

IMPORTANT INFORMATION ABOUT THIS WORKBOOK

Risk Map Workbook

Please Select Your Area (e.g. Northeastern Area):

California

There are four general worksheets followed by 15 empty modelsheets. Fill out the empty sheets. If you need additional sheets, please start a new file to keep the number of model worksheets to 15 in each file.

If more than 1 file is needed, please update this section with the correct numbers:

This is file

1

of

1

Worksheets:

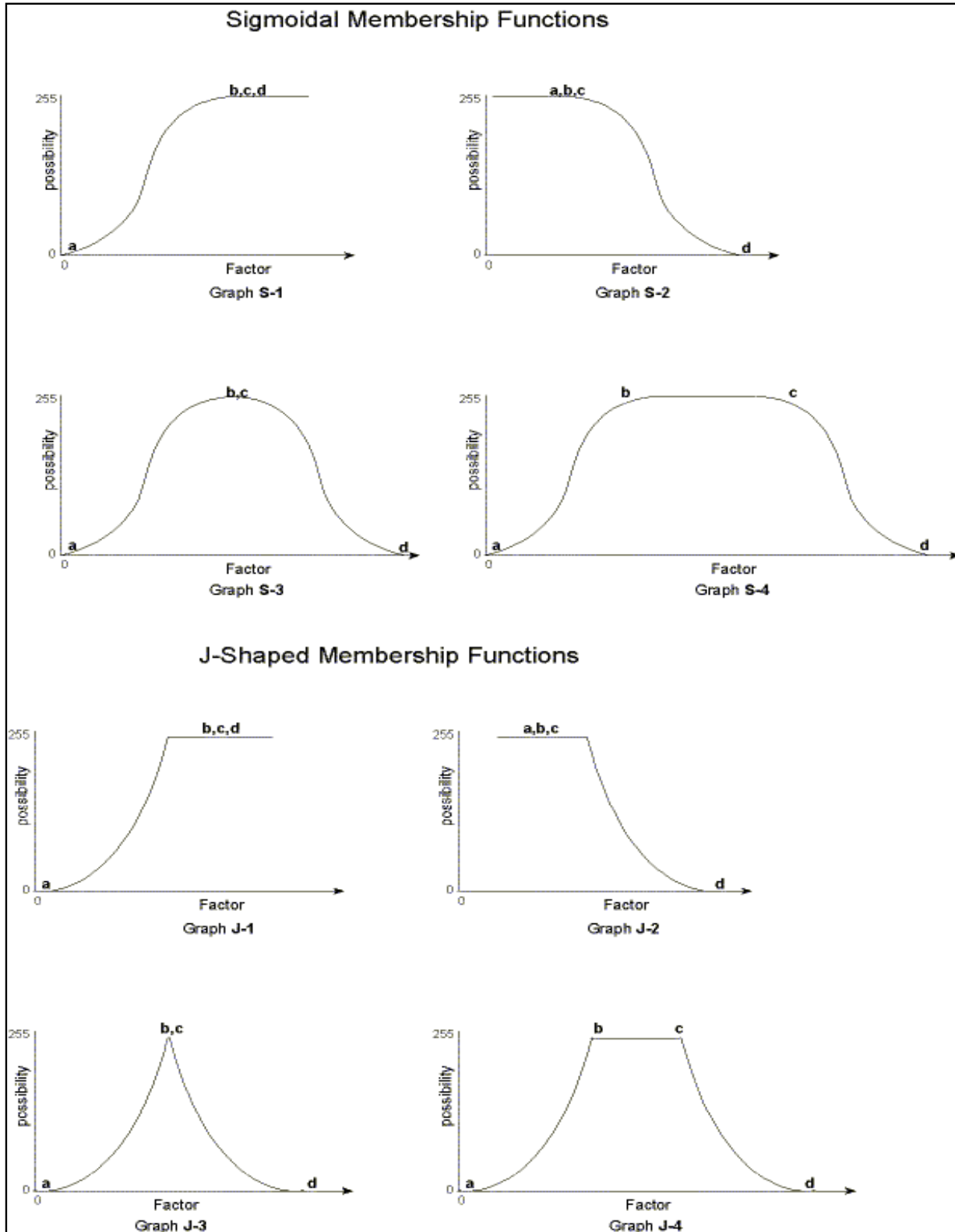
README	This worksheet
Curves	Curve graphics
Risk Rankings	Tool for assisting in developing scales
Citations	Listing and status of models for interior west
Base Sheet	Empty base sheet

Filling out the Model Worksheets

The area in blue on the top of the worksheet is for your use and is not printed. The format has changed slightly from the previous versions.

Risk Agent(s):	Common name of the risk agent, e.g. Spruce budworm
Host(s):	Host tree species, e.g. Balsam fir
Model Extent:	Extent, e.g. Northeastern or list certain ecoregions. If the list of ecoregions is too long for this field, enter them in the comments and put a note in the model extent, such as "Certain IW ecoregions - see comments".
Max Percent Mortality:	Maximum threshold expected (in percent)
Susceptibility/Vulnerability	Enter the Rank for each (or one if only one used) and the Weights will calculate.
Criteria	Enter the criteria following the same rules as the previous worksheets. *Note for rare exceptions (such as the inverse S-3 and S-4) where two sets of A,B,C,D risk values are needed for one criteria, delete the "Criteria X" from the cell. You will have to renumber the remaining criteria.
Criteria Rank/Weight	Enter the Rank value, the Weight will calculate automatically.
Constraints	List any model constraints, if applicable
Comments	Area for information not covered in other fields
Citations	Enter the full citation details (publication, communication, model developer, etc) on the Citations worksheet and assign a number. On the model spreadsheet, enter the citation number in this area. Two example citations are shown, replace with your citations.
Model Certainty	Select the model certainty/source from the dropdown list.

Curves



Risk/Mortality Scaling Tool

To obtain eleven class values (for risk values, mortality thresholds), enter the risk begins and risk peaks values. Equal interval classes will be calculated.

	<u>Input Value</u>	<u>Classes</u>	<u>Scaled Value</u>
Risk Begins (0):	<input type="text" value="0"/>	0	0
		10	1
		20	2
		30	3
		40	4
		50	5
		60	6
		70	7
		80	8
		90	9
Risk Peaks (10):	<input type="text" value="100"/>	100	10

Citation List - California

- | No. | Citation |
|-----|--|
| 1 | Amman, G.D., McGregor, M.D., Cahill, D.B. and Klein, W.H.. 1977. Guidelines for reducing losses of lodgepole pine to the mountain pine beetle in unmanaged stands in the Rocky Mountains. USDA Forest Service, General Technical Report INT-36. Intermountain Forest and Range Experimental Station, Ogden, UT. 19 p. |
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| 18 | Hickman, J.C. (Ed.). 1993. The Jepson Manual. Higher Plants of California. Berkeley: University of California Press. 1400 pp. |
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| 22 | Meentemeyer, R., Rizzo, D., Mark, W., and Lotz E.. 2004. Mapping the risk of establishment and spread of sudden oak death in California. Forest Ecology and Management, 200, pgs 195-214. |
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Risk Model Worksheet - California

Risk Agent(s):

Host(s):

Model Extent:

Max Percent Mortality:

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Host %	1%	10%	10%	10%	Linear	1	33%
Criteria 2		Ponderosa Pine Host %	70%	70%	70%	70%	Linear	1	33%
Criteria 3		Jeffrey Pine Host %	70%	70%	70%	70%	Linear	1	33%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	40
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



Model Certainty	3 - Informed Professional Judgement
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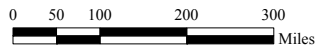


**Risk* of Mortality
Annosus Root Disease
on Coulter Pine (CA)**
Mortality Ceiling of 5%

Legend

Level of risk for host

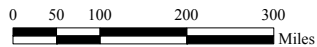
-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk



*Risk of experiencing mortality at a given threshold over a 15 year period.

