

10860

Rocky Mountain Lower Montane-Foothill Shrubland

BpS Model/Description Version: Aug. 2020

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Vegetation Type

Shrubland

Map Zones

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Geographic Range

Slopes, saddles, peaks of the Sacramento mountains of the Sky Islands of the Trans-Pecos (ECOMAP subsections 321Aa, 321Ab and M313Ba).

Foothills, canyon slopes, and lower mountains of the Rocky Mountains. The general information provided in this form is based on personal experience in the upper Rio Grande drainage (specifically the Rio Grande NF, Erhard). The description here focuses more on true mountain-mahogany. Information in the FEIS online database indicates that the central distribution of true mountain-mahogany is located on the west side of the Rocky Mountains in the foothills and mountains of Utah, Colorado, and Wyoming. The range of true mountain-mahogany also extends north into Montana, east into South Dakota and Nebraska, south from Oklahoma into Mexico, and west into Arizona and Nevada. True mountain-mahogany occasionally occurs in Idaho and southwestern Oregon.

Biophysical Site Description

This BpS occurs in the transition zone between the foothill and montane life zones. It ranges from roughly 5,000–8,300ft. This BpS occurs on relatively thin to moderately well-developed soils (sometimes talus and boulder fields) on moderately steep to steep southerly aspects, usually in wind exposed topographic positions.

Vegetation Description

Species dominance varies depending on site conditions and by geographic location. Trees include *Quercus gambelii* and *Q. grisea*. Shrubs include *Amelanchier utahensis*, *Cercocarpus montanus*, *Purshia tridentata*, *Rhus trilobata*, *Ribes cereum*, *Symphoricarpus oreophilus*, and *Yucca glauca*. Grasses may include species of *Bouteloua*, *Muhlenbergia*, *Hesperostipa*, and *Pseudoroegneria spicata*. Species dominant in the upper Rio Grande drainage are true mountain-mahogany, several species of rabbitbrush, snowberry, and chokecherry.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
CEMO2	<i>Cercocarpus montanus</i>	Alderleaf mountain mahogany
CHRY9	<i>Chrysothamnus</i>	Rabbitbrush

SYMPH	<i>Symphoricarpos</i>	Snowberry
PRVI	<i>Prunus virginiana</i>	Chokecherry

Species names are from the NRCS PLANTS database. Check species codes at <http://plants.usda.gov>.

Disturbance Description

Historically, this type may have been in a Fire Regime II -- primarily short interval (e.g., 10-30yr) stand replacement fires in the shrub-dominated layer. Nearly all the dominant species in this BpS have the capability to resprout after disturbance. These are wind exposed and sculpted systems.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	14	100		
Moderate (Mixed)				
Low (Surface)				
All Fires	14	100		

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

A small patch community seldom exceeds a few 100ac. Erhard's observations suggest that the scale of the most common disturbance extent is relatively small. The disturbance regime is expected to be relatively frequent under historic conditions. Scale estimate is in the 100s of acres realm -- not 1,000s of acres.

Adjacency or Identification Concerns

This system is found on high exposed mountains and slopes.

Issues or Problems

A climate change may increase rain that could increase erosion but would not affect fire cycles.

Native Uncharacteristic Conditions

Comments

Succession Classes

Mapping Rules

Upper Layer Lifeform	Height (m)	Canopy Cover (%)									
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Herb	0-0.5	A	A	A	A	A	A	A	A	A	A
Herb	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Herb	>1.0	A	A	A	A	A	A	A	A	A	A
Shrub	0-0.5	A	A	A	A	A	A	A	A	A	A
Shrub	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Shrub	1.0-3.0	A	A	A	A	A	A	A	A	A	A
Shrub	>3.0	B	B	B	B	B	B	B	B	B	B
Tree	0-5	B	B	UN	UN	UN	UN	UN	UN	UN	UN

Tree	5-10	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	>50	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

Description

Class A 92 Early Development 1 - All Structures

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
QUGA	Quercus gambelii	Gambel oak	Upper
QUGR	Quercus graciliformis	Chisos oak	Upper
CEMO2	Cercocarpus montanus	Alderleaf mountain mahogany	Upper
SYOR2	Symphoricarpos oreophilus	Mountain snowberry	None

Description

Early succession, following stand replacement fires; resprouting chaparral to 2m. Shrub dominated with Gambel's oak (*Quercus gambelii*), gray oak (*Q. grisea*), mountain mahogany (*Cercocarpus montanus*) and snowberry (*Symphoricarpos albus*). Wind sculpted and height maintained.

Maximum Tree Size Class

None

Class B 8 Late Development 1 - Open

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
QUGA	Quercus gambelii	Gambel oak	Upper
QUGR	Quercus graciliformis	Chisos oak	Upper
CEMO2	Cercocarpus montanus	Alderleaf mountain mahogany	Middle
SYOR2	Symphoricarpos oreophilus	Mountain snowberry	Middle

Description

Late succession following several missed fire intervals. Shrubs begin to attain tree form. As a few trees emerge, the cover of the trees may be very low (not quite zero, but <10%).

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Early1:ALL	999
Late1:OPN	35	Late1:OPN	999

Probabilistic Transitions

Disturbance Type	Disturbance occurs In	Moves vegetation to	Disturbance Probability	Return Interval (yrs)	Reset Age to New Class Start Age After Disturbance?	Years Since Last Disturbance
Alternative Succession	Early1:ALL	Late1:OPN	1	1	Yes	35
Replacement Fire	Early1:ALL	Early1:ALL	0.07	14	Yes	0
Replacement Fire	Late1:OPN	Early1:ALL	0.07	14	Yes	0

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