* (CT FD09D)

535 [533] Douglas-fir dominant over (greater cover than) aspen. Both Douglas-fir and aspen always present, Douglas-fir >35% cover, aspen >10% cover. Rose 0-30% cover, sometimes absent ..... *Douglas-fir-aspen-common juniper-pachistima-elk sedge* (CT FD09A)
535 Aspen dominant over (greater cover than) Douglas-fir. Aspen >50% cover, always present, but Douglas-fir sometimes absent. Rose always present, 10-30% cover ..... (536)

536 [535] Douglas-fir >30% ..... *Aspen-Douglas-fir-common juniper-pachistima-rose-elk sedge* (CT FD09E)
536 Douglas-fir absent or <10% ..... *Aspen-pachistima-rose-elk sedge-brome-lupine* (CT FD09F)

537 [531] Buffaloberry >5% cover ..... → FD14. DOUGLAS-FIR/BUFFALOBERRY–LIGHT-COLORED SANDY COLD SOILS–NORTHERLY (432)
537 Buffaloberry absent or <5% cover ..... (538)

538 [537] Thurber fescue >5% cover ... → FD12. DOUGLAS-FIR/THURBER FESCUE–COLD DARK SOILS–GENTLE (443)
538 Thurber fescue absent or <5% cover ..... (539)

539 [538] Kinnikinnick >5% cover..... → FD13. DOUGLAS-FIR/KINNIKINNICK-COLD TO MODERATELY COLD (467)
539 Kinnikinnick absent or <5% cover. Elk sedge >15% cover, often >20%.....
.....→ FD11. DOUGLAS-FIR/ELK SEDGE–COLD TO MODERATELY COLD–GENTLE TO STEEP (495)

540 [531] Subalpine fir or Engelmann spruce present, one of them >0.5% cover ..... (541)
540 Subalpine fir and Engelmann spruce absent.....
..... → FD09. DOUGLAS-FIR/PACHISTIMA–DARK SOILS–NORTHERLY (532)

541 [540] Dominated by aspen, >55% cover. Lodgepole pine <30% cover *Aspen-pachistima-lupine* (CT FL01B)
541 Dominated by lodgepole pine, >35% cover. Aspen <30% cover.....
.....*Lodgepole pine-aspen-common juniper-pachistima-elk sedge* (CT FL01C)

542 Limber pine >15%. Subalpine fir and Engelmann spruce absent .....
.....*Limber pine-Douglas-fir-common juniper-ocean spray-rocky* (CT FL11A)
542 Limber pine absent or minor, or if limber pine sometimes >15%, then dominated by Engelmann spruce or subalpine fir .....(543)

543 Mountain gooseberry prominent, >5% cover. Very cold spruce or fir-spruce forest near timberline. Moss cover >15%, often >20% .....(545)
543 Mountain gooseberry usually absent. Moss cover usually <15% .....(546)

544 Mountain gooseberry conspicuous, >20% cover. Rocky Mountain whortleberry absent or <1%. Silvertop sedge absent. Lodgepole pine absent or <25% cover *Engelmann spruce-mountain gooseberry* (CT FL08A)
544 Mountain gooseberry present but not conspicuous, 5-20% cover. Rocky Mountain whortleberry prominent, >20% cover. Silvertop sedge >10%. Lodgepole pine dominant or codominant, >30% cover.....
...*Lodgepole pine-sparse Engelmann spruce-Rocky Mtn. whortleberry-mountain gooseberry* (CT FL08B)

545 [543] At least one non-tree understory species >15%. Site somewhat exposed to wind .....
..... → FL08. SPRUCE/GOOSEBERRY–COLD UPPER-SUBALPINE SLOPES (544)
545 No non-tree understory species >15%. Site protected from wind, accumulating snow .....
.....→ FL06. FIR-SPRUCE/MOSS–COLD LIGHT-COLORED SOILS–NORTHERLY (546)

546 [543] Short, patchy, wind-formed forest at upper timberline. Grayleaf willow present, often codominant. Elevation >11,500 ft.....*Krummholz Engelmann spruce-grayleaf willow* (CT FL10A)
546 Tall forests, usually at least 50% closed canopy. Grayleaf willow absent .....(547)

547 [546] Twinflower >5% cover. Steep northerly slopes, 9,600-10,100 ft .....
..... → FL02. FIR/TWINFLOWER–COLD LIGHT-COLORED SOILS–STEEP NORTHERLY (548)
547 Twinflower usually absent, sometimes <5% cover.....(550)

548 [547, 558] Douglas-fir >15%; whortleberry sometimes absent.....
.....*Douglas-fir-aspen-common juniper-twinflower* (CT FL02A)
548 Douglas-fir absent; whortleberry always present.....(549)

549 [548] Lodgepole pine dominant, >60%. Engelmann spruce absent.....
.....*Lodgepole pine-aspen-common juniper-whortleberry-kinnikinnick-twinflower* (CT FL02C)
549 Fir or spruce dominant, >35%, Lodgepole pine subordinate.....
.....*Engelmann spruce-subalpine fir-lodgepole pine-whortleberry-twinflower* (CT FL02B)

550 [547] Buffaloberry prominent, >5% cover, often >10% ..... (551)
550 Buffaloberry absent or <5% cover .....(556)

551 [550] Twinflower >3% cover .....(552)
551 Twinflower absent or <3% cover .....(553)

552 [551] Dominated by subalpine fir, 1-55% cover, Engelmann spruce sometimes codominant. Lodgepole pine subdominant or codominant .....
.....*Engelmann spruce-subalpine fir-lodgepole pine-whortleberry-twinflower* (CT FL02B)
552 Dominated by lodgepole pine, 25-90% cover. Subalpine fir absent or <1% cover. Engelmann spruce present but <2% cover .....
.....*Lodgepole pine-Engelmann spruce-buffaloberry-Rocky Mtn. whortleberry* (CT FL07B)

553 [551] Elk sedge >25% cover. Rocky Mountain whortleberry usually absent, rarely up to 2% cover ....*Lodgepole pine-elk sedge-kinnikinnick* (CT FL05D)
553 Elk sedge <25% cover. Rocky Mountain whortleberry usually conspicuous, 10-80% cover..... .....→ FL07. FIR-SPRUCE/BUFFALOBERRY–COLD LIGHT-COLORED SOILS (554)

554 [553, 557] Aspen present and >5%, but clearly subordinate to lodgepole pine .... *Lodgepole pine-aspen-sparse Engelmann spruce-buffaloberry-common juniper-elk sedge* (CT FL07C)
554 Aspen absent or isolated stems, <2% cover.....(555)

555 [554] Subalpine fir present and >0.5%, but clearly subordinate to lodgepole pine ....*Lodgepole pine-buffaloberry-common juniper-Rocky Mtn. whortleberry* (CT FL07A)
555 Subalpine fir absent .... *Lodgepole pine-Engelmann spruce-buffaloberry-Rocky Mtn. whortleberry* (CT FL07B)

556 [550] Rocky Mountain whortleberry conspicuous, >10% cover .....(557)
556 Rocky Mountain whortleberry absent to <10% cover ..... (568)

557 [556] Buffaloberry >5% cover.....(554)
557 Buffaloberry absent or <5% cover ..... (558)

558 [557] Twinflower >3% cover..... (548)
558 Twinflower absent or <3% cover .....(559)

559 [558] Pachistima >3% cover ..... (560)
559 Pachistima absent or <3% cover..... → FL09. FIR-SPRUCE/WHORTLEBERRY–COLD LIGHT-COLORED SOILS (565)

560 [559, 568] Douglas-fir present, >5% cover. Rocky Mountain whortleberry sometimes absent, sometimes present up to 45% cover.....→ FL01. FIR-DOUGLAS-FIR/PACHISTIMA–MODERATELY COLD SOILS (561)
560 Douglas-fir absent or <1% cover..... → FL03. FIR-SPRUCE/PACHISTIMA–COLD LIGHT-COLORED SOILS (563)

561 [560] Douglas-fir >70%, dominant over aspen and subalpine fir. Pachistima <10% ....*Douglas-fir-subalpine fir-aspen-elk sedge-pachistima-rose* (CT FL01A)
561 Douglas-fir not dominant, <50%..... (562)

562 [561] Aspen dominant, >55%. Douglas-fir usually >5%, sometimes absent. Lodgepole pine up to 30%, sometimes absent. Subalpine fir up to 55%, sometimes sparse or absent..... .....*Aspen-pachistima-lupine* (CT FL01B)
562 Lodgepole pine dominant, >40%. Aspen conspicuous subdominant, >20% ....*Lodgepole pine-aspen-common juniper-pachistima-elk sedge* (CT FL01C)

563 [560] Subalpine fir >35% cover. Dominated by Engelmann spruce, >50% cover. Lodgepole pine absent or subordinate to fir and spruce. Aspen conspicuous but subordinate to spruce and fir. Forest fleabane (EREX4) >5% cover..... *Engelmann spruce-subalpine fir-aspen-pachistima-forest fleabane* (CT FL03A)
563 Subalpine fir 35% cover. Lodgepole pine or aspen dominant one of them >30%, usually >45%. Forest fleabane absent or rarely <5% cover..... (564)

564 [563] Lodgepole pine dominant or codominant, 45-95% cover. Aspen absent to <5% cover. Elk sedge absent to 70% cover .... *Lodgepole pine-Engelmann spruce-subalpine fir-pachistima-common juniper* (CT FL03B)
564 Aspen dominant or codominant 30-95% cover. Lodgepole pine minor or codominant, 5-50% cover. Elk sedge >10% cover..... *Aspen-lodgepole pine-elk sedge-pachistima-common juniper* (CT FL03C)

565 [559] Engelmann spruce >50%, dominant over other trees. Lodgepole pine 1-30%, clearly subordinate to spruce. Elk sedge sometimes absent.....*Engelmann spruce-Rocky Mtn. whortleberry* (CT FL09A)
565 Engelmann spruce <40% (sometimes absent), subordinate to other trees. Lodgepole pine 1-70%, sometimes dominant. Elk sedge always present, >5% ..... (566)

566 [565] Aspen conspicuous, >20%, sometimes dominant .....(567)
566 Aspen absent or minor, <10% cover..... *Lodgepole pine-Rocky Mtn. whortleberry-elk sedge* (CT FL09C)

567 [566] Engelmann spruce >10%. Aspen >60%, dominant. Lodgepole pine <10% ..... *Aspen-Engelmann spruce-lodgepole pine-common juniper-elk sedge-Rocky Mtn. whortleberry* (CT FL09D)
567 Engelmann spruce absent or very minor, <5%. Lodgepole pine >40%, dominant or codominant with aspen (20-50%)..... *Lodgepole pine-aspen-elk sedge-Rocky Mtn. whortleberry* (CT FL09B)

568 [556] Pachistima >3% cover ..... (560)
568 Pachistima absent or <3% cover..... (569)

569 [568] Kinnikinnick >5% cover, often >10% ..... (570)
569 Kinnikinnick absent or <5% cover..... (571)

570 [569] Dominated by Engelmann spruce or blue spruce, lodgepole pine, and aspen. Deep rainshadow climates ..... (465)
570 Blue spruce absent. Not in rainshadow climates..... (571)

571 [569, 570] Thurber fescue >10% cover ..... (572)
571 Thurber fescue absent to <10% cover..... (573)

572 [571] Timber oatgrass >10% cover. A minor type, dominated by aspen and Engelmann spruce. 10,200-10,600 ft ..... → FL04A. SPRUCE-ASPEN/TIMBER OATGRASS–COLD CLAY SOILS
572 Timber oatgrass absent..... (574)

573 [571] Dwarf bilberry >20% cover. A minor type of mixed tree dominance, 10,000-10,400 ft..... ..... → FL04B. FIR-SPRUCE/DWARF BILBERRY–COLD SANDY SOILS–GLACIAL
573 Dwarf bilberry absent to <10% cover .... → FL05. FIR-SPRUCE/ELK SEDGE–COLD LIGHT-COLORED CLAY SOILS–GENTLE (574)

574 [572, 573] Engelmann spruce >70% cover, dominant over other trees..... ..... *Engelmann spruce-aspen-elk sedge* (CT FL05A)
574 Engelmann spruce absent or <70% cover, subordinate to other trees ..... (575)

575 [574] Subalpine fir present and reproducing, >5% cover. Big sagebrush absent or <10% cover ..... (576)
575 Subalpine fir absent or <5% cover. Big sagebrush (ARTR2) sometimes >10% cover ..... (577)

576 [575] Common juniper usually absent, but rarely up to 10%. Subalpine fir always present but <15% cover .. .. *Aspen-Engelmann spruce-subalpine fir-elk sedge* (CT FL05B)
576 Common juniper always present, 5-30%. Subalpine fir usually absent, but sometimes up to 40% .... *Aspen-lodgepole pine-Engelmann spruce-common juniper-elk sedge-rose* (CT FL05C)

577 [575] Lodgepole pine >60% cover, dominant over other trees. Aspen absent or <10% cover .... *Lodgepole pine-Engelmann spruce-elk sedge-strawberry* (CT FL05E)
577 Lodgepole pine <60% cover, usually subordinate to other trees. Aspen usually >20%, rarely absent ....(578)

578 [577] Big sagebrush prominent, >10% cover..... *Lodgepole pine-elk sedge-kinnikinnick* (CT FL05D)
578 Big sagebrush absent or <10%..... (579)

579 [578] Engelmann spruce >5%. Common juniper always present, 5-35% cover .... *Aspen-lodgepole pine-Engelmann spruce-common juniper-elk sedge-rose* (CT FL05C)
579 Engelmann spruce absent or <5% cover. Common juniper <10% cover .... *Lodgepole pine-Engelmann spruce-elk sedge-strawberry* (CT FL05E)

KEY F. SHRUBLANDS

Dominated by shrubs, generally with no tree species greater than 2% cover, and total tree cover always less than 10%.
Tall shrubs include the species of serviceberry (Utah, Saskatoon), mountain-mahogany, oak, maple, alder, chokecherry, wax currant, ocean-spray, skunkbrush, river birch, and the tall willows (Geyer, Bebb, yellow, serviceberry, Booth, blue, sandbar, Pacific, or Scouler willows).
Medium shrubs include the species of bitterbrush, medium sagebrush (big, Wyoming, mountain, silver), shrubby cinquefoil, medium willows (planeleaf, Wolf, grayleaf, barrenground), medium rabbitbrush (Douglas, rubber, Parry), bog birch, snowberry, common juniper, buffaloberry, and snakeweed. Low shrubs include species of short sagebrush (low, black), rabbitbrush (green, dwarf), horsebrush, and winterfat.

601 [11, 810] Bottomland communities. Landforms are draws, canyons, ravines, gulches, floodplains, or valleys. Slope positions are bottoms or lower toeslopes. Slope shapes are concave, U-shaped, or V-shaped. Soils are sometimes Aquolls, Aquepts, Aquents, or Histosols ..... KEY C. BOTTOMLANDS (201)
601 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, moraines, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically). Soils are very rarely Aquolls, Aquepts, Aquents, or Histosols ..... (602)

602 [601] Dominated by tall shrubs: serviceberry, mountain-mahogany, oak, Rocky Mountain maple, tall willows, alder, river birch, or chokecherry (see note above this key). Other shrubs may be present as well ..... (605)
602 Dominated by other shrubs, graminoids, or forbs. Serviceberry, maple, or chokecherry may be present, but is always either <1% cover, or subordinate to other shrub species ..... (603)

603 [602, 606] Dominated by one or more species of medium or short sagebrush (big, mountain, Wyoming, black, silver, or low) or bitterbrush. Sometimes bitterbrush is codominant ..... (652)
603 Sagebrush absent, or some other shrub dominant, or grasses or forbs dominant. Bitterbrush usually absent to <5% cover ..... (604)

604 [603] Dominated by a shrub species other than tall shrubs, sagebrush, or bitterbrush ..... (772)
604 Dominated by grasses, grasslike plants, or forbs ..... (12)

605 [9, 602] One or more of the tall willow species (see note above this key), river birch, alder, aspen, or cottonwood >10% cover ..... (201)
605 Tall willows and alder absent or each species <10% cover ..... (606)

606 [605] Dominated by medium shrubs, tall shrub species are usually absent, but occasionally one tall shrub species is >2%. No tall shrub species is the leading species in cover, and there is at least one medium shrub with >5× cover of the tall shrub ..... (603)
606 Dominated by tall shrubs. At least one tall shrub species >10% cover or the leading shrub species in cover ..... (607)

607 [606] Mountain-mahogany >10% cover ..... (608)
607 Mountain-mahogany usually absent, sometimes <10% cover ..... (615)

608 [607] Green needlegrass present and >1% ..... (609)
608 Green needlegrass usually absent ..... (610)

609 [608] Green needlegrass >15% cover. Serviceberry >35% cover ..... *Serviceberry-snowberry-mountain-mahogany-green needlegrass* (CT SA4A)
609 Green needlegrass 1-15% cover. Serviceberry 10-35% cover ..... *Snowberry-big sagebrush-muttongrass-green needlegrass* (CT SA4E)

610 [608] Elk sedge present, >1% cover. Higher elevations, >8,800 ft ..... (611)
610 Elk sedge absent. Other sedge species sometimes conspicuous. Lower elevations, <8,800 ft ..... → SA2. UTAH SERVICEBERRY-MOUNTAIN-MAHOGANY/SEDGE–DARK CLAY SOILS–PROTECTED (612)