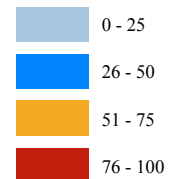


Percent Contribution*
Annosus Root Disease
on Coulter Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Annosus Root Disease

Host(s): Jeffrey Pine (*Pinus jeffreyi*)

Model Extent: M262A and M262B

Max Percent Mortality: 100%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Annosus	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	40
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Model Certainty	3 - Informed Professional Judgement
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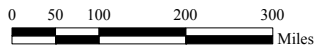


**Risk* of Mortality
Annosus Root Disease
on Jeffrey Pine (CA)**
Mortality Ceiling of 100%

Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk



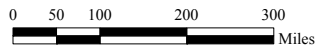
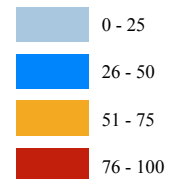
*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Annosus Root Disease
on Jeffrey Pine (CA)

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Annosus Root Disease

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: A, M261B, M261C, M261D, M261E, M261G, M262A, M262B,

Max Percent Mortality: 100%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Annosus	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	Model dependent on R5 root disease data.
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Citations	40
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Model Certainty	1 - Data Driven
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





Risk* of Mortality
Annosus Root Disease
on Ponderosa Pine (CA)
Mortality Ceiling of 100%



Legend

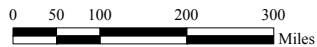
Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

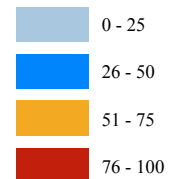


Percent Contribution*
Annosus Root Disease
on Ponderosa Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Annosus Root Disease

Host(s): Red Fir (*Abies magnifica*)

Model Extent: M261A, M261B, M261C, M261D, M261E and M261G

Max Percent Mortality: 80%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Annosus	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	40, 42, 48
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Model Certainty	3 - Informed Professional Judgement
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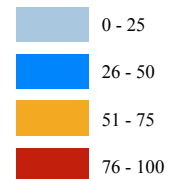




Percent Contribution*
Annosus Root Disease
on Red Fir (CA)

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Annosus Root Disease

Host(s): White Fir (*Abies concolor*)

Model Extent: M262A and M262B

Max Percent Mortality: 100%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Annosus	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments Model dependent on R5 root disease data.

Citations 40

Model Certainty 1 - Data Driven







Risk* of Mortality
 Annosus Root Disease
 on White Fir (CA)
 M262A, B
 Mortality Ceiling of 100%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

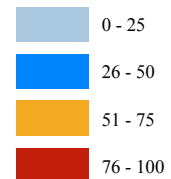


Percent Contribution*
Annosus Root Disease
on White Fir (CA)
M262A, B



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Annosus Root Disease

Host(s): White Fir (*Abies concolor*)

Model Extent: M261A, M261B, M261C, M261D, M261E, and M261G

Max Percent Mortality: 80%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Annosus	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments Model dependent on R5 root disease data.

Citations 40

Model Certainty 1 - Data Driven







Risk* of Mortality
 Annosus Root Disease
 on White Fir (CA)
 M261A, B, C, D, E, G
 Mortality Ceiling of 80%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

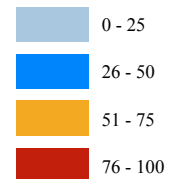
Printing Date: October 31, 2007



Percent Contribution*
Annosus Root Disease
on White Fir (CA)
M261A, B, C, D, E, G

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Black Stain Root Disease**

Host(s): **Douglas-fir (*Pseudotsuga menziesii*)**

Model Extent: **M261A, M261B, M261C and 263A**

Max Percent Mortality: **100%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

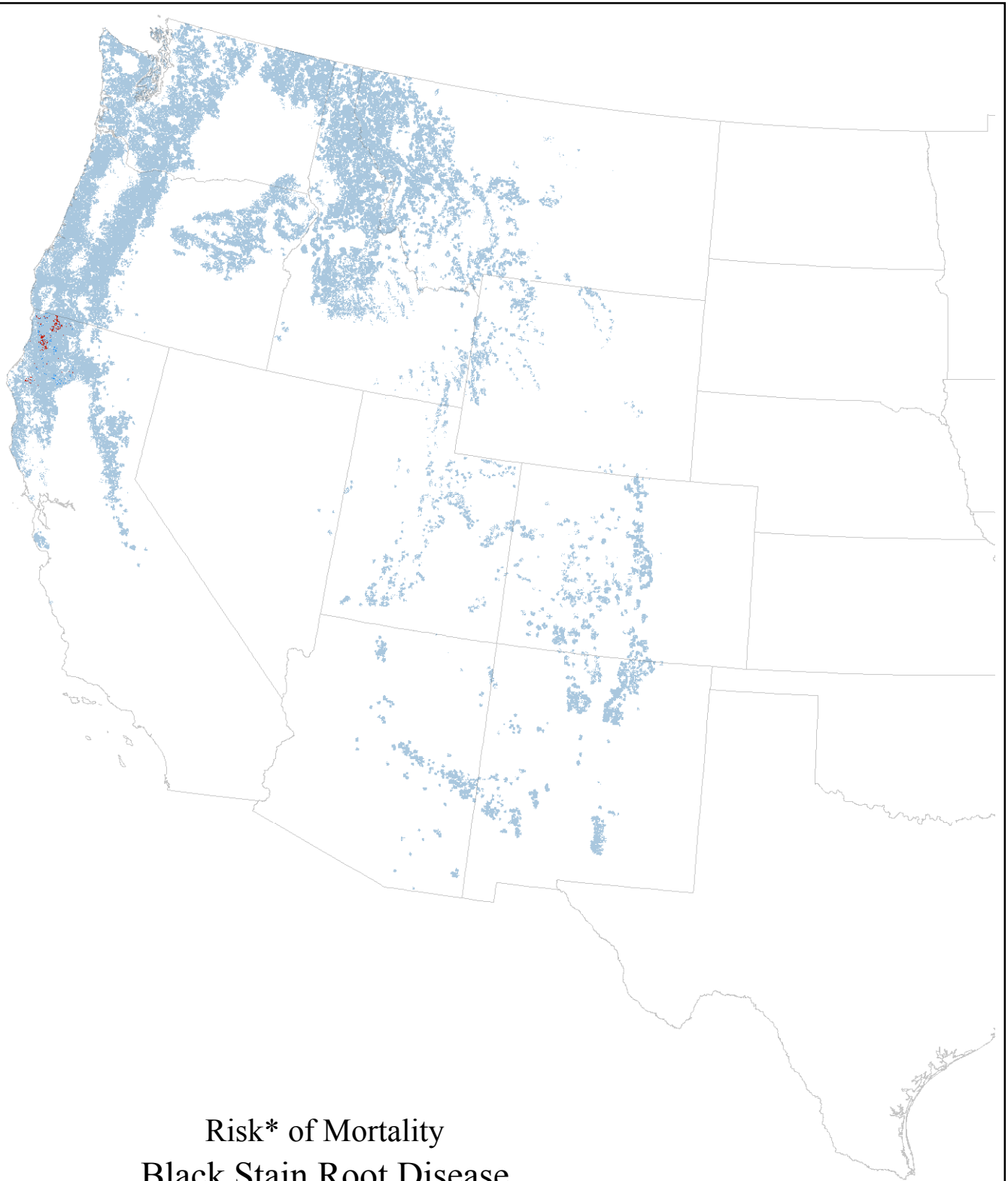
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		All Douglas-fir Plantations	< 30 years	< 30 years	< 30 years	< 30 years	Linear	1/2	33%
Criteria 2		Black Stain present	present	present	present	present	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

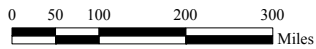
Comments Model dependent on R5 root disease data.

Citations 40

Model Certainty 1 - Data Driven







Risk* of Mortality
 Black Stain Root Disease
 on Douglas-fir (CA)
 Mortality Ceiling of 100%

