

**Table 4--Structural stages defined for assessing the structural features of macrovegetation across the interior Columbia basin, as adapted from Hann and others (1997)**

Structural stag	Structural stage cod	Description <sup>a</sup>
<u>Forest:</u>		
Stand initiation	Si	LgT_cc <30% and SS_cc ≥10% and [(PT_cc + SmT_cc + MedT_cc <20%) or (PT_cc + SmT_cc + MedT_cc ≤60% and PT_cc + SmT_cc + MedT_cc ≥20% and SmT_cc + MedT_cc <10%)]
Stem exclusion open canopy	Seo	LgT_cc <30% and SS_cc <10% and PT_cc + SmT_cc + MedT_cc ≤70%
Stem exclusion closed canopy	Sec	LgT_cc <30% and SS_cc <10% and PT_cc + SmT_cc + MedT_cc >70%
Understory reinitiation	Ur	LgT_cc <30% and SS_cc ≥10% and PT_cc + SmT_cc + MedT_cc >60%
Managed young multi-story	MYf	LgT_cc <30% and SS_cc ≥10% and PT_cc + SmT_cc + MedT_cc ≤60% and SmT_cc ≥10% or MedT_cc ≥10%. Has undergone some form of silvicultural treatment, salvage, or roading; contain relatively few large snags and trees (>53.2 cm d.b.h.)
Unmanaged young multi-story	UYf	LgT_cc <30% and SS_cc ≥10% and PT_cc + SmT_cc + MedT_cc ≤60% and SmT_cc ≥10% or MedT_cc ≥10%. Has not undergone active forms of management; contain relatively higher densities of large snags and trees (>53.2 cm d.b.h.)
Old multi-story	Of	LgT_cc ≥30% and SS_cc + PT_cc + SmT_cc + MedT_cc >20%
Old single-story	Ofs	LgT_cc ≥30% and SS_cc + PT_cc + SmT_cc + MedT_cc ≤20%
<u>Woodland:</u>		
	WDL	All structural stages of the woodland community group were combined as one for this assessment
Stand initiation		PT_cc + SmT_cc + MedT_cc + LgT_cc <10% and SS_cc ≥10%
Stem exclusion		LgT_cc <10% and PT_cc + SmT_cc + MedT_cc ≥10% and SS_cc <10%
Understory reinitiation		LgT_cc <10% and PT_cc + SmT_cc + MedT_cc ≥10% and SS_cc ≥10%
Young multi-story		LgT_cc <10%, and SmT_cc + MedT_cc ≥10%, and PT_cc ≥10%, and SS_cc ≥10%
Old multi-story		LgT_cc ≥10%, and SS_cc + PT_cc + SmT_cc + MedT_cc ≥10%
Old single-story		LgT_cc ≥10%, and SS_cc + PT_cc + SmT_cc + MedT_cc <10%
<u>Nonforest-nonwoodland:</u>		
Open herbland	Oh	A canopy of herbaceous vegetation with <66% projected canopy cover; <10% cover each of shrubs or trees; ≥1 stratum <sup>b</sup>
Closed herbland	Ch	A canopy of herbaceous vegetation with ≥66% projected canopy cover; <10% cover each of shrubs or trees; ≥1 stratum

Table 4--Structural stages defined for assessing the structural features of macrovegetation across the interior Columbia basin, as adapted from Hann and others (1997)(continued)

Structural stag	Structural stage cod	Description <sup>a</sup>
Open low-medium shrub	Olms	A canopy of low (<50 cm) or medium-sized (50 cm - 2 m) shrubs with <66% projected canopy cover; shrubs dominate; tree cover <10%; ≥2 strata, ≥2 cohorts possibl
Closed low-medium shrub	Clms	A canopy of low (<50 cm) or medium-sized (50 cm - 2 m) shrubs with ≥66% projected canopy cover; shrubs dominate; tree cover <10%; ≥2 strata, ≥2 cohorts possibl
Open tall shrub	Ots	A canopy of tall (2 - 5 m) shrubs with <66% projected canopy cover; shrubs dominate; tree cover <10%; ≥2 strata, ≥2 cohorts possibl
Closed tall shrub	Cts	A canopy of tall (2 - 5 m) shrubs with ≥66% projected canopy cover; shrubs dominate; tree cover <10%; ≥2 strata, ≥2 cohorts possibl
Agricultural		Dominated by crop and pasture land us
Urban		Dominated by rural and urban buildings and facilities
Water		Large bodies of water
Rock		Large areas of rock with <5% vegetative canopy cover

<sup>a</sup> Structural stage descriptions include the following abbreviations:

◆ tree size class: SS = seedlings and saplings [<12.6 cm diameter at breast height (d.b.h.)]; PT = pole trees (12.7 - 22.6 cm d.b.h.); SmT = small trees (22.7 - 40.4 cm d.b.h.); MedT = medium trees (40.5 - 53.1 cm d.b.h.); and LgT = large trees (> 53.2 cm d.b.h.).

◆ cc =crown cover. Crown cover was interpreted in 10% increments and class percentages were expressed as midpoints, for example, 10% = 5 to 14%, and 20% = 15 to 24%.

<sup>b</sup> Canopy cover related to herblands and shrubs is based on the definition and measurement technique reported in Hann and others (1997; Appendix 3-G, p. 1007) and in Hessburg and others (1999). This technique uses photo interpretation methods at a scale of about 1:12,000, which is not applicable to the fine-scale techniques typically used by Forest Service and BLM field staff on the ground. These agencies typically measure on-the-ground cover at a 1:1 scale, often by a line-intercept technique for shrubs, or by a quadrat microplot for herbaceous plants.

A comparison of the two techniques and scales (1:1 versus 1:12,000) reveals a ratio of about 1:4; i.e., canopy cover thresholds using the photo interpretation (1:12,000) scale will be about 4 times higher than canopy cover thresholds using the line intercept (1:1) scale (S. Bunting, Univ. of Idaho Range Science Department). For example, a 15% canopy cover of shrubs using line intercept at a 1:1 on-the-ground scale will be comparable to a 60-70% canopy cover using photo interpretation dot-grid techniques at a 1:12,000 scale.

This table uses the definition for canopy cover that is consistent with that used in photo interpretation (i.e., 1:12,000)