611 [610] Dominated by Saskatoon serviceberry, >20% cover. Big sagebrush also present ..... *Saskatoon serviceberry-big sagebrush-snowberry-muttongrass-elk sedge* (CT SA5C)
611 Saskatoon serviceberry absent to <15% cover. Big sagebrush prominent, 10-70% cover ..... *Big sagebrush-prairie junegrass* (CT SA5E)

612 [610, 617, 639, 725, 747] Total tall shrub cover (serviceberry, mountain-mahogany, and chokecherry) >70%. Utah serviceberry cover >30%. Total sedge (*Carex*) cover >20% ..... *Utah serviceberry-mountain-mahogany-snowberry-dryland sedge* (CT SA2A)
612 Total tall shrub cover <70%. Serviceberry cover <40%. If total tall shrub cover rarely >80%, then serviceberry cover always <30%. Total sedge cover usually <20%, sometimes more ..... (613)

613 [612] Total graminoid cover >55%. Total tall shrub cover >45%, usually >50%. Total sedge cover usually >5% ..... *Mountain-mahogany-Utah serviceberry-big sagebrush-snowberry-muttongrass* (CT SA2B)
613 Total graminoid cover <55%. Total tall shrub cover <55%, usually <45%. Total sedge cover <15%, often <10% ..... (614)

614 [613] Either total tall shrub cover >40% or serviceberry cover >10%. Total sedge cover <5% ..... *Mountain-mahogany-Utah serviceberry-big sagebrush-snowberry* (CT SA2C)
614 Total tall shrub cover always <40%. Serviceberry cover usually <5%. Total sedge cover 0-15% ..... *Mountain-mahogany-big sagebrush-muttongrass-sparse Utah serviceberry* (CT SA2D)

615 [607] Oak >5% cover, often >20%. Oak is clonal, so the distribution of oak may well be patchy..... (616)
615 Oak usually absent, occasionally <5% cover ..... (621)

616 [615] Spike-fescue >10%.....(Unassigned CT in SA4)
616 Spike-fescue usually absent, rarely <5% cover..... (617)

617 [616] Mountain-mahogany >10% cover ..... (612)
617 Mountain-mahogany absent or occasionally <10% cover..... → SA3. SERVICEBERRY-OAK–DARK CLAY SOILS–PROTECTED (618)

618 [617, 633, 647, 727, 729, 748] Tall shrub cover nearly complete, oak cover >75%, serviceberry cover >20%. Sagebrush missing or <10% cover. Total graminoid cover >80%. Total sedge cover >40%..... *Oak-serviceberry-snowberry-bedstraw* (CT SA3A)
618 Tall shrub cover patchy, oak cover <75%, serviceberry missing or <20%. Sagebrush cover conspicuous, usually >20%. Total graminoid cover usually <80%, uncommonly more. Total sedge cover <40% ..... (619)

619 [618] Total graminoid cover >40%. Oak cover >30%; serviceberry present, but very inconspicuous (need to search for it under sagebrush). Total sedge cover usually >10% ..... *Oak-big sagebrush-snowberry-muttongrass* (CT SA3B)
619 Total graminoid cover <40%. Oak cover 5-50%; serviceberry present, usually <5% cover. Total sedge cover usually <10% ..... (620)

620 [619] Serviceberry missing or very inconspicuous, <0.1% cover; oak cover 10-50%; sagebrush cover 20-50% .....*Big sagebrush-oak-sparse grasses* (CT SA3D)
620 Serviceberry present but sparse, 0.5-5% cover; oak cover 5-50%; sagebrush cover 20-40% ..... *Big sagebrush-oak-snowberry-sparse serviceberry* (CT SA3C)

621 [615] Ocean-spray, wax currant, or skunkbrush >15% on convex rock outcrops and rockslides. The rocks are really dominant, not the plants; no more than one other species besides the dominant shrub is >10%... ..... *Rocky tall shrublands* (CT SA7A)
621 [615] Ocean-spray, wax currant, and skunkbrush usually absent ..... (622)

622 [621] Green needlegrass or spike-fescue present and >1% cover. .....(623)
622 Green needlegrass and spike-fescue usually absent, rarely <1% cover..... (631)

623 [622, 632] Oak >20% cover ..... (624)
623 Oak absent or <10% cover .....(625)

624 [623] Oak >70% cover. Green needlegrass >1% cover. Spike-fescue absent or <1% ..... *Oak-serviceberry-snowberry-bedstraw* (CT SA3A)
624 Oak 20-50% cover. Spike-fescue >10% cover, Green needlegrass absent or <1% cover(Unassigned CT in SA4)

625 [623] Elk sedge >15% cover ..... (626)
625 Elk sedge absent or <15% cover .....→ SA4. SERVICEBERRY/GREEN NEEDLEGRASS–DEEP CLAY SOILS–LEES (627)

626 [625] Green needlegrass >5% cover. Spike-fescue absent. Thurber fescue >25% cover ..... *Thurber fescue-serviceberry-rabbitbrush-yarrow* (CT SA6B)
626 Spike-fescue >5% cover. Green needlegrass absent or <1% cover. Thurber fescue absent or <5% cover ..... *Big sagebrush-sparse serviceberry-muttongrass-spike-fescue* (CT SA4D)

627 [625, 638, 726, 749] Serviceberry cover >40%. Green needlegrass always present and >20%; spike-fescue absent ..... (628)
627 Serviceberry cover <40%. Green needlegrass sometimes absent, 1-25% cover; spike-fescue sometimes present, 1-25% cover ..... (629)

628 [627] Mountain-mahogany present and >15% cover. Total graminoid cover >60% ..... *Serviceberry-snowberry-mountain-mahogany-green needlegrass* (CT SA4A)
628 Mountain-mahogany absent or <5% cover. Total graminoid cover <60% ..... *Serviceberry-snowberry-big sagebrush-green needlegrass* (CT SA4B)

629 [627] Green needlegrass always present, 1-25% cover. Spike-fescue absent or if rarely present then less cover than green needlegrass ..... (630)
629 Green needlegrass absent. Spike-fescue always present, 1-25% cover ..... *Big sagebrush-sparse serviceberry-muttongrass-spike-fescue* (CT SA4D)

630 [629] Total graminoid cover >90%. Green needlegrass cover >20%; spike-fescue sometimes prominent but less cover than green needlegrass ..... *Big sagebrush-serviceberry-bitterbrush-green needlegrass-pine needlegrass* (CT SA4C)
630 Total graminoid cover <90%. Green needlegrass cover <20%; spike-fescue absent ..... *Snowberry-big sagebrush-muttongrass-green needlegrass* (CT SA4E)

631 [622] Elk sedge absent and elevation <8,900 ft ..... (632)
631 Either elk sedge present and >1% cover, or elevation >8,900 ft ..... (646)

632 [631] Green needlegrass or spike-fescue present and >1% cover ..... (623)
632 Green needlegrass and spike-fescue usually absent, rarely one of them <1% cover ..... (633)

633 [632] Oak >20% cover ..... (618)
633 Oak absent or <10% cover ..... (634)

634 [633] Thurber fescue present and >2% cover. Somewhat higher elevations, 8,700-10,000 ft ..... → SA6. SERVICEBERRY/THURBER FESCUE–DEEP DARK COLD LOAMY SOILS–SUBALPINE (635)
634 Thurber fescue usually absent, rarely <2% cover ..... (638)

635 [634, 646, 713, 751] Saskatoon serviceberry >30% cover ..... (636)
635 Saskatoon serviceberry <30% cover. Thurber fescue 10-85% cover ..... (637)

636 [635] Big sagebrush or mountain sagebrush >25% cover. Snowberry <10% cover. Total graminoid cover <85% ..... *Big sagebrush-serviceberry-snowberry-elk sedge-Thurber fescue* (CT SA6C)
636 Big sagebrush and mountain sagebrush usually absent, sometimes <10% each. Snowberry >10% cover. Total graminoid cover >85% ..... *Serviceberry-snowberry-Thurber fescue-elk sedge* (CT SA6A)

637 [635] Big sagebrush or mountain sagebrush >25% cover. Serviceberry >5% cover, often >20%. Total graminoid cover <85% ..... *Big sagebrush-serviceberry-snowberry-elk sedge-Thurber fescue* (CT SA6C)
637 Big sagebrush and mountain sagebrush absent or <20% cover. Serviceberry <5% cover. Total graminoid cover >85% ..... *Thurber fescue-serviceberry-rabbitbrush-yarrow* (CT SA6B)

638 [634] Green needlegrass or spike-fescue present and >1% cover ..... (627)
638 Green needlegrass and spike-fescue usually absent, rarely <1% cover ..... (639)

639 [638] Mountain-mahogany >15% cover. Somewhat protected slopes, not always in the lee of ridges or mesas.....(612)
639 Mountain-mahogany usually absent, sometimes <10% cover. Lees of ridges or mesas ..... → SA1. UTAH SERVICEBERRY/SEDGE–DARK CLAY SOILS–LEEWARD (640)

640 [639, 728, 752] Total graminoid cover >70%.....(641)
640 Total graminoid cover <70% ..... (642)

641 [640] Sun sedge conspicuous, >25% cover. Utah serviceberry dominant, >30% cover..... *Utah serviceberry-snowberry-sun sedge* (CT SA1A)
641 Sun sedge absent. Utah serviceberry <20% cover..... *Big sagebrush-snowberry-dryland sedge-sparse Utah serviceberry* (CT SA1C)

642 [640] Total graminoid cover 55-70%. Total sedge cover <5% ..... *Big sagebrush-muttongrass-sparse snowberry* (CT SA1E)
642 Total graminoid cover <55%. Total sedge cover 0-20%..... (643)

643 [642] Utah serviceberry cover >20%. Total graminoid cover <25%..... *Utah serviceberry-sparse* (CT SA1B)
643 Utah serviceberry cover <20%. Total graminoid cover 2-55%..... (644)

644 [643] Big sagebrush cover 20-30%, Utah serviceberry cover 0-10%, total graminoid cover 30-50% ..... *Big sagebrush-sparse Utah serviceberry-pine needlegrass* (CT SA1D)
644 Big sagebrush cover <20% or >30%, Utah serviceberry cover 0-20%, total graminoid cover 2-55% .....(645)

645 [644] Big sagebrush cover <20%..... *Big sagebrush-sparse Utah serviceberry-rabbitbrush-sparse snowberry-Indian ricegrass* (CT SA1F)
645 Big sagebrush cover >30%..... *Big sagebrush-sparse Utah serviceberry-rabbitbrush-sparse snowberry* (CT SA1G)

646 [631] Thurber fescue present and >5% cover.....(635)
646 Thurber fescue absent or <5% cover .....(647)

647 [646] Oak >25% cover. Elevation <8,700 ft.....(618)
647 Oak usually absent, rarely <10% cover..... → SA5. SASKATOON SERVICEBERRY/ELK SEDGE–DEEP DARK SOILS–LEES (648)

648 [647, 728, 730, 751] Total graminoid cover >75%. Elk sedge cover >25%..... *Saskatoon serviceberry-snowberry-elk sedge-moist forbs* (CT SA5A)
648 Total graminoid cover <75%. Elk sedge cover usually <25%..... (649)

649 [648] Total graminoid cover >60%. Serviceberry cover 0-85%..... (650)
649 Total graminoid cover <60%. Serviceberry cover 0-15% ..... *Big sagebrush-prairie junegrass* (CT SA5E)

650 [649] Saskatoon serviceberry cover >35%. Total graminoid cover 60-70%..... *Saskatoon serviceberry-chokecherry-big sagebrush-snowberry-elk sedge* (CT SA5B)
650 Saskatoon serviceberry cover <35%. Total graminoid cover 40-140%.....(651)

651 [650] Serviceberry cover 20-35%. Total graminoid cover 40-70%. Total sedge cover 20-30%..... *Saskatoon serviceberry-big sagebrush-snowberry-muttongrass-elk sedge* (CT SA5C)
651 Serviceberry cover 0-10%. Total graminoid cover >70% ..... *Snowberry-big sagebrush-dry grasses* (CT SA5D)

652 [10, 603] One of the short sagebrushes (black, low) >10% cover .....(653)
652 Black sagebrush and low sagebrush both absent or <10% cover. ..... (688)

653 [652] Black sagebrush >10% cover, low sagebrush absent. Lower elevations, 8,000-9,400 ft, and warmer sites (usually Frigid). Parry oatgrass absent. Adjacent sites have Wyoming sagebrush or big sagebrush, and no Thurber fescue ..... (654)
653 Low sagebrush >10% cover, black sagebrush absent. Higher elevations, 8,900-10,500 ft, and colder sites (Cryic). Parry oatgrass sometimes present. Adjacent sites have mountain sagebrush or Thurber fescue, and no Wyoming sagebrush..... (668)

654 [653, 691] Big sagebrush, Wyoming big sagebrush, or Douglas rabbitbrush dominant; at least one of these >15% cover. Soils shallow to very deep, sometimes heavy-clayey (Smectitic), but usually with a well-defined Mollic layer >5 in thick. Various aspects, sometimes windward .....(655)
654 Big sagebrush, Wyoming sagebrush, and Douglas rabbitbrush absent or <15% cover. Deep, coarse soils; there is a very thin Mollic layer to dense, heavy (Smectite) clay ("Concrete" Alfisols). Windward aspects(660)

655 [654] Serviceberry and snowberry both present and >1% cover. Snow-deposition sites in the lee sides of ridges and mesas, <8,700 ft..... .....*Big sagebrush-sparse Utah serviceberry-rabbitbrush-sparse snowberry-Indian ricegrass* (CT SA1F)
655 Serviceberry usually absent, rarely <1% cover. Snowberry absent or <2% cover..... (656)

656 [655] Bitterbrush >0.5% cover, often codominant with big sagebrush .....(657)
656 Bitterbrush absent or <0.5% cover..... (659)

657 [656] Arizona fescue present and >0.5% cover ....*Big sagebrush-bitterbrush-muttongrass-pine needlegrass* (CT SS6F)
657 Arizona fescue absent ..... (658)

658 [657] Cheatgrass absent or <1% cover.....*Big sagebrush-sparse bitterbrush* (CT SS2G)
658 Cheatgrass >20% cover.....(Unassigned CT in SS2)

659 [656] Black sagebrush >15% cover .....(Unassigned CT in SB1)
659 Black sagebrush <15% cover .....*Big sagebrush-pine needlegrass* (CT SS1E)

660 [654] Arizona fescue present and >1% cover. Coarser (average 67%), shallower (average 50 cm) soils, with more gravel on surface (average 56% cover) ....→ SB3. BLACK SAGEBRUSH/ARIZONA FESCUE–COARSE HEAVY CLAY SOILS–WINDWARD (661)
660 Arizona fescue absent. Somewhat less coarse (average 46%), deeper (average 62 cm) soils, with less gravel on surface (average 38% cover) ....→ SB2. BLACK SAGEBRUSH/MUTTONGRASS–COARSE HEAVY-CLAY SOILS–WINDWARD (663)

661 [660] Total graminoid cover >30%. Arizona fescue >10% cover. Muttongrass always present, 3-20% cover .....*Black sagebrush-Arizona fescue-muttongrass* (CT SB3A)
661 Total graminoid cover <30%. Arizona fescue <10% cover. Muttongrass usually absent, rarely up to 5% cover ..... (662)

662 [661] Total graminoid cover 20-30%. Sandberg bluegrass present, 5-15% cover ....*Black sagebrush-Sandberg bluegrass-Arizona fescue* (CT SB3B)
662 Total graminoid cover <20%. Sandberg bluegrass absent or <10% cover..... .....*Black sagebrush-big sagebrush-sparse* (CT SB3C)

663 [660] Cheatgrass prominent, >40% cover. Total graminoid cover >60% ....*Cheatgrass-black sagebrush* (CT SB2D)
663 Cheatgrass usually absent, sometimes <10%. Total graminoid cover <60%..... (664)

664 [663] Total graminoid cover 45-60% .....*Black sagebrush-pine needlegrass* (CT SB2A)
664 Total graminoid cover <45%..... (665)

665 [664] Total graminoid cover 30-45%*Black sagebrush-bottlebrush squirreltail-pine needlegrass* (CT SB2B)
665 Total graminoid cover <30% ..... (666)

666 [665] Total graminoid cover 20-30% .....*Black sagebrush-sparse* (CT SB2C)
666 Total graminoid cover <20% .....(667)

667 [666] Total graminoid cover 10-20% ... *Black sagebrush-big sagebrush-bottlebrush squirreltail* (CT SB2E)
667 Total graminoid cover <10%..... *Black sagebrush-rabbitbrush-sparse* (CT SB2F)

668 [653] Shrubby cinquefoil >5% cover ..... (669)
668 Shrubby cinquefoil usually absent, rarely <3% cover ..... (670)

669 [668] Exposed slopes, often windward, usually outside deep rainshadow climates .....
.....*Low sagebrush* (CT SU4E)
669 Bottoms of parks and meadows in deep rainshadow climates.....
..... *Kentucky bluegrass-shrubby cinquefoil* (CT RI6A)

670 [668] Mountain sagebrush >10% cover, often >20%..... (671)
670 Mountain sagebrush usually absent, sometimes <10% cover..... (683)

