# Rapid Assessment Reference Condition Model

*The Rapid Assessment is a component of the LANDFIRE project. Reference condition models for the Rapid Assessment were created through a series of expert workshops and a peer-review process in 2004-2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.*

## *Potential Natural Vegetation Group (PNVG):*

**R1SABU** **Saltbush**

## *General Information*

**Contributors** *(additional contributors may be listed under "Model Evolution and Comments")*


| Modelers | | Reviewers |
|---|---|---|
| Jennifer Mata | jmata@blm.gov | |
| Louis Provencher | lprovencher@tnc.org | |


**Vegetation Type**

Shrubland

**Dominant Species***

ATRIP
ALLEN
HARA
DISTI

**General Model Sources**

- [x] Literature
- [x] Local Data
- [x] Expert Estimate

**LANDFIRE Mapping Zones**

3 6
4
5

**Rapid Assessment Model Zones**

- [x] California
- [ ] Great Basin
- [ ] Great Lakes
- [ ] Northeast
- [ ] Northern Plains
- [ ] N-Cent.Rockies
- [ ] Pacific Northwest
- [ ] South Central
- [ ] Southeast
- [ ] S. Appalachians
- [ ] Southwest

### Geographic Range

Typically found in central and southern central valleys of California, and near the Salton Sea. Found extensively in UT, NV, and portions of AZ.

### Biophysical Site Description

Occurs on poorly to moderately drained saline and/or alkaline soils. Usually occurs in two phases a xerophytic phase in basins and valleys and a halophytic phase in playas and sinks. Elevations range from -80 to 1200 meters.

### Vegetation Description

Vegetation is dominated by several Atriplex spp. Throughout its range. Other genera include Haplopappus, Allenrolfea, Distichlis, and Sporobolus. Variations in vegetation occur throughout the region, based on soil drainage. This type correlates with Kuchler's (1964)Saltbush-Greasewood ( type 40) and CES302.749 Sonora-Mojave Mixed Salt Desert Scrub (NatureServe 2004).

### Disturbance Description

Fire regime group III, infrequent fire with mixed severity. Fire return interval is correlated to precipitation and the availability of fine fuels to carry fire. Fire would typically occur during moist years when fine fuels were persistent into late summer.

### Adjacency or Identification Concerns

Likely adjacent to barren areas and California grassland types. This area is probably less than 3 percent of the landscape in California, but would be significant if combined with similar vegetation types in NV and UT.

### Scale Description

**Sources of Scale Data** [x] Literature [ ] Local Data [x] Expert Estimate

In California patches are small in size from 100's to 1000's of acres. There are several journal articles which

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

predict mapped areas of this vegetation, with larger patches occurring in NV and UT. Disturbance size could encompass entire patches under certain conditions.

### Issues/Problems

Difficult to locate quantifiable information regarding fire regime. Not sure about the time steps associated with each class and percent cover breaks. Unsure of whether insects and/or weather would create disturbance impacts that need to be modeled. Suspect that there is disturbance associated with flood events, not sure how to incorporate that into model since that it would cause an increase in recruitment.

### Model Evolution and Comments

Would like to have the Great Basin group review and refine model, to see if California type compares with that found in the Great Basin. Suggested reviewers: Dave Germano (dgermano@csu.bak.edu), Steve Laymon (slaymon@ca.blm.gov), Ellen Cypher (ecypher@esrp.org) and Bill Laudenslayer (blaudenslayer@fs.fed.us)

## 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 PostRep

**Description**

Immediate post fire class, vegetation is dominated by forbs, resprouting grasses, and some shrubs. This type typically occurs where fires burn relatively hot in classes B and C.

**Indicator Species* and Canopy Position**

ATRIP
DISTI

**Upper Layer Lifeform**

☐ Herbaceous
☐ Shrub
☐ Tree

**Fuel Model** no data

**Structure Data (for upper layer lifeform)**

| | Min | Max |
|---|---|---|
| *Cover* | 5 % | 20 % |
| *Height* | no data | no data |
| *Tree Size Class* | no data | |

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

### *Class B* 45 %

Mid1 Open

**Description**

Canopy cover is open with Atriplex dominating the site. There is some vegetation in the understory including Distichlis and other forbs. Fire could occur in this class during wet years and would be stand replacing if it occurred with a wind event.

