Carey Classification – parameters (Carey, Elliott, et al. 1996. Report 2)

Quadratic Mean Diameter – QMD – Quadratic Mean Diameter of the entire stand
Canopy Closure – CC – Calculated using the PC variant
Species Diversity – SD – of the entire stand

OG (Old Growth):
- QMD - 24
- CC – 30
- SD – 2

FF (Fully Functional):
- QMD – 21
- CC – 35
- SD – 2

WH/ND (Wildlife foraging Habitat/Niche Diversification):
- QMD – 21
- CC - 35
- SD - 2

BD (Botanically Diverse):
- QMD - 21
- CC - 35
- SD - 1

DU (Developed Understory):
- QMD - 21
- CC - 40

UR (Understory Reinitiation):
- QMD - 16
- CC - 40

ES/CE (Exclusion Stage/Competitive Exclusion):
- CC - 60

SI/EI (Stand Initiation/Ecosystem Initiation)
- Everything else

Oliver 5c Classification

Big Trees – BT – trees per acres greater than 32” in diameter.
Shade Trees – ST – trees per acre greater than 16” in diameter and either WH, RC, SF, GF.
Savana Big Trees – SBT – trees per acre greater than 20” in diameter.
Savana Med. Trees – SMT – trees per acre greater than 16” in diameter.
Canopy Closure – CC – calculated using the PC variant.
Quadratic Mean Diameter – QMD – QMD of the top 40 trees per acre defined by DBH.

OG –	BT -	8
	ST -	16
	CC -	30
SV -	SBT >	40
	SMT >	10
	SMT<	20
UR -	QMD -	23
	CC -	40
SE -	QMD -	23
	CC -	40

Oliver 81 Classification

Big Trees – BT – trees per acres greater than 32” in diameter.
Shade Trees – ST – trees per acre greater than 16” in diameter and either WH, RC, SF, GF.
Canopy Closure – CC – calculated using the PC variant.
Quadratic Mean Diameter – QMD – QMD of the top 40 trees per acre defined by DBH.

OG –	BT -	8
	ST -	16
	CC -	30
UR -	QMD -	16
	CC -	40
SE -	QMD -	16
	CC -	55

HCSSPT Classification

Average DBH (top 100 trees) – ADBH
Minimum Canopy Closure – MCC – calculated using the PC variant
Maximum Canopy Closure – XCC – calculated using the PC variant.
Canopy Layers – CL – calculated using the Wilson, Baker equations.
Species Diversity – SD – number of species occupying more than 10% of the basal area.
Conifer Snags – CS
Hardwood Snags – HS
Logs - LG

DIM – ADBH - 20
CC - 60
CL - 2
SD - 2
CS - 4
HS - 1
LG - 6

DEM - ADBH - 16
MCC - 50
XCC - 100
CL - 2
SD - 2
CS - 3
HS - 1
LG - 6

DIU - ADBH - 16
MCC - 50
XCC - 100
CL - 2
SD - 2
CS - 3
HS - 0
LG - 2

DEU - ADBH - 14
MCC - 40
XCC - 100
CL - 2
CS - 2
HS - 0
LG - 2

UR - ADBH - 12
MCC - 40
XCC - 100

SE - MCC – 40

Oliver 5c (PS Park Variant)

This classification is identical to the Oliver 5c classification except for modifications made to account for high elevation stands. The first modification is to the diameter of the large trees, and the shade trees when a certain species mix is measured. The second is to change the measurements to only include the top n trees.

Sub_spp = NF MH SF
% of stand to be dominant – 60%
modified big dbh – 24”
modified shade dbh – 16”
topn - 40

South East Classification:

The southeast classification is not truly a structural stage classification, but rather a stand type classification.

The classification contains the following 5 classes:

LL (Long leaf pine): >= 60% BA is long leaf pine (species code can be set)

OF (old forest): >= 60% BA is old field species (species list can be set, default = SA, LP)

HWD (hardwood): >= 50% BA is hardwood species (default species list is all those not above)

Mix (Mixed HWD/Pine): BA >= 10% and BA <= 50%

MP (mixed pine/other): anything that does not match above.

