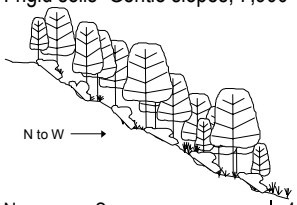
FD10. **DOUGLAS-FIR/BITTERBRUSH–GENTLE SLOPES** (PSME/PUTR2). Douglas-fir/bitterbrush–Thin-dark Frigid soils–Gentle slopes, 7,900-10,300 ft



NUMBER OF SAMPLES	41, soil descriptions from 5 of these (total 41)
ELEVATION	9,097 ft (7,960-10,260 ft) = 2,773 m (2,426-3,127 m)
AVERAGE ASPECT	220°M (r = 0.38)
LITHOLOGY	A wide variety
FORMATIONS[1]	A variety
LANDFORMS	Ridges and mesas [60%], soil creep slopes [40%]
SLOPE POSITIONS	Backslopes, shoulders, summits
SLOPE SHAPES	Convex to undulating horizontally, Convex to linear vertically
SLOPE ANGLE	27.0% (3-100%)
SOIL PARENT MATERIAL	Primarily colluvium [80%]
COARSE FRAGMENTS	14.0% (0-80%) cover on surface, 58.4% (24-84%) by volume in soil
SOIL DEPTH	65 cm (40-152 cm) = 25.6 in (16-60 in)
MOLLIC THICKNESS	10 cm (0-30 cm) = 3.8 in (0-12 in)
TEXTURE	A wide variety of textures on the surface and in subsurface
SOIL CLASSIFICATION	Eutroboralfs [40%], Lithic Haploborolls, Haplochrept, Argiboroll
TOTAL LIVE COVER	145.0% (67.2-319.5%)
NUMBER OF SPECIES	21.7 (12-38)
TOTAL LIVE COVER/NO. SPECIES	7.3% (1.8-17.8%)
CLIMATE	In moderate rainshadow. Cool, moderately dry, moderately exposed to sun, slightly exposed to wind.
WATER	Litter and duff holds moisture in soil through most of season, unless the site has been depleted and bare soil is evident over about 10% cover.

Key to Community Types

1. Parry oatgrass (DAPA2) present and >1% cover..... **A**
1. Parry oatgrass absent or <1% cover..... (2)

2. Bitterbrush >20% cover. Ponderosa pine >10% cover..... (3)
2. Bitterbrush <20% cover. Ponderosa pine absent to 25% cover, often <10%..... (4)

3. Four trees: ponderosa, lodgepole, aspen, Douglas-fir. Ponderosa pine >10% cover, aspen >25%. Bottlebrush squirreltail (ELEL5) >20%..... **B**
3. Two trees: lodgepole pine and aspen both absent. Ponderosa pine >5% cover, Douglas-fir >20%. Bottlebrush squirreltail absent to <20% cover..... **C**

4. Elk sedge >20% cover..... (5)
4. Elk sedge <20% cover..... (8)

5. Douglas-fir >25% cover, dominant over other trees..... (6)
5. Either Douglas-fir <25% cover or other trees dominant..... (7)

6. Bitterbrush >5% cover..... **D**
6. Bitterbrush absent or <5% cover ..... **H**

7. Dominated by lodgepole pine. Sagebrush 0-20% cover..... **F**
7. Mixed stands of aspen-ponderosa-Douglas-fir, no one of these >15% cover. Lodgepole pine absent. Sagebrush 5-20% cover ..... **J**

8. Mixed stands of aspen-ponderosa-Douglas-fir, no one of these >15% cover. Lodgepole pine absent..... **J**
8. Either lodgepole pine or ponderosa pine >20% cover..... (9)

9. Ponderosa pine dominant, >15% cover ..... **E**
9. Lodgepole pine dominant, >25% cover ..... **G**

Description of Community Types

A *Douglas-fir-ponderosa pine-sagebrush-bitterbrush-common juniper* has Douglas-fir dominant over ponderosa pine, though both are present. Aspen and lodgepole pine are usually absent. Bitterbrush cover is >20%, Parry oatgrass cover is >1%, sometimes >15%, Elk sedge cover is >50%.

B *Aspen-ponderosa pine-lodgepole pine-Douglas-fir-bitterbrush-common juniper-elk sedge* is a mixed-species forest, with lodgepole pine, aspen, ponderosa pine, and Douglas-fir. Bitterbrush cover is >25%, and elk sedge cover is >60%. Oatgrass is absent.