671 [670] Saskatoon serviceberry >25%..... *Serviceberry-snowberry-Thurber fescue-elk sedge* (CT SA6A)
671 Saskatoon serviceberry usually absent, rarely <1% cover .....(672)

672 [671, 708, 720] Deeper (average 85 cm), coarser (average 32%), loamier soils, Argic Cryoborolls.....
.....→ SU1. MOUNTAIN SAGEBRUSH/THURBER-ARIZONA FESCUES–DEEP COLD CLAY SOILS (673)
672 Somewhat shallower (average 73 cm), less coarse (average 19%), clayier soils, Smectitic Cryoboralfs.....
.....*Mountain sagebrush-low sagebrush* (CT SU5A)

673 [672] Bitterbrush present, 0.5-45% cover, often >5%.....(674)
673 Bitterbrush absent .....(675)

674 [673] Total graminoid cover >90%. Bitterbrush <30% cover, subordinate to mountain sagebrush.....
..... *Mountain sagebrush-bitterbrush-Thurber fescue* (CT SU1B)
674 Total graminoid cover <90%. Bitterbrush 25-50% cover, codominant with mountain sagebrush.....
..... *Mountain sagebrush-bitterbrush* (CT SU1F)

675 [672] Total graminoid cover >90%.....(676)
675 Total graminoid cover <90% .....(679)

676 [675] Parry oatgrass present, T-95% cover .....(677)
676 Parry oatgrass absent.....(678)

677 [676] Bitterbrush present, 0.5-30% cover..... *Mountain sagebrush-bitterbrush-Thurber fescue* (CT SU1B)
677 Bitterbrush absent .....*Mountain sagebrush-Parry oatgrass* (CT SU1A)

678 [676] Thurber fescue >35% cover..... *Mountain sagebrush-Thurber fescue* (CT SU1C)
678 Thurber fescue <35% cover ..... *Mountain sagebrush-sparse Thurber fescue* (CT SU1D)

679 [675] Parry oatgrass present, T-40% cover ..... (680)
679 Parry oatgrass absent.....(681)

680 [679] Bitterbrush >15% cover, codominant with sagebrush..... *Mountain sagebrush-bitterbrush* (CT SU1F)
680 Bitterbrush usually absent .....*Mountain sagebrush-Parry oatgrass-Thurber fescue* (CT SU1E)

681 [679] Bitterbrush >15% cover, codominant with sagebrush..... *Mountain sagebrush-bitterbrush* (CT SU1F)
681 Bitterbrush usually absent..... (682)

682 [681] Total graminoid cover 70-90%.....*Mountain sagebrush-rabbitbrush-forbs* (CT SU1G)
682 Total graminoid cover <70% .....*Mountain sagebrush-sparse Thurber fescue-forbs* (CT SU1H)

683 [670] Soils Argic Cryoborolls, coarser (average 54%) soils.....
.....*Thurber fescue-low sagebrush-blunt sedge-aspen peavine* (CT SU6A)
683 Soils Smectitic Cryoboralfs, somewhat less coarse (average 33%) .....
.....→ SU4. LOW SAGEBRUSH/IDAHO FESCUE–HEAVY CLAY SOILS (684)

684 [683] Parry oatgrass >30% cover ..... *Parry oatgrass-low sagebrush-Idaho fescue-desert sandwort* (CT SU4A)
684 Parry oatgrass usually absent, sometimes <30% cover ..... (685)

685 [684] Thurber fescue >10% cover. Total graminoid cover 65-110% ..... (686)
685 Thurber fescue usually absent, rarely <5% cover. Total graminoid cover 30-70% ..... (687)

686 [685] Thurber fescue >30% cover. Junegrass absent or <2% cover *Thurber fescue-low sagebrush* (CT SU4B)
686 Thurber fescue 10-30% cover. Junegrass >5% cover, often >10% ..... *Low sagebrush-Idaho fescue-Thurber fescue-sulfurflower* (CT SU4C)

687 [685] Parry oatgrass 10-30% cover ..... *Low sagebrush-Parry oatgrass-prairie junegrass* (CT SU4D)
687 Parry oatgrass absent or <5% cover ..... *Low sagebrush* (CT SU4E)

688 [652] Big sagebrush dominant, usually >20% cover (sometimes absent in burn patches, but obvious in adjacent patches or sites). Thurber fescue and Idaho fescue usually absent, occasionally <5% cover. Lower to middle elevations, 8,000-10,200 ft. Soils with Mesic to Frigid temperatures. Ponderosa pine, Douglas-fir, aspen, lodgepole pine, or Rocky Mountain juniper in nearby stands at the same elevation ..... (689)
688 Mountain sagebrush or silver sagebrush dominant, usually >20% cover. Thurber fescue or Idaho fescue often present, up to 90% cover. Upper elevations, 9,400-10,600 ft. Soils with Cryic temperatures. Subalpine fir, Engelmann spruce, aspen, or lodgepole pine in nearby stands at the same elevation .....(697)

689 [688] Wyoming sagebrush always present, usually >10% cover. If Wyoming sagebrush is 1-10% cover, then other species of sagebrush are absent, and Douglas rabbitbrush is >20% cover. Indian ricegrass is often present in small quantities, T-20% cover. Arizona fescue, mountain muhly, Parry oatgrass, and Thurber fescue are all absent. Aridic soils in partial rainshadows near the lowest elevations of the Basin, southerly somewhat exposed slopes, 8,000-8,900 ft, never in the lees of ridges or mesas ..... (690)
689 Wyoming sagebrush usually absent. Arizona fescue, mountain muhly, Thurber fescue, or Parry oatgrass are sometimes present. Indian ricegrass is usually absent, sometimes <3% cover. Soils usually not Aridic, but sometimes in partial rainshadows. Slopes various, at somewhat higher (middle) elevations, 8,600-10,200 ft .....(697)

690 [689] Black sagebrush absent or <15% cover .....(691)
690 Black sagebrush >15% cover ..... (Unassigned CT in SB1)

691 [690] Soils Eutroboralfs, somewhat coarser (average 46%) ..... (654)
691 Soils Aridisols or Aridic Mollisols, somewhat less coarse (average 34%) ..... → SB1. WYOMING SAGEBRUSH/INDIAN RICEGRASS–ARIDIC SOILS (692)

692 [691, 723] Total graminoid cover >60%. Needle-and-thread usually >15% cover ..... (693)
692 Total graminoid cover <60%. Needle-and-thread absent to <15% cover ..... (694)

693 [692] Total shrub cover >40% ..... *Wyoming sagebrush-rabbitbrush-muttongrass-pine needlegrass* (CT SB1B)
693 Total shrub cover <40% ..... *Needle-and-thread-blue grama-Wyoming sagebrush* (CT SB1A)

694 [692] Total graminoid cover 40-60%. Wyoming sagebrush 10-30% cover ..... *Wyoming sagebrush-muttongrass-needle-and-thread* (CT SB1C)
694 Total graminoid cover <40%. Wyoming sagebrush 0-40% cover ..... (695)

695 [694] Total graminoid cover 30-40% ..... *Wyoming sagebrush-sparse Indian ricegrass* (CT SB1D)
695 Total graminoid cover <30% ..... (696)

696 [695] Total graminoid cover 20-30% ..... *Wyoming sagebrush-Hood's phlox* (CT SB1E)
696 Total graminoid cover <20% ..... *Wyoming sagebrush-sparse* (CT SB1F)

697 [688, 689] Rocky Mountain juniper >20% cover .....(401)
697 Rocky Mountain juniper usually absent, rarely <5% cover ..... (698)

698 [697] Ponderosa pine, Douglas-fir, Engelmann spruce, subalpine fir, lodgepole pine, bristlecone pine, cottonwood, or aspen >1% cover ..... (404)
698 Trees usually absent, rarely one will be <1% cover over the whole site. Sometimes a tree will occur in small patches through the site, but is not characteristic of the site as a whole ..... (699)

699 [698] Thurber fescue >10% cover or Idaho fescue >2% cover..... (700)
699 Thurber fescue absent or <10% cover. Idaho fescue absent or <2% cover ..... (719)

700 [699] Silver sagebrush >15% cover, usually dominant. Soils from alluvium or "Slope alluvium,">8,900 ft... ..... (701)
700 Silver sagebrush absent or <15% cover, if it is present then it is dominated by other shrubs..... (704)

701 [700] Geyer willow present, T-25% cover. Shrubby cinquefoil >5% cover. Quackgrass or Baltic rush >10% cover Lower elevations, 7,800-9,700 ft. Soils from geologically recent alluvium ....*Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)
701 Geyer willow absent. Shrubby cinquefoil absent or <1% cover. Quackgrass and Baltic rush absent or <5% cover. Higher elevations, 8,900-10,400 ft. Soils from Pleistocene alluvium ....→ SU7. SILVER SAGEBRUSH/FESCUE–COLD DARK SOILS (702)

702 [701] Parry oatgrass >30% cover..... .....*Parry oatgrass-silver sagebrush-Kentucky bluegrass-desert sandwort* (CT SU7A)
702 Parry oatgrass usually absent, sometimes <15% cover .....(703)

703 [702] Thurber fescue dominant, >50% cover. Idaho fescue 0-10% cover .... *Thurber fescue-silver sagebrush-shrubby cinquefoil* (CT SU7B)
703 Thurber fescue <35% cover, rarely absent. Idaho fescue 0-70% cover..*Silver sagebrush-yarrow* (CT SU7C)

704 [700] Big sagebrush and mountain sagebrush both absent or <1% cover.....(801)
704 Big sagebrush or mountain sagebrush present and >1% cover, often >10% cover.....(705)

705 [704] Geyer willow present, T-25% cover. Shrubby cinquefoil >5% cover. Quackgrass or Baltic rush >10% cover. Lower elevations, 7,800-9,700 ft..... .....*Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)
705 Geyer willow absent ..... (706)

706 [705] Low sagebrush >15% cover .....(707)
706 Low sagebrush absent or <15% cover..... (709)

707 [706] Shrubby cinquefoil prominent, >10% cover ..... *Kentucky bluegrass-shrubby cinquefoil* (CT RI6A)
707 Shrubby cinquefoil usually absent..... (708)

708 [707] Parry oatgrass usually present, 0-75% cover. Less coarse (average 19%) soils, Cryoboralfs ....*Mountain sagebrush-low sagebrush* (CT SU5A)
708 Parry oatgrass absent to <2% cover. Coarser (average 42%) soils, Cryoborolls.....(672)

709 [706] Thurber fescue usually absent, sometimes <0.05% cover. Idaho fescue always present, >2%. Parry oatgrass usually absent. Shallower soils (average 62 cm deep), from glacial sources..... .....→ SU3. MOUNTAIN SAGEBRUSH/IDAHO FESCUE–SANDY SOILS–GLACIAL (710)
709 Either Thurber fescue >0.5% cover, or Parry oatgrass >10% cover. Idaho fescue is sometimes present, sometimes absent. Deeper soils (average 85 cm), rarely from glacial sources ..... (713)

710 [709] Total graminoid cover >85%. Slimstem muhly >20% cover, often >25% ....*Mountain sagebrush-Idaho fescue-slimstem muhly-prairie smoke* (CT SU3A)
710 Total graminoid cover <85%. Slimstem muhly <25% cover, often <20% .....(711)

711 [710] Total graminoid cover 70-85%..... *Idaho fescue-mountain sagebrush-slimstem muhly* (CT SU3B)
711 Total graminoid cover <70% ..... (712)

712 [711] Total graminoid cover 50-70% ....*Mountain sagebrush-blunt sedge-Idaho fescue-slimstem muhly-horse cinquefoil* (CT SU3C)
712 Total graminoid cover <50% .....*Mountain sagebrush-Idaho fescue-desert sandwort* (CT SU3D)

713 [709] Saskatoon serviceberry or maple present, T-70% cover ..... (635)
713 Saskatoon serviceberry and maple both absent ..... (714)

714 [713] Arizona fescue always present, >3% cover. Mountain muhly sometimes present, 0-30% cover ....(764)
714 Arizona fescue absent or uncommonly <3% cover. Mountain muhly usually absent, rarely up to 1% cover... ..... → SU2. MOUNTAIN SAGEBRUSH/THURBER-IDAHO FESCUES–DEEP LOAMY CLAY SOILS (715)

715 [714] Thurber fescue >30% cover ..... *Parry oatgrass-Thurber fescue-mountain sagebrush-Idaho fescue* (CT SU2A)
715 Thurber fescue <30% cover ..... (716)

716 [715] Parry oatgrass >10% cover, often >30% ..... (717)
716 Parry oatgrass absent or rarely <5% cover ..... (718)

717 [716] Thurber fescue present, >5% cover. Idaho fescue >5% cover, often >10% ..... *Parry oatgrass-Idaho fescue-mountain sagebrush* (CT SU2B)
717 Thurber fescue absent or <5% cover. Idaho fescue <10% cover ..... *Parry oatgrass-mountain sagebrush-muttongrass-sparse Idaho fescue* (CT SU2C)

718 [716] Total graminoid cover >60% ..... *Mountain sagebrush-yarrow-sparse Thurber fescue-sparse Idaho fescue* (CT SU2D)
718 Total graminoid cover <60% . *Mountain sagebrush-sparse Thurber fescue-sparse Idaho fescue* (CT SU2E)

719 [699] Bitterbrush >0.5% cover, often >3% ..... (720)
719 Bitterbrush absent ..... (745)

720 [719] Either Kentucky bluegrass >10% cover or Thurber fescue >5% cover. Mountain big sagebrush >15% cover. Deep Argic Cryoborolls, 8,500-10,300 ft ..... (672)
720 Kentucky bluegrass usually absent, very rarely <1% cover. Thurber fescue absent ..... (721)

721 [720] Black sagebrush >10% cover. Soils are coarse Eutroboralfs, 8,000-9,200 ft ..... (722)
721 Black sagebrush absent or <5% cover. Soils are usually Mollisols ..... (723)

722 [721] Total graminoid cover >20% ..... *Black sagebrush-sparse* (CT SB2C)
722 Total graminoid cover <20% ..... *Black sagebrush-big sagebrush-bottlebrush squirreltail* (CT SB2E)

723 [721] Indian ricegrass present and >0.5% cover. Aridic soils, lower elevations, 8,000-8,900 ft ..... (692)
723 Indian ricegrass usually absent, rarely <0.5% cover. Soils not Aridic ..... (724)

724 [723] One of the serviceberry species present and >0.05% cover ..... (725)
724 Serviceberry absent ..... (729)

725 [724] Mountain-mahogany >10% cover ..... (612)
725 Mountain-mahogany usually absent, sometimes <5% cover ..... (726)

726 [725] Green needlegrass or spike-fescue present and >1% cover ..... (627)
726 Green needlegrass and spike fescue both absent, or rarely one of them <1% cover ..... (727)

727 [726] Oak >10% cover ..... (618)
727 Oak usually absent, sometimes <5% cover ..... (728)

728 [727] Elk sedge present and >1% cover, often >10% ..... (648)
728 Elk sedge usually absent, sometimes <1% cover ..... (640)

729 [724] Oak >10% cover ..... (618)
729 Oak usually absent, sometimes <5% cover ..... (730)

730 [729] Elk sedge present and >1% cover, often >10% ..... (648)
730 Elk sedge absent ..... (731)

731 [730] Arizona fescue present and >5% cover. If Arizona fescue is absent or <5%, then either Parry oatgrass or mountain muhly present and >5% cover. Moderate rainshadow to deep rainshadow climates, rarely northerly (NW-NE), 8,050-10,120 ft.....(732)
731 Arizona fescue and Parry oatgrass both absent (<1% cover in any case). Mountain muhly usually absent. Usually outside rainshadow climates, never northerly, 7,980-10,160 ft ....→ SS2. BITTERBRUSH-SAGEBRUSH/NEEDLEGRASS–DARK COARSE SOILS (733)

732 [731] Parry oatgrass present and >1% cover (always >0.5%). Aspects usually northerly, 8,700-8,960 ft, 8-23% slope. Mollic (dark surface) soil thickness average 14 cm (5.5 in) ....→ SS5. BITTERBRUSH-SAGEBRUSH/OATGRASS-ARIZONA FESCUE–LIGHT-COLORED SOILS–NORTHERLY (739)
732 Parry oatgrass always absent. Aspects rarely northerly, 8,050-9,600 ft, 3-50% slope. Mollic (dark surface) soil thickness average 23 cm (9 in)..... → SS6. BITTERBRUSH-SAGEBRUSH/ARIZONA FESCUE–DARK SOILS (740)

733 [731] Bitterbrush cover usually >20% (always >15%), big sagebrush cover usually 15-30%; total graminoid cover >50% .....*Bitterbrush-big sagebrush-muttongrass-grasses* (CT SS2A)
733 Either bitterbrush cover <20% or big sagebrush cover >30%; total graminoid cover <70%.....(734)

734 [733] Bitterbrush cover <10%.....(735)
734 Bitterbrush cover >10% .....(737)

735 [734] Total graminoid cover >50%, bare surface >10%..... .....*Big sagebrush-grasses-sparse bitterbrush* (CT SS2E)
735 Total graminoid cover <50%, bare surface <10% .....(736)

