

11270

Inter-Mountain Basins Semi-Desert Shrub-Steppe

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
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Vegetation Type

Steppe/Savanna

Map Zone

15

Geographic Range

This ecological system occurs throughout the Intermountain West from the western Great Basin to the northern Rocky Mountains and Colorado Plateau.

Biophysical Site Description

Found at elevations ranging from 300m up to 2,500m (1,000-8,250 ft). The climate where this system occurs is generally hot in summers and cold in winters with low annual precipitation, ranging from 18-40cm and high inter-annual variation. This system primarily occurs on deep-soiled to stony flats, ridges, nearly flat ridgetops, and mountain slopes. In general, this system shows an affinity for mild topography, fine soils, and some source of subsurface moisture. Much of the precipitation falls as snow, and growing-season drought is characteristic. Temperatures are continental with large annual and diurnal variation. Sites are generally alluvial fans and flats with moderate to deep soils. Some sites can be flat, poorly drained, and intermittently flooded with a shallow or perched water table often within 1m depth (West 1983).

Vegetation Description

This semi-arid shrub-steppe is typically dominated by grasses at >25% cover. The general aspect of occurrences may be either open shrubland with patchy grasses or patchy open herbaceous layer. Disturbance may be important in maintaining the woody component. Microphytic crust is very important in some stands. The plant associations in this system are characterized by a somewhat sparse to moderately dense (10-70% cover) shrub layer of *Ephedra* spp., *Ericameria nauseosa*, *Chrysothamnus viscidiflorus*, *Gutierrezia sarothrae*, or *Atriplex canescens*. *Artemisia tridentata* may be present but does not dominate. The herbaceous layer is dominated by bunchgrasses, which occupy patches in the shrub matrix. Species may include *Sporobolus airoides*, *Bouteloua gracilis*, *Distichlis spicata*, *Hesperostipa comata*, and *Poa secunda*. Forbs are generally of low importance and are highly variable across the range but may be diverse in some occurrences.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	Basin big sagebrush

ARTRW 8	<i>Artemisia tridentata ssp. wyomingensis</i>	Wyoming big sagebrush
ATCA2	<i>Atriplex canescens</i>	Fourwing saltbush
ACHY	<i>Achnatherum hymenoides</i>	Indian ricegrass
PSSP6	<i>Pseudoroegneria spicata</i>	Bluebunch wheatgrass

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

Disturbance Description

Fire is rare. Drought occurs frequently but does not change seral stage. The *Aroga* moth can affect sagebrush but does not change seral stage. A wood borer may affect *Atriplex* without changing seral stage.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	118	100		
Moderate (Mixed)				
Low (Surface)				
All Fires	118	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

The Biophysical Setting (BpS) can occupy fairly large areas (1,000s-10,000s ac). Disturbance patch size within the type are generally 100s of acres.

Adjacency or Identification Concerns

Separates from greasewood and saltbrush types because they will be on saline soils. This type is somewhat lower elevation and drier than the sagebrush montane steppe. Differs from Intermountain Basins Big Sagebrush Steppe (BpS 1127) in being somewhat farther south and drier.

Issues or Problems

Native Uncharacteristic Conditions

Comments

During the 2017 Review, Kori Blankenship changed the Mid1 Open to Mid1 Open mixed-severity fire transition to replacement-severity to comply with LANDFIRE fire severity definitions. LANDFIRE defines replacement-severity fire as a fire that topkills >75% of the upper-layer lifeform. Because most major species listed for this BpS are topkilled by fire (according to their respective Fire Effects Information System species reviews), Blankenship assumed that the modelers used mixed fire to represent a very patchy fire, but because where fire occurred it probably topkilled most plants, it met LANDFIRE's replacement fire criteria.

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	B	C	C	C	C	C	C	C	C
Shrub	0.5-1.0	B	B	C	C	C	C	C	C	C	C
Shrub	1.0-3.0	B	B	C	C	C	C	C	C	C	C
Shrub	>3.0	B	B	C	C	C	C	C	C	C	C
Tree	0-5	C	C	C	C	C	UN	UN	UN	UN	UN
Tree	5-10	C	C	C	C	C	UN	UN	UN	UN	UN
Tree	10-25	C	C	C	C	C	UN	UN	UN	UN	UN
Tree	25-50	C	C	C	C	C	UN	UN	UN	UN	UN
Tree	>50	C	C	C	C	C	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	8	Early Development 1 - All Structures
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Indicator Species

Indicator Species	Symbol	Scientific Name	Common Name	Canopy Position
Grass	HECO26	<i>Hesperostipa comata</i>	Needle and thread	Lower
	PSSP6	<i>Pseudoroegneria spicata</i>	Bluebunch wheatgrass	Lower
	ACHY	<i>Achnatherum hymenoides</i>	Indian ricegrass	Lower
	ATTR	<i>Atriplex truncata</i>	Wedgescale saltbush	Mid-Upper

Description

Primarily grass, with shrubs just beginning.

Maximum Tree Size Class

No Data

Class B	49	Mid Development 1 - Open
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARTRT	Artemisia tridentata ssp. tridentata	Basin big sagebrush	Upper

Replacement Fire	Mid1:OPN	Early1:ALL	0.002	500	Yes	0
Replacement Fire	Mid1:OPN	Mid1:OPN	0.01	100	No	0
Insects or Disease	Mid1:OPN	Mid1:OPN	0.01	100	No	0
Wind or Weather or Stress	Mid1:OPN	Mid1:OPN	0.1	10	No	0
Replacement Fire	Late1:OPN	Early1:ALL	0.005	200	Yes	0
Insects or Disease	Late1:OPN	Late1:OPN	0.02	50	No	0
Wind or Weather or Stress	Late1:OPN	Late1:OPN	0.1	10	No	0

References

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