C *Ponderosa pine-Douglas-fir-bitterbrush-sagebrush* has Douglas-fir dominant over ponderosa pine, though both are present. Aspen and lodgepole pine are usually absent. Bitterbrush cover is >20%. Elk sedge cover is >10%, but oatgrass is absent.

D *Douglas-fir-ponderosa pine-common juniper-bitterbrush-sagebrush-elk sedge* Douglas-fir cover is >25%, and it is dominant over other trees. Lodgepole pine is absent to minor, <5% cover. Bitterbrush cover is 5-10%, and elk sedge cover is >10%.

E *Ponderosa pine-Douglas-fir-bitterbrush* Ponderosa pine is dominant over Douglas-fir, though both are present. Aspen is absent or <1% cover. Lodgepole pine is absent. Bitterbrush cover is 5-20%. Elk sedge cover is absent to 10%.

F *Lodgepole pine-Douglas-fir-sagebrush-elk sedge-bluegrass has* lodgepole pine dominant over other tree species. Bitterbrush cover is 10-30%.

G *Lodgepole pine-bitterbrush-kinnikinnick-common juniper-sparse* is dominated by lodgepole pine (>25% cover). Bitterbrush cover is 5-30%.

H *Sagebrush-sparse conifers-muttongrass* is dominated by Douglas-fir, but the stand is really dominated by sagebrush and elk sedge. Bitterbrush is absent to 1% cover.

J *Sparse Douglas-fir-sagebrush-bitterbrush-muttongrass* has few trees, with no tree species cover >15%. Sagebrush cover is 5-20%, and bitterbrush cover is 5-20%.

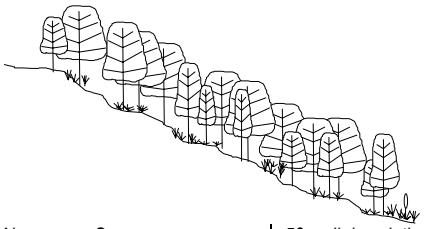
CT	Elevation, ft Slope, %	Coarse, % Depth, cm Mollic Depth, cm	Surface Coarse, % Bare, % Seral Stage	Cover, %: Trees Shrubs Gramin. Forbs	No. Species Total Live Cover, % TLC/NS, %
A. Douglas-fir-ponderosa pine-sagebrush-bitterbrush-common juniper	* *	* * *	* * LM	43 (32-50) 60 (45-81) 89 (65-135) 41 (8-61)	19 (18-20) 233 (212-274) 12.3 (10.6-15.2)
B. Aspen-ponderosa pine-lodgepole pine-Douglas-fir-bitterbrush-common juniper-elk sedge	* *	* * *	* * LM	79 (67-91) 49 (47-51) 140 (130-150) 34 (32-35)	20 (18-22) 301 (283-320) 15.3 (12.8-17.8)
C. Ponderosa pine-Douglas-fir-bitterbrush-sagebrush	9,440 *	* * *	* * MS	56 (22-100) 55 (35-74) 43 (22-66) 8 (2-20)	21 (13-28) 161 (132-197) 8.2 (6.4-10.1)
D. Douglas-fir-ponderosa pine-common juniper-bitterbrush-sagebrush-elk sedge	* *	* * *	* * MS	62 (28-91) 45 (22-75) 59 (35-75) 8 (2-16)	19 (17-23) 174 (112-257) 9.3 (5.9-15.1)
E. Ponderosa pine-Douglas-fir-bitterbrush	8,870 (8,290-9,280) 14.8 (3-32)	63 (49-77) 42 (40-43) 20 (9-30)	10 (3-23) 3 (1-8) EM	38 (21-70) 41 (11-85) 28 (16-35) 12 (1-55)	27 (18-38) 118 (67-167) 4.8 (1.8-8.8)
F. Lodgepole pine-Douglas-fir-sagebrush-elk sedge-bluegrass	9,600 (8,830-10,260) 28.6 (10-54)	81 (78-84) 48 (46-49) 3 (2-4)	24 (20-27) 3 (2-4) EM	49 (22-93) 30 (13-55) 43 (25-65) 16 (2-52)	23 (14-35) 138 (83-203) 6.6 (2.8-14.5)
G. Lodgepole pine-bitterbrush-kinnikinnick-common juniper-sparse	9,600 (9,320-9,880) 27.7 (21-36)	48 (36-61) 64 (43-88) 2 (0-3)	11 (2-27) 10 (2-18) EM	59 (42-77) 36 (28-52) 8 (0-13) 2 (0-7)	24 (16-34) 105 (83-134) 4.8 (2.4-6.0)
H. Sagebrush-sparse conifers-muttongrass	8,045 (8,040-8,050) 60.0 (20-100)	* * *	* * ES	48 (21-65) 28 (22-36) 38 (11-70) 9 (2-21)	16 (12-18) 122 (68-192) 7.7 (4.0-11.3)
J. Sparse Douglas-fir-sagebrush-bitterbrush-muttongrass	8,920 (8,500-9,340) 15.2 (10-20)	24 (24-24) 152 (152-152) 26 (26-26)	38 (30-46) 0 (0-0) EM	25 (16-33) 31 (16-47) 29 (17-42) 18 (2-72)	21 (17-32) 103 (86-140) 5.2 (2.7-7.4)

