

# 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,  $\approx$  < 5% ARTRT (OSU Herbarium Id. only ARTRT in B7, B8 no ARTRW 1987 +/-) ARTRV in high Wallowa's only – ARTRT 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 dropseed (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 (except 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 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

- Occurs on sites with less than 10" to a restrictive layer (very shallow soils)
- Stiff sage (ARRI2) north of John Day – Mitchell line (mesic to frigid >10"ppt)
- Low sage (ARAR8) south of John Day – Mitchell line (frigid, >10"ppt)

## Mid to Tall-growing sagebrush

- Frigid, 12 – 16"  $\Rightarrow$  Mountain Big Sagebrush (ARTRV)
- Frigid, <12"  $\Rightarrow$  Wyoming Big Sagebrush (ARTRW8)

- Mesic, 12 – 16" ⇒ Basin Big Sagebrush (ARTRT)
- Mesic, <12" ⇒ Wyoming Big Sagebrush (ARTRW8)
- Note 8-22" ppt B7, B8, & B9 Basin Big Sagebrush (ARTRT) 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).