# **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#PIPOxe	Ponderosa Pine - Xe	ric							
General Information									
Contributors (additiona	al contributors may be listed under "Model	Evolution and Comm	ents")						
Modelers		Reviewers							
Mike Simpson	mlsimpson@fs.fed.us	Miles Hemstrom	mhemstron	rom@fs.fed.us					
Dave Swanson	dswanson@fs.fed.us	Rex Crawford	Rex Crawford rex.crawford						
			V						
Vegetation Type	General Model Sources	Sources Rapid Assessment Model Zones							
Forested	✓ Literature	Ca	llifornia	✓ Pacific Northwest					
Dominant Species*	Species* ✓ Local Data		eat Basin	South Central					
	✓ Expert Estimate	Gr	eat Lakes	Southeast					
	I ANDEIRE Manning Zonos		ortheast	S. Appalachians					
	LANDFINE Mapping zones	No	orthern Plains	Southwest					
LELE	1 8	N-	Cent.Rockies						
JUOC	2 9								
	7								

## **Geographic Range**

This PNVG occurs in the forest shrub steppe interface along the east side of the Fremont and Deschutes National Forests and along the southern fringe of the Blue Mountains to the Idaho border.

## **Biophysical Site Description**

This PNVG occurs in precipitation zones between 15-17". This precipitation band reaches from the east side of the Fremont NF north along the east side of the Deschutes NF to the south edge of the Blues, and east along the Ochocos and Malheur NF. This type may occur in Idaho opposite the Snake River.

## **Vegetation Description**

Tree species common in this type are PIPO and JUOC. Minor amounts of PSME may occur. Understory vegetation is dominated by ARTR, ARAR, CELE3, PUTR. Important herbaceous species include FEID, AGSP, SIHY, POSA and various Stipa species.

## **Disturbance Description**

Mixed and Stand Replacement Fires dominate this PNVG. Large wind driven events originating in the shrub steppe or Juniper Woodland vegetation zones heavily influence this PNVG. Fire return intervals in this type are more like adjacent shrub steppe or Juniper Woodland communities than typical low intensity frequent fire PIPO communities.

# Adjacency or Identification Concerns

Typically this vegetation type occurs between JUOC/ARTR, JUOC/ARAR, JUOC/ PUTR, ARTR, PUTR and PIPO or Dry Mixed Conifer sites with frequent fire return intervals.

This PNVG is distinct from Ponderosa Pine mesic (R#PIPOm) in that it typically occurs in regions with

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

<45cm/year precipitation.

#### **Scale Description**

Sources of Scale Data 🖌 Literature 🖌 Local Data 🖌 Expert Estimate

Stand replacement events can be tens of thousands of acres in size.

#### **Issues/Problems**

This model attempts to capture the Forest - Shrub Steppe interface areas where lack of fuels continuity increases the fire return intervals and significant dry shrub communities increase the occurrence of stand replacement and mixed fires.

### **Model Evolution and Comments**

Reviewers requested greater clarification between this model and R#PIPOm. Furthermore, it was suggested that the replacement fire may occur too frequently resulting in too much mid-seral (classes B and C). A run with reduced replacement fire (0.003 for open classes C and D; 0.01 for classes A, B and E) moved 15% of the landscape from Class A and C into Class D, and nearly doubled the MFRI of replacement fires.

### Succession Classes

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

Class A 25%		Indicator Species* and	Structure Data (for upper layer lifeform)			
Early1 PostRep <u>Description</u> Class A is a Grass/ Forb/Shrub and Seedling Sapling Stage. Initial establishment of grass and herbaceous species (and CHVI if present in the pre-disturbance community) gives way to shrubs at 15-30 years. JUOC and PIPO are often established after the shrub community is in place. Re- establishment of the trees may be delayed by the large disturbance size and removal of nearby seed		Canopy Position		Min	Max	
		ARTR CHVI AGSP SIHY Upper Layer Lifeform Herbaceous Shrub Tree Fuel Model no data	Cover	0%	50 %	
			Height	no data	no data	
			Tree Size Class no data			
sources.	5%	Indicator Species* and Canopy Position	Structure	Data (for upper layer	lifeform)	
Mid1 Close	d	PIPO		Min	Max	
Description		JUOC FEID ARTR	Cover	25 %	70 %	
Class B represents Pole to Small tree (5-20" dbh) dominated sites with significant competition between trees even though canopy cover does not exceed 70%. Shrub and herbaceous species are often depauperate or declining in this stage due to the competition from			Height	no data	no data	
			Iree Size Class no data			
		Upper Layer Lifeform Herbaceous Shrub Tree Fuel Model no data	Upper la Height a	n dominant lifeform. feform are:		

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the Overstory Trees. This stage is

susceptible to mountain pine beetle attack which cycles this stage to Class C.