*. Unknown: measurements were not taken in this CT.

	TREES	
PICO	Pinus contorta	lodgepole pine
PIPO	Pinus ponderosa	ponderosa pine
POTR5	Populus tremuloides	quaking aspen
PSME	Pseudotsuga menziesii	Douglas-fir
	SHRUBS	
ARUV	Arctostaphylos uva-ursi	kinnikinnick
CEFE	Ceanothus fendleri	buckbrush
JUCO6	Juniperus communis	common juniper
PUTR2	Purshia tridentata	antelope bitterbrush
SYRO	Symphoricarpos rotundifolius	mountain snowberry

	GRAMINOIDS	
ACPI2	Achnatherum pinetorum	pine needlegrass
CAGE	Carex geophila	dryland sedge
CAGE2	Carex geyeri	elk sedge
DAPA2	Danthonia parryi	Parry oatgrass
ELEL5	Elymus elymoides	bottlebrush squirreltail
FEAR2	Festuca arizonica	Arizona fescue
KOMA	Koeleria macrantha	prairie junegrass
MUMO	Muhlenbergia montana	mountain muhly
POA	Poa	bluegrass
POFE	Poa fendleriana	muttongrass
	FORBS	
ALLIU	Allium	onion
AMLA6	Amerosedum lanceolatum	yellow stonecrop
ANPA4	Antennaria parvifolia	smallleaf pussytoes
ERCO24	Eremogone congesta	desert sandwort
EREA	Erigeron eatonii	Eaton fleabane
ERSU11	Eriogonum subalpinum	sulfurflower
PADI11	Packera dimorphophylla	splitleaf groundsel
TAOF	Taraxacum officinale	common dandelion

FD11. **DOUGLAS-FIR/ELK SEDGE–COLD TO MODERATELY COLD–GENTLE TO STEEP** (PSME/CAGE2).
Douglas-fir/elk sedge–Dark Frigid or Cryic soils–Gentle to steep slopes, 8,700-10,200 ft



NUMBER OF SAMPLES	50; soil descriptions from 7 of these (total 50)
ELEVATION	9,337 ft (8,700-10,120 ft); 2,846 m (2,652-3,084 m)
AVERAGE ASPECT	325°M (r = 0.23)
LITHOLOGY	A variety, including gneiss, sandstone, schist, granite, and others
FORMATIONS[1]	A variety
LANDFORMS	Soil creep slopes
SLOPE POSITIONS	Backslopes
SLOPE SHAPES	Variable (mostly linear) horizontally; Linear vertically
SLOPE ANGLE	30.4% (13-66%)
SOIL PARENT MATERIAL	Colluvium [83%]
COARSE FRAGMENTS	4.7% (0-24%) cover on surface, 42.0% (9-85%) by volume in soil
SOIL DEPTH	62 cm (33-155 cm); 24.2 in (13-61 in)
MOLLIC THICKNESS	17 cm (1-52 cm); 6.5 in (0-20 in)
TEXTURE	A wide variety
SOIL CLASSIFICATION	Cryoborolls [50%]; Eutroboralfs [38%]
TOTAL LIVE COVER	196.3% (66.0-448.5%)
NUMBER OF SPECIES	18.2 (5-42)
TOTAL LIVE COVER/NO. SPECIES	12.5% (3.0-29.6%)
CLIMATE	Usually outside rainshadows, occasionally within partial rainshadow. Moderately moist, cool forest.
WATER	As long as the canopy is intact, litter and duff keep soil moisture through the season. Usually no open water in the sites, although there is water uncommonly in adjacent riparian sites.

