

Modal Rangeland Ecological Site Concepts for Oregon NRCS

January 2010

OPEN GRASSLANDS-Reference Plant Community ARTRT <= 5% (Predominantly SIL Surfaces)-B7, B8, B9, & B10B*

MLRA	B-7	B-10B*	B-8	B-8	B-10B*	B-9	B-9
Temperature (warm) 59°F – 46°F Mesic	Bluebunch Wheatgrass -PSSPS-(sil) Needle-and- Thread-(sl)	Bluebunch Wheatgrass -PSSPS- Thurbers Needlegrass	Bluebunch Wheatgrass -PSSPS-(sil)	Idaho Fescue- Bluebunch Wheatgrass -PSSPS-(sil)	Bluebunch Wheatgrass -PSSPS- Idaho Fescue	Idaho Fescue- Bluebunch Wheatgrass -PSSPS-	Idaho Fescue- Bluebunch Wheatgrass -PSSPS-
	Modal Sites &Nor. Prod Loamy 8-10 600 lbs Sandy 8-10 600 lbs	JD Lo.9-12 1400 lbs JD Cl.9-12 1000 lbs	Loamy10-12 900 lbs	Loamy12-14 1100 lbs	JD Lo.12-16 1600 lbs JD Cl.12-16 1200 lbs	Loamy14-17 1600 lbs Clayey14-17 700 lbs	Loamy17-22 2000 lbs Clayey17-22 1300 lbs
Temperature (cold) 46°F – 41°F Frigid					Idaho Fescue	Idaho Fescue- Bluebunch Wheatgrass -PSSPS-	Idaho Fescue- Bluebunch Wheatgrass -PSSPS-
	Modal Sites &Nor. Prod.				JD Mountain Clayey12-16 1200 lbs	Mountain Loamy13-17 1200 lbs	Mountain Loamy17-22 1800 lbs
	8 – 10 inches	9 – 12 inches	10 – 12 inches	12 – 14 inches	12 – 16 inches	14 – 17 inches	17 – 22 inches
	(dry) Precipitation (wet)						

* B10B – Primarily clayey soils - Juniper strongly invades both 9-12 & 12-16” ppt zones

Other Observations:

B-7, B-8 & B-9 MLRA

- Open Grasslands, =/ $<$ 5% ARTRT (OSU Herbarium Id. only ARTRT in B7, B8 no ARTRW 1987 +/-) ARTRV in high Wallowa's only – ARTTRT present only north of John Day main-stem, similarly no ARAR8 north of John Day main-stem ARRI2 occupies very shallow scabland soils in these three MLRA's
- Western Juniper invades primarily in very south portion of B9 only
- Sand drop-seed a warm season grass is present in low elevation canyons—John Day-west of Monument, Umatilla-west of Pendleton and lower Imnaha and Snake River

B-10 MLRA

- Oregon subdivisions
 - A = pumice zone
 - B = Clays, John-Day & Clarno formations, mesic temperature regime (9-12 & 12-16), juniper strongly invades both ppt zones
 - C = Snake River, silt loams or silty clay loams over clays, mesic & frigid temperature regimes in 9-12"ppt., frigid only $>$ 12"ppt except some lower elev. south's, typically no Thurber's Needlegrass - excepting Loamy 12-16, Juniper strongly invades $>$ 12"ppt only, ARRI2 present on very shallow scabland soils

Temperature Regimes

- Mesic
 - Some overlap between growing season moisture and temperature
 - E.g. Pendleton
 - Annual grass invasion more likely
- Frigid
 - Little to no overlap between growing season moisture and temperature
 - E.g. Burns
 - Annual grass invasion limited – typically Sandberg's Bluegrass increases
 - Elevation breaks for changing temperature regimes
 - 3400' at WA border, 4000' central, 4500' at NV border
 - 600' lower for north slopes
 - 600' higher for south slopes

Low-growing sagebrush

- Stiff sage north of John Day – Mitchell line (mesic to frigid $>$ 10"ppt)
- Low sage south of John Day – Mitchell line (frigid, $>$ 10"ppt)
- Both occur on sites with less than 10" to a restrictive layer (very shallow soils)

Mid to Tall-growing sagebrush

- Frigid, 12 – 16" \Rightarrow Mountain Big Sagebrush
- Frigid, $<$ 12" \Rightarrow Wyoming Big Sagebrush

- Mesic, 12 – 16" ⇒ Basin Big Sagebrush
- Mesic, <12" ⇒ Wyoming Big Sagebrush
- Note 8-22" ppt B7, B8, & B9 Basin Big Sagebrush present in moisture accumulating sites

Moisture gradient for meadow sites

- Mesic-Loamy Bottom → Meadow → Wet Meadow
- Frigid-Mtn. Loamy Bottom → Mtn. Meadow → Mtn. Wet Meadow
Note – Mtn Meadow & Mtn Wet Meadow could be cryic in frigid zone due to wetness

Dry Pumice Meadow → Wet Pumice Meadow → Moist Meadow → Wet Meadow

Break between grass dominated sites to sedge dominated sites occurs between Wet Pumice Meadow (grass domination) and Moist Meadow (sedge domination).