Blackbrush is considered to be one of the most flammable native plant assemblages in the Mojave Desert, although this desert does not have a history of fire. There are many ecological site descriptions in the Mojave desert and the bioregional transition between the Mojave Desert and Great Basin that describe the various sites by vegetation composition and soils published by the NRCS. In general terms, blackbrush dominates the site with 80 to 90% of total cover. Although 185 species of vascular plants have been found growing within blackbrush, they are never very abundant except at upper- and lower-elevational ecotones. For instance, desert needlegrass (Achnatherum speciosum) and Indian ricegrass (Oryzopsis hymenoides) are important grass species. Beatley (1976) stated that “so nearly complete is the dominance of this shrub species that in areas that are not ecotonal there are only a few associated shrubs species, and these occur usually as scattered plants in an otherwise pure stands of Coleogyne.”
Disturbance Description
Low amounts of fine fuels in interspaces probably limited fire spread to only extreme fire conditions, during which high winds, low relative humidity, and low fuel moisture led to high intensity stand-replacing crown fires. Historical fire return intervals appear to have been on the order of centuries allowing late seral blackbrush stands to re-establish.

Adjacency or Identification Concerns
On the upper elevation, adjacent PNVG's include, black sagebrush and Wyoming Big sagebrush communities and at lower elevations creosotebush and bursage communities. Within the upper and lower limits exist adjacent problem areas of blackbrush that are characterized by burned patches with early seral characteristics that have been degraded by overgrazing, prescribed burning in the mid-1900's. There is increased cover of early seral shrubs such as Chrysothamnus spp., Gutierrezia spp., and Eriogonum fasciculatum, early seral herbaceous perennials such as Sphaeralcea ambiguа and Astragalus spp, and alien annual plants such as Bromus rubens, Bromus tectorum and erodium cictarum. Burned stands can also have a large perennial grass component. Other areas are annual grasslands dominated by Bromus rubens, and Bromus tectorum from repeated burning.

Scale Description
The typical scale of common disturbance extent ranges from 100 to 1000 acres. Exceptions do occur in excess of 1000's of acres.

Issues/Problems
We don't have much data on this community.

Model Evolution and Comments
The PNVG and references apply best to the Mojave Desert and the Nevada Test Site. Although Utah and Arizona's blackbrush are not part of the Great Basin model zone, it is worth discussing its characteristics. Understory and associated species varies with soil type. Sandy sites in southeastern Utah have a much greater perennial grass component (mainly ricegrass and dropseeds) than the shallow calcareous soils in the Mojave. On the isolated mesas in the Grand Canyon there is an interesting relationship between soil depth, site location on the landscape and associated species. Grazing has not confounded these relationships because the only ungulate grazing has been by desert bighorns. Shallow soils over a petrocalcic horizon has very little perennial grass. The deep soils on " run in " sites have much greater perennial grass and associated shrub (eg. 4 wing saltbush ) cover. According to Ledyard Stebbins blackbrush has been around for a long time; experts refer to it as a paleoendemic.

Succession Classes
Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).

Class A 10%
Early1 Open

Description
Historically, fire was relatively uncommon in this vegetation. The average FRI for replacement fire was 333 years, which would reset the ecological clock to zero. When burned, the fire tolerant/crown-sprouting shrubs such as spiny menodora, horsebrush, and

Indicator Species* and Canopy Position
GUSA2
MESP2
EPNE
TETRA3

Upper Layer Lifeform
Herbaceous
Shrub
Tree

Fuel Model

Structure Data (for upper layer lifeform)

<table>
<thead>
<tr>
<th>Cover</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td></td>
<td>35%</td>
</tr>
</tbody>
</table>

Height no data

Tree Size Class no data

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.
snakeweed will dominate the site. At higher elevations of mesic blackbrush, a big sagebrush-desert bitterbrush community typically replaces blackbrush for a protracted period. This class can express itself for over a hundred years with varying amounts of blackbrush gradually establishing after decades and eventually succeeding to Class B. A few examples of this that have been observed in the field are believed to be over 60 plus years old. The ground cover varies by elevation and moisture regime with mesic sites being generally 0 to 35 percent with some sites only capable of 10 percent cover. The thermic sites are generally, 10 to 15 ground cover with exception going as high as 35 percent. Currently, there is much more that is burned due to burning done to produce forage in the mid-1900's. This is estimated to be about 20 percent. Portions of the this 20 percent have transitioned through repeated burning into annual grasslands that are not historical but are now part of the system.