Key to Community Types

1. Douglas-fir >20% cover, dominant over (more cover than) other trees. Lodgepole pine absent or <15% cover. Aspen absent or subordinate to Douglas-fir ..... (2)
1. Douglas-fir subordinate to either aspen or lodgepole pine. Either aspen >35% cover or lodgepole pine >20% cover ..... (5)

2. Aspen absent. Elk sedge <30% cover. Douglas-fir <70% cover ..... (3)
2. Either aspen cover >10% *or* elk sedge >30% *or* Douglas-fir >60% ..... (4)

3. Elk sedge <15% cover ..... **G**
3. Elk sedge >20% cover ..... **C**

4. Aspen >10% cover, subordinate to Douglas-fir (>20%). Elk sedge >30% cover ..... **B**
4. Aspen absent or <10% cover. Douglas-fir >35% cover ..... **A**

5. Aspen >45% cover, often >60%, dominant over other trees. Lodgepole pine usually absent, but sometimes up to 15%. Douglas-fir absent or conspicuous, 0-35% cover. Elk sedge >15% cover ..... (6)
6. Aspen absent to <45% cover. Lodgepole pine cover >30%, often >50%, dominant over other trees. Elk sedge minor to conspicuous, 5-80% cover ..... (9)

7. Douglas-fir >10% cover, subordinate to aspen. Elk sedge >70% cover ..... **D**
7. Douglas-fir absent or rarely <10% cover. Aspen cover >35%, dominant ..... (8)

8. Elk sedge cover 15-45% ..... **F**
8. Elk sedge cover 45-95% ..... **E**

9. Douglas-fir present and >1% cover, clearly subordinate to lodgepole pine and/or aspen. ...(10)
9. Douglas-fir absent ..... (11)

10. Elk sedge cover >35% ..... **H**
10. Elk sedge cover <25% ..... **L**

11. Elk sedge cover >20%. Lodgepole pine cover 30-50% ..... **J**
11. Elk sedge cover <20%. Lodgepole pine cover 35-70% ..... **K**

Community Type Descriptions

A *Douglas-fir-elk sedge*. Douglas-fir is dominant, with >35% cover, often >60%. Aspen is sometimes present, up to 2% cover. Lodgepole pine is sometimes present, up to 15% cover. Elk sedge cover is >45%.

B *Douglas-fir-aspen-elk sedge-sparse snowberry-sparse Oregon-grape*. Douglas-fir is dominant at >20% cover, with aspen subdominant at 5-50% cover. Elk sedge cover is>30%.

C *Douglas-fir-snowberry-elk sedge*. Douglas-fir is dominant at >40% cover. Aspen is absent, and elk sedge cover is <35% cover. Lodgepole pine is sometimes present at <10% cover.

D *Aspen-Douglas-fir-common juniper-elk sedge*. Aspen is dominant at >55% cover. Douglas-fir is always present and is an obvious subdominant at >10% cover. Elk sedge is >70% cover.

E *Aspen-elk sedge*. Aspen is dominant at >35% cover. Douglas-fir is absent or rarely <1% cover. Elk sedge cover is >60%. This and CT F were previously classified as "aspen/elk sedge type," which was combined with this type because the soil and landform are indistinguishable from other community types, for example CT D. These are *disclimaxes*, in which a seral-vegetation type has become permanent, in this case because of lack of Douglas-fir seed source.

F *Aspen-snowberry-common juniper-Kentucky bluegrass-elk sedge-dandelion*. Aspen is dominant at >50% cover. Douglas-fir is absent or rarely <1% cover. Elk sedge cover is 10 to 30%.

G *Douglas-fir-sparse snowberry-sparse elk sedge*. Douglas-fir is dominant at >20% cover, with no aspen, and no lodgepole pine. The understory is sparse, with elk sedge and snowberry the only constants.

H *Lodgepole pine-Douglas-fir-aspen-elk sedge*. Lodgepole pine is dominant at >30% cover, often >50%. Douglas-fir is always present, ranging from 1 to 55% cover. Aspen is always present, ranging from 3 to 30% cover. Elk sedge cover is >35%.

J *Lodgepole pine-elk sedge*. Lodgepole pine is dominant at >30% cover, often >50%. Douglas-fir is absent, but aspen is sometimes present, up to 45% cover. Elk sedge cover is >20%. This and CT K were once classified as the "lodgepole pine/elk sedge type." These communities are *disclimaxes*, in which seral vegetation has become permanent, in this case because of lack of Douglas-fir seed sources.

