11530

Inter-Mountain Basins Greasewood Flat

BpS Model/Description Version: Aug. 2020

|  |  |  |  |
| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
| Jolie Pollet | jpollet@blm.gov | Vic Ecklund | vecklund@csu.org |
| Annie Brown | annie\_brown@blm.gov | Chuck Kostecka | kostecka@webaccess.net |
| Stan Kitchen | skitchen@fs.fed.us |  |  |

Vegetation Type

Mixed Upland and Wetland

Map Zones

28

Geographic Range

Occurs throughout much of the western US in intermountain basins and extends onto the western Great Plains.

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, 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 canescens*, *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), *Distichilis spicata* (saltgrass) or *Eleocharis palustrus* (spikerush).

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| SARCO | *Sarcobatus* | Greasewood |
| DISTI | *Distichlis* | Saltgrass |
| SPAI | *Sporobolus airoides* | Alkali sacaton |
| ATCA2 | *Atriplex canescens* | Fourwing saltbush |

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

Disturbance Description

Historically, fire was extremely infrequent. May be killed by standing water that lasts greater than 40 days. Vigorous resprouts follow low to moderate severity fires, although severe fires may result in some mortality. Some re-seeding may occur from nearby remnant plants. Drought impacts greasewood communities by lowering the water table, and mortality may result.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 204 | 100 | 100 | 800 |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 204 | 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

Large patch, tens to hundreds of acres

Adjacency or Identification Concerns

May have been completely overtaken by non-native annual grasses (cheatgrass and red brome). Cheatgrass and red brome invasion have resulted in higher fire frequencies.

Issues or Problems

The precise effects of flooding (ie, whether a transition from class C to class A or B would occur) are unknown, and were difficult to model here.

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 | B | B | C | C | C | C | C | C |
| Shrub | 0.5-1.0 | A | A | B | B | C | C | C | C | C | C |
| Shrub | 1.0-3.0 | A | A | B | B | C | C | C | C | C | C |
| Shrub | >3.0 | A | A | B | B | 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** |
| DISTI | Distichlis | Saltgrass | Lower |
| SPAI | Sporobolus airoides | Alkali sacaton | None |
| SARCO | Sarcobatus | Greasewood | Lower |

Description

Some grasses, with greasewood sprouts present. Some representation of other sprouting species may be present (creosotebush and rabbitbrush). Grass species varies geographically.

*Maximum Tree Size Class*  
None

Class B 29 Mid 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 |

Description

Greasewood shrubs are maturing, with a good mix of perennial grasses. Other shrub species that may be found with greasewood include: creosotebush and rabbitbrush, and in transition zones, may occur with various sagebrush species and salt desert shrub vegetation.

*Maximum Tree Size Class*  
None

Class C 68 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 |

Description

Greasewood shrubs have reached maturity, and will increase canopy closure. Perennial grasses will still be in the understory.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:OPN | 2 |
| Mid1:OPN | 3 | 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 | 0.005 | 200 | Yes | 0 |
| Wind or Weather or Stress | Mid1:OPN | Early1:ALL | 0.013 | 77 | Yes | 0 |
| Replacement Fire | Late1:OPN | Early1:ALL | 0.005 | 200 | Yes | 0 |
| Wind or Weather or Stress | Late1:OPN | Mid1:OPN | 0.0075 | 133 | Yes | 0 |
| Wind or Weather or Stress | Late1:OPN | Early1:ALL | 0.0075 | 133 | Yes | 0 |

References

Blaisdell, J.P. and R.C. Holmgren. 1984. Managing intermountain rangelands-salt-desert shrub ranges. General Technical Report INT-163. USDA Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT. 52 pp.

Brown, J.K. and J. Kapler-Smith, eds. 2000. Wildland fire in ecosystems: effects of fire on flora. Gen. Tech. Rep. RMRS-GTR-42. vol 2. Ogden, UT: USDA Forest Service, Rocky Mountain Research Station. 257 pp.

Knight, D.H. 1994. Mountains and plains: Ecology of Wyoming landscapes. Yale University Press, New Haven, MA. 338 pp.

NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.4. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: May 6, 2005 ).

NatureServe. 2007. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA. Data current as of 10 February 2007.

Personal communication with Stan Kitchen.

West, N.E. 1983. Intermountain salt desert shrublands. Pages 375-397 in: N.E. West, editor. Temperate deserts and semi-deserts. Ecosystems of the world, Volume 5. Elsevier Publishing Company, Amsterdam.