Mid1 Open     Description       Mid1 Open     PIPO       Description     ARTR       PUTR     Tree Size Class       Class C represents Pole to Small     AGSP       PUTR     Tree Size Class       modata     Tree Size Class       modata     Tree Size Class       modata     Tree Size Class       modet     Min       Upper Laver Lifeform     Upper layer lifeform differs from domir       Height     no data       Bass A.     Indicator Species* and       Class D     40%       Late1 Open     PIPO       Description     ARTR       Class D represents the Large tree     CELE       (20°+) open canopy conditions.     PIPO       Often this gives a Savanna-like     Upper Laver Lifeform       appearance. Shrub and herbaceous     Shrub       Communities are similar to Class A.     Upper Laver Lifeform       Indicator Species* and     Upper layer lifeform differs from domir       Height and cover of dominant lifeform     Height and cover of dominant lifeform       Upper Laver Lifeform     Upper layer lifeform differs from domir       Height no data     Tree Size Class no data       Class E     5%     Indicator Species* and       Class E     5%     Cover 25 %       Latel Closed	<u>Max</u> <u>25 %</u> no data ant lifeform. are: <u>n)</u>			
Mid Open       Info       Cover       0 %         Description       ARTR       Height       no data         Class C represents Pole to Small       PUTR       Tree Size Class       no data         PUTR       Tree Size Class       no data       Image: Class Class       Image: Class       Image: Class <td< th=""><th><u>25 %</u> no data ant lifeform. are: <u>n)</u></th></td<>	<u>25 %</u> no data ant lifeform. are: <u>n)</u>			
Description       ARTR       Height       no data         Class C represents Pole to Small       PUTR       Tree Size Class       no data         tree (5-20" dbh) dominated sites       AGSP       Tree Size Class       no data         with open canopies. Understories are more vigorous than class B and have similar species composition to class A.       Upper Laver Lifeform       Upper layer lifeform differs from domin Height and cover of dominant lifeform         Class D       40 %       Indicator Species* and Canopy Position       Structure Data (for upper layer lifefor Upper layer lifefor Upper layer lifefor         Latel Open       PIPO       Min         Class D represents the Large tree (20"+) open canopy conditions.       PIPO       Min         Often this gives a Savanna-like appearance. Shrub and herbaceous communities are similar to Class A.       Upper Laver Lifeform       Upper layer lifeform differs from domin Height and cover of dominant lifeform         Class E       5%       Indicator Species* and Canopy Position       Upper layer lifeform differs from domin Height and cover of dominant lifeform         Class E       5%       Indicator Species* and Canopy Position       Structure Data (for upper layer lifeform         Class E       5%       Indicator Species* and Canopy Position       Structure Data (for upper layer lifeform         Lifejht and cover of dominant lifeform       Cover       25 %       Height	no data ant lifeform. are: <u>n)</u>			
Class C represents Pole to Small tree (5-20" dbh) dominated sites with open canopies. Understories are more vigorous than class B and have similar species composition to class A.       Imper Laver Lifeform Lever Lifeform differs from dominant lifeform dominant lifeform differs from dominant lifeform domi	ant lifeform. are: <u>n)</u>			
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Upper Laver Literorm       Upper laver literorm differs from dominant lifeform differs from dominant lifeform differs from dominant lifeform differs from dominant lifeform         are more vigorous than class B and have similar species composition to class A.       Indicator Species* and Canopy Position       Upper laver lifeform         Class D       40 %       Indicator Species* and Canopy Position       Structure Data (for upper laver lifeform         Description       ARTR       Celle       Min         Class D represents the Large tree (20"+) open canopy conditions.       Min       Celle         Often this gives a Savanna-like appearance. Shrub and herbaccous communities are similar to Class A.       Upper Laver Lifeform       Upper laver lifeform differs from domin theight and cover of dominant lifeform         Class E       5%       Indicator Species* and Canopy Position       Upper laver lifeform         Latel Closed       PIPO       Min       Min         Class E       5%       Indicator Species* and Canopy Position       Structure Data (for upper laver lifeform         Latel Closed       PIPO       Min       Min         Class E       5%       Indicator Species* and Canopy Position       Structure Data (for upper laver lifeform         Latel Closed       PIPO       Cover       25 %         Latel Closed       PIPO       Zover       25 % <t< th=""><th>n)</th></t<>	n)			
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Canopy Position     Min       Late1 Closed     PIPO     Cover     25 %       Description     CELE     Height     no data       Class E occurs when class D misses     JUOC     Tree Size Class     no data       2-3 fire intervals. This stage is     FEID     FEID     Interval	<u></u>			
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Description     CELE     Height     no data       Class E occurs when class D misses     JUOC     Tree Size Class     no data       2-3 fire intervals. This stage is     FEID     Tree Size Class     no data	70 %			
2-3 fire intervals. This stage is FEID Susceptible to western pine beetle FEID FEID FEID FEID FEID FEID				
2 of the intervals. This suggests $1$ in the set of	no data			
events which cycle this stage to Class C.	no data			
Fuel Model no data	no data ant lifeform. are:			
Disturbances	no data			

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Non-Fire Disturbances Modeled	Fire Regime G	aroup:	3			
<ul> <li>Insects/Disease</li> <li>Wind/Weather/Stress</li> <li>Native Grazing</li> <li>Competition</li> <li>Other:</li> <li>Other:</li> </ul>	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					
<u>Historical Fire Size (acres)</u> Avg: Min: Max:	<i>Fire Intervals (FI):</i> 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.					
		Avg Fl	Min FI	Max Fl	Probability	Percent of All Fires
Sources of Fire Regime Data	Replacement	130			0.00769	37
✓ Literature	Mixed	100			0.01	48
└ Local Data	Surface	300			0.00333	16
Expert Estimate	All Fires	48			0.02103	
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<sup>\*</sup>Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.

Volland, Lenny, Ecology Plot Data Unpublished Data Collected Mid 1960's to Mid 1970's.

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