K *Lodgepole pine-Oregon-grape-elk sedge*. Lodgepole pine is dominant with 35% cover. Douglas-fir or aspen cover may rarely as much as 5% cover. Elk sedge cover is <20%.

L *Lodgepole pine-Douglas-fir-elk sedge*. Lodgepole pine is dominant at >45% cover. Douglas-fir is always present, but varies from trace to 35% cover. Aspen is sometimes present in small quantities. Elk sedge cover is <20%.

Communities Not Assigned to a Community Type

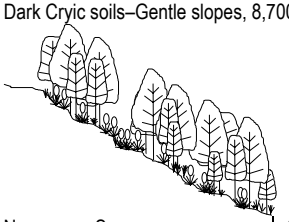
- A community with Douglas-fir dominant in a sparse canopy, and aspen present in trace amounts. Elk sedge is apparently absent or trace, but some dry-site grasses such as muttongrass (POFE) may be present. Based on landform and soil, this community belongs in this ecological type.

CT	Elevation, ft Slope, %	Coarse, % Depth, cm Mollic Depth, cm	Surface Coarse, % Bare, % Seral Stage	Cover, %: Trees Shrubs Gramin. Forbs	No. Species Total Live Cover, % TLC/NS, %
A. Douglas-fir-elk sedge	9,361 (9,180-9,760) 35.9 (21-66)	51 (30-85) 52 (42-57) 18 (5-40)	7 (3-11) 2 (1-3) LM	81 (55-100) 30 (13-48) 59 (41-78) 22 (1-85)	25 (14-35) 191 (139-278) 8.3 (5.6-13.8)
B. Douglas-fir-aspen-elk sedge-sparse snowberry-sparse Oregon-grape	9,440 (9,160-9,720) 29.5 (29-30)	61 51 15	0 0 MS	59 (31-100) 44 (14-80) 57 (41-72) 17 (3-27)	19 (13-32) 177 (108-251) 11.0 (4.7-19.3)
C. Douglas-fir-snowberry-elk sedge	9,320 32	72 53 7	1 3 MS	52 (46-59) 29 (28-31) 39 (35-44) 8 (4-13)	23 (16-29) 130 (115-144) 6.1 (5.0-7.2)
D. Aspen-Douglas-fir-common juniper-elk sedge	9,500 38	22 58 30	* * MS	99 (84-118) 23 (6-40) 89 (61-111) 86 (20-141)	20 (15-33) 297 (200-374) 16.2 (9.8-23.3)
E. Aspen-elk sedge	9,580 (9,120-10,120) 29.6 (21-35)	27 94 1	5 (0-10) 5 MS	75 (38-106) 64 (12-121) 115 (85-146) 101 (35-201)	21 (10-35) 355 (207-448) 19.9 (5.9-29.6)
F. Aspen-snowberry-common juniper-Kentucky bluegrass-elk sedge-dandelion	9,100 (8,760-9,440) 17.0 (16-18)	9 155 52	0 2 EM	60 (53-72) 45 (36-51) 101 (62-121) 98 (39-135)	24 (15-41) 305 (203-363) 16.5 (5.0-24.2)
G. Douglas-fir-sparse snowberry-sparse elk sedge	8,810 (8,700-8,920) 34.2 (25-44)	48 (32-65) 45 (41-48) 10 (3-16)	17 (10-24) 9 (0-18) EM	48 (28-68) 20 (13-27) 23 (17-30) 21 (1-40)	35 (28-42) 112 (99-125) 3.3 (3.0-3.5)
H. Lodgepole pine-Douglas-fir-aspen-elk sedge	9,500 13	53 49 3	* * EM	80 (37-116) 24 (8-60) 51 (40-67) 12 (2-41)	17 (12-22) 167 (87-226) 10.2 (5.4-15.2)
J. Lodgepole pine-elk sedge	* *	* * *	* * EM	55 (30-96) 19 (10-55) 50 (20-100) 39 (3-105)	11 (5-17) 163 (84-311) 15.1 (6.0-21.0)
K. Lodgepole pine-Oregon-grape-elk sedge	* *	* * *	* * EM	50 (35-70) 19 (3-30) 15 (10-20) 9 (2-25)	9 (6-13) 94 (67-120) 12.2 (5.2-18.3)
L. Lodgepole pine-Douglas-fir-elk sedge	9,520 40	41 33 18	2 0 EM-MS	78 (58-100) 7 (2-15) 11 (6-20) 5 (1-11)	15 (9-21) 100 (66-118) 7.6 (4.7-13.1)

*. Unknown: measurements were not taken in this CT.