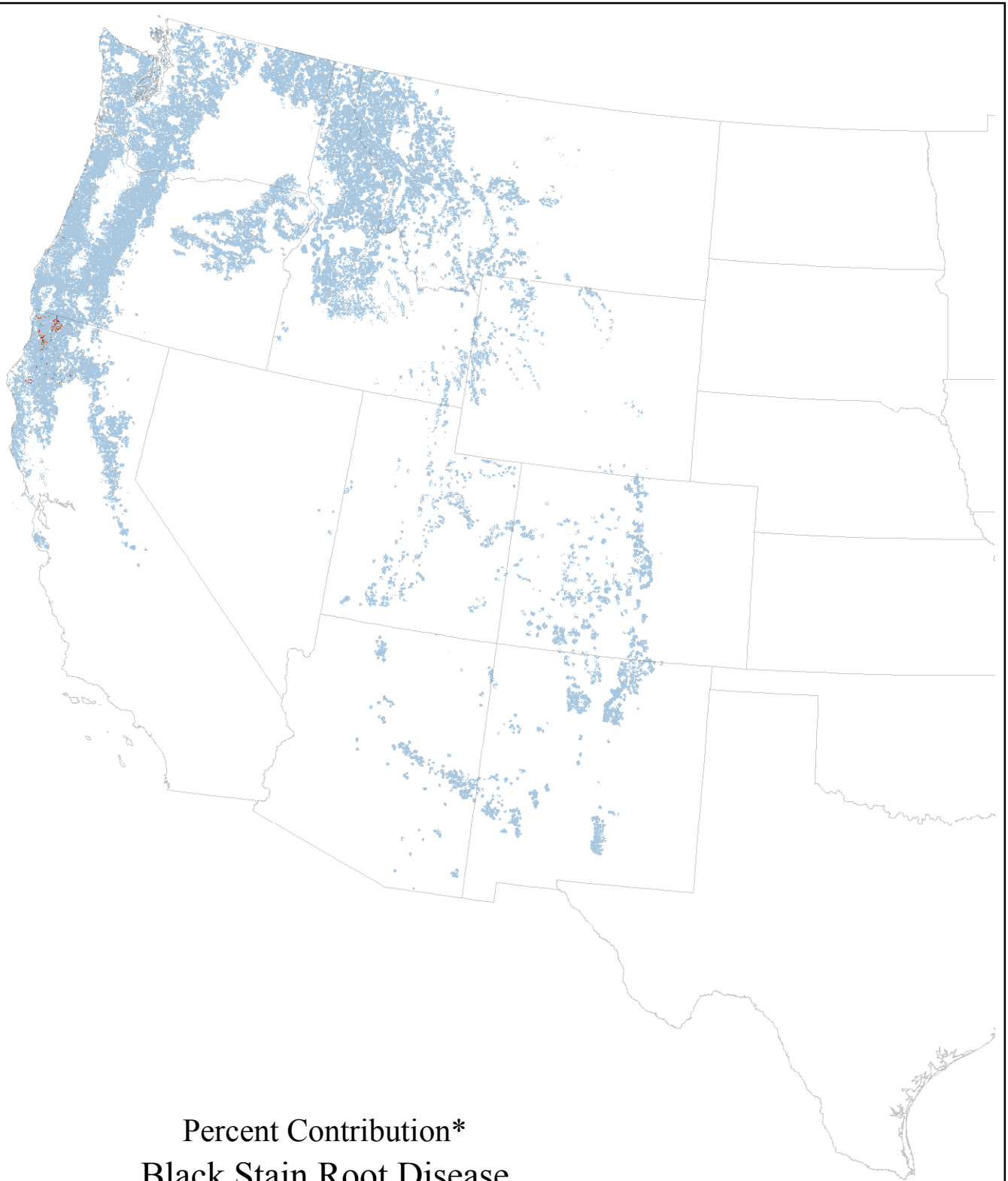


Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Black Stain Root Disease
on Douglas-fir (CA)

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): **Black Stain Root Disease**

Host(s): **Jeffrey Pine (*Pinus jeffreyi*)**

Model Extent: **M261D and M261G**

Max Percent Mortality: **80%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Black Stain	present	present	present	present	Linear	1	67%
Criteria 2		SDI	230	230	230	230	Linear	1/2	33%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	40
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Model Certainty	3 - Informed Professional Judgement
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Percent Contribution*
Black Stain Root Disease
on Jeffrey Pine (CA)

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): **Black Stain Root Disease**

Host(s): **Pinyon Pine (*P. monophylla*, *P. quadrifolia*)**

Model Extent: **341D, 341F, M261E, and 322A**

Max Percent Mortality: **70%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Black Stain	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints **M261E- Only southern portion**

Comments **Model dependent on R5 root disease data.**

Citations **4, 54**

Model Certainty **1 - Data Driven**



**Risk* of Mortality
Black Stain Root Disease
on Pinyon Pine (CA)**





341D, F, M261E, 322A

Mortality Ceiling of 70%



Legend

Level of risk for host

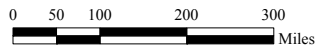
-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



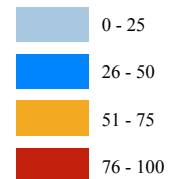
Percent Contribution*
Black Stain Root Disease
on Pinyon Pine (CA)

341D, F, M261E, 322A



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Black Stain Root Disease**

Host(s): **Pinyon Pine (*Pinus monophylla*, *P. quadrifolia*)**

Model Extent: **M262B**

Max Percent Mortality: **100%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Black stain	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments **Model dependent on R5 root disease data.**

Citations **4, 54**

Model Certainty **1 - Data Driven**



Risk* of Mortality
 Black Stain Root Disease
 on Pinyon Pine (CA)





M262B

Mortality Ceiling of 100%



Legend

Level of risk for host

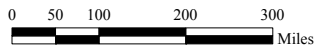
-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



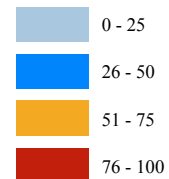
Percent Contribution*
Black Stain Root Disease
on Pinyon Pine (CA)

M262B



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Black Stain Root Disease**

Host(s): **Ponderosa Pine (*Pinus ponderosa*)**

Model Extent: **M261A, M261B, M261C, M261D, M261E, and M261G**

Max Percent Mortality: **70%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Black Stain	present	present	present	present	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments **Model dependent on R5 root disease data.**

Citations **40**

Model Certainty **1 - Data Driven**



Risk* of Mortality
Black Stain Root Disease
on Ponderosa Pine (CA)
Mortality Ceiling of 70%

0 50 100 200 300
Miles

Legend

Level of risk for host

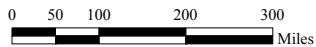
- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 30, 2007

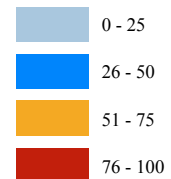


Percent Contribution*
Black Stain Root Disease
on Ponderosa Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s):

Host(s):

Model Extent:

Max Percent Mortality:

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Host Stocking (%)	25	25	75	75	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	23, 57, 58, 59
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Model Certainty	3 - Informed Professional Judgement
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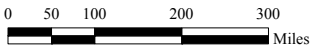


Risk* of Mortality
 Douglas-fir Tussock Moth
 on White Fir (CA)
 Mortality Ceiling of 5%

Legend

Level of risk for host

Light Blue	0 - 2	Little or no risk
Blue	3 - 4	Low risk
Orange	5 - 6	Medium risk
Red	7 - 10	High risk



*Risk of experiencing mortality at a given threshold over a 15 year period.

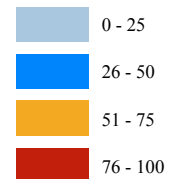


Percent Contribution*
 Douglas-fir Tussock Moth
 on White Fir (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Douglas-fir (*Pseudotsuga menziesii*)

Model Extent: M261A and M261D

Max Percent Mortality: 10%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

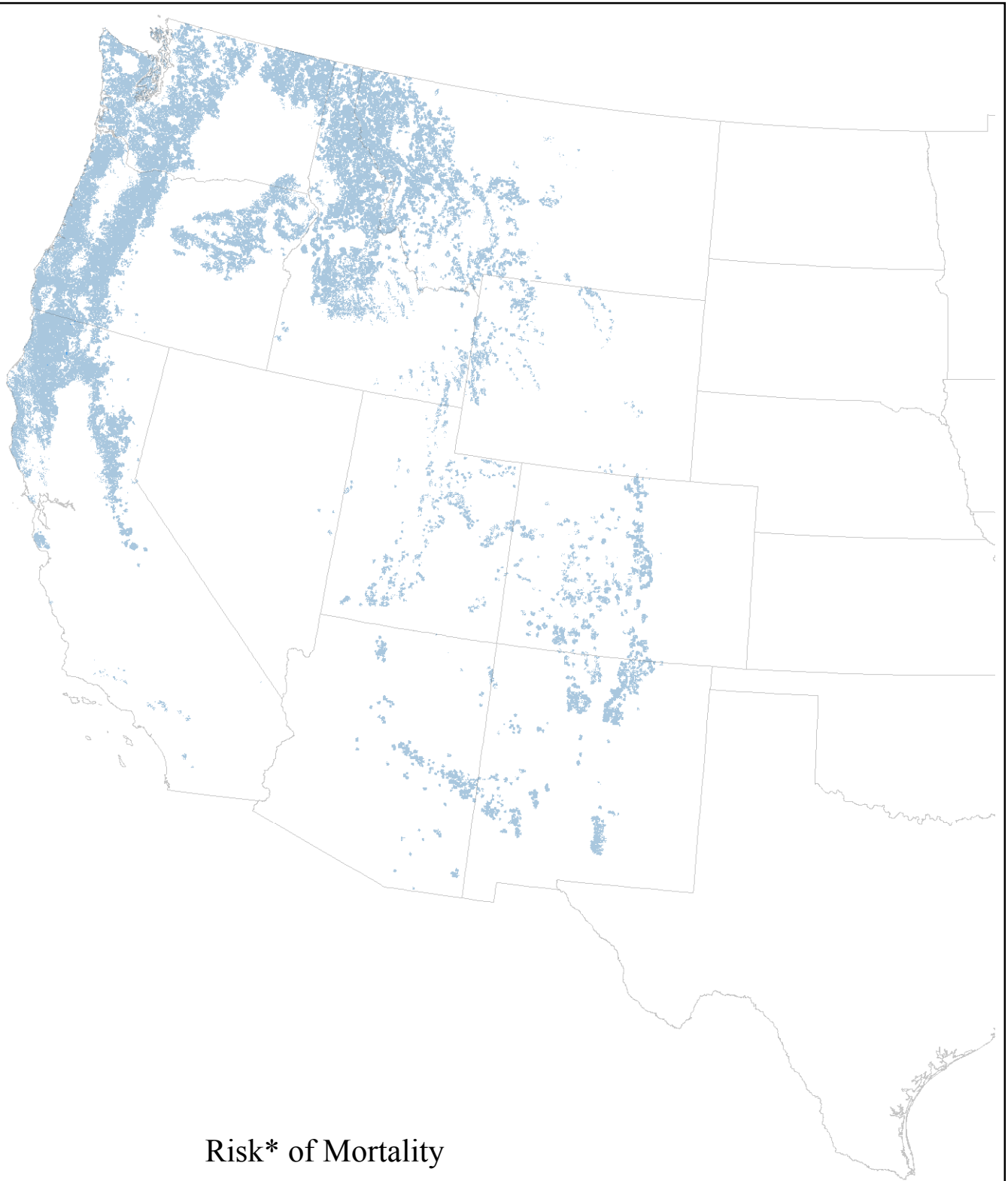
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