736 [735] Total graminoid cover usually <20% (always <25%), vegetation sparse (total live cover <75%)..... .....*Big sagebrush-sparse bitterbrush* (CT SS2G)
736 Total graminoid cover usually >25% (always >20%), vegetation denser (total live cover usually >80%, always >65%) .....*Big sagebrush-grasses-sparse snowberry-sparse bitterbrush* (CT SS2F)

737 [734] Total graminoid cover <30%..... *Big sagebrush-bitterbrush-muttongrass* (CT SS2D)
737 Total graminoid cover >30% .....(738)

738 [737] Bitterbrush cover >20% .....*Bitterbrush-big sagebrush-muttongrass* (CT SS2B)
738 Bitterbrush cover <20%.....*Big sagebrush-bitterbrush-grasses* (CT SS2C)

739 [732] Total graminoid cover >75% .... *Oatgrass-pussytoes-junegrass-big sagebrush-bitterbrush* (CT SS5A)
739 Total graminoid cover <70% .....*Big sagebrush-Arizona fescue-oatgrass-junegrass* (CT SS5B)

740 [732] Total graminoid cover >90%..... *Big sagebrush-grasses-bitterbrush* (CT SS6A)
740 Total graminoid cover <80% ..... (741)

741 [740] Total graminoid cover 75-80% ..... *Bitterbrush-big sagebrush-grasses* (CT SS6B)
741 Total graminoid cover <75%.....(742)

742 [741] Total graminoid cover 65-75% .....*Big sagebrush-bitterbrush-Arizona fescue* (CT SS6C)
742 Total graminoid cover <65% .....(743)

743 [742] Total graminoid cover 50-65%..... *Bitterbrush-big sagebrush-muttongrass* (CT SS6D)
743 Total graminoid cover <50% .....(744)

744 [743] Total graminoid cover >45%; if not, then bitterbrush cover >20% .... *Bitterbrush-big sagebrush-muttongrass-Arizona fescue* (CT SS6E)
744 Total graminoid cover <40%; if not, then bitterbrush cover <15%..... .....*Big sagebrush-bitterbrush-muttongrass-pine needlegrass* (CT SS6F)

745 [719] Aspen present and >3% cover .....(219)
745 Aspen usually absent, rarely <1% cover.....(746)

746 [745] One of the serviceberry species or maple present and >0.05% cover .....(747)
746 Serviceberry and maple absent.....(753)

747 [746] Mountain-mahogany >10% cover ..... (612)
747 Mountain-mahogany usually absent, rarely <5% cover ..... (748)

748 [747] Oak >10% cover ..... (618)
748 Oak usually absent, rarely <5% cover ..... (749)

749 [748] Green needlegrass or spike-fescue present and >1% cover ..... (627)
749 Green needlegrass and spike-fescue usually absent, rarely <1% cover ..... (750)

750 [749] Elk sedge present and >1% cover ..... (751)
750 Elk sedge usually absent, rarely <1% cover ..... (752)

751 [750] Thurber fescue >3% cover, often >10% ..... (635)
751 Thurber fescue usually absent, sometimes <3% cover ..... (648)

752 [750] Kentucky bluegrass >30% cover ..... *Kentucky bluegrass-sagebrush-cinquefoil* (CT RI3E)
752 Kentucky bluegrass absent ..... (640)

753 [746] Kentucky bluegrass prominent, >20% cover ..... (754)
753 Kentucky bluegrass absent or <10% cover ..... (756)

754 [753] Shrubby cinquefoil or bitterbrush prominent, >10% cover ..... (755)
754 Shrubby cinquefoil and bitterbrush usually absent, occasionally one of then <1% cover ..... (756)

755 [754] Elk sedge or Thurber fescue >20% cover. Bottoms of parks and swales in deep rainshadow climates.. ..... *Kentucky bluegrass-shrubby cinquefoil* (CT RI6A)
755 Elk sedge and Thurber fescue absent ..... *Kentucky bluegrass-sagebrush-cinquefoil* (CT RI3E)

756 [753, 754] Bottomland communities. Landforms are draws, floodplains, or valleys. Slope positions are bottoms. Slope shapes are concave or U-shaped ..... (757)
756 Uplands. Landforms are slopes, mesas, mountains, ridges, benches, soil creep slopes, or slump-earthflows. Slope positions are toeslopes, footslopes, backslopes, shoulders, or summits. Slope shapes are linear or convex in at least one direction (horizontally or vertically) ..... (758)

757 [756] Cottonwood present in adjacent sites above or below in the same drainage. Soils water-layered (Fluvaquentic). Elevations usually <9,000 ft ..... *Big sagebrush-quackgrass-Baltic rush-Kentucky bluegrass-dandelion* (CT FR1G)
757 Cottonwood absent in the vicinity. Soils not water-layered (Fluvaquentic). Elevations usually >9,000 ft ..... *Big sagebrush-Kentucky bluegrass-yarrow-dandelion* (CT RI1H)

758 [756] Arizona fescue (fear2) present and >5% cover. If Arizona fescue is absent or <5%, then either Parry oatgrass or mountain muhly present and >5% cover. Moderate rainshadow to deep rainshadow climates, rarely northerly (NW-NE), 8,050-10,120 ft ..... (759)
758 Arizona fescue and Parry oatgrass both absent (<1% cover in any case). Mountain muhly usually absent. Usually outside rainshadow climates, never northerly, 7,980-10,160 ft ..... → SS1. SAGEBRUSH/MUTTONGRASS–DARK CLAY SOILS (760)

759 [758] Parry oatgrass present, though sometimes sparse ..... → SS3. BIG SAGEBRUSH/OATGRASS-ARIZONA FESCUE–DARK CLAY SOILS (764)
759 Parry oatgrass always absent ..... → SS4. BIG SAGEBRUSH/ARIZONA FESCUE–DARK SOILS (767)

760 [758] At least one graminoid species with cover greater than sagebrush; total graminoid cover >65%; big sagebrush cover usually <35% ..... *Grasses-big sagebrush-rabbitbrush* (CT SS1A)
760 Big sagebrush usually has greater cover than any graminoid species; total graminoid cover usually <65%; big sagebrush cover variable ..... (761)

761 [760] Total graminoid cover <20% ..... *Big sagebrush-pine needlegrass* (CT SS1E)
761 Total graminoid cover >30% ..... (762)

762 [761] Total graminoid cover <40% ..... (763)
762 Total graminoid cover >40% ..... *Big sagebrush-grasses* (CT SS1C)

763 [762] Pine needlegrass conspicuous (average >5% cover, always present); one or more individual sedge species with >10% cover; bare surface >25% .....*Big sagebrush-pine needlegrass-grasses* (CT SS1D)
763 Pine needlegrass inconspicuous (<5% cover) or absent; one or more individual grass species with >10% cover; bare surface <25%.....*Forbs-big sagebrush-sedges-rabbitbrush* (CT SS1B)

764 [714, 759] Total graminoid cover >95%. Parry oatgrass prominent, 10-75% cover, often >35%. Surface coarse fragments <10% cover, bare soil <15% cover. Sedges (*Carex*) prominent, 10-50% cover .... *Parry oatgrass-big sagebrush-Arizona fescue-junegrass* (CT SS3A)
764 Total graminoid cover <95%. Parry oatgrass usually present but not prominent, always <35%, usually <15% cover. Surface coarse fragments usually >10%, bare soil usually >10% cover. Sedges usually aggregate <35% cover .....(765)

765 [764] Total graminoid cover 80-95%. Parry oatgrass and Arizona fescue prominent, total of the two usually >20%. Total sedge cover usually >25%, always >10%. Surface coarse fragments <20% cover..... ..... *Big sagebrush-Arizona fescue-Parry oatgrass* (CT SS3B)
765 Total graminoid cover <80%. Parry oatgrass or Arizona fescue prominent or not, usually not both. Total sedge cover usually 0-10%, occasionally >15%. Surface coarse fragments usually >20% cover, always >17% .....(766)

766 [765] Total graminoid cover 60-80%, Arizona fescue prominent, 10-50% cover, Parry oatgrass present but <10% cover. Mountain muhly or muttongrass >10%. Surface coarse fragments 20-30% ....*Arizona fescue-big sagebrush-Parry oatgrass* (CT SS3C)
766 Total graminoid cover 40-60%. Sedge cover usually <5%. Surface coarse fragments 15-50% ....*Big sagebrush-Arizona fescue-junegrass* (CT SS3D)

767 [759] Total graminoid cover usually >85% (always >80%), big sagebrush cover 20-25%, Arizona fescue cover >35%.....*Arizona fescue-big sagebrush-muttongrass* (CT SS4A)
767 Total graminoid cover usually <80% (always <85%), big sagebrush cover usually either >25% or <20%, Arizona fescue usually <35% .....(768)

768 [767] Total graminoid cover >55% (55-85%), big sagebrush cover sometimes 20-25%, Arizona fescue cover sometimes >30%.....(769)
768 Total graminoid cover <55% (20-55%), big sagebrush cover never 20-25%, Arizona fescue cover never >30% .....(770)

769 [768] Total graminoid cover >65% (65-85%). Junegrass sometimes not present, usually <10% cover in any case.....*Big sagebrush-Arizona fescue* (CT SS4B)
769 Total graminoid cover <65% (55-65%). Junegrass always present, always >10% cover..... ..... *Big sagebrush-junegrass-Arizona fescue* (CT SS4C)

770 [768] Total graminoid cover <35%.....*Big sagebrush-muttongrass* (CT SS4F)
770 Total graminoid cover >40% ..... (771)

771 [770] Arizona fescue cover >10%.....*Big sagebrush-Arizona fescue-junegrass* (CT SS4D)
771 Arizona fescue cover <10% ..... *Big sagebrush-black sagebrush-muttongrass-Arizona fescue* (CT SS4E)

772 [604] Dominated by shrubby cinquefoil, >10% cover, and the leading shrub in cover.....(774)
772 Shrubby cinquefoil absent or <10% cover, or else some other shrub is the leading shrub in cover.....(773)

773 [772] Dominated by red-osier dogwood, >30% cover. Openings in spruce riparian forest ..... (230)
773 Dominated by some other shrub species. Site usually not close to riparian.....(774)

774 [772, 773] One of these medium to short shrubs the leading shrub, >2% cover (usually <10%): winterfat, snakeweed, horsebrush, Douglas rabbitbrush, green rabbitbrush, common juniper, Parry rabbitbrush, rubber rabbitbrush, dwarf rabbitbrush, or snowberry..... (829)
774 The shrubs listed absent or dominated by some other shrub or tree.....(775)

775 [774] Dominated by ocean-spray, shrubby cinquefoil, raspberry, common juniper, skunkbrush, or wax currant. Rocky sites, convex rock outcrops or rockslides, with sparse vegetation below the shrub dominant .....*Tall shrublands–Extremely rocky* (CT SA7A)
775 Without the above combination of characteristics .....(776)

776 [775] Rocky sites, convex rock outcrops or rockslides, with sparse vegetation besides shrubby cinquefoil. No understory species >10% cover .....*Tall shrublands–Extremely rocky* (CT SA7A)
776 Sites not rocky, or some understory species >10% cover .....(1)

KEY G. GRASSLANDS

Included in this key are grass-dominated stands seral to other types.

801 [13, 705] Dominated by purple pinegrass, >20% cover, and alpine fescue. Exposed convex, rocky ridges, never riparian, 10,500-12,500 ft, sometimes Subalpine .....*Purple pinegrass-sparse alpine fescue-sparse tufted hairgrass* (CT GA10A)
801 Purple pinegrass usually absent, sometimes present and <5% cover. Various landforms, sometimes convex, rocky ridges .....(802)

802 [801] Timber oatgrass >5% cover. Shrubs all <5% cover, clearly subordinate to timber oatgrass. Exposed, gravelly, convex ridges, never riparian, 10,500-12,000 ft .....*Timber oatgrass-tufted hairgrass-sparse* (CT GA09A)
802 Timber oatgrass usually absent, sometimes up to 5% cover but then clearly subordinate to other graminoids .....(803)

803 [802] Dominated by water sedge, beaked sedge, or tufted hairgrass. Middle Subalpine and higher, >9,500 ft. Soils are Cryaquolls or Histosols .....(804)
803 Water sedge, beaked sedge, and tufted hairgrass usually absent, sometimes conspicuous but dominated by Kentucky bluegrass, timothy, or Baltic rush. Soils are never Cryaquolls or Histosols ..... (810)

804 [803] Planeleaf willow present, >3% cover .....*Sedges-sparse planeleaf willow-yarrow-Baltic rush-dandelion* (CT RI4E)
804 Planeleaf willow absent or sometimes <1% cover, usually only on the edges of the site ..... (805)

805 [804] Quackgrass, Baltic rush, Kentucky bluegrass, or little barley >10% cover .....*Baltic rush-dandelion-yarrow-sparse willows* (CT RI1F)
805 Quackgrass, Baltic rush, Kentucky bluegrass, and little barley all absent or <5% .....→ RI9. SEDGE WETLAND–DEEP COLD GLEYED SOILS–CONCAVE WATER BOWLS (806)

806 [805] Water sedge >55% cover, usually >60%. Tufted hairgrass usually present, 0-45% cover. Total graminoid cover >115% ..... *Water sedge-wet sedges and forbs* (CT RI9A)
806 Water sedge sometimes absent, always <60% cover, usually <45%. Tufted hairgrass usually absent or <15% cover, sometimes up to 95% cover. Total graminoid cover <115% ..... (807)

807 [806] Beaked sedge dominant, >75% cover. Water sedge usually present in small quantities. All other species <5% cover each .....*Beaked sedge-water sedge* (CT RI9B)
807 Beaked sedge absent to <5% cover .....(808)

808 [807] Teachers' sedge prominent, >15% cover. Total graminoid cover 45-90% .....*Teachers' sedge-water sedge-sparse planeleaf willow* (CT RI9D)
808 Teachers' sedge absent or very minor. Total graminoid cover either <45% or >90% .....(809)

809 [808] Total graminoid cover <45% ..... *Water sedge-tufted hairgrass-annual bluegrass-moist forbs* (CT RI9E)
809 Total graminoid cover >90% .....*Tufted hairgrass-reedgrass-water sedge* (CT RI9C)

810 [803] At least one shrub species >10% cover .....(601)
810 Shrubs absent, or sometimes a shrub species <10% cover. Any shrub species present has cover <½ of a grass species .....(811)

811 [810] Dominated by the grass bluejoint reedgrass or the wet forbs arrowleaf groundsel, mountain bluebells, or bittercress; one of these >60% cover. Springs and wet patches within fir-spruce riparian forest ..... *Wet forbs* (CT FR6C)
811 Dominated by other grasses or forbs ..... (812)

812 [811] Kentucky bluegrass, Baltic rush, common timothy, quackgrass, little barley, foxtail barley, or Bebb's sedge >10%, and one of these sometimes the leading graminoid. Thurber fescue absent ..... (813)
812 Baltic rush, common timothy, quackgrass, little barley, foxtail barley, and Bebb's sedge all absent or rarely <2%, none of these are the leading graminoid. Kentucky bluegrass present only if Thurber fescue is also present ..... (829)

813 [812] Cottonwood present in small quantities in the site or in nearby sites up or down the watercourse. Soils water-layered (Fluvaquentic) ..... (CT FR1G)
813 Cottonwood absent in the site or nearby. Soils not water-layered (Fluvaquentic) ..... (814)

814 [813] Soils are Clayey Endoaquolls. U-shaped or concave draw bottoms, swales, slumps, and earthflows, 7,800-9,700 ft ..... → RI1. YELLOW WILLOW–DEEP ALLUVIAL SOILS–CONCAVE BOTTOMS AND SWALES (815)
814 Soils are Silty or Loamy Cryaquolls, sometimes Histic. U-shaped or flat draws, slopes, floodplains, swales, benches, ravines, and slumps, 8,100-11,000 ft ..... → RI3. SERVICEBERRY WILLOW–DEEP ALLUVIAL SOILS–CONCAVE BOTTOMS AND SWALES (824)

815 [814] Yellow willow or Pacific willow prominent, >10% cover, often >20%. Total willow cover usually >45% ..... (816)
815 Yellow willow and Pacific willow absent to <10% cover ..... (818)

816 [815] Wet sedges (beaked and water), prominent and >10% cover. Total sedge cover >15%, often >25% ..... *Yellow willow-Geyer willow-other willows-beaked sedge* (CT RI1A)
816 Wet sedges usually absent or uncommonly <10%. Total sedge cover 0-40% ..... (817)

817 [816] Kentucky bluegrass prominent, >80%. Total graminoid cover >125% ..... *Geyer-serviceberry-yellow willows-alder-Kentucky bluegrass* (CT RI1E)
817 Kentucky bluegrass absent to <30%. Total graminoid cover <125% ..... *Yellow willow-other willows-moist to dry grasses and forbs* (CT RI1C)

818 [815] Total willow cover >15%. Geyer willow (sage2) prominent, >10% cover, usually >15% ..... (819)
818 Willows absent or total willow cover <15%. Geyer willow usually absent ..... (820)

819 [818] Beaked sedge prominent, >10% cover. Total sedge cover >10%, usually >20% ..... *Geyer willow-beaked sedge* (CT RI1B)
819 Beaked sedge absent or <10% cover. Total sedge cover usually <15%, rarely up to 30% ..... *Geyer willow-Kentucky bluegrass-dandelion* (CT RI1D)