	TREES	
PICO	Pinus contorta	lodgepole pine
	SHRUBS	
JUCO6	Juniperus communis	common juniper
MARE11	Mahonia repens	Oregon-grape
ROWO	Rosa woodsii	Woods rose
SYRO	Symphoricarpos rotundifolius	mountain snowberry
	GRAMINOIDS	
ACNE9	Achnatherum nelsonii	Nelson's needlegrass
BRCA10	Bromopsis canadensis	fringed brome
CACA4	Calamagrostis canadensis	bluejoint reedgrass
CAGE2	Carex geyeri	elk sedge
CARO5	Carex rossii	Ross sedge
ELEL5	Elymus elymoides	bottlebrush squirreltail
ELGL	Elymus glaucus	blue wildrye
KOMA	Koeleria macrantha	prairie junegrass
POA	Poa	bluegrass
POFE	Poa fendleriana	muttongrass
POPR	Poa pratensis	Kentucky bluegrass
	FORBS	
ACLA5	Achillea lanulosa	western yarrow
ARCO9	Arnica cordifolia	heartleaf arnica
ASTRA	Astragalus	milkvetch
ERSP4	Erigeron speciosus	Oregon fleabane
FRVI	Fragaria virginiana	Virginia strawberry
GASE6	Galium septentrionale	northern bedstraw
GERI	Geranium richardsonii	Richardson geranium
LALE2	Lathyrus leucanthus	aspen peavine
LUAR3	Lupinus argenteus	silvery lupine
PEPR7	Pedicularis procera	Gray's lousewort
PSMO	Pseudocymopterus montanus	mountain parsely
TAOF	Taraxacum officinale	common dandelion
THFE	Thalictrum fendleri	Fendler meadow-rue
VIAM	Vicia americana	American vetch

FD12. **DOUGLAS-FIR/THURBER FESCUE–COLD DARK SOILS–GENTLE** (PSME/FETH). Douglas-fir/Thurber fescue–Dark Cryic soils–Gentle slopes, 8,700-10,400 ft



NUMBER OF SAMPLES	60, soil descriptions from none; 3 plots not assigned to a Community Type (Total 63)
ELEVATION	9,752 ft (8,700-10,400 ft); 2,972 m (2,652-3,170 m)
AVERAGE ASPECT	213°M (r = 0.59)
LITHOLOGY	Predominantly sedimentaries, with Shale, sandstone, and siltstone leading
FORMATIONS[1]	Km-Jmj [67%]
LANDFORMS	Soil creep slopes or slump-earthflows
SLOPE POSITIONS	Backslopes and upper backslopes
SLOPE SHAPES	Undulating [67%] to linear [33%] horizontally; Concave [50%] to linear [33%] vertically
SLOPE ANGLE	21.8% (10-40%)
SOIL PARENT MATERIAL	Primarily colluvium [83%]
COARSE FRAGMENTS	3.3% (0-24%) cover on surface
TOTAL LIVE COVER	330.1% (170.0-592.5%)
NUMBER OF SPECIES	16.8 (11-44)
TOTAL LIVE COVER/NO. SPECIES	20.4% (4.6-33.6%)
CLIMATE	Usually outside rainshadows, towards the highest elevations for Douglas-fir dominance.
WATER	These stands are moist to very moist for a conifer forest. Aspen and Thurber fescue both retain a great deal of moisture at the soil surface and in the soil.

Key to Community Types

1. Thurber fescue >40% cover ..... (2)
1. Thurber fescue <40% cover ..... (8)

2. Elk sedge present, >40% cover ..... (3)
2. Elk sedge absent or <40% cover ..... (6)

3. Parry oatgrass (DAPA2) conspicuous, >10% cover ..... **B**
3. Parry oatgrass absent or rarely <5% ..... (4)

4. Lodgepole pine present, >10% cover ..... **D**
4. Lodgepole pine absent or rarely <10% ..... (5)

5. Douglas-fir present, subdominant to (uncommonly) dominant, >5% cover ..... **A**
5. Douglas-fir absent or rarely <5% cover ..... **G**

6. Ponderosa pine present and >10% cover ..... **F**
6. Ponderosa pine absent ..... (7)

7. Douglas-fir present, subdominant to (uncommonly) dominant, >5% cover ..... **A**
7. Douglas-fir absent or rarely <5% cover ..... **G**