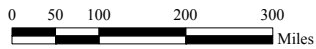
Citations 10, 17

Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality Dwarf Mistletoe on Douglas-fir (CA)

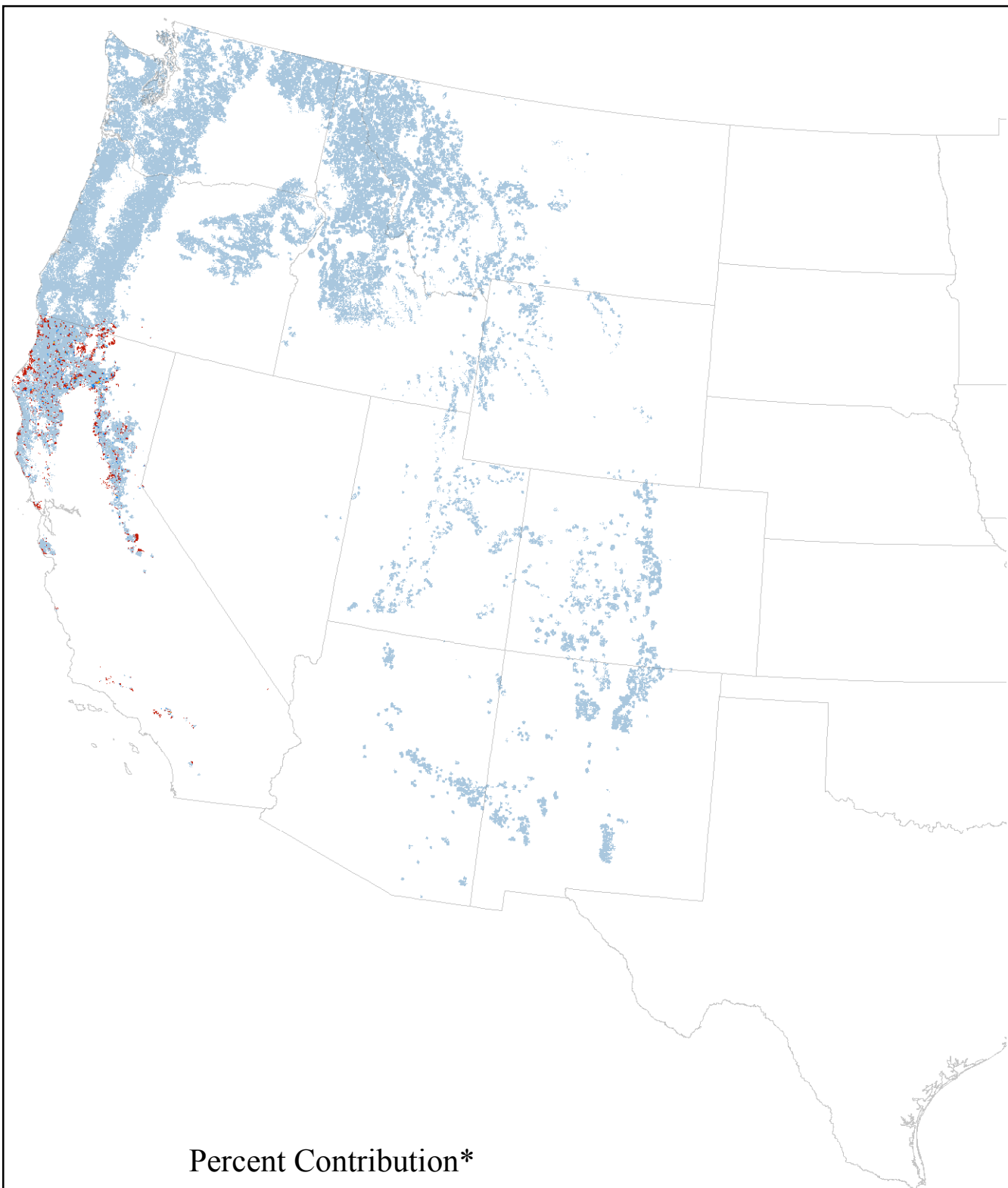
Mortality Ceiling of 10%



Legend

Level of risk for host	
Light Blue	0 - 2 Little or no risk
Medium Blue	3 - 4 Low risk
Yellow	5 - 6 Medium risk
Red	7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

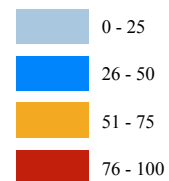


Percent Contribution*
 Dwarf Mistletoe on Douglas-fir (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Jeffrey Pine (*Pinus jeffreyi*)

Model Extent: M262A and M262B

Max Percent Mortality: 20%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

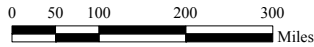
Citations 10, 17

Model Certainty 3 - Informed Professional Judgement



**Risk* of Mortality
Dwarf Mistletoe on
Jeffrey Pine (CA)
M262A, B**

Mortality Ceiling of 20%



Legend

Level of risk for host

Light blue	0 - 2	Little or no risk
Blue	3 - 4	Low risk
Yellow	5 - 6	Medium risk
Red	7 - 10	High risk

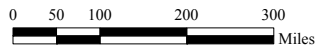
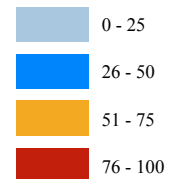
*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Dwarf Mistletoe on
Jeffrey Pine (CA)
M262A, B

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Jeffrey Pine (*Pinus jeffreyi*)

Model Extent: M261D, M261E and M261G

Max Percent Mortality: 50%

Susceptibility

Rank/Weight	Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
Criteria 1								
Criteria 2								
Criteria 3								
Criteria 4								
Criteria 5								
Criteria 6								
Criteria 7								
Criteria 8								
Criteria 9								
Criteria 10								

Vulnerability

Rank/Weight	Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
Criteria 1	Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2								
Criteria 3								
Criteria 4								
Criteria 5								
Criteria 6								
Criteria 7								
Criteria 8								
Criteria 9								
Criteria 10								

Constraints

Comments

Citations 10, 17

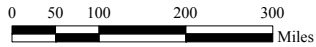
Model Certainty 3 - Informed Professional Judgement



**Risk* of Mortality
Dwarf Mistletoe on
Jeffrey Pine (CA)**





M261D, E, G

Mortality Ceiling of 50%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Dwarf Mistletoe on
Jeffrey Pine (CA)
M261D, E, G

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Lodgepole Pine (*Pinus contorta*)

Model Extent: M261A, M261D, M261E, M261G, 341D, M262A and M262B

Max Percent Mortality: 60%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

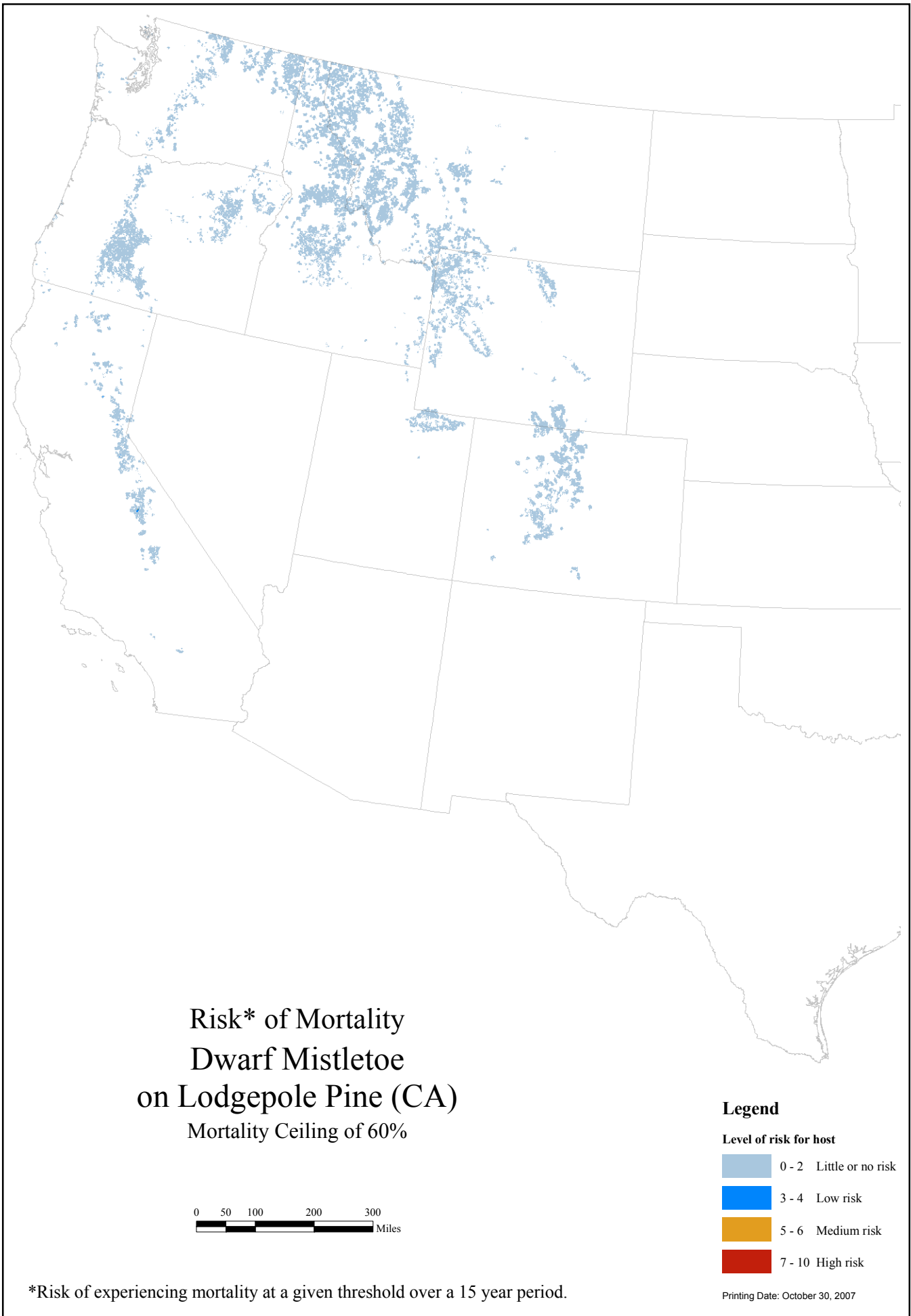
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

