10660

Inter-Mountain Basins Mat Saltbush Shrubland

BpS Model/Description Version: Aug. 2020

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Vegetation Type

Shrubland

Map Zones

22

Geographic Range

This ecological system occurs on gentle slopes and rolling plains in the northern Colorado Plateau and Uinta Basin on Mancos Shale and arid, wind-swept basins and plains across parts of WY. Occurs in some of the driest environments in MZ22.

Biophysical Site Description

Substrates are shallow, typically saline, alkaline, fine textured soils developed from shale or alluvium and may be associated with shale badlands. Infiltration rate is typically low. In WY and possibly elsewhere inclusions of non-saline, gravelly barrens or rock outcrops may be present.

Vegetation Description

These dwarf-shrublands are typically composed of relatively pure stands of *Atriplex* spp. such as *Atriplex corrugata* (mat saltbush) or *Atriplex gardneris* (Gardner's saltbush). Other dominant or codominant dwarf-shrubs may include *Artemisia longifolia* (longleaf wormwood), *Artemisia pedatifida* (birdfoot sagebrush) or *Picrothamnus desertorum* (bud sagebrush), sometimes with a mix of other low shrubs such as *Krascheninnikovia lanata* (winterfat) or *Tetradymia spinosa*. *Atriplex confertifolia* (shadscale) or *Atriplex canescens* (fourwing saltbush) may be present, but do not codominate. The herbaceous layer is typically sparse. Scattered perennial forbs occur, such as *Xylorhiza glabriuscula* and *Sphaeralcea grossulariifolia*, and the perennial grasses *Achnatherum hymenoides* (Indian ricegrass), *Bouteloua gracilis* (blue grama), *Elymus elymoides*, *Elymus lanceolatus* ssp. *lanceolatus*, *Pascopyrum smithii* (western wheatgrass), or *Sporobolus airoides* (alkali sacaton) may dominate the herbaceous layer. In less saline areas, there may be inclusions grasslands dominated by *Hesperostipa comata*, *Leymus salinus*, *Pascopyrum smithii*, or *Pseudoroegneria spicata*. In WY and possibly elsewhere, inclusions of non-saline, gravelly barrens or rock outcrops dominated by cushion plants such as *Arenaria hookeri* (Hooker's sandwort) and *Phlox hoodii* without dwarf-shrubs may be present. Annuals are seasonally present and may include *Eriogonum inflatum* and *Plantago tweedyi*. In MZ22, the dominant shrub is *Atriplex gardneri* which occurs on very fine-textured clay rich soils. Sometimes this occurs with *Artemesia pedatifita*, *Elymus elymoides*, *Pascopyrum smithii*, and *Sphaeralcea coccinea*.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| ATCO4 | *Atriplex corrugata* | Mat saltbush |
| ATGA | *Atriplex gardneri* | Gardner's saltbush |

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

Disturbance Description

This system does not have a fire regime due to discontinuous fuel. High mortality (every 100yrs on average) can occur in conjunction with wet years.

Wet periods contribute to mortality and are the only disturbance in this system.

Fire Frequency

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

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

Patches occur in hundreds to tens of thousands of acres. In MZ22 patches occur in one to hundreds of acres.

Adjacency or Identification Concerns

This BpS may be hard to distinguish from Intermountain Basins Mixed Salt Desert Scrub (1081) without ground truthing.

Sickle saltbush communities are common in central and eastern NV. The range described in NatureServe should be extended to the central and eastern Great Basin.

In some areas there is cheatgrass invasion, though usually not enough (continuous) to carry fire or to increase fire frequency

Issues or Problems

For MZ22, this BpS is a one-box model. It was decided that this is a BpS that would be in FRCC 1 - no departure.

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 | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | A | A | A | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | A | A | A | UN | UN | UN | UN | UN | UN | UN |
| Shrub | >3.0 | A | A | A | UN | UN | UN | UN | UN | UN | UN |
| Tree | 0-5 | A | A | A | A | A | UN | UN | UN | UN | UN |
| Tree | 5-10 | A | A | A | A | A | UN | UN | UN | UN | UN |
| Tree | 10-25 | A | A | A | A | A | UN | UN | UN | UN | UN |
| Tree | 25-50 | A | A | A | A | A | UN | UN | UN | UN | UN |
| Tree | >50 | A | A | A | A | A | 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 100 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| ATCO4 | Atriplex corrugata | Mat saltbush | All |
| ATGA | Atriplex gardneri | Gardner's saltbush | All |

Description

Characterized by bare ground and young to mature shrubs that have re-sprouted or established from nearby seed. May find some ephemeral forbs or grasses (listed in vegetation description above). Shrub cover patchy and discontinuous.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Early1:ALL | 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** |
| Wind or Weather or Stress | Early1:ALL | Early1:ALL | 0.01 | 100 | Yes | 0 |

References

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

Fire Effects Information System, [Online]. USDA Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis [2005, February 23].

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