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):

R#WGRA **Marsh**

General Information

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

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Vegetation Type

Grassland

Dominant Species*

SCAC3
TYPHA
JUNCU

General Model Sources

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

LANDFIRE Mapping Zones

1 8
2 9
7

Rapid Assessment Model Zones

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

Geographic Range

This PNVG occurs in southeastern Oregon and western Oregon and Washington.

Biophysical Site Description

Freshwater marshes are located in southeastern Oregon primarily in association with Pleistocene lakes. There are additional freshwater marshes in western Oregon and western Washington, mostly in association with reservoirs and major rivers, and possibly as part of the Oregon Dunes.

Marshes are saturated, poorly drained wetlands intermittently or permanently water covered and vegetated by grass-like hydrophytic plants. Water may be slow moving (Dorr et al. 2003). The edges of some marshes may be slightly saline or alkaline where the marsh borders desert shrub and the supporting freshwater peters out.

Vegetation Description

Hardstem bulrush and cattails are the dominant species with various species of rushes common. Some marshes also have floating aquatic vegetation of varying amounts but generally less than 10% cover.

Disturbance Description

Since bulrushes and cattails are culturally significant plants, the Great Basin American Indian tribes probably maintained marsh productivity with frequent burning (need reference). Most marshes dried out enough to burn at least part of the year on a 5-10 year basis.

Adjacency or Identification Concerns

Marshes lie adjacent to pluvial lakes and the desert scrub, warm sagebrush, low sagebrush PNVGs in southeastern Oregon and reservoirs and major rivers in western Oregon and Washington. Most westside

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

marshes are located in wildlife refuges or other protected areas. Many marshes have been partly or fully drained and converted to agriculture or hayfields in southeastern Oregon. Some marshes in the Willamette and Puget Trough were created. Wet meadows in forest settings and saltwater marshes should be treated as different PNVGs.

This PNVG may be similar to the PNVG R1WEHB for the California Model Zone. The California model may reflect conditions in Oregon/Washington west of the Cascades.

Scale Description

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

Marshes vary in size, depending on the former size of the remnant lake, existing size of the remaining lake (if any), and the size of the streams and rivers the feed the current marshes.

Issues/Problems

Reed canarygrass is beginning to invade in southeastern Oregon, but has not established widely as yet. Reed canarygrass dominates most freshwater marshes in western Oregon and western Washington.

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 15 %

Early1 PostRep

Description

Cover less than 10%, with most vegetation burned off. This stage only lasts one year.

Indicator Species* and Canopy Position

SCAC3
TYPHA
JUNCU

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	10 %
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 80 %

Mid1 Closed

Description

Cover >60% of hardstem bulrush, cattails, rushes, and other associated species. Litter mat develops quickly.

Indicator Species* and Canopy Position

SCAC3
TYPHA

JUNCU

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	80 %
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

Cover less than 60% of bulrushes, cattails, rushes, and other associated species. Can be created by two types of events: 1) after relatively intense fires during prolonged droughts that damage rhizomes, reducing sprouting capacity or density of surviving plants, or 2) during very wet periods that raise the water level considerably, drowning some plants. Both types of events create areas of open water within the marsh that are filled by plants recolonizing the area.

Indicator Species* and Canopy Position

SCAC3
TYPHA
JUNCU

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	60 %
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: **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

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	7			0.14286	74
Mixed	20			0.05	26
Surface					
All Fires	5			0.19287	

References

Brown, J.K.; J.K. Smith, 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.

Dorr, J.; K. Greulich, E. Nicita, and J. Skalka. 2003. Ecological unit inventory of the Winema portion, Fremont-Winema National Forests, Oregon. Interim report #5. Klamath Falls, OR: U.S. Department of Agriculture, Forest Service, Fremont-Winema National Forests. [alternate pagination].

Schimdt, K.M.; J.P. Menakis, C.C. Hardy, W.J. Hann, and D.L. Bunnell. 2002. Development of coarse-scale spatial data for wildland fire and fuel management. Gen. Tech. Rep. RMRS-GTR-87. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 41 p. + CD.

Smith, L.M. and J.A. Kadlec. 1983. Seed banks and their role during drawdown of a North American marsh. Journal of Applied Ecology 20: 673-684.

Smith, L.M. and J.A. Kadlec. 1985. Fire and herbivory in a Great Salt Lake marsh. Ecology 66(1): 259-265.