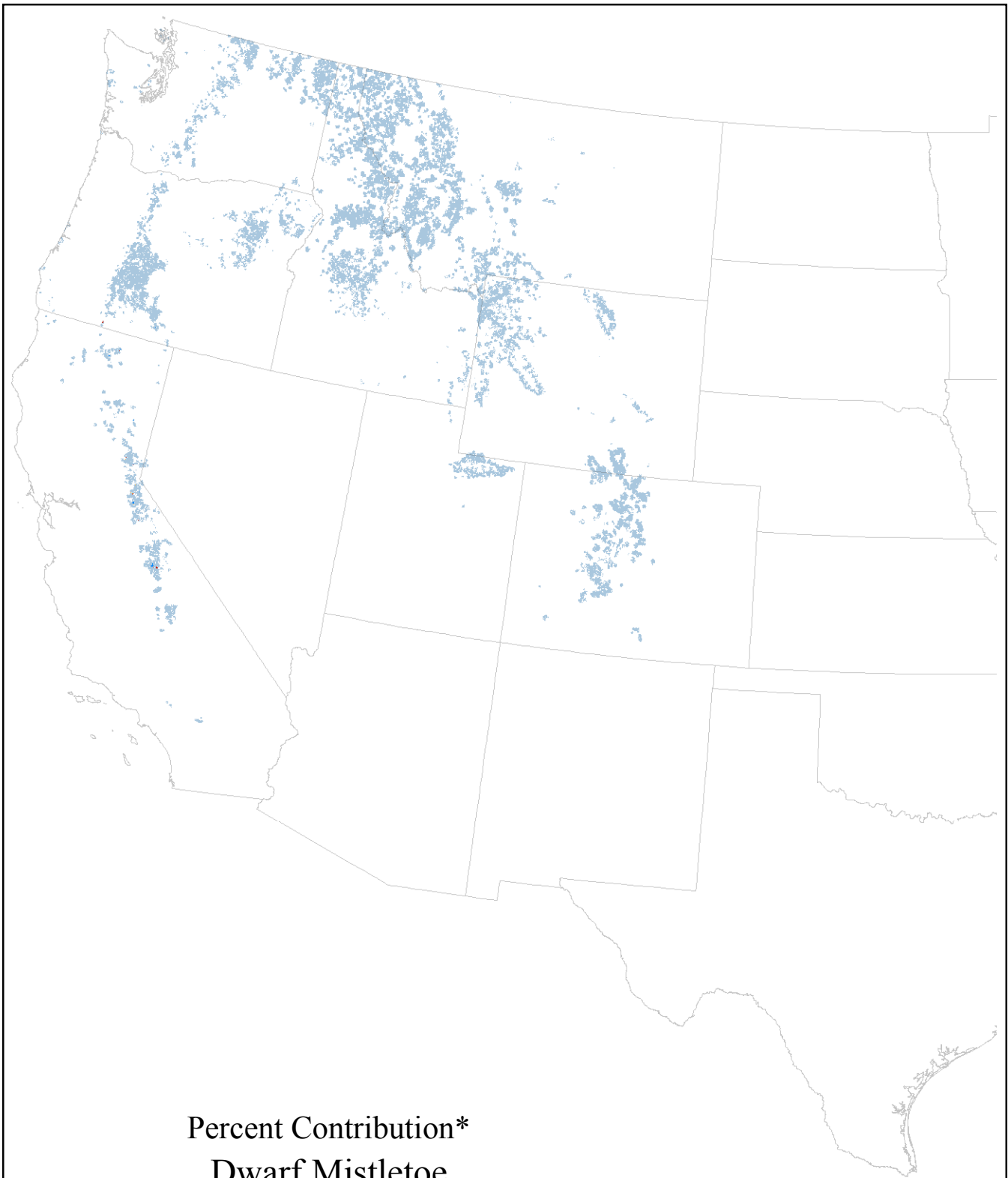
Constraints

Comments

Citations 10, 17

Model Certainty 3 - Informed Professional Judgement



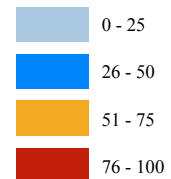


Percent Contribution*
Dwarf Mistletoe
on Lodgepole Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Pinyon Pine (*Pinus monophylla*, *P. quadrifolia*)

Model Extent: M262B, 322A, B, C, 341D, and 341F

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

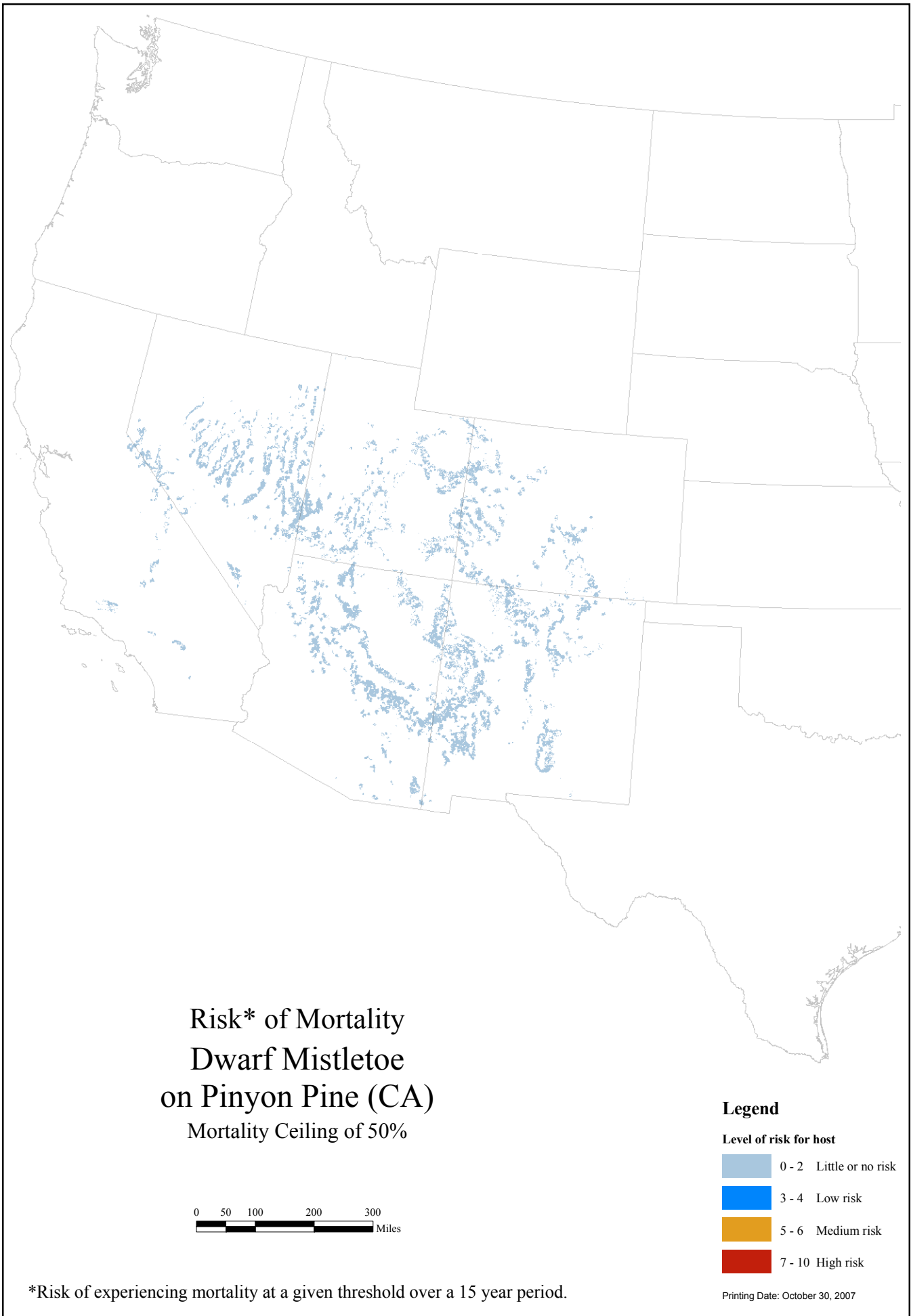
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