8. Lodgepole pine present and >10% cover ..... (9)
8. Lodgepole pine absent or <10% ..... (10)

9. Thurber fescue <10% cover ..... **J**
9. Thurber fescue >10% cover ..... **D**

10. Ponderosa pine present and >10% cover ..... **F**
10. Ponderosa pine absent ..... (11)

11. Parry oatgrass conspicuous, >10% cover ..... **B**
11. Parry oatgrass absent ..... (12)

12. Douglas-fir subdominant or dominant, >20% cover ..... **E**
12. Douglas-fir absent or <10% cover ..... (13)

13. Douglas-fir always present but <10% cover ..... **C**
13. Douglas-fir absent ..... **H**

Community Type Descriptions

A *Aspen-Douglas-fir-Thurber fescue-elk sedge*. Aspen and Douglas-fir share dominance. Thurber fescue cover is >60%, and elk sedge cover ranges from 10 to 80%.

B *Douglas-fir-elk sedge-Thurber fescue* is dominated by aspen, with Douglas-fir subdominant, or Douglas-fir dominates, with no aspen present. Thurber fescue cover varies from 5 to 50%. Elk sedge cover is >40%.

C *Aspen-sparse Douglas-fir-elk sedge-Thurber fescue* is dominated by aspen, with >60% cover. Douglas-fir is always present, but in small quantities, Trace to 5% cover. Thurber fescue cover is 15-35%, and elk sedge is >60% cover.

D *Aspen-sparse lodgepole pine-common juniper-elk sedge-Thurber fescue* is dominated by aspen, at 35-85% cover. Douglas-fir is usually present in small quantities. Lodgepole pine is subdominant, at >1% and usually >10% cover. Thurber fescue cover is variable, 10-60%, and elk sedge cover is >40%.

E *Douglas-fir-aspen-common juniper-snowberry-elk sedge-Thurber fescue*. Aspen (at 10-60% cover) and Douglas-fir (20-45% cover) share dominance. Lodgepole pine is absent or <5%. Thurber fescue cover is 10-25%, and elk sedge is >40% cover.

F *Aspen-ponderosa pine-Douglas-fir-Thurber fescue-elk sedge-snowberry*. Ponderosa pine is codominant with aspen and Douglas-fir. Ponderosa pine cover is >10%, and lodgepole pine is absent. Thurber fescue cover is >20%; elk sedge cover is >30%.

G *Aspen-elk sedge-Thurber fescue-kinnikinnick-common juniper* is dominated by aspen at >45% cover. Douglas-fir is absent; lodgepole pine may be present or not. Thurber fescue cover is >40%, and elk sedge cover is >30%. Community types G, H, and J represent part of a broader concept of the aspen/Thurber fescue type (*Aspen/Thurber fescue–Deep dark soils*). They are *disclimaxes*, from which the seed source for Douglas-fir was eliminated a century or more ago.

H *Aspen-common juniper-elk sedge-Thurber fescue* is dominated by aspen at >60% cover. Douglas-fir and lodgepole pine are absent. Thurber fescue cover is 10-30%; elk sedge cover is >60%.

J *Aspen-lodgepole pine-common juniper-kinnikinnick-elk sedge-sparse*. Thurber fescue is dominated by aspen, at >60% cover. Lodgepole pine is present at >10% cover. Thurber fescue cover is <10%; elk sedge cover is >60%.

Communities Not Assigned to a Community Type

- A community with Douglas-fir and no aspen; ponderosa pine is present but subdominant. Elk sedge is very conspicuous, and Thurber fescue is present in small amounts. Though clearly part of this Ecological Type, this community does not clearly fit any of the above Community Types.

