

11530

Inter-Mountain Basins Greasewood Flat

BpS Model/Description Version: Aug. 2020

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Vegetation Type

Mixed Upland and Wetland

Map Zones

20, 22, 29, 30

Geographic Range

Occurs throughout much of the western United States in intermountain basins and extends onto the western Great Plains. Occurs throughout map zone (MZ) 22 in all subsections at lower elevations. In MZ20, this Biophysical Setting (BpS) is thought to be limited to very limited in extent. In MZ29 and MZ30, might occur -- but in little areas -- in playas. This type goes into western North Dakota in MZ30 and MZ29. In central area of MZ29. In streams and closed depressional areas.

Biophysical Site Description

Typically occurs near drainages, on stream terraces and flats, or may form rings around more sparsely vegetated playas. Sites typically have saline soils and shallow water table and flood intermittently but remain dry for most growing seasons. The water table remains high enough to maintain vegetation, despite salt accumulations.

Vegetation Description

This system sometimes occurs as a mosaic of multiple communities, with open to moderately dense shrublands dominated or co-dominated by *Sarcobatus vermiculatus* (greasewood). *Atriplex confertifolia* (shadscale) or *Krascheninnikovia lanata* (winterfat) may be present or co-dominant. Occurrences are often surrounded by mixed salt desert scrub. Herbaceous layer, if present, is usually dominated by graminoids. There may be inclusions of *Sporobolus airoides* (alkali sacaton), *Distichlis spicata* (saltgrass), or *Eleocharis patustris* (spikerush). In MZ22, very little *Atriplex confertifolia* (shadscale) but rather *Atiplex gardneri* occurs. *Artemesia tridentata* ssp. *tridentata* is common in southwestern part of MZ22 more in riparian systems; *Artemesia wyomingensis* occurs more on the playa types. MZ22 was the only zone that did not include *Pascopyrum smithii* and *Puccinellia* in the BpS Dominant and Indicator Species list.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
SARCO	<i>Sarcobatus</i>	Greasewood
DISTI	<i>Distichlis</i>	Saltgrass
SPAI	<i>Sporobolus airoides</i>	Alkali sacaton

PASM	<i>Pascopyrum smithii</i>	Western wheatgrass
PUCCI	<i>Puccinellia</i>	Alkaligrass

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

Disturbance Description

Historically, fire was extremely infrequent. There is conflicting evidence about mean fire return interval (MFRI) in this system. Anderson (2004) claims a fire return interval (FRI) <100yrs, whereas expert opinion considers fire rare to absent in greasewood. As a compromise, an MFRI of ~200yrs was chosen here.

Greasewood may be killed by standing water that lasts >40 days. Greasewood is a vigorous resprouter following low- to moderate-severity fires, although severe fires may result in some mortality. Some reseedling may occur from nearby remnant plants.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	209	100	100	800
Moderate (Mixed)				
Low (Surface)				
All Fires	209	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

1-100s ac.

Adjacency or Identification Concerns

Greasewood communities are susceptible to invasion by non-native annual grasses (cheatgrass). Adjacency to other vegetation with shorter FRIs may influence the FRI in this BpS, particularly where the patches are small in areal extent.

Issues or Problems

Anderson (2004) indicates that black greasewood height, canopy coverage, and total leaf surface area are inversely related to depth to water. Greasewood is phreatophytic and tends to increase the salt in the soil over time, so older stands could be less flammable as the increasing salt reduces productivity. Herbage production is generally 0-500 pounds per acre (0-560 kg/ha) while fuel loads range from very low to 2,000 pounds per acre (2,267 kg/ha).

Native Uncharacteristic Conditions

Comments

This model was reviewed by Kathleen S. Roche during the 2016 BpS Review. Kori Blankenship combined MZ20, MZ22, MZ29, and MZ30 during the BpS review because the models were identical. The minor zone-to-zone differences in the descriptions are noted in the text.

The modeled wind/weather/stress transition represents flooding.

For LANDFIRE National, MZ22 was not reviewed; MZ20 was reviewed by Cooper.

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	B	B	B	B	B	B	B	B
Shrub	0.5-1.0	A	A	B	B	B	B	B	B	B	B
Shrub	1.0-3.0	A	A	B	B	B	B	B	B	B	B
Shrub	>3.0	A	A	B	B	B	B	B	B	B	B
Tree	0-5	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	5-10	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	10-25	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	25-50	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	>50	B	B	B	B	B	UN	UN	UN	UN	UN

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leaf form 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 3 Early Development 1 - All Structures

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
DISTI	Distichlis	Saltgrass	Lower
SPAI	Sporobolus airoides	Alkali sacaton	Lower

Description

Some grasses, with greasewood sprouts present. Some representation of other sprouting species may be present such as rabbitbrush (*Ericameria nauseosus*). Grass species vary geographically but include the following: inland saltgrass, bottlebrush squirreltail, and alkali sacaton.

Maximum Tree Size Class

None

Class B 97 Late Development 1 - Open

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
SARCO	Sarcobatus	Greasewood	Upper
DISTI	Distichlis	Saltgrass	Lower

SPAI	Sporobolus airoides	Alkali sacaton	Lower
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Description

Greasewood shrubs maturing or have reached maturity and will increase canopy closure. Perennial grasses will still be in the understory. Shrubs probably only reach heights of 1.5m.

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Late1:OPN	2
Late1:OPN	3	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
Replacement Fire	Late1:OPN	Early1:ALL	0.005	200	Yes	0
Wind or Weather or Stress	Late1:OPN	Early1:ALL	0.013	77	Yes	0

References

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