820 [818] Willows (at least one species) present and >1% cover, and total willow cover 1-15% ..... *Baltic rush-dandelion-yarrow-sparse willows* (CT RI1F)
820 Willows usually absent or total willow cover <0.5% ..... (821)

821 [820] Shrubby cinquefoil dominant, >10% cover ..... *Shrubby cinquefoil-Baltic rush-Kentucky bluegrass-tufted hairgrass* (CT RI1G)
821 Shrubby cinquefoil absent or <10% cover ..... (822)

822 [821] Big sagebrush dominant, >10% cover ..... *Big sagebrush-Kentucky bluegrass-yarrow-dandelion* (CT RI1H)
822 Big sagebrush usually absent, sometimes up to 1% cover ..... (823)

823 [822] Kentucky bluegrass prominent, >10% cover, often >25%. Baltic rush prominent to absent, 0-90% cover. Dandelion often >15% cover ..... *Kentucky bluegrass-Baltic rush-dry grasses* (CT RI1J)
823 Kentucky bluegrass absent or <25% cover. Baltic rush always present, 5-40% cover. Dandelion always present, 0.5-30% cover ..... *Baltic rush-quackgrass-dandelion-yarrow-Kentucky bluegrass-iris* (CT RI1K)

824 [814] Serviceberry (mountain) willow dominant or codominant, >20% cover ..... (825)
824 Serviceberry willow usually absent, uncommonly <20% cover ..... (826)

825 [824] Beaked sedge prominent, >15% cover, often >20%. Shrubby cinquefoil minor, <6% cover ..... *Serviceberry willow-beaked sedge* (CT RI3A)
825 Beaked sedge usually absent, sometimes <10%. Shrubby cinquefoil 5-25% cover ..... *Serviceberry willow-shrubby cinquefoil-yarrow-dandelion* (CT RI3B)

826 [824] Dominated by Bebb willow or Geyer willow; total willow cover >10%, usually >40%. Silver sagebrush usually absent, rarely <1% cover. Shrubby cinquefoil always <15% cover, usually <10% ..... *Bebb-Geyer willows-shrubby cinquefoil-Baltic rush-dandelion-yarrow* (CT RI3C)
826 Dominated by shrubby cinquefoil, silver sagebrush, or herbaceous plants. Total willow cover ranges 0-20%, usually <15% ..... (827)

827 [826] Dominated by silver sagebrush, shrubby cinquefoil, mountain sagebrush, or big sagebrush; one of these always >10%, and the total of these >15% cover ..... (828)
827 Dominated by exotic, native, and increaser graminoids and forbs such as Kentucky bluegrass, silvertop sedge, quackgrass, muttongrass, and Baltic rush. Total shrub cover 0-5% ..... *Dandelion-Kentucky bluegrass-Baltic rush-moist sedges* (CT RI3F)

828 [827] Geyer willow always present and >0.5% cover. Total willow cover ranges 1-20%, usually >3%. Dominated by shrubby cinquefoil or silver sagebrush ..... *Shrubby cinquefoil-sparse Geyer willow-Kentucky bluegrass* (CT RI3D)
828 Geyer willow usually absent. Total willow cover usually zero, sometimes an occasional plant, <0.1% cover. Dominated by shrubby cinquefoil, silver sagebrush, or big sagebrush ..... *Kentucky bluegrass-sagebrush-cinquefoil* (CT RI3E)

829 [775, 812] Dominated by purple pinegrass, >20% cover, and alpine fescue. Exposed convex, rocky ridges, never riparian, 10,500-12,500 ft, Alpine or Subalpine ..... *Purple pinegrass-sparse alpine fescue*-sparse *tufted hairgrass* (CT GA10A)
829 Purple pinegrass usually absent, sometimes present and <5% cover. Various landforms, sometimes convex, rocky ridges ..... (830)

830 [829] Timber oatgrass >5% cover. Shrubs all <5% cover, clearly subordinate to timber oatgrass. Exposed, gravelly, convex ridges, never riparian, 10,500-12,000 ft, Alpine or Subalpine ..... *Timber oatgrass-tufted hairgrass-sparse* (CT GA09A)
830 Timber oatgrass usually absent, sometimes up to 5% cover but then clearly subordinate to other graminoids ..... (831)

831 [830] Thurber fescue >10% cover, Idaho fescue >2% cover, or slender wheatgrass >2% cover. Cryoborolls ..... (832)
831 Thurber fescue, Idaho fescue, and slender wheatgrass usually absent, rarely <1% each. Cryoborolls, Argiborolls, or Aridisols ..... (845)

832 [831] Idaho fescue always present, >4% cover. Thurber fescue usually absent, sometimes <2% cover. Soils barely Mollic (average 12 cm thick), shallow to Argillic horizon. Concave backslopes and footslopes ..... *Idaho fescue-sparse slender wheatgrass-forbs* (CT GA08A)
832 Thurber fescue usually present, 0-95% cover. Idaho fescue absent to abundant, 0-30% cover. Soils deep-Mollic (typically 20-50 cm thick), with or without an Argillic horizon ..... (833)

833 [832] Dominated by the medium to tall forbs osha, false-hellebore, mule's ears, nodding helianthella, or larkspur. Idaho fescue absent. Thurber fescue usually absent, sometimes <5% cover. Slender wheatgrass absent or abundant, 0-85% cover. Very deep Argic Cryoborolls. Linear to concave slumps and earthflows, 9,100-10,200 ft ..... → GA07. OSHA–VERY DEEP HEAVY-CLAY SOILS (834)
833 Usually dominated by Thurber fescue, Idaho fescue, or other graminoids. Osha usually absent ..... (835)

834 [833, 845] Osha conspicuous, >30% cover. Aspen peavine >15% cover ..... *Osha-helianthella-peavine-meadow-rue-slender wheatgrass* (CT GA07A)
834 Osha absent or <10% cover. Aspen peavine absent to <10% cover ..... *Mule's ears-false-hellebore-forbs* (CT GA07B)

835 [833] Arizona fescue present and >0.1% cover, often >5%. Idaho fescue usually absent; if Idaho fescue is present, then it is clearly subordinate to Arizona fescue. 9,200-10,900 ft ..... (836)
835 Arizona fescue usually absent; if Arizona fescue is present, then it is clearly subordinate to Idaho fescue. Idaho fescue sometimes absent, sometimes present, 0-75% cover ..... (840)

836 [835] Thurber fescue absent ..... *Muhly-Arizona fescue* (CT GA03C)
836 Thurber fescue present, 0.5-50% cover... → GA04. THURBER-ARIZONA FESCUES–DEEP COLD DARK SOILS (837)

837 [836] Parry oatgrass >35% cover ..... *Thurber fescue-Parry oatgrass-sedge-Arizona fescue* (CT GA04A)
837 Parry oatgrass absent or <35% cover ..... (838)

838 [837] Sedges sometimes absent, total sedge cover 0-10%. Parry oatgrass sometimes absent, 0-20% cover. Mountain muhly usually absent or <1% cover ..... *Thurber fescue-Arizona fescue* (CT GA04C)
838 Total sedge cover >10%. Parry oatgrass always present, 5-40% cover. Mountain muhly always present, T-25% cover ..... (839)

839 [838] Thurber fescue >40% cover. Arizona fescue <12% cover ..... *Thurber fescue-Parry oatgrass-Arizona fescue* (CT GA04B)
839 Thurber fescue <40% cover, often <20%. Arizona fescue >12% cover, often >15% ..... *Parry oatgrass-Arizona fescue-blunt sedge-Thurber fescue* (CT GA04D)

840 [835] Idaho fescue present and >2% cover. Total forb cover 10-115%, usually <100% ..... → GA05. THURBER-IDAHO FESCUES–DEEP COLD DARK SOILS (841)
840 Idaho fescue absent. Total forb cover 100-160% ..... → GA06. THURBER FESCUE/MOIST FORBS–DEEP DARK CLAY SOILS–LINEAR OR CONCAVE SLOPES (843)

841 [840] Parry oatgrass conspicuous to abundant, >5% cover, often >25%. Idaho fescue >5% cover, often >10% ..... *Parry oatgrass-Idaho fescue-Thurber fescue* (CT GA05A)
841 Parry oatgrass usually absent, rarely <1% cover. Idaho fescue absent or <15% cover ..... (842)

842 [841] Thurber fescue dominant, >25% cover, often >40%. Total graminoid cover >75% ..... *Thurber fescue-Idaho fescue* (CT GA05B)
842 Thurber fescue absent to minor, 0-10% cover. Total graminoid cover <75%, often <50% ..... *Sparse fescue-yarrow-dandelion-beauty cinquefoil* (CT GA05C)

843 [840] Total forb cover >80%, often >95%. Total live cover >200%. Thurber fescue 40-100% cover .... (844)
843 Total forb cover <80%, often <60%. Total live cover <200%. Thurber fescue >70% cover ..... *Thurber fescue-yarrow-forbs* (CT GA06C)

844 [843] Thurber fescue <50% cover .. *Thurber fescue-elk sedge-slender wheatgrass-dense forbs* (CT GA06B)
844 Thurber fescue >50% cover ..... *Thurber fescue-yarrow-vetch-valerian-meadow-rue* (CT GA06A)

845 [831] Dominated by the medium to tall forbs osha, false-hellebore, mule's ears, nodding helianthella, or larkspur. Arizona fescue and mountain muhly absent. Slender wheatgrass absent or abundant, 0-85% cover. Very deep Argic Cryoborolls with very little coarse on surface. Protected linear to concave slumps and earthflows, 9,100-10,200 ft ..... → GA07. OSHA–VERY DEEP HEAVY-CLAY SOILS (834)
845 Usually dominated by Arizona fescue, mountain muhly, or other graminoids. Osha and slender wheatgrass absent. Moderately deep to shallow Argiborolls or Aridisols with considerable gravel on surface Unprotected or partially protected upper slopes, often windward ..... (846)

846 [845] Arizona fescue present and >0.05% cover. Indian ricegrass usually absent, sometimes <0.5% cover. Soils very dry, Aridisols or Aridic Mollisols, derived from old Alluvium. 7,600-9,400 ft ..... (851)
846 Arizona fescue usually absent, rarely <0.05% cover. Indian ricegrass usually present in small amounts, 0-40% cover. Soils not very dry, Argiborolls, usually derived from colluvium or residuum. 8,400-10,500 ft.... ..... → GA01. INDIAN RICEGRASS/NEEDLE-AND-THREAD–ARIDIC SOILS–WINDSWEPT RIDGE SHOULDERS (847)

847 [846] Winterfat evident, >5% ..... (848)
847 Winterfat absent or <5%, usually <2% ..... (849)

848 [847] Western wheatgrass conspicuous, >15%. Total graminoid cover >85% ....*Needle-and-thread-winterfat-western wheatgrass* (CT GA01B)
848 Western wheatgrass absent or minor, usually <10%. Total graminoid cover <80% ....*Needle-and-thread-sparse* (CT GA01D)

849 [847] Needle-and-thread usually dominant, >10% cover, often >25%. Pine needlegrass absent or <10%. Snakeweed absent to <1% cover ..... (850)
849 Needle-and-thread minor, <10% cover. Pine needlegrass always present, >10% cover. Snakeweed present, >2% cover.....*Snakeweed-pine needlegrass-needle-and-thread-blue grama* (CT GA01C)

850 [849] Total graminoid cover >85%. Total live cover >95%..... .....*Needle-and-thread-sedge-Sandberg bluegrass-sparse Indian ricegrass* (CT GA01A)
850 Total graminoid cover <75%. Total live cover <95%.....*Needle-and-thread-sparse* (CT GA01D)

851 [846] Pingue or Sandberg bluegrass present. Mountain muhly absent. Slimstem muhly usually absent, occasionally up to 2% cover. Parry oatgrass absent. Slightly coarser (average 69%), deeper (average 64 cm) soils. Sites westerly, exposed to wind. Somewhat lower elevations, 8,400-9,600 ft ....→ GA02. ARIZONA FESCUE/PINGUE–SHALLOW–WINDWARD SLOPES (852)
851 Pingue or muttongrass present. Mountain muhly or slimstem muhly usually present, the sum of these two muhlies >5% cover. Parry oatgrass often present, 0-90% cover. Slightly less coarse (average 54%), shallower (average 54 cm) soils. Sites south-southeasterly, somewhat exposed to wind. Somewhat higher elevations, 8,700-10,500 ft.....→ GA03. ARIZONA FESCUE/MUHLY–DEEP–WINDWARD SLOPES (855)

852 [851] Arizona fescue >30% cover ..... *Arizona fescue-pingue-needle-and-thread* (CT GA02A)
852 Arizona fescue <30% cover..... (853)

853 [852] Arizona fescue 20-30% cover.....*Arizona fescue-junegrass-pingue* (CT GA02B)
853 Arizona fescue <20% cover..... (854)

854 [853] Dominated by blue grama or needle-and-thread. Arizona fescue T-10%. Total live cover >75%..... .....*Blue grama-sedge-needle-and-thread-sparse Arizona fescue* (CT GA02C)
854 Both blue grama and needle-and-thread secondary to Arizona fescue (5-25% cover). Total live cover <75% .....*Arizona fescue-sparse* (CT GA02D)

855 [851] Parry oatgrass conspicuous, >10% cover, often >25%..... ..... *Parry oatgrass-mountain muhly-Arizona fescue* (GA03A)
855 Parry oatgrass absent or <10% ..... (856)

856 [855] Total graminoid cover <30%. Arizona fescue <10%, usually <2% cover. Parry oatgrass absent..... .....*Muhly-sparse* (GA03D)
856 Total graminoid cover >30%. Arizona fescue usually >5% cover. Parry oatgrass usually present, 0-10% cover .....(857)

857 [856] Arizona fescue >13% cover, usually >20%.....*Arizona fescue-muhly* (GA03B)
857 Arizona fescue <13% cover, usually <10%.....*Muhly-Arizona fescue* (GA03C)

Plant Species Used in this Key

Also see Appendix A. If you want to know which plant species to learn first, this is the list!

Common Name	Species Name	Code*	Fam†	Usual Growth Form
alder, thinleaf	*Alnus incana* ssp. *tenuifolia*	ALINT	BET	Tall Shrub
arnica, longleaf	*Arnica longifolia*	ARLO6	AST	Forb
aspen	*Populus tremuloides*	POTR5	SAL	Tree, deciduous
avens, alpine	*Acomastylis rossii* ssp. *turbinata*	ACROT	ROS	Forb, matted (Alpine)
barley, foxtail	*Critesion pusillum*	CRJU2	POA	Grass, loose bunch
barley, little	*Critesion brachyantherum*	CRBR12	POA	Grass, loose bunch
bilberry, dwarf	*Vaccinium cespitosum*	VACE	ERI	Shrub, low
birch, bog	*Betula glandulosa*	BEGL	BET	Shrub, medium
birch, river	*Betula fontinalis*	BEFO2	BET	Tall shrub
bistort, American	*Bistorta bistortoides*	BIBI5	PLG	Forb (Alpine)
bitterbrush	*Purshia tridentata*	PUTR2	ROS	Shrub, medium
bittercress	*Cardamine cordifolia*	CACO6	BRA	Forb
bluebells, mountain	*Mertensia ciliata*	MECI3	BOR	Forb
bluegrass, annual	*Poa annua*	POAN	POA	Grass, annual
bluegrass, Arctic	*Poa arctica* ssp. *grayana*	POARG	POA	Grass, bunch (Alpine)
bluegrass, Kentucky	*Poa pratensis*	POPR	POA	Grass, rhizomatous (exotic)
bluegrass, Sandberg	*Poa secunda*	POSE	POA	Grass, bunch
bluegrass, swamp	*Poa palustris*	POPA2	POA	Grass, loose bunch
bluegrass, Wheeler	*Poa nervosa*	PONE2	POA	grass, bunch
brome, smooth	*Bromopsis inermis*	BRIN7	POA	Grass, rhizomatous, no sod
brooklime	*Veronica* spp.	VERON	SCR	Forb
buffaloberry	*Shepherdia canadensis*	SHCA	ELE	Shrub, medium
buttercup	*Ranunculus* spp.	RANUN	RAN	Forb
cheatgrass	*Anisantha tectorum*	ANTE6	POA	Grass, annual
chokecherry	*Padus virginiana*	PAVI11	ROS	Tall Shrub
cinquefoil, shrubby	*Pentaphylloides floribunda*	PEFL15	ROS	Shrub, medium
clover, dwarf	*Trifolium nanum*	TRNA2	FAB	Forb, mat (Alpine)
clover, Parry	*Trifolium parryi*	TRPA5	FAB	Forb, mat (Alpine)
clover, whiproot	*Trifolium dasyphyllum*	TRDA2	FAB	Forb, mat (Alpine)
club-moss, little	*Selaginella densa*	SEDE2	SEL	Fern-ally or mat forb (Alpine)
cottonwood, narrowleaf	*Populus angustifolia*	POAN3	SAL	Tree, deciduous
cowbane	*Oxypolis fendleri*	OXFE	API	Forb
currant, wax	*Ribes cereum*	RICE	GRS	Tall Shrub
currant, whitestem	*Ribes inerme*	RIIN2	GRS	Shrub, medium
dandelion	*Taraxacum officinale*	TAOF	AST	Forb
dock	*Rumex* spp.	RUMEX	PLG	Forb, tall
dogwood, red-osier	*Swida sericea*	SWSE	COR	Tall Shrub
Douglas-fir	*Pseudotsuga menziesii*	PSME	PIN	Tree, coniferous
dryad, mountain	*Dryas octopetala*	DROC	ROS	Forb, mat
false-hellebore	*Veratrum tenuipetalum*	VETE4	LIL	Forb, tall
fescue, alpine	*Festuca brachyphylla* ssp. *coloradensis*	FEBRC	POA	Grass, mat or bunch (Alpine)
fescue, Arizona	*Festuca arizonica*	FEAR2	POA	Grass, bunch
fescue, Idaho	*Festuca idahoensis*	FEID	POA	Grass, bunch
fescue, Rocky Mountain	*Festuca saximontana*	FESA	POA	Grass, bunch
fescue, Thurber	*Festuca thurberi*	FETH	POA	Grass, big bunch
fir	*Abies* spp.	ABIES	PIN	Tree, coniferous
fir, subalpine or corkbark	*Abies bifolia*	ABBI2	PIN	Tree, coniferous
gooseberry, mountain	*Ribes montigenum*	RIMO2	GRS	Shrub, medium
grama, blue	*Chondrosum gracile*	CHGR15	POA	Grass, mat
groundsel, arrowleaf	*Senecio triangularis*	SETR	AST	Forb, tall

