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)

R#MGRA **Idaho Fescue Grasslands**

General Information

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

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Vegetation Type

Grassland

Dominant Species*

FEID
LUPIN
KOCR
PSSP6

General Model Sources

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

LANDFIRE Mapping Zones

1 2 7 8 9

Rapid AssessmentModel Zones

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

Geographic Range

Eastern Columbia Basin, Palouse, Okanogan foothills, Blue Matins, Zumwalt Prairie, Yumatilla Plateau, Hells Canyon

Biophysical Site Description

PNVG generally occurs on gentle (< 30%) northerly aspects above 2000 feet, gentle southerly aspects in the montane zone, and steep (>30%) southerly aspects in the upper montane zone (FRCC model MGRA1). It is typically dominated by one or more perennial bunchgrasses (e.g. Festuca idahoensis) but may contain a strong forb component on more mesic sites. Its distribution is largely the product of low precipitation caused by the rain shadow of the Cascades Mountains, though timing of precipitation and soils are also important drivers (Daubenmire 1970, Driscoll 1964). Climatically this vegetation zone is arid to semi-arid with warm to hot dry summers and relatively cold winters (Franklin and Dyrness 1988).

Vegetation Description

It is typically dominated by one or more perennial bunchgrasses including Pseudoroegneria spicata, Agropyron inerma, Festuca idahoensis, Calamagrostis rubescence, Koeleria crestata. This PNVG also includes a strong forb component including Balsamorhiza sagittata, Hieracium cynoglossoides, Lupinus sericeus and Lupinus latifolius.

Disturbance Description

Grasslands retain little evidence of historic fire regimes. Native Americans likely played a role in fire occurrence near populated areas, but the evidence is inconclusive as to their impact at a larger spatial scale and it is likely that fuel conditions and weather were more important drivers of historic fire regimes (Whitlock and Knox 2002). Grasslands in this area dominated by Idaho fescue may have enough fuel to burn annually, but probably did not because of low flammability early in the season and lack of fire starts across grasslands late in the season (Agee 1994). Response to fire varies, with Idaho fescue susceptible to mortality if fuel load allows smouldering of the root crown to occur. Following fire, this PNVG typically

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

exhibits an increase in forb cover (Agee 1994).

The rangelands of the planning area and many of the major perennial grasses (e.g. bluebunch wheatgrass and Idaho fescue) did not evolve with substantial ungulate grazing (Daubenmire 1970).

Adjacency or Identification Concerns

Many of the soils are suitable for agriculture and approximately 56 percent of the dry grass zone has been converted to agriculture or urban use (Quigley and Arbelbide 1997).

Fire suppression may lead to a shrub dominated type in some areas, particularly in mesic ecotones.

Scale Description

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

This type fingers up into the montane forests on steep southerly slopes and shallow soils. These patches are often too small to map and may be overlooked. Burn size is variable with topography and distribution of rock and riparian areas influencing fire spread.

Issues/Problems

This PNVG lacks fire history data.

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 10 %

Early1 PostRep

Description

This early seral community follows a topkill event in which cover of bunch grasses and perennial forbs has been reduced. Forb composition is relatively higher in this stage than at later stages with increased occurrence of Colinsia, Lupinus, Epilobium, Balsamorhiza, Geum and Potentilla. Poa and Vulpia may also increase.

Dominant Species* and Canopy Position

PSSP6
POSA
EPILO
FEID

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 70 %

Late1 Closed

Description

Very little bare ground, litter bare ground cover is high. Plants are vigorous and well established. Fires are rarely lethal, and the community responds quickly to fire. Cover values are high, ranging from 30 to 80 percent.

Dominant Species* and Canopy Position

FEID
LUPIN
PSSP6
KOCR

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	40 %	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 20 %

Late2 Closed

Description

Open shrubland resulting from long absences of fire. Shrub component has largely encroached from adjacent deciduous shrublands. These sites are more mesic than the similar Class B.

Dominant Species* and Canopy Position

SYAL
ROSA
CRDO2
FEID

Structure Data (for upper layer lifeform)

	Min	Max
Cover	20 %	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 Closed

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
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 %

Late2 Closed

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
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

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Disturbances Modeled

- [x] Fire
- [ ] Insects/Disease
- [ ] Wind/Weather/Stress
- [ ] Native Grazing
- [x] 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	40			0.025	76
Mixed	125			0.008	24
Surface					
All Fires	30			0.03301	

References

Agee, J.K. 1994. Fire and weather disturbances in terrestrial ecosystems of the Eastern Cascades. Gen. Tech. Rep. PNW-GTR-320. Portland OR: USDA, Forest Service 52 pp.

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