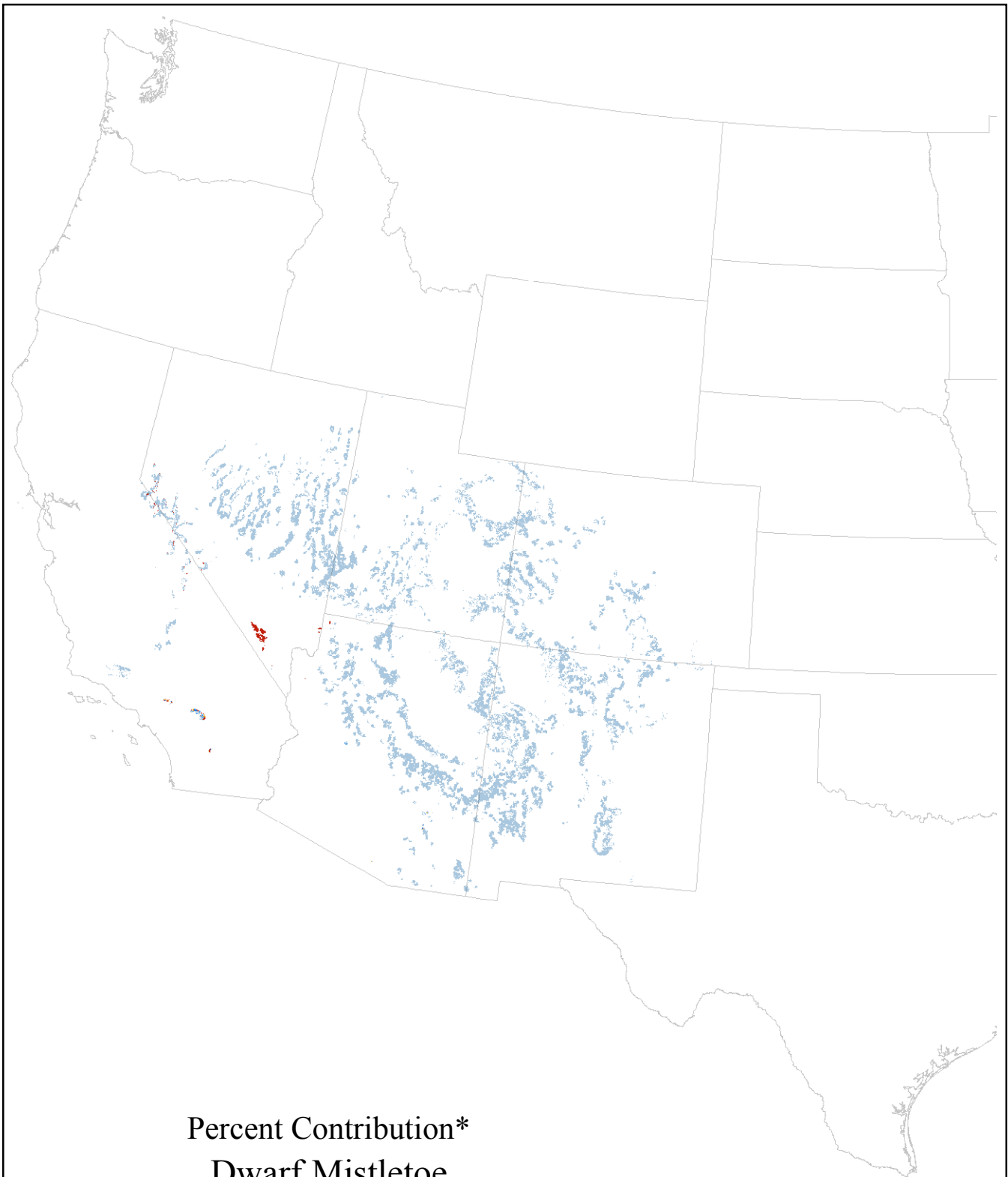
Constraints

Comments

Citations 10, 17

Model Certainty 3 - Informed Professional Judgement





Percent Contribution*
Dwarf Mistletoe
on Pinyon Pine (CA)

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: M261A, M261B, M261D, M261C, and M261E

Max Percent Mortality: 60%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 10, 17

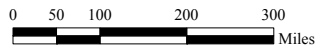
Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality
 Dwarf Mistletoe
 on Ponderosa Pine (CA)

M261A - E

Mortality Ceiling of 60%



Legend

Level of risk for host

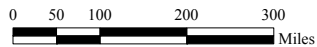
- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



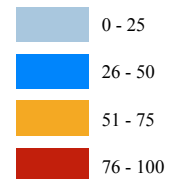
Percent Contribution*
 Dwarf Mistletoe
 on Ponderosa Pine (CA)

M261A - E



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: M262A and M262B

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Mistletoe Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 10, 17

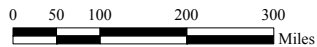
Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality
Dwarf Mistletoe
on Ponderosa Pine (CA)

M262A, B

Mortality Ceiling of 50%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

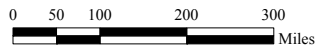
*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 30, 2007



Percent Contribution*
Dwarf Mistletoe
on Ponderosa Pine (CA)

M262A, B



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Dwarf Mistletoe

Host(s): Red Fir (*Abies magnifica*)

Model Extent: M261A, M261B, M261C, M261D, M261E and M261G

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

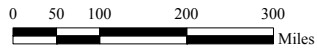
Comments

Citations 10, 17

Model Certainty 3 - Informed Professional Judgement







**Risk* of Mortality
Dwarf Mistletoe
on Red Fir (CA)**
Mortality Ceiling of 50%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 31, 2007

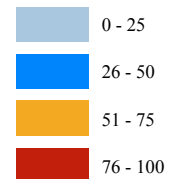


Percent Contribution*
Dwarf Mistletoe
on Red Fir (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Dwarf Mistletoe**

Host(s): **White Fir (*Abies concolor*)**

Model Extent: **M261A, M261B, M261C, M261D, M261E, M261G and M262B**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