Common Name	Species Name	Code*	Fam†	Usual Growth Form
hairgrass, tufted	*Deschampsia cespitosa*	DECE	POA	Grass, bunch
hawthorn, river	*Crataegus rivularis*	CRRI	ROS	Tall Shrub, spiny
helianthella, nodding	*Helianthella quinquenervis*	HEQU2	AST	Forb, tall
honeysuckle, bush	*Distegia involucrata*	DIIN5	CPR	Shrub, medium
horsebrush, gray	*Tetradymia canescens*	TECA2	AST	Shrub, medium to short
horsetail, field	*Equisetum arvense*	EQAR	EQU	Fern-ally/forb
horsetail, scouring-rush	*Hippochaete hyemalis* ssp. *affinis*	HIHYA	EQU	Fern-ally/forb
juniper, common	*Juniperus communis*	JUCO6	CUP	Shrub, medium
juniper, Rocky Mountain	*Juniperus scopulorum*	JUSC2	CUP	Short, Multi-stemmed Tree
king's-crown	*Rhodiola integrifolia*	RHIN11	CRA	Forb
kinnikinnick	*Arctostaphylos uva-ursi*	ARUV	ERI	Shrub, short
kobresia, Bellard's	*Kobresia myosuroides*	KOMY	CYP	Graminoid, tufted (Alpine)
larkspur, Barbey	*Delphinium barbeyi*	DEBA	RAN	Forb, tall
maple, Rocky Mountain	*Acer glabrum*	ACGL	ACE	Tall Shrub
marsh-marigold	*Psychrophila leptosepala*	PSLE	RAN	Forb
mountain-mahogany	*Cercocarpus montanus*	CEMO2	ROS	Tall Shrub
muhly, mountain	*Muhlenbergia montana*	MUMO	POA	Grass, mat
muhly, slimstem	*Muhlenbergia filiculmis*	MUFI	POA	Grass, bunch-mat
mule's ears	*Wyethia* x *magna*	WYMA	AST	Forb, medium to tall
muttongrass	*Poa fendleriana*	POFE	POA	Grass, bunch
needle-and-thread	*Hesperostipa comata*	HECO26	POA	Grass, bunch
needlegrass, green	*Nassella viridula*	NAVI4	POA	Grass, loose bunch
needlegrass, pine	*Achnatherum pinetorum*	ACPI2	POA	Grass, bunch
oak, scrub (Gambel)	*Quercus gambelii*	QUGA	FAG	Tall Shrub
oatgrass, Parry	*Danthonia parryi*	DAPA2	POA	Grass, tight mat
oatgrass, timber	*Danthonia intermedia*	DAIN	POA	Grass, mat
ocean-spray	*Holodiscus discolor*	HODI	ROS	Tall Shrub
Oregon-grape	*Mahonia repens*	MARE11	BER	Shrub, short
Osha	*Ligusticum porteri*	LIPO	API	Forb, tall
Pachistima	*Paxistima myrsinites*	PAMY	CPR	Shrub, short
Pine	*Pinus* spp.	PINUS	PIN	Tree, coniferous
pine, bristlecone	*Pinus aristata*	PIAR	PIN	Tree, coniferous
pine, limber	*Pinus flexilis*	PIFL2	PIN	Tree, coniferous
pine, lodgepole	*Pinus contorta*	PICO	PIN	Tree, coniferous
pine, ponderosa	*Pinus ponderosa*	PIPO	PIN	Tree, coniferous
pinegrass, purple	*Calamagrostis purpurascens*	CAPU	POA	Grass, bunch (Alpine – high Subalpine)
pingue	*Picradenia richardsonii*	PIRI6	AST	Forb or short shrub
quackgrass	*Elytrigia repens*	ELRE3	POA	Grass, rhizomatous-loose sod
rabbitbrush, Douglas	*Chrysothamnus viscidiflorus*	CHVI8	AST	Shrub, medium
rabbitbrush, dwarf	*Chrysothamnus depressus*	CHDE2	AST	Shrub, short
rabbitbrush, green	*Chrysothamnus viscidiflorus* ssp. *pumilus*	CHVIP5	AST	Shrub, short
rabbitbrush, rubber	*Chrysothamnus nauseosus*	CHNA2	AST	Shrub, medium
raspberry, American red	*Rubus idaeus*	RUID	ROS	Shrub, medium
red-osier	*Swida sericea*	SWSE	COR	Tall Shrub
reedgrass, bluejoint	*Calamagrostis canadensis*	CACA4	POA	Grass, loose bunch
reedgrass, northern	*Calamagrostis stricta*	CAST36	POA	Grass, loose bunch
ricegrass, Indian	*Achnatherum hymenoides*	ACHY	POA	Grass, bunch
ricegrass, littleseed	*Piptatherum micranthum*	PIMI7	POA	Grass, loose bunch
rose, Wood's	*Rose woodsii*	ROWO	ROS	Shrub, medium
rush, Baltic	*Juncus arcticus* ssp. *ater*	JUARA4	JUN	Graminoid, rhizomatous, no sod
sagebrush, big	*Artemisia tridentata*	ARTR2	AST	Shrub, medium
sagebrush, black	*Artemisia nova*	ARNO4	AST	Subshrub
sagebrush, low	*Artemisia arbuscula*	ARAR8	AST	Subshrub
sagebrush, mountain (big)	*Artemisia tridentata* ssp. *vaseyana*	ARTRV	AST	Shrub, medium
sagebrush, silver	*Artemisia cana*	ARCA13	AST	Shrub, medium
sagebrush, Wyoming (big)	*Artemisia tridentata* ssp. *wyomingensis*	ARTRW8	AST	Shrub, medium

Common Name	Species Name	Code*	Fam†	Usual Growth Form
sedge, beaked	*Carex utriculata*	CAUT	CYP	Graminoid, very tight sod
sedge, Bebb's	*Carex bebbii*	CABE2	CYP	Graminoid, bunch-mat
sedge, black alpine	*Carex nigricans*	CANI2	CYP	Graminoid, bunch-mat (Alpine)
sedge, cliff (a misnomer!)	*Carex scopulorum*	CASC12	CYP	Graminoid, bunch-mat (Alpine)
sedge, cloud	*Carex haydeniana*	CAHA6	CYP	Graminoid, bunch (Alpine)
sedge, ebony	*Carex ebenea*	CAEB	CYP	Graminoid, bunch-mat
sedge, elk	*Carex geyeri*	CAGE2	CYP	Graminoid, rhizomatous
sedge, Kobresia-like	*Carex elynoides*	CAEL3	CYP	Graminoid, bunch (Alpine)
sedge, Pyrenees	*Carex crandallii*	CACR17	CYP	Graminoid, bunch (Alpine)
sedge, silvertop	*Carex foenea*	CAFO3	CYP	Graminoid, rhizomatous
sedge, sun	*Carex pensylvanica* ssp. *heliophila*	CAPEH	CYP	Graminoid, mat
sedge, teachers'	*Carex praeceptorum*	CAPR4	CYP	Graminoid, rhizomatous
sedge, water	*Carex aquatilis*	CAAQ	CYP	Graminoid, very tight sod
sedge, western	*Carex occidentalis*	CAOC2	CYP	Graminoid, loose mat
serviceberry, Saskatoon	*Amelanchier alnifolia*	AMAL2	ROS	Tall Shrub
serviceberry, Utah	*Amelanchier utahensis*	AMUT	ROS	Tall Shrub
sibbaldia	*Sibbaldia procumbens*	SIPR	ROS	Forb, mat
skunkbrush	*Rhus aromatica* ssp. *trilobata*	RHART	ANA	Tall Shrub
snakeweed	*Gutierrezia sarothrae*	GUSA2	AST	Shrub, medium
snowberry, mountain	*Symphoricarpos rotundifolius*	SYRO	CPR	Shrub, medium
spike-fescue	*Leucopoa kingii*	LEKI2	POA	Grass, bunch
spike-rush, creeping	*Eleocharis palustris*	ELPA3	CYP	Graminoid, short-rhizomatous
spruce	*Picea* spp.	PICEA	PIN	Tree, coniferous
spruce, blue	*Picea pungens*	PIPU	PIN	Tree, coniferous
spruce, Engelmann	*Picea engelmannii*	PIEN	PIN	Tree, coniferous
squirreltail, bottlebrush	*Elymus elymoides*	ELEL5	POA	Grass, bunch
timothy, common (field)	*Phleum pratense*	PHPR3	POA	Grass, loose bunch
twinflower	*Linnaea borealis*	LIBO4	CPR	Forb, mat
twisted-stalk	*Streptopus fassettii*	STFA3	LIL	Forb, tall
vetch, American	*Vicia americana*	VIAM	FAB	Forb, twining
wheatgrass, Scribner	*Elymus scribneri*	ELSC4	POA	grass, bunch (Alpine)
wheatgrass, slender	*Elymus trachycaulus*	ELTR7	POA	grass, bunch
wheatgrass, western	*Pascopyrum smithii*	PASM	POA	Grass, rhizomatous-no sod
whortleberry, Rocky Mountain	*Vaccinium myrtillus* ssp. *oreophilum*	VAMYO	ERI	Shrub, short
wildrye, blue	*Elymus glaucus*	ELGL	POA	Grass, bunch
willow, Arctic	*Salix arctica*	SAAR4	SAL	Forb, woody at base (Alpine)
willow, barrenground	*Salix brachycarpa*	SABR	SAL	Shrub, medium
willow, Bebb	*Salix bebbiana*	SABE2	SAL	Tall Shrub
willow, blue (Drummond)	*Salix drummondiana*	SADR	SAL	Tall Shrub
willow, Booth	*Salix boothii*	SABO2	SAL	Tall Shrub
willow, Geyer	*Salix geyeriana*	SAGE2	SAL	Tall Shrub
willow, grayleaf	*Salix glauca*	SAGL	SAL	Shrub, medium (Alpine – high Subalpine)
willow, Pacific	*Salix lucida* ssp. *lasiandra*	SALUL	SAL	Tall Shrub
willow, planeleaf	*Salix planifolia*	SAPL2	SAL	Shrub, medium
willow, serviceberry (mountain)	*Salix monticola*	SAMO2	SAL	Tall Shrub
willow, snow	*Salix reticulata* ssp. *nivalis*	SAREN	SAL	Forb, woody at base (Alpine)
willow, Wolf	*Salix wolfii*	SAWO	SAL	Shrub, medium
willow, yellow	*Salix lutea*	SALU2	SAL	Tall Shrub
willows	*Salix* spp., shrubs only (not including forb willows such as snow willow or Arctic willow)	SALIX	SAL	Shrubs, tall to medium
winterfat	*Krascheninnikovia lanata*	KRLA2	CHN	Shrub, short

*Plant species codes as in USDA NRCS (1997). †Family codes as in Weber and Wittmann (1996).

Vegetation, Land, and Soil Characteristics of Ecological Types

A. Dry Forests (FD)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FD01 Tree juniper–Coarse dark soils–Steep southerly	8	8,920 (8,360-9,240)	171 (0.60) 39 (29-47)	56 (35-73)	51 (28-80) 12 (2-21)	52 (40-66) 9 (1-16)	32 (15-63) 15 (3-29) 41 (10-59) 3 (1-5)	91.4 (51.7-117.5) 32 (25-47) 3.1 (1.4-4.5)
FD02 Ponderosa pine/Arizona fescue–Light-colored clay soils	8	9,270 (8,460-10,060)	178 (0.48) 14 (3-42)	51 (29-67)	83 (60-143) 11 (8-14)	11 (2-19) 13 (1-52)	42 (1-69) 12 (0-67) 37 (12-57) 13 (2-32)	103.6 (48.0-138.2) 30 (24-38) 3.6 (1.4-5.7)
FD03 Ponderosa pine/bitterbrush–Dark soils with no clay layer	11	8,969 (8,360-9,400)	136 (0.38) 19 (3-36)	53 (24-84)	58 (38-115) 19 (6-30)	14 (1-40) 5 (1-14)	39 (10-56) 29 (8-48) 40 (6-70) 16 (2-50)	124.5 (62.0-177.0) 28 (12-47) 5.6 (1.6-14.8)
FD04 Bristlecone pine/currant-Arizona fescue–Cold soils–Southeasterly	8	9,985 (9,440-10,380)	143 (0.78) 26 (9-51)	54 (35-68)	71 (62-75) 9 (0-13)	43 (10-90) 14 (3-65)	49 (21-66) 7 (2-20) 37 (25-62) 14 (4-32)	107.2 (80.9-154.4) 26 (20-32) 4.2 (3.1-5.3)
FD05 Bristlecone pine/Thurber fescue–Cold soils	2	11,190 (10,520-11,860)	143 (0.78) 35 (21-48)	66	81 25	9 (2-16) 3 (1-6)	64 (55-73) 4 (4-5) 75 (24-126) 17 (6-29)	161.0 (112.9-209.1) 36 (28-43) 5.0 (2.6-7.5)
FD06 Douglas-fir/wax currant-Arizona fescue–Coarse thin-dark soils–Steep	31	8,729 (7,600-10,000)	301 (0.33) 39 (14-100)	64 (28-90)	49 (8-124) 13 (3-26)	27 (4-72) 9 (0-60)	48 (20-75) 19 (0-81) 22 (0-115) 7 (0-71)	96.0 (37.4-268.8) 25 (13-40) 4.3 (1.9-10.6)
FD08 Douglas-fir/serviceberry–Steep northerly	35	8,875 (7,960-9,920)	357 (0.64) 37 (8-66)	59 (22-85)	69 (33-180) 15 (0-48)	12 (0-80) 5 (0-15)	80 (14-211) 58 (3-165) 65 (0-166) 41 (0-185)	243.7 (68.2-491.5) 25 (12-51) 11.2 (2.8-26.1)
FD09 Douglas-fir/pachistima–Dark soils–Northerly	34	9,391 (7,960-9,920)	320 (0.70) 32 (13-52)	47 (13-75)	70 (46-104) 15 (5-33)	11 (0-80) 1 (0-15)	79 (37-120) 62 (10-135) 48 (1-111) 38 (0-125)	227.0 (107.0-412.5) 18 (8-29) 13.7 (4.7-24.3)
FD10 Douglas-fir/bitterbrush–Gentle slopes	41	9,097 (7,960-10,260)	220 (0.38) 27 (3-100)	58 (24-84)	65 (40-152) 10 (0-30)	19 (0-80) 5 (0-18)	48 (16-100) 39 (11-85) 44 (0-150) 14 (0-72)	145.0 (67.2-319.5) 22 (12-38) 7.3 (1.8-17.8)
FD11 Douglas-fir/elk sedge–Cold to moderately cold–Gentle to steep	50	9,337 (8,700-10,120)	325 (0.23) 30 (13-66)	42 (9-85)	62 (33-155) 17 (1-52)	6 (0-24) 3 (0-18)	68 (28-118) 30 (2-121) 58 (6-146) 40 (1-201)	196.3 (66.0-448.5) 18 (5-42) 12.5 (3.0-29.6)
FD12 Douglas-fir/Thurber fescue–Cold dark soils–Gentle	60	9,752 (8,700-10,400)	213 (0.59) 22 (10-40)	*	* *	3 (0-24) 7 (0-18)	71 (23-131) 61 (10-140) 117 (50-200) 81 (17-240)	330.1 (170.0-592.5) 17 (11-44) 20.4 (4.6-33.6)
FD13 Douglas-fir/kinnikinnick-Cold to moderately cold	49	9,458 (8,800-9,940)	314 (0.32) 19 (2-39)	44 (33-61)	56 (41-75) 11 (5-19)	2 (0-24) 1 (0-18)	63 (26-120) 47 (14-160) 47 (1-151) 25 (0-210)	182.0 (55.0-473.0) 15 (4-35) 12.9 (2.4-26.3)
FD14 Douglas-fir/buffaloberry–Light-colored sandy cold soils–Northerly	26	9,666 (9,050-10,520)	320 (0.66) 38 (24-49)	65 (28-85)	88 (50-175) 6 (3-9)	7 (0-20) 2 (1-2)	74 (26-140) 67 (16-140) 18 (0-65) 18 (0-76)	176.5 (97.0-321.5) 15 (9-27) 13.0 (4.0-21.4)
FD15 Blue spruce/Arizona fescue–Dark clay soils–Easterly	6	9,838 (9,280-10,140)	73 (0.52) 27 (5-70)	53 (47-58)	42 (32-52) 14 (2-26)	25 (0-70) 18 (1-30)	70 (25-112) 13 (0-41) 49 (25-86) 21 (7-63)	152.9 (84.4-284.5) 23 (19-28) 6.6 (3.0-10.9)

* Not sampled.

