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 and 2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG)

R1WEHB Herbaceous Wetland

General Information

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

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Vegetation Type

Grassland

Dominant Species*

LETR5
ELMO
TYSP
SCCA

General Model Sources

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

LANDFIRE Mapping Zones

3 4 5 6

Rapid AssessmentModel Zones

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

Geographic Range

California Central Valley, coastal, and montane areas. This PNVG occurs from coastal brackish marshes to interior valley fresh water marshes, to haline or saline settings adjacent to alkaline playas and seeps in the desert. In the Sierra, Cascades, and Klamath mountains stands may occur in saturated meadows and along the shores of ponds and lakes which experience drawdown throughout the growing season.

Biophysical Site Description

Herbaceous wetland occurs on flat, poorly drained sites or on valley bottom depressions.

Vegetation Description

Large (>.5km2) coastal, montane, and valley freshwater marsh and wet meadow communities dominated by Scirpus (bulrush), Typha spp (cattail) and/or other herbaceous species with saturated soil or standing water for most of the year, but which generally dry out annually. Vegetation is characterized by short to medium graminoids which typically range from .5 to 1 meter. Some stands are heavily dominated Eleocharis, Scirpus, and/or Typha spp while others have several graminoids common throughout the stand. This PNVG occurs from coastal brackish marshes to interior valley fresh water marshes, to haline or saline settings adjacent to alkaline playas and seeps in the desert. In the Sierra, Cascades, and Klamath mountains stands may occur in saturated meadows and along the shores of ponds and lakes which experience drawdown throughout the growing season. Some stands occupy the centers of vernal pools. (Sawyer & Wolf, Sugihara et al. 2005)

Disturbance Description

The fire return interval of Herbaceous wetland is 3-20 years. These sites were likely burned by native peoples along with adjacent grasslands. In the absence of Native Americans, the fire return interval probably tended toward the longer end of the above range. Native herbivory was also a source of continual background-level disturbance (FEIS). These systems will succeed to upland grasslands on very long time frames (tens of thousands of years) (Mayer & Laudenslayer 1988).

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

Adjacency or Identification Concerns

Adjacent systems include grasslands, coastal scrub, chaparral, oak woodland, and mountain meadows. Large portions of Herbaceous wetland are now in an uncharacteristic state as they have been drained and/or converted to agriculture/grazing.

This PNVG may be similar to the PNVG R#WGRA for the Pacific Northwest Model Zone. R#WGRA has a more frequent fire regime.

Scale Description

Sources of Scale Data ☑ Literature ☐ Local Data ☑ Expert Estimate

Historically, fire size probably varied widely from very small fires (10s of hectares) to very large fires (1000s of hectares). Fires in this system are tied to burning in adjacent uplands. (Sugihara et al. 2005)

Issues/Problems

Model Evolution and Comments

*Succession Classes***

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

Class A 5 %

Early1 PostRep

Description

Immediately after a stand replacing fire, this class will appear. It will be composed of Scirpus, Typha, Eleocharis and other wetland graminoids in an early life stage.

Dominant Species* and Canopy Position

SCCA
LETR5
TYSP
ELMO

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	100 %
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 90 %

Mid1 Closed

Description

This class is composed of closed canopy (>60%) wetland species including Scirpus, Typha, Eleocharis and other wetland graminoids. This type occurs several years after a stand replacing fire.

Dominant Species* and Canopy Position

SCCA
LETR5
ELMO
TYSP

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	100 %
Height	no data	no data
Tree Size Class	no data	

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

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Class C 5 %

Mid1 Open

Description

A matrix of openings and closed canopy (<60%) wetland species including Scirpus, Typha, Eleocharis and other wetland graminoids. This type can occur via two pathways. A mixed severity fire in Class B creates a patchy expression of this type. Alternatively, a rare extreme stand replacing fire event (during a drought) would patchily kill rhizomes and a few years later create a patchy expression of this type.

Dominant Species* and Canopy Position

SCCA
LETR5
TYSP
ELMO

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	0 %	59 %
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 D 0 %

Late1 Open

Description

Dominant Species* and Canopy Position

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	0 %	%
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 E 0 %

Late1 Closed

Description

Dominant Species* and Canopy Position

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

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

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

Disturbances

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Disturbances Modeled

- [x] Fire
- [ ] Insects/Disease
- [ ] Wind/Weather/Stress
- [ ] Native Grazing
- [ ] Competition
- [ ] Other:
- [ ] Other

Historical Fire Size (acres)

Avg: no data
Min: no data
Max: no data

Sources of Fire Regime Data

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

Fire Regime Group: **2**

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

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 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.

	Avg FI	*Min FI*	*Max FI*	*Probability*	*Percent of All Fires*
Replacement	15			0.06667	70
Mixed	35			0.02857	30
Surface					
All Fires	10			0.09525	

References

Sawyer, J.O. and T.K. Wolf. In preparation. Manual of California Vegetation, revised. California Native Plant Society.

Sugihara, N.G., J.W. Van Wagtendonk, J. Fites-Kaufman, K.E. Shaffer, A.E. Thode, editors. 2005. Fire in California Ecosystems. University of California Press, Berkeley, California. In press.

USDA, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. Fire Effects Information System (online). Available: http://www.fs.fed.us/database/feis/. Accessed November 3, 2004.

Mayer, K.E. and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. State of California, Resources Agency. Dept of Fish and Game. Sacramento, CA. 166pp.

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