**Indicator Species* and Canopy Position**

ATRIP
DISTI

**Upper Layer Lifeform**

☐ Herbaceous
☐ Shrub
☐ Tree

**Fuel Model** no data

**Structure Data (for upper layer lifeform)**

| | Min | Max |
|---|---|---|
| *Cover* | 20 % | 40 % |
| *Height* | no data | no data |
| *Tree Size Class* | no data | |

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

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

### *Class C* 45 %

Mid1 Closed

**Description**

This type occurs when there are consistently dry years with little persistent fine fuels to build a receptive fuelbed. It allows for dense stands of Atriplex to form. The vegetation is relatively stable in this state.

**Indicator Species* and Canopy Position**

ATRIP

**Structure Data (for upper layer lifeform)**

| | Min | Max |
|---|---|---|
| *Cover* | 40 % | 70 % |
| *Height* | no data | no data |
| *Tree Size Class* | no data | |

**Upper Layer Lifeform**

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

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

**Fuel Model** no data

---

### *Class D* 0 %

Late1 Open

**Description**

**Indicator Species* and Canopy Position**

**Structure Data (for upper layer lifeform)**

| | Min | Max |
|---|---|---|
| *Cover* | 0 % | % |
| *Height* | no data | no data |
| *Tree Size Class* | no data | |

**Upper Layer Lifeform**

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

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

**Fuel Model** no data

---

### *Class E* 0 %

Late1 Closed

**Description**

**Indicator Species* and Canopy Position**

**Structure Data (for upper layer lifeform)**

| | Min | Max |
|---|---|---|
| *Cover* | 0 % | % |
| *Height* | no data | no data |
| *Tree Size Class* | no data | |

**Upper Layer Lifeform**

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

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

**Fuel Model** no data

## *Disturbances*

**Non-Fire Disturbances Modeled**

- ☐ Insects/Disease
- ☐ Wind/Weather/Stress
- ☐ Native Grazing
- ☐ Competition
- ☐ Other:
- ☐ Other:

**Fire Regime Group:** 4

I: 0-35 year frequency, low and mixed severity
II: 0-35 year frequency, replacement severity
III: 35-200 year frequency, low and mixed severity
IV: 35-200 year frequency, replacement severity
V: 200+ year frequency, replacement severity

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

**Historical Fire Size (acres)**

Avg:

Min:

Max:

***Fire Intervals (FI):***

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. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class. All values are estimates and not precise.

**Sources of Fire Regime Data**

- ☑ Literature
- ☑ Local Data
- ☑ Expert Estimate

| | *Avg FI* | *Min FI* | *Max FI* | *Probability* | *Percent of All Fires* |
|---|---|---|---|---|---|
| *Replacement* | 100 | 60 | 200 | 0.01 | 70 |
| *Mixed* | 235 | | | 0.00426 | 30 |
| *Surface* | | | | | |
| *All Fires* | 70 | | | 0.01427 | |

## *References*


Barbour, M. & Major, J. 1988. Terrestrial Vegetation of California, New Expanded Edition. California Native Plant Society. Special Publication Number 9.

Branson, F. & Miller, R. Geographic Distribution and Factors Affecting the Distribution of Salt Desert Shrubs in the United States. Journal of Range Management, Vol 20, No. 5. (Sept., 1967), 287-296.

Brown, James K.; Smith, Jane Kapler, eds. 2000. Wildland fire in ecosystems: effects of fire on flora. Gen. Tech. Rep. RMRS-GTR-42-vol. 2. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 257 p.

Kuchler, A. W. 1964. Manual to accompany the map of potential natural vegetation of the conterminous United States. American Geographical Society. Spec. Publ. No. 36. Lib. Congress Cat. Card Num. 64-15417. 156 p.

NatureServe. 2004. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA. U.S.A. Data current as of October 12, 2004.

Sankary, M. & Barbour, M. Autoecology of Atriplex Polycarpa from California. Ecology, Vol 53, No. 6. (Nov., 1972), 1155-1162.

U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, December). Fire Effects Information System, [Online]. Available: http://www.fs.fed.us/database/feis/ (October 27,2004).


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