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FD16 Blue-Engelmann spruces/kinnikinnick–Light-colored soils–Northerly	6	9,800 (9,400-10,480)	336 (0.58) 15 (9-24)	51 (29-65)	58 (47-73) 7 (0-12)	4 (1-12) 5 (0-15)	88 (61-123) 28 (10-56) 27 (1-90) 14 (1-23)	157.5 (101.1-270.6) 28 (24-39) 5.8 (3.7-10.8)
FD17 Lodgepole pine/silvertop sedge–Cold light-colored soils–Glacial	3	10,197 (9,930-10,730)	58 (0.34) 21 (16-29)	23 (16-30)	106 (71-124) 6 (2-15)	2 35	65 (22-91) 1 (0-2) 38 (5-73) 9 (0-26)	112.5 (86.9-128.1) 22 (14-32) 5.6 (3.8-6.7)
FD18 Lodgepole pine/whortleberry–Cold light-colored soils	13	10,063 (9,350-10,600)	52 (0.31) 15 (5-29)	49 (39-60)	159 (43-275) 5 (0-10)	1 (1-2) 2 (1-35)	75 (40-107) 61 (26-116) 19 (0-61) 25 (1-62)	179.2 (96.0-278.0) 13 (5-25) 15.8 (8.9-25.1)
FD19 Lodgepole pine/sparse	8	*	* *	*	* *	* *	48 (30-60) 11 (2-26) 1 (0-5) 4 (1-15)	63.6 (46.0-81.0) 7 (4-11) 10.0 (4.6-13.5)

B. Moderately-Moist Forests (FL)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FL01 Fir-Douglas-fir/pachistima–Moderately cold soils	10	9,824 (9,320-10,235)	251 (0.36) 22 (16-38)	55 (25-77)	81 (59-101) 15 (3-33)	* *	106 (80-158) 62 (4-126) 63 (0-111) 48 (1-114)	279.0 (197.0-409.5) 21 (12-31) 14.7 (8.2-22.8)
FL02 Fir/twinflower–Cold light-colored soils–Steep northerly	8	9,775 (9,160-10,020)	351 (0.79) 50 (45-60)	63 (56-73)	75 (61-84) 13 (0-42)	6 (0-10) *	94 (67-110) 64 (11-106) 12 (0-51) 43 (4-72)	212.6 (141.1-272.5) 21 (12-30) 11.3 (4.7-19.6)
FL03 Fir-spruce/pachistima–Cold light-colored soils	9	10,312 (9,840-10,860)	352 (0.30) 25 (3-40)	66 (56-77)	76 (57-111) 6 (4-9)	8 (3-10) 1 (0-2)	111 (71-200) 53 (7-86) 38 (0-140) 37 (1-160)	238.7 (135.0-451.5) 18 (9-27) 15.2 (6.1-32.0)
FL04 Minor spruce-fir types	3	10,347 (10,240-10,400)	80 (0.34) 9 (7-12)	52	82 5	2 (1-2) 12 (8-15)	81 (73-90) 14 (3-34) 59 (3-92) 13 (5-21)	168.1 (115.2-199.4) 28 (22-32) 5.9 (5.2-6.2)
FL05 Fir-spruce/elk sedge–Cold light-colored clay soils–Gentle	31	10,377 (10,020-10,670)	200 (0.54) 15 (0-34)	64 (31-81)	67 (30-116) 18 (1-65)	4 (0-10) 9 (0-25)	112 (40-300) 20 (0-81) 75 (19-185) 55 (2-235)	262.0 (139.5-525.0) 19 (12-40) 15.0 (4.4-32.8)
FL06 Fir-spruce/moss–Cold light-colored soils–Northerly	13	10,389 (9,700-11,050)	27 (0.63) 15 (3-64)	56 (33-82)	74 (42-115) 11 (2-20)	3 (1-8) 6 (1-25)	101 (63-200) 6 (0-25) 5 (0-16) 17 (0-94)	129.6 (63.4-214.0) 23 (11-34) 6.2 (3.9-19.5)
FL07 Fir-spruce/buffaloberry–Cold light-colored soils	12	10,100	27 (0.63) 22 (21-23)	53 (28-77)	45 6	17 (14-20) *	71 (37-92) 93 (45-145) 10 (0-30) 23 (2-70)	196.2 (141.7-264.0) 13 (9-20) 15.7 (7.1-25.2)
FL08 Spruce/gooseberry–Cold upper-Subalpine slopes	7	11,182 (10,160-12,125)	137 (0.44) 14 (4-31)	57 (51-62)	50 (25-64) 12 (0-25)	8 (0-18) 6 (3-12)	73 (33-107) 28 (8-50) 43 (2-186) 47 (11-120)	190.9 (121.0-365.5) 22 (10-30) 9.7 (5.1-19.6)
FL09 Fir-spruce/whortleberry–Cold light-colored soils	16	10,951 (10,600-11,385)	204 (0.12) 14 (3-29)	67 (54-79)	42 (31-59) 2 (0-7)	5 (0-20) 5 (0-10)	73 (32-116) 55 (10-116) 42 (1-100) 41 (0-105)	210.4 (99.3-375.5) 16 (9-31) 14.1 (3.2-26.8)

* Not sampled.

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FL10 Fir-spruce/grayleaf willow treeline–Wind-scarred	2	11,670 (11,620-11,720)	204 (0.12) 18 (18-19)	70	34 (15-53) 9 (0-17)	22 (14-30) 3 (1-5)	29 (25-32) 93 (78-109) 10 (4-16) 31 (9-53)	164.6 (118.8-210.4) 36 (24-47) 4.7 (4.5-5.0)
FL11 Limber pine/common juniper–Rocks	2	9,390 (9,000-9,780)	204 (0.12) 38 (22-53)	79	28 10	36 (20-53) 6 (1-10)	36 (27-45) 9 (2-16) 8 (0-16) 9 (1-17)	61.7 (29.6-93.9) 28 (27-28) 2.2 (1.1-3.4)

C. Moist Forests (FM)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FM1 Aspen/serviceberry–Deep dark soils	16	8,956 (8,060-9,700)	5 (0.25) 19 (7-30)	36 (9-64)	83 (33-170) 47 (9-170)	3 (0-17) 3 (0-10)	66 (30-93) 68 (22-120) 78 (6-180) 49 (1-121)	262.8 (175.0-403.9) 26 (11-42) 12.0 (5.3-26.8)
FM2 Aspen/Thurber fescue–Deep dark soils	32	9,561 (8,060-10,380)	224 (0.17) 13 (1-36)	35 (4-72)	53 (33-97) 39 (18-66)	3 (0-17) 2 (0-10)	63 (6-96) 34 (0-104) 112 (44-200) 102 (20-231)	311.6 (145.8-545.0) 21 (12-38) 17.7 (5.4-32.9)
FM3 Aspen/meadow-rue-peavine–Deep dark clay soils	9	9,714 (9,140-10,080)	95 (0.65) 25 (7-50)	41 (24-46)	70 (26-92) 48 (12-88)	2 (0-17) 2 (0-10)	74 (35-91) 8 (0-31) 107 (41-178) 144 (75-280)	333.4 (185.5-491.0) 24 (13-34) 14.7 (9.5-30.7)

D. Riparian Forests (FR)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
FR1 Cottonwood/willow–Water-layered soils–Floodplains	33	8,369 (7,530-9,380)	236 (0.42) 6 (1-17)	27 (0-81)	100 (46-285) 72 (16-160)	13 (0-48) 14 (0-52)	23 (0-97) 53 (0-149) 84 (10-291) 49 (2-177)	210.6 (45.4-616.5) 34 (18-55) 7.0 (1.2-23.6)
FR2 Aspen-cottonwood–Deep alluvial soils–Floodplains	23	8,466 (7,900-9,160)	253 (0.50) 11 (1-30)	35 (7-70)	91 (43-160) 83 (19-160)	11 (0-48) 6 (0-15)	61 (10-126) 64 (7-150) 107 (16-236) 67 (2-226)	300.7 (120.0-557.5) 28 (14-51) 13.1 (2.7-27.1)
FR3 Spruce-cottonwood–Sandy wet soils–Terraces	8	8,212 (7,810-8,825)	203 (0.69) 4 (2-6)	15 (0-30)	79 (74-80) 36 (8-80)	9 (0-48) 4 (0-10)	81 (62-101) 49 (11-139) 75 (9-182) 41 (10-83)	250.7 (139.6-332.6) 31 (23-41) 8.4 (4.5-13.8)
FR4 Spruce/honeysuckle-reedgrass–Deep sandy moist soils–Narrow bottoms	15	9,696 (8,960-10,475)	165 (0.31) 7 (2-14)	29 (0-45)	66 (50-82) 36 (0-70)	5 (0-48) *	81 (10-200) 66 (1-146) 105 (5-235) 108 (7-265)	371.8 (197.2-635.5) 24 (12-48) 18.6 (4.1-33.4)
FR5 Spruce/red-osier–Moist soils–Bottoms	6	8,812 (8,560-9,180)	194 (0.73) 12 (3-36)	52	50 6	24 (2-95) 11 (2-25)	41 (0-109) 93 (35-153) 21 (3-63) 11 (4-23)	181.4 (76.4-279.5) 23 (17-26) 7.9 (3.5-10.7)
FR6 Fir-spruce/wet forbs–Moist soils–Narrow V-shaped bottoms	12	10,254 (9,590-11,640)	127 (0.16) 11 (2-27)	43 (29-59)	50 (20-76) 26 (0-65)	4 (1-10) 4 (1-8)	65 (0-142) 25 (0-92) 42 (0-130) 93 (23-150)	231.3 (113.2-415.5) 23 (7-37) 12.6 (5.3-34.7)

* Not sampled.

E. Non-Forested Riparian (RI)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
RI1 Yellow willow–Deep alluvial soils–Concave bottoms and swales	69	8,809 (7,800-9,680)	354 (0.09) 6 (0-20)	24 (0-76)	111 (33-203) 89 (11-203)	4 (0-31) 11 (0-40)	0 (0-2) 40 (0-161) 140 (7-295) 84 (9-319)	266.2 (99.0-595.5) 29 (9-56) 12.2 (3.0-39.5)
RI2 Blue willow–Deep alluvial soils–Bottoms	17	9,291 (8,560-10,160)	204 (0.36) 3 (0-12)	35 (8-60)	70 (50-92) 48 (16-71)	6 (1-15) 10 (0-40)	6 (0-57) 83 (14-155) 85 (6-185) 57 (8-193)	238.9 (127.8-422.9) 27 (11-41) 10.1 (4.3-26.0)
RI3 Serviceberry willow–Deep alluvial soils–Concave bottoms and swales	34	9,468 (8,160-10,970)	188 (0.41) 6 (0-25)	19 (0-47)	102 (71-168) 75 (41-168)	3 (0-15) 20 (0-75)	1 (0-15) 55 (0-147) 127 (50-226) 84 (13-191)	268.5 (125.6-425.0) 29 (10-59) 12.3 (3.3-36.0)
RI4 Planeleaf willow/water sedge–Cold deep alluvial soils–Bottoms	19	10,353 (9,540-12,040)	57 (0.45) 2 (0-7)	31 (11-46)	58 (31-70) 28 (0-70)	2 (0-15) 7 (0-75)	0 (0-1) 66 (4-186) 93 (23-147) 49 (8-113)	208.5 (121.5-328.8) 27 (12-49) 8.7 (3.5-17.4)
RI5 Wolf and planeleaf willows–Cold deep alluvial soils–Bottoms	14	9,895 (9,510-10,650)	161 (0.28) 2 (1-4)	14 (0-27)	78 (60-100) 53 (22-90)	0 (0-15) 38 (0-100)	0 (0-1) 101 (40-167) 99 (25-158) 58 (7-105)	259.8 (176.5-332.5) 24 (13-35) 11.6 (7.5-25.1)
RI6 Shrubby cinquefoil–Colluvial or alluvial soils–Parks and swales	10	9,768 (9,080-10,760)	207 (0.20) 12 (3-47)	42 (32-53)	54 (52-56) 25 (22-28)	5 (0-18) 18 (0-100)	1 (0-6) 36 (2-75) 88 (37-170) 59 (17-110)	184.3 (110.8-311.0) 26 (12-41) 8.6 (3.0-19.8)
RI7 Planeleaf willow/marsh-marigold–Cold, wet young soils–High bottoms	2	11,963 (11,640-12,285)	207 (0.20) 4 (3-4)	*	33 (20-46) 0 (0-0)	1 (1-1) 5 (5-5)	0 (0-0) 100 (100-100) 8 (1-16) 47 (39-54)	154.8 (139.8-169.8) 28 (26-29) 5.7 (4.8-6.5)
RI8 Grayleaf willow/water sedge–Deep cold wet soils–High creek bottoms	7	10,774 (9,640-12,080)	289 (0.26) 7 (0-22)	37 (5-63)	87 (33-136) 52 (0-136)	3 (1-4) 2 (1-4)	0 (0-0) 103 (69-146) 66 (2-101) 65 (38-127)	234.1 (141.8-295.8) 28 (17-34) 8.9 (5.7-17.4)
RI9 Sedge wetland–Deep cold gleyed soils–Concave water bowls	18	10,382 (9,530-12,040)	139 (0.23) 1 (0-5)	13 (0-39)	95 (15-155) 59 (0-125)	4 (1-25) 18 (1-45)	0 (0-0) 1 (0-8) 93 (7-196) 32 (0-161)	128.8 (45.2-278.8) 13 (5-21) 12.0 (3.5-39.2)

F. Non-Riparian Grasslands (GA)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
GA01 Indian ricegrass/needle-and-thread–Aridic soils–Windswept ridge shoulders	18	8,511 (7,680-9,370)	240 (0.47) 18 (1-44)	59 (27-93)	54 (26-100) 16 (0-37)	51 (7-74) 14 (1-41)	0 (0-0) 8 (0-24) 67 (24-119) 15 (1-47)	89.3 (44.9-167.2) 27 (19-37) 3.4 (1.5-5.7)
GA02 Arizona fescue/pingue–Shallow–Windward slopes	19	9,041 (8,420-9,520)	268 (0.86) 20 (6-34)	69 (36-87)	64 (26-162) 20 (7-40)	58 (24-77) 7 (1-19)	0 (0-0) 9 (0-21) 42 (18-73) 20 (5-67)	71.4 (43.7-140.9) 30 (22-39) 2.4 (1.4-4.1)
GA03 Arizona fescue/muhly–Deep–Windward slopes	20	9,669 (8,760-10,480)	166 (0.54) 25 (6-111)	54 (14-79)	54 (20-95) 22 (0-52)	30 (5-71) 31 (1-90)	0 (0-0) 7 (0-41) 59 (15-117) 22 (3-54)	88.1 (29.4-167.0) 27 (17-38) 3.4 (1.1-5.6)

* Not sampled.