Colville National Forest Stand Structures

SI (Stand Initiation) –	LgTcc < 20 and SScc >= 10 and (Ptcc + SmTcc + MedTcc) < 20 or LgTcc < 20 and SScc >= 10 and (Ptcc + SmTcc + MedTcc) <= 60 and (Ptcc + SmTcc + MedTcc) >= 20 and (SmTcc + MedTcc < 10
SEOC (Stem Exclusion Open Canopy) -	LgTcc < 30 and SScc < 10 and (PTcc + SmTcc + MedTcc) <= 70
SECC (Stem Exclusion Closed Canopy) -	LgTcc < 30 and SScc < 10 and (PTcc & SmTcc + MedTcc) > 70
UR (Understory Reinitiation) -	LgTcc < 30 and SScc <= 10 and (PTcc + SmTcc + MedTcc) > 60
YFMS (Young Forest Multistory) -	LgTcc < 30 and SScc >= 10 and (PTcc + SmTcc + MedTcc) <= 60 and SmTcc >= 10 or MedTcc >= 10
OFMS (Old Forest Multistory) -	LgTcc >= 30 and (SScc + PTcc + SmTcc + MedTcc) > 20
OFSS (Old Forest Single Story) -	LgTcc >= 30 and (SScc + PTcc + SmTcc + MedTcc) <= 20
Unknown -	No match from above

ICBEMP Stand Structures

Classification taken from:

Wisdom, Michael J.; Holthausen, Richard S.; Wales, Barbara C.; Hargis, Christina D.; Saab, Victoria A.; Lee, Danny C.;Hann, Wendel J.; Rich, Terrell D.; Rowland, Mary M.; Murphy, Wally J.; Eames, Michelle R. 2000. Source habitats for terrestrial vertibrates of focus in the interior Columbia basin: broad-scale trends and management implications. Volume 1 -- Overview. Gen. Tech. Rep. PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 3 vol. (Quigley, Thomas, M., tech. ed.; Interior Columbia Basin Ecosystem Managment Project: scientific assessment).

Ofs (Old forest single story) –	LgTcc >= 25 and (SScc + PTcc + SmTcc + MedTcc) <= 25
Ofm (Old forest multi-story) –	LgTcc >= 25 and (SScc + PTcc + SmTcc + MedTcc) > 25
Yf (Young forest) –	LgTcc < 35 and SScc >= 5 and (PTcc + SmTcc + MedTcc_ <= 65 and SmTcc >=5 or MedTcc >= 5
Ur (Understory reinitiation) –	LgTcc < 35 and SScc >= 5 and (PTcc + SmTcc + MedTcc) > 55
Sec (stem-exclusion closed canopy) –	LgTcc < 35 and SScc < 15 and (PTcc + SmTcc + MedTcc) > 65
Seo (Stem-exclusion open canopy) –	LgTcc < 35 and SScc < 15 and (PTcc + SmTcc + MedTcc) <= 65
Si (Stand Initiation) –	LgTcc < 35 and SScc >= 5 and (Ptcc + SmTcc + MedTcc) < 25 or LgTcc < 35 and SScc >= 5 and (Ptcc + SmTcc + MedTcc) <= 65 and (Ptcc + SmTcc + MedTcc) >= 15 and (SmTcc + MedTcc < 10

Johnson & O'Neil (2001) WHR Structures

Classification algorithm developed from:

Jonhson, David H. and Thomas A. O'Neil. 2001. Wildlife Habitat Relationships in Oregon and Washington.

Classification consists of three components: Size Class-Strata-Canopy Closure

Size Class:

- Seedling – QMD <= 1"
- Sapling/Pole – 1" < QMD <= 10"
- Small – 10" < QMD <= 15"
- Medium – 15" < QMD <= 20"
- Large – 20" < QMD <= 30"
- Giant – QMD >= 30"

Strata:

- Single – Canopy Layers >= 2
- Multi – Canopy Layers < 2

Canopy Closure:

- Grass/Forb – Canopy Closure < 10
- Open – Canopy Closure <= 40
- Moderate – Canopy Closure <= 70
- Closed – Canopy Closure > 70

Montana Fire Report Stand Structures

Classification based on:

Fiedler, C., C. Keegan III, C. Woodall, T. Morgan, S. Robertson, and J. Chmelik. 2001. A strategic assessment of fire hazard in Montana. Bureau of Business and Economic Research, Missoula, Montana, http://www.bber.umt.edu/forestproducts/pdf/MTfirereport.pdf.

Size Classes:

- Sapling (0.0-4.9") – Min basal area 5.0
- Pole (5.0-8.9") – Min basal area 10.0
- Medium (9.0-14.9") – Min basal area 10.0
- Large (15.0-19.9") – Min basal area 10.0
- Very Large (> 20.0) – Min basal area 10.0

Density Classes:

- High –
- Moderate –
- Low –

Scattered – total stand basal area < 25.0
Single – only 1 size class has more than min basal area
Two – two size classes have more than min basal area
Multi – three or more size classes have more than min basal area