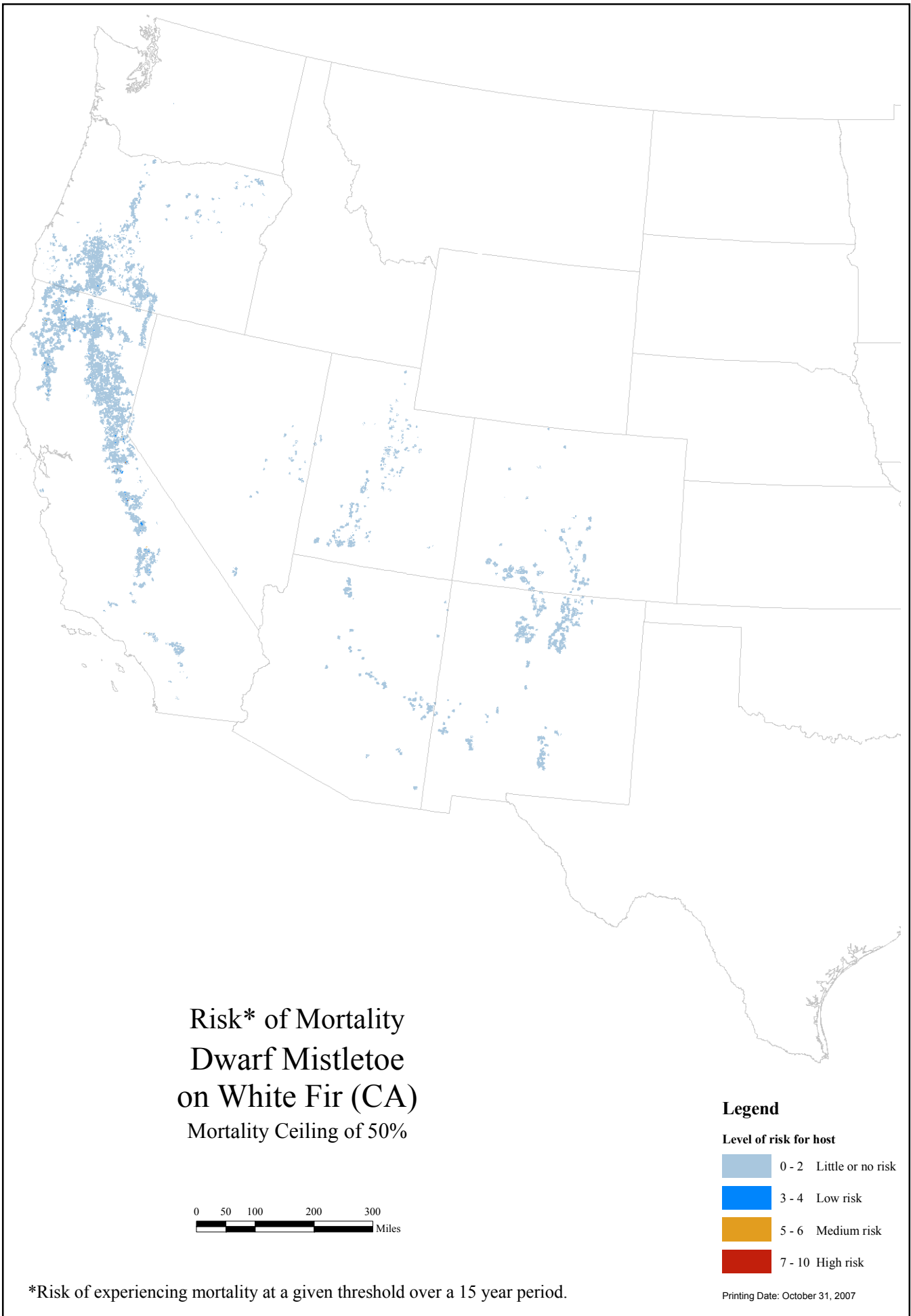
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Hawksworth Rating	1	6	6	6	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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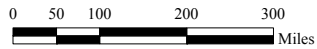
Citations	10, 17
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Model Certainty	3 - Informed Professional Judgement
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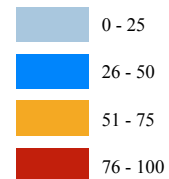


Percent Contribution*
Dwarf Mistletoe
on White Fir (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **Red Fir (*Abies magnifica*)**

Model Extent: **M261A, M261B, and M261C**

Max Percent Mortality: **60%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

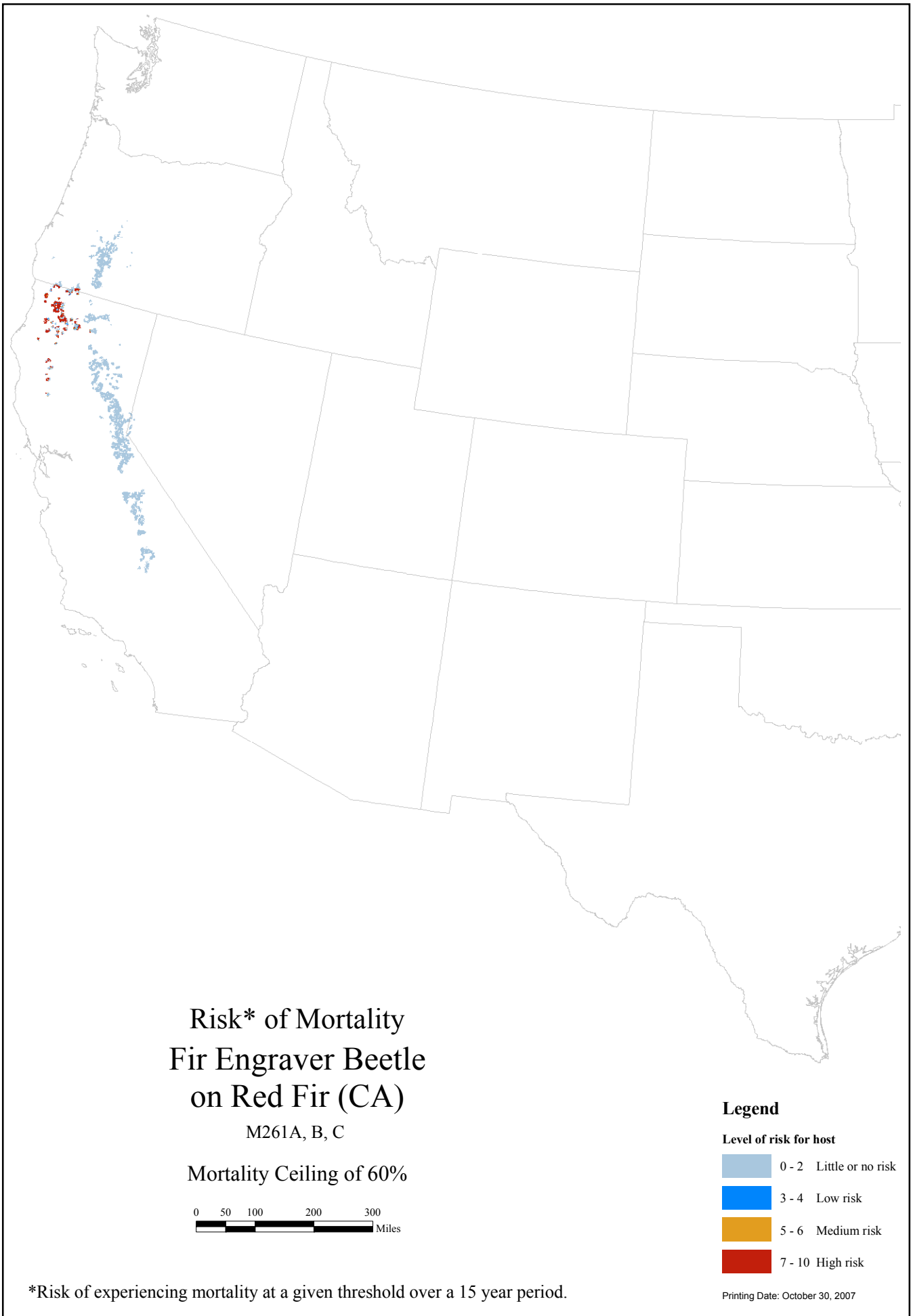
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	440	440	440	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 43, 48

Model Certainty 3 - Informed Professional Judgement





Percent Contribution*
Fir Engraver Beetle
on Red Fir (CA)

M261A, B, C



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **Red Fir (*Abies magnifica*)**

Model Extent: **M261G**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 2		SDI	230	230	230	230	Linear	1	50%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	43, 48
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Fir Engraver Beetle
 on Red Fir (CA)

M261G

Mortality Ceiling of 50%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Fir Engraver Beetle
on Red Fir (CA)

M261G



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **Red Fir (*Abies magnifica*)**

Model Extent: **M261D**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	4	4	4	4	Linear	1	50%
Criteria 2		Precipitation (inches)	< 45	< 45	< 45	< 45			
Criteria 3		SDI	230	230	230	230	Linear	1	50%
Criteria 4		QMD (inches)	>= 4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 5		Precipitation (inches)	>= 45	>= 45	>= 45	>= 45			
Criteria 6		SDI	400	400	400	400	Linear	1	50%
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	Precipitation
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Comments	Criteria 1-3 are applied to Part 1 of the model; Criteria 4-6 are applied to Part 2 of the model.
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Citations	43, 48
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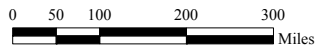
Model Certainty	3 - Informed Professional Judgement
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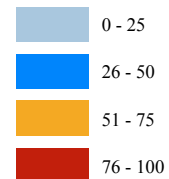
Percent Contribution*
Fir Engraver Beetle
on Red Fir (CA)

M261D



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **Red Fir (*Abies magnifica*)**

Model Extent: **M261E**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	> 4	> 4	> 4	> 4	Linear	1	50%
Criteria 2		Precipitation (inches)	< 45	< 45	< 45	< 45			
Criteria 3		SDI	350	350	350	350	Linear	1	50%
Criteria 4		QMD (inches)	> 4	> 4	> 4	> 4	Linear	1	50%
Criteria 5		Precipitation (inches)	>= 45	>= 45	>= 45	>= 45			
Criteria 6		SDI	440	440	440	440	Linear	1	50%
Criteria 7		QMD (inches)	> 4	> 4	> 4	> 4	Linear	1	50%
Criteria 8		Precipitation (inches)	> 60	> 60	> 60	> 60			
Criteria 9		SDI	500	500	500	500	Linear	1	50%
Criteria 10									

Constraints	Precipitation
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Comments	Criteria 1-3 are applied to Part 1 of the model; Criteria 4-6 are applied to Part 2 of the model; Criteria 7-9 are applied to Part 3 of the model.
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Citations	43, 48
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Fir Engraver Beetle
 on Red Fir (CA)

