11530

Inter-Mountain Basins Greasewood Flat

BpS Model/Description Version: Aug. 2020

|  |  |  |  |
| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
| Jeff Rose | Jeffrey\_rose@blm.gov | None | None |
| John Foster | jfoster@tnc.org | None | None |
| None | None | None | None |

Reviewer: Andrea Laliberte

Vegetation Type

Mixed Upland and Wetland

Map Zones

7, 8, 9

Geographic Range

Occurs throughout much of the western United States in intermountain basins. Common in southern Idaho, Nevada, and Utah. Also occurs in eastern Oregon and possibly eastern Washington.

Biophysical Site Description

This site occurs on alluvial flats or lake plains usually adjacent to 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. Slope gradients of <2% are most typical. Elevations are between 3,800-5,800ft. Average annual precipitation is 5-8in, mean temperature is 45°-50° F, and average growing season is 100-120 days. The surface layer will normally crust, inhibiting water infiltration and seedling emergence.

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) 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) and *Distichilis spicata* (saltgrass). Vegetation on this site is normally restricted to coppice mound areas that are surrounded by playa-like depressions or nearly level, usually barren, inner spaces. Potential vegetative composition is about 15% grasses, 5% forbs, and 80% shrubs. As ecological condition declines, herbaceous understory is reduced or eliminated and the site becomes a community of halophytic shrub dominated by greasewood.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| SAVE4 | *Sarcobatus vermiculatus* | Greasewood |
| DISTI | *Distichlis* | Saltgrass |
| LECI4 | *Leymus cinereus* | Basin wildrye |
| ATCO | *Atriplex confertifolia* | Shadscale saltbush |

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

Disturbance Description

Historically, fire was extremely infrequent. Greasewood is a vigorous resprouter following low- to moderate-severity fires, although severe fires may result in some mortality (Anderson 2004). Some reseeding may occur from nearby remnant plants.

Vegetation may be killed by standing water that lasts >40 days based on observation of inundations of Lake Bonneville flats in 1983 (personal observation, Gary Medlyn, Ely BLM).

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 1020 | 100 | 500 | 2000 |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 1020 | 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

10s to 100,000 of acres.

Adjacency or Identification Concerns

Halogeton is likely to invade this site.

Issues or Problems

Native Uncharacteristic Conditions

Comments

Andrea Laliberte reviewed this model during the 2016 BpS review and made minor descriptive edits. Laliberte also suggested that it would make more sense geographically to include map zone (MZ) 8 with the MZ07/09 variant even though the MZ08 model was identical to the MZ06 et al. variant. Blankenship accepted the recommendation, noting that the descriptions were identical, except the s-class information, and that a previous MZ08 reviewer had suggested a 3-box model such as in MZ07 and MZ09. Laliberte also questioned whether a two box model could adequately represent this Biophysical Setting (BpS) as was done in the MZ06 et al. variant.

LANDFIRE National Comments:

Local data in Oregon informed this three box model in MZ07 and MZ09.

MZ08 was reviewed by Jeff Rose ([jeffery\_rose@blm.com](mailto:jeffery_rose@blm.com)). Rose suggested that there be a 3-box model reflecting recent data collected in Oregon.

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 | B | B | B | B | B | B | B | B | B | B |
| Shrub | 0.5-1.0 | B | B | B | B | B | B | B | B | B | B |
| Shrub | 1.0-3.0 | C | C | C | C | C | C | C | C | C | C |
| Shrub | >3.0 | C | C | 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 3 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| ELEL5 | Elymus elymoides | Bottlebrush squirreltail | Upper |
| LECI4 | Leymus cinereus | Basin wildrye | Lower |
| SPAI | Sporobolus airoides | Alkali sacaton | Lower |
| SAVE4 | Sarcobatus vermiculatus | Greasewood | Middle |

Description

Immediately after a stand-replacing event, there is a relatively homogenous distribution of vegetation. Greasewood in productive sites can resprout. Some grasses, with greasewood sprouts present. Some representation of other sprouting species may be present (rabbitbrush). Grass species vary geographically, with squirreltail and alkali sacaton occurring.

*Maximum Tree Size Class*  
None

Class B 11 Mid Development 1 - Open

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| SAVE4 | Sarcobatus vermiculatus | Greasewood | Upper |
| DISTI | Distichlis | Saltgrass | Lower |
| SPAI | Sporobolus airoides | Alkali sacaton | Middle |
| LECI4 | Leymus cinereus | Basin wildrye | Upper |

Description

Vegetation is still relatively evenly distributed, though self-thinning and sorting are beginning to occur. Rabbitbrush is beginning to decline. Basin wildrye also occurs among the greasewood.

*Maximum Tree Size Class*  
None

Class C 86 Late Development 1 - Open

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| SAVE4 | Sarcobatus vermiculatus | Greasewood | Upper |
| DISTI | Distichlis | Saltgrass | Lower |
| SPAI | Sporobolus airoides | Alkali sacaton | Middle |
| LECI4 | Leymus cinereus | Basin wildrye | Upper |

Description

Greasewood shrubs are mature and show clumping on mounds, or mots. Rabbitbrush may still be found. Grass component is reduced. Various sagebrush species and salt desert shrub vegetation may occur (shadscale, saltbushes, and budsage).

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:OPN | 4 |
| Mid1:OPN | 5 | Late1:OPN | 20 |
| Late1:OPN | 21 | 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 | Mid1:OPN | Early1:ALL | 0.001 | 1000 | Yes | 0 |
| Wind or Weather or Stress | Mid1:OPN | Early1:ALL | 0.007 | 143 | Yes | 0 |
| Replacement Fire | Late1:OPN | Early1:ALL | 0.001 | 1000 | Yes | 0 |
| Wind or Weather or Stress | Late1:OPN | Early1:ALL | 0.0067 | 149 | Yes | 0 |

References

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