**Class B** 90 %

Late3 Closed

**Description**

This community class seems to be stable and occurs after a threshold is crossed. Composition is 70 to 80 percent blackbrush dominated. Other species are perennial grasses of desert needlegrass, Indian ricegrass, galleta grass, fluff grass, and threeawn. Lesser shrub composition includes: Nevada ephedra, turbineila oak, desert bitterbrush, fourwing saltbush, and Anderson's wolfberry in mesic sites.

<table>
<thead>
<tr>
<th>Indicator Species* and Canopy Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORA</td>
</tr>
<tr>
<td>EPNE</td>
</tr>
<tr>
<td>YUSC2</td>
</tr>
<tr>
<td>LATR2</td>
</tr>
</tbody>
</table>

**Upper Layer Lifeform**

- □ Herbaceous
- □ Shrub
- □ Tree

**Fuel Model** no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Cover</td>
</tr>
<tr>
<td>Height</td>
</tr>
</tbody>
</table>

| Tree Size Class | no data |

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit [http://plants.usda.gov](http://plants.usda.gov).
and Nevada ephedra, creosotebush, Mojave buckwheat, snakeweed, prickly pear, white bursage and spiny menodora in thermic sites. There are other shrubs also. The FRI for replacement fire is 1000 years, which causes a rare transition to class A.

<table>
<thead>
<tr>
<th>Class</th>
<th>0 %</th>
<th>Indicator Species' and Canopy Position</th>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid1 Open</td>
<td></td>
<td>Herbaceous, Shrub, Tree</td>
<td>Min</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td>Cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tree Size Class</td>
</tr>
</tbody>
</table>

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

| Fuel Model | no data |

<table>
<thead>
<tr>
<th>Class D</th>
<th>0 %</th>
<th>Indicator Species' and Canopy Position</th>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late1 Open</td>
<td></td>
<td>Herbaceous, Shrub, Tree</td>
<td>Min</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td>Cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tree Size Class</td>
</tr>
</tbody>
</table>

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

| Fuel Model | no data |

<table>
<thead>
<tr>
<th>Class E</th>
<th>0 %</th>
<th>Indicator Species' and Canopy Position</th>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late1 Closed</td>
<td></td>
<td>Herbaceous, Shrub, Tree</td>
<td>Min</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td>Cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tree Size Class</td>
</tr>
</tbody>
</table>

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

| Fuel Model | no data |

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit [http://plants.usda.gov](http://plants.usda.gov).
**Disturbances**

<table>
<thead>
<tr>
<th>Non-Fire Disturbances Modeled</th>
<th>Fire Regime Group: 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insects/Disease</td>
<td>I: 0-35 year frequency, low and mixed severity</td>
</tr>
<tr>
<td>Wind/Weather/Stress</td>
<td>II: 0-35 year frequency, replacement severity</td>
</tr>
<tr>
<td>Native Grazing</td>
<td>III: 35-200 year frequency, low and mixed severity</td>
</tr>
<tr>
<td>Competition</td>
<td>IV: 35-200 year frequency, replacement severity</td>
</tr>
<tr>
<td>Other:</td>
<td>V: 200+ year frequency, replacement severity</td>
</tr>
</tbody>
</table>

**Sources of Fire Regime Data**

<table>
<thead>
<tr>
<th></th>
<th>Avg FI</th>
<th>Min FI</th>
<th>Max FI</th>
<th>Probability</th>
<th>Percent of All Fires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement</td>
<td>833</td>
<td>100</td>
<td>1700</td>
<td>0.00120</td>
<td>98</td>
</tr>
<tr>
<td>Mixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.00122</td>
</tr>
<tr>
<td>Surface</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Fires</td>
<td>832</td>
<td></td>
<td></td>
<td>0.00122</td>
<td></td>
</tr>
</tbody>
</table>

**References**


USDA-NRCS. 2002, Rangeland Ecological Site Descriptions,Technical guide section llE, Las Vegas NV FO and Caliente, NV FO.

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.*