Community Type	Elevation, ft Slope, %	Surface Coarse, % Bare, % Seral Stage	Cover, %: Trees Shrubs Gramin. Forbs	No. Species Total Live Cover, % TLC/NS, %
A. Aspen-Douglas-fir-Thurber fescue-elk sedge	9,200 (9,200-9,250) *	* * LS	79 (55-101) 59 (40-77) 139 (90-200) 103 (55-240)	16 (13-20) 380 (251-593) 23.0 (16.7-29.6)
B. Douglas-fir-elk sedge-Thurber fescue	9,400 (9,200-9,400) *	* * LS	62 (36-88) 57 (15-90) 127 (90-190) 56 (17-136)	18 (13-22) 302 (212-383) 17.2 (10.6-28.2)
C. Aspen-sparse Douglas-fir-elk sedge-Thurber fescue	9,950 (9,610-10,160) 18.3 (10-30)	7 * MS	86 (61-131) 54 (10-91) 131 (85-195) 86 (51-125)	17 (15-21) 357 (299-492) 20.9 (14.2-28.9)
D. Aspen-sparse lodgepole pine-common juniper-elk sedge-Thurber fescue	10,118 (9,610-10,280) 12.5 (10-20)	* * EM	68 (50-94) 65 (15-95) 103 (80-165) 95 (45-170)	15 (11-22) 331 (221-476) 21.6 (16.7-26.7)
E. Douglas-fir-aspen-common juniper-snowberry-elk sedge-Thurber fescue	9,655 (9,610-10,280) 30	* * MS	62 (42-90) 70 (36-125) 89 (50-135) 71 (20-145)	17 (14-20) 292 (170-455) 17.3 (10.6-26.8)
F. Aspen-ponderosa pine-Douglas-fir-Thurber fescue-elk sedge-snowberry	9,560 (9,560-10,280) 35	* * EM-MS	44 (23-65) 58 (51-65) 120 (110-130) 68 (65-71)	20 (18-22) 290 (269-311) 14.7 (12.2-17.3)
G. Aspen-elk sedge-Thurber fescue-kinnikinnick-common juniper	9,975 (9,550-10,400) 28.0 (16-40)	* * MS	68 (50-90) 70 (20-105) 135 (100-180) 103 (65-145)	15 (12-18) 376 (281-476) 25.4 (16.5-32.6)
H. Aspen-common juniper-elk sedge-Thurber fescue	9,448 (9,050-9,740) 25.2 (16-35)	0 7 EM	78 (61-105) 67 (10-140) 101 (67-155) 73 (17-211)	19 (11-44) 320 (203-571) 21.0 (4.6-33.6)
J. Aspen-lodgepole pine-common juniper-kinnikinnick-elk sedge-sparse Thurber fescue	* *	* * EM	81 (76-86) 40 (30-50) 95 (80-110) 51 (45-56)	14 (12-15) 266 (252-281) 20.1 (16.8-23.4)

*. Unknown: measurements were not taken in this CT.

	TREES	
PICO	Pinus contorta	lodgepole pine
PIPO	Pinus ponderosa	ponderosa pine
POTR5	Populus tremuloides	quaking aspen
PSME	Pseudotsuga menziesii	Douglas-fir
	SHRUBS	
ARUV	Arctostaphylos uva-ursi	kinnikinnick
ARTR2	Artemisia tridentata	big sagebrush
ARTRV	Artemisia tridentata ssp. vaseyana	mountain big sagebrush
CHVI8	Chrysothamnus viscidiflorus	Douglas rabbitbrush
JUCO6	Juniperus communis	common juniper
MARE11	Mahonia repens	Oregon-grape
ROWO	Rosa woodsii	Woods rose
SYRO	Symphoricarpos rotundifolius	mountain snowberry
	GRAMINOIDS	
ACNE9	Achnatherum nelsonii	Nelson's needlegrass
BRCA10	Bromopsis canadensis	fringed brome
CAGE2	Carex geyeri	elk sedge
DAPA2	Danthonia parryi	Parry oatgrass
ELEL5	Elymus elymoides	bottlebrush squirreltail
ELTR7	Elymus trachycaulus	slender wheatgrass
FETH	Festuca thurberi	Thurber fescue
KOMA	Koeleria macrantha	prairie junegrass
POPR	Poa pratensis	Kentucky bluegrass
	FORBS	
ACLA5	Achillea lanulosa	western yarrow
ANPA4	Antennaria parvifolia	smallleaf pussytoes
ARCO9	Arnica cordifolia	heartleaf arnica
ASTRA	Astragalus	milkvetch
CALI4	Castilleja linariifolia	Wyoming paintbrush
ERCO24	Eremogone congesta	desert sandwort
ERSP4	Erigeron speciosus	Oregon fleabane
FRVI	Fragaria virginiana	Virginia strawberry
GASE6	Galium septentrionale	northern bedstraw
GERI	Geranium richardsonii	Richardson geranium
LALE2	Lathyrus leucanthus	aspen peavine
LUAR3	Lupinus argenteus	silvery lupine
PSMO	Pseudocymopterus montanus	mountain parsely
TAOF	Taraxacum officinale	common dandelion
THFE	Thalictrum fendleri	Fendler meadow-rue
VIAM	Vicia americana	American vetch