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
GA04 Thurber-Arizona fescues–Deep cold dark soils	12	10,072 (9,210-10,800)	133 (0.83) 17 (4-49)	50 (19-85)	69 (46-87) 37 (13-65)	4 (1-19) 10 (0-30)	0 (0-0) 3 (0-11) 121 (80-153) 35 (8-83)	158.7 (105.8-201.5) 25 (20-36) 6.5 (4.6-9.5)
GA05 Thurber-Idaho fescues–Deep cold dark soils	12	10,212 (9,500-11,120)	141 (0.59) 9 (2-31)	45 (30-55)	68 (41-116) 45 (18-116)	3 (0-9) 25 (8-60)	0 (0-2) 8 (0-72) 83 (14-147) 53 (10-112)	144.8 (89.5-217.6) 27 (18-34) 5.6 (3.5-11.7)
GA06 Thurber fescue/moist forbs–Deep dark clay soils–Linear or concave slopes	12	10,024 (8,700-11,240)	140 (0.25) 16 (4-30)	24 (1-53)	101 (52-190) 48 (18-94)	2 (0-9) 6 (1-60)	0 (0-2) 3 (0-16) 130 (103-154) 88 (18-181)	221.5 (129.0-334.3) 31 (20-39) 7.5 (4.0-11.9)
GA07 Osha–Very deep heavy-clay soils	6	9,752 (9,100-10,100)	89 (0.70) 24 (5-40)	16 (4-25)	89 (65-111) 49 (3-78)	5 (1-10) 17 (2-27)	0 (0-0) 3 (0-16) 56 (3-114) 145 (69-203)	203.5 (124.5-282.5) 24 (20-32) 8.5 (5.7-11.3)
GA08 Idaho fescue–Deep dark clay soils, shallow to clay layer	4	10,285 (9,720-10,810)	180 (0.80) 2 (0-5)	30	94 12	5 (1-14) 22 (4-50)	0 (0-0) 1 (0-2) 78 (7-119) 59 (20-94)	137.8 (85.8-174.1) 24 (20-32) 5.7 (4.3-7.2)
GA09 Timber oatgrass–Shallow soils–Exposed high ridges	4	11,108 (10,580-11,960)	297 (0.79) 4 (2-7)	*	20 0	2 (2-3) 13 (5-30)	0 (0-0) 2 (0-4) 72 (51-95) 37 (20-65)	111.0 (93.0-125.6) 29 (22-38) 4.1 (2.4-5.7)
GA10 Purple pinegrass–Shallow rocky soils–Exposed high ridges	3	11,813 (11,200-12,380)	214 (0.51) 22 (11-41)	79	35 (10-57) 22 (10-38)	42 (18-63) 5 (4-5)	0 (0-0) 0 (0-0) 65 (43-90) 29 (24-34)	94.1 (71.0-124.6) 28 (25-30) 3.4 (2.4-5.0)

G. Tall Non-Riparian Shrublands (SA)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
SA1 Utah serviceberry/sedge–Dark clay soils–Leeward	37	8,525 (8,000-9,036)	54 (0.35) 22 (1-64)	53 (14-76)	48 (20-74) 32 (0-66)	20 (0-50) 14 (1-55)	0 (0-5) 58 (22-124) 44 (1-148) 18 (1-87)	119.1 (43.4-317.3) 36 (16-53) 3.6 (1.3-8.8)
SA2 Utah serviceberry-mountain-mahogany/sedge–Dark clay soils–Protected	16	8,303 (7,600-8,640)	348 (0.61) 35 (12-53)	53 (20-79)	49 (13-85) 27 (0-85)	23 (5-66) 6 (0-24)	0 (0-2) 91 (57-147) 51 (11-96) 13 (0-27)	155.1 (88.7-218.6) 32 (23-46) 4.9 (2.6-8.0)
SA3 Serviceberry-oak–Dark clay soils–Protected	16	8,176 (7,600-8,600)	304 (0.10) 26 (10-40)	48 (16-84)	50 (35-69) 31 (20-37)	4 (2-7) 1 (0-24)	2 (0-12) 86 (38-203) 38 (4-95) 13 (0-81)	139.6 (70.0-369.6) 23 (13-41) 6.4 (1.7-12.2)
SA4 Serviceberry/green needlegrass–Deep clay soils–Lees	23	8,561 (8,000-9,250)	29 (0.36) 24 (8-54)	50 (17-84)	82 (31-183) 31 (4-64)	8 (0-65) 9 (0-24)	0 (0-0) 90 (32-189) 64 (5-109) 19 (0-62)	172.4 (57.6-332.4) 32 (19-45) 5.7 (1.5-9.8)
SA5 Saskatoon serviceberry/elk sedge–Deep dark soils–Lees	26	9,113 (8,580-9,840)	108 (0.17) 25 (6-75)	46 (11-82)	58 (14-99) 28 (12-63)	12 (0-65) 5 (0-15)	1 (0-10) 73 (10-216) 70 (9-135) 25 (4-69)	169.2 (83.8-306.4) 36 (14-48) 5.2 (2.1-15.3)
SA6 Serviceberry/Thurber fescue–Deep dark cold loamy soils–Subalpine	8	9,084 (8,780-9,925)	57 (0.35) 34 (17-50)	52 (5-78)	64 (48-78) 42 (24-75)	8 (3-20) 6 (1-14)	0 (0-0) 67 (22-110) 91 (47-140) 45 (14-78)	203.7 (173.3-254.3) 37 (28-43) 5.6 (4.1-7.1)

* Not sampled.

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
SA7 Tall shrublands–Extremely rocky	9	10,028 (9,280-11,800)	161 (0.33) 72 (36-214)	*	28 0	61 (12-98) 5 (1-8)	0 (0-0) 46 (5-92) 19 (1-76) 14 (6-33)	79.3 (17.0-132.9) 24 (16-41) 3.5 (.8-7.0)

H. Dry Sagebrush Shrublands (SB)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
SB1 Wyoming sagebrush/Indian ricegrass–Aridic soils	32	8,091 (7,660-8,900)	196 (0.31) 16 (1-100)	34 (3-70)	87 (14-175) 21 (0-143)	20 (0-60) 30 (7-55)	0 (0-2) 33 (10-73) 35 (10-86) 10 (2-38)	78.3 (30.7-133.7) 28 (20-51) 2.8 (1.3-5.3)
SB2 Black sagebrush/ muttongrass–Coarse heavy-clay soils–Windward	36	8,393 (8,040-9,180)	286 (0.39) 17 (0-50)	46 (15-68)	62 (18-200) 11 (2-25)	35 (5-64) 19 (6-31)	0 (0-1) 33 (21-50) 32 (4-100) 11 (3-49)	75.9 (39.0-131.5) 27 (12-41) 3.0 (1.5-5.7)
SB3 Black sagebrush/ Arizona fescue–Coarse heavy clay soils–Windward	13	8,819 (8,080-9,340)	250 (0.47) 18 (2-53)	67 (48-87)	50 (25-85) 14 (8-19)	57 (31-90) 9 (1-25)	0 (0-1) 31 (11-44) 27 (14-43) 12 (3-30)	69.3 (41.5-91.8) 30 (18-41) 2.4 (1.7-3.5)

I. Big Sagebrush Shrublands (SS)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
SS1 Big sagebrush/ muttongrass–Dark clay soils	31	8,653 (8,000-10,160)	292 (0.04) 12 (1-49)	44 (7-67)	58 (31-128) 28 (0-51)	13 (0-28) 19 (1-65)	0 (0-1) 39 (11-73) 49 (14-115) 29 (3-78)	116.1 (54.3-183.4) 31 (15-46) 3.9 (1.7-9.9)
SS2 Bitterbrush-sagebrush/ needlegrass–Dark soils	56	8,660 (7,980-9,660)	229 (0.30) 16 (2-40)	37 (0-73)	51 (0-107) 25 (0-61)	18 (2-50) 12 (0-40)	0 (0-6) 50 (21-106) 36 (3-76) 17 (2-120)	103.0 (31.0-205.1) 24 (10-44) 5.1 (1.4-14.7)
SS3 Big sagebrush/ oatgrass-Arizona fescue–Dark clay soils	17	9,451 (8,990-10,110)	144 (0.11) 18 (6-47)	41 (16-65)	56 (37-81) 26 (6-59)	16 (0-47) 13 (3-28)	0 (0-0) 30 (12-58) 80 (50-142) 32 (16-61)	142.7 (94.3-207.7) 34 (26-43) 4.3 (2.9-5.8)
SS4 Big sagebrush/Arizona fescue–Dark soils	30	9,189 (8,620-10,120)	272 (0.24) 16 (0-51)	53 (16-88)	63 (27-140) 21 (0-48)	23 (1-60) 16 (1-35)	0 (0-0) 35 (13-58) 60 (26-116) 20 (0-67)	114.4 (60.7-174.5) 32 (21-45) 3.6 (2.2-4.8)
SS5 Bitterbrush-sagebrush/oatgrass-Arizona fescue–Light-colored soils–Northerly	7	8,839 (8,700-8,960)	3 (0.40) 16 (8-23)	43 (26-66)	66 (40-106) 14 (8-26)	26 (7-43) 18 (7-35)	0 (0-0) 35 (6-57) 71 (50-87) 23 (14-35)	128.7 (106.5-164.8) 37 (30-46) 3.5 (2.9-4.4)
SS6 Bitterbrush-sagebrush/Arizona fescue–Dark soils	38	8,783 (8,050-9,600)	229 (0.27) 21 (3-50)	57 (11-86)	75 (32-182) 23 (0-54)	23 (2-67) 15 (1-45)	0 (0-2) 48 (15-80) 54 (12-147) 11 (2-49)	113.4 (60.5-216.4) 29 (12-45) 4.4 (2.1-10.2)

* Not sampled.

J. Subalpine Sagebrush Shrublands (SU)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
SU1 Mountain sagebrush/Thurber-Arizona fescues–Deep cold clay soils	45	9,422 (8,560-10,220)	168 (0.19) 17 (0-45)	42 (15-78)	73 (33-137) 36 (17-62)	5 (0-67) 8 (0-45)	0 (0-8) 50 (10-135) 97 (50-170) 46 (3-110)	193.5 (120.9-340.0) 26 (10-46) 9.1 (3.1-26.2)
SU2 Mountain sagebrush/Thurber-Idaho fescues–Deep loamy clay soils	15	9,585 (8,820-10,400)	328 (0.28) 12 (4-26)	32 (7-59)	85 (63-98) 26 (15-46)	4 (0-67) 10 (1-30)	0 (0-0) 28 (6-65) 95 (14-225) 51 (16-105)	174.4 (78.8-311.0) 25 (12-46) 9.4 (3.1-25.9)
SU3 Mountain sagebrush/Idaho fescue–Sandy soils–Glacial	14	9,666 (9,440-9,940)	283 (0.09) 7 (1-26)	43 (21-72)	62 (50-79) 7 (0-25)	14 (1-42) 11 (3-25)	0 (0-0) 24 (14-39) 71 (38-103) 36 (13-67)	131.5 (90.0-157.3) 31 (25-36) 4.3 (3.5-5.6)
SU4 Low sagebrush/Idaho fescue–Heavy clay soils	25	9,618 (9,210-10,490)	259 (0.54) 14 (8-31)	33 (0-66)	85 (46-140) 24 (0-87)	9 (0-41) 11 (1-31)	0 (0-1) 32 (5-61) 76 (38-116) 54 (8-127)	161.6 (109.0-241.1) 33 (12-49) 5.1 (2.7-9.1)
SU5 Low-mountain sagebrushes/Idaho fescue–Heavy clay soils	5	9,460 (9,000-9,920)	259 (0.54) 10 (10-10)	19 (19-20)	73 (26-120) 27 (3-51)	1 (1-1) 4 (2-5)	0 (0-0) 52 (31-66) 83 (37-150) 47 (19-109)	182.4 (128.5-236.0) 22 (12-40) 10.7 (5.0-19.7)
SU6 Low sagebrush/Thurber-Idaho fescues–Cold dark clay soils	4	9,753 (8,980-10,530)	89 (0.24) 18 (8-40)	54 (30-77)	93 (56-139) 48 (24-106)	13 (3-32) 15 (13-19)	0 (0-0) 26 (18-34) 87 (44-126) 40 (21-65)	153.2 (134.4-164.1) 30 (19-36) 5.6 (4.1-8.6)
SU7 Silver sagebrush/fescue–Cold dark soils	10	9,822 (8,900-10,390)	4 (0.42) 8 (4-15)	19 (11-42)	96 (44-154) 25 (20-30)	2 (1-5) 15 (1-34)	0 (0-0) 31 (17-45) 102 (62-148) 65 (21-195)	198.4 (128.1-355.0) 27 (14-40) 8.4 (4.3-25.4)

K. Alpine Ecosystems

(GA09 and GA10 above may also occur in the Alpine Zone)

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse % Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees/Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
AL01 Alpine Rocky Forblands	14	12,265 (11,400-12,915)	64 (0.12) 17 (2-47)	* 21 (5-46) 1 (0-20)	68 (20-95) 17 (2-60)	0 (0-0) 0 (0-0) 13 (0-53) 38 (12-76)	50.9 (19.6-100.6) 23 (15-33) 2.2 (1.1-4.0)
AL02 Kobresia/curly sedge-club-moss	3	12,193 (11,960-12,520)	305 (0.39) 8 (7-9)	56 39 (15-55) 15 (13-18)	13 (2-21) 4 (3-5)	0 (0-0) 0 (0-0) 82 (70-97) 40 (16-83)	122.1 (99.8-153.4) 30 (25-35) 4.0 (3.8-4.4)
AL03 Kobresia-like sedge/alpine sandwort-alpine sagebrush	10	12,318 (11,820-12,780)	174 (0.27) 12 (2-36)	* 23 (13-56) 8 (0-28)	17 (4-45) 23 (3-60)	0 (0-0) 0 (0-0) 56 (12-87) 47 (17-105)	103.5 (60.6-138.8) 28 (18-38) 3.9 (2.2-6.1)
AL04 Curly sedge/Greenland bluegrass	2	12,485 (12,450-12,520)	174 (0.27) 10 (5-14)	* 31 (20-41) 21 (0-41)	25 (15-35) 5 (5-5)	0 (0-0) 0 (0-0) 49 (19-79) 56 (37-75)	105.2 (94.2-116.2) 24 (23-24) 4.5 (3.9-5.1)
AL05 Tufted hairgrass/alpine avens	9	12,186 (11,700-12,885)	323 (0.40) 9 (3-15)	42 25 (8-50) 7 (0-24)	9 (1-30) 19 (2-40)	0 (0-0) 1 (0-5) 68 (25-148) 63 (28-98)	131.7 (95.8-241.8) 29 (20-45) 4.8 (2.3-7.1)

* Not sampled.

Code ET Name	ns	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse % Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees/Shrubs Graminoids Forbs	Total Live Cover, % No. Species TLC/NS, %
AL06 Sibbaldia/alpine avens	4	12,275 (12,140-12,480)	215 (0.53) 15 (6-32)	* 37 (23-53) 2 (0-8)	32 (4-45) 20 (5-40)	0 (0-0) 1 (0-2) 20 (4-37) 49 (34-58)	70.3 (52.4-85.4) 27 (26-30) 2.6 (2.0-3.2)
AL07 Pyrenees sedge-cloud sedge-black alpine sedge	3	12,113 (11,840-12,450)	45 (0.33) 5 (2-7)	* 21 (10-28) 0 (0-0)	20 (5-50) 5 (4-5)	0 (0-0) 0 (0-0) 70 (33-93) 28 (27-30)	98.1 (60.4-120.2) 22 (20-23) 4.6 (2.6-5.7)
AL08 Cliff sedge	3	12,043 (10,690-12,720)	271 (0.85) 6 (5-7)	* 24 (15-33) 0 (0-0)	3 (1-5) 6 (3-12)	0 (0-0) 1 (0-2) 56 (12-81) 53 (14-105)	109.4 (94.9-116.8) 22 (20-23) 5.0 (4.1-5.8)
AL09 Dwarf bilberry/varileaf cinquefoil	2	11,750 (11,180-12,320)	271 (0.85) 20 (3-36)	* 40 (33-46) 5 (0-10)	43 (25-60) 13 (1-25)	0 (0-1) 32 (25-38) 25 (11-38) 31 (27-35)	87.4 (84.8-89.9) 38 (37-39) 2.3 (2.3-2.3)
AL10 Whiproot clover/alpine sandwort	1	11,860	* 32	* 31 31	12 8	0 0 7 74	81.4 26 3.1
AL11 Parry clover/tufted hairgrass-bistort	3	12,360 (11,620-12,760)	285 (0.98) 3 (3-3)	* 31 (18-50) 5 (0-10)	7 (1-18) 14 (3-25)	0 (0-0) 0 (0-0) 28 (14-35) 78 (67-98)	105.5 (100.6-112.2) 30 (27-32) 3.5 (3.2-4.2)
AL12 Dwarf clover/alpine sandwort	3	12,597 (12,280-12,760)	26 (0.54) 7 (4-9)	* 14 (13-15) 3 (0-5)	36 (4-85) 6 (4-7)	0 (0-0) 0 (0-0) 29 (7-72) 54 (37-86)	82.8 (45.2-109.3) 29 (22-39) 3.0 (1.8-4.3)
AL13 Mountain dryad/curly sedge-alpine fescue	3	12,190 (11,800-12,450)	26 (0.54) 19 (7-36)	* 27 (18-36) 27 (18-36)	27 (20-35) 12 (6-18)	0 (0-0) 60 (55-70) 8 (4-10) 19 (13-23)	86.9 (78.8-102.4) 28 (23-39) 3.2 (2.6-3.5)
AL14 Snow willow	3	12,417 (12,000-12,800)	360 (0.59) 6 (3-9)	* 20 (13-28) 0 (0-0)	33 (4-70) 5 (3-8)	0 (0-0) 1 (0-3) 18 (6-38) 63 (19-90)	81.3 (56.6-99.4) 27 (26-28) 3.0 (2.2-3.8)
AL15 Arctic willow	3	12,272 (11,880-12,485)	243 (0.24) 6 (4-7)	* 25 (15-33) 9 (0-26)	31 (2-50) 5 (5-6)	0 (0-0) 0 (0-0) 8 (4-15) 89 (58-115)	96.9 (62.8-120.8) 26 (22-30) 3.8 (2.9-4.8)
AL16 Marsh-marigold-king's crown riparian forblands	3	12,228 (11,760-12,885)	243 (0.24) 6 (3-9)	* 19 (10-31) 0 (0-0)	32 (4-80) 14 (3-30)	0 (0-0) 0 (0-1) 10 (5-19) 60 (31-87)	70.1 (35.4-105.4) 22 (20-24) 3.1 (1.5-4.4)

Looking west across the West Fork of Dry Creek, about 20 mi west of Gunnison. Islands of aspen surrounded by big sagebrush-bitterbrush/Arizona fescue on the hills in foreground and middleground. September 11, 1995.

* Not sampled.