M261E

Mortality Ceiling of 50%



Legend

Level of risk for host

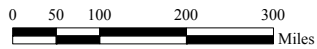
- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Fir Engraver Beetle
on Red Fir (CA)

M261E



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **White Fir (*Abies concolor*)**

Model Extent: **M262A and M262B**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

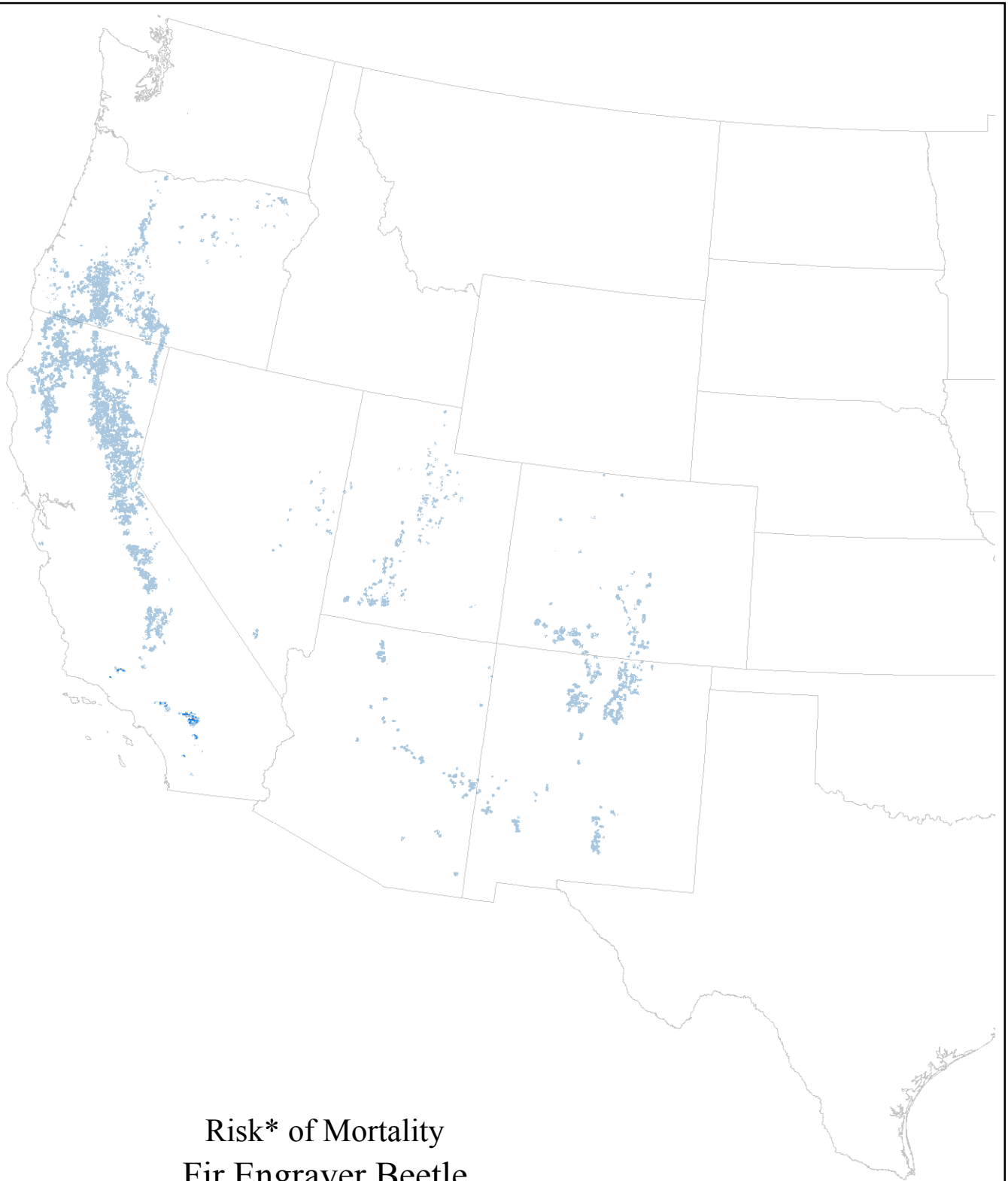
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	200	200	200	200	Linear	1/2	29%
Criteria 2		Annosus	present	present	present	present	Linear	1	57%
Criteria 3		Hawksworth Rating	1	6	6	6	Linear	1/4	14%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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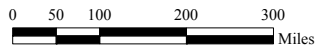
Comments	
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Citations	42, 44, 47, 48
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Fir Engraver Beetle
 on White Fir (CA)
 M262A, B
 Mortality Ceiling of 50%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Fir Engraver Beetle
on White Fir (CA)
M262A, B

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **White Fir (*Abies concolor*)**

Model Extent: **M261A, M261B, M261C and M261G**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

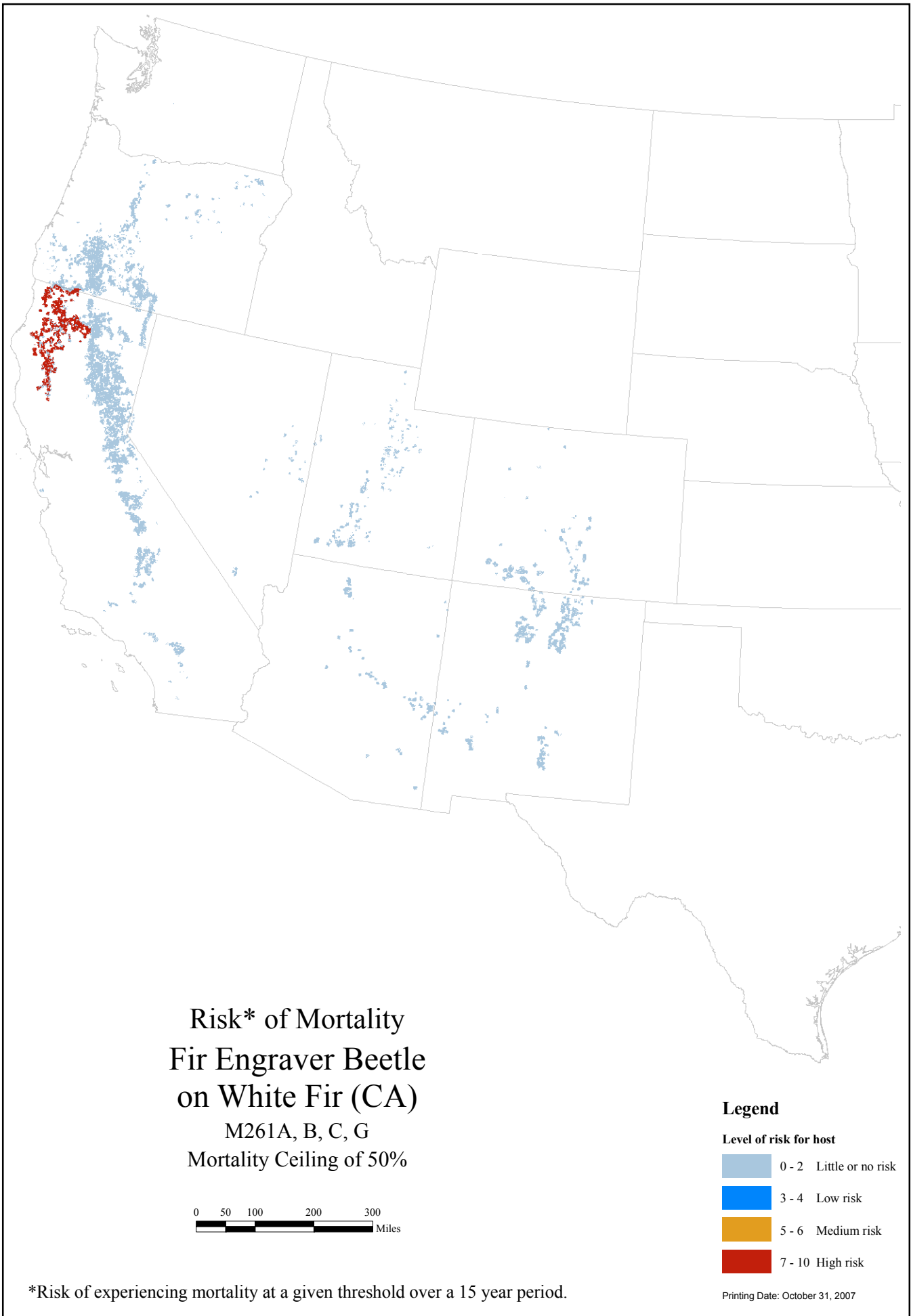
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	200	200	200	200	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	42, 44, 47, 48
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Model Certainty	3 - Informed Professional Judgement
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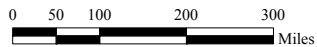
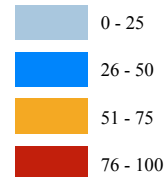




Percent Contribution*
Fir Engraver Beetle
on White Fir (CA)
M261A, B, C, G

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **White Fir (*Abies concolor*)**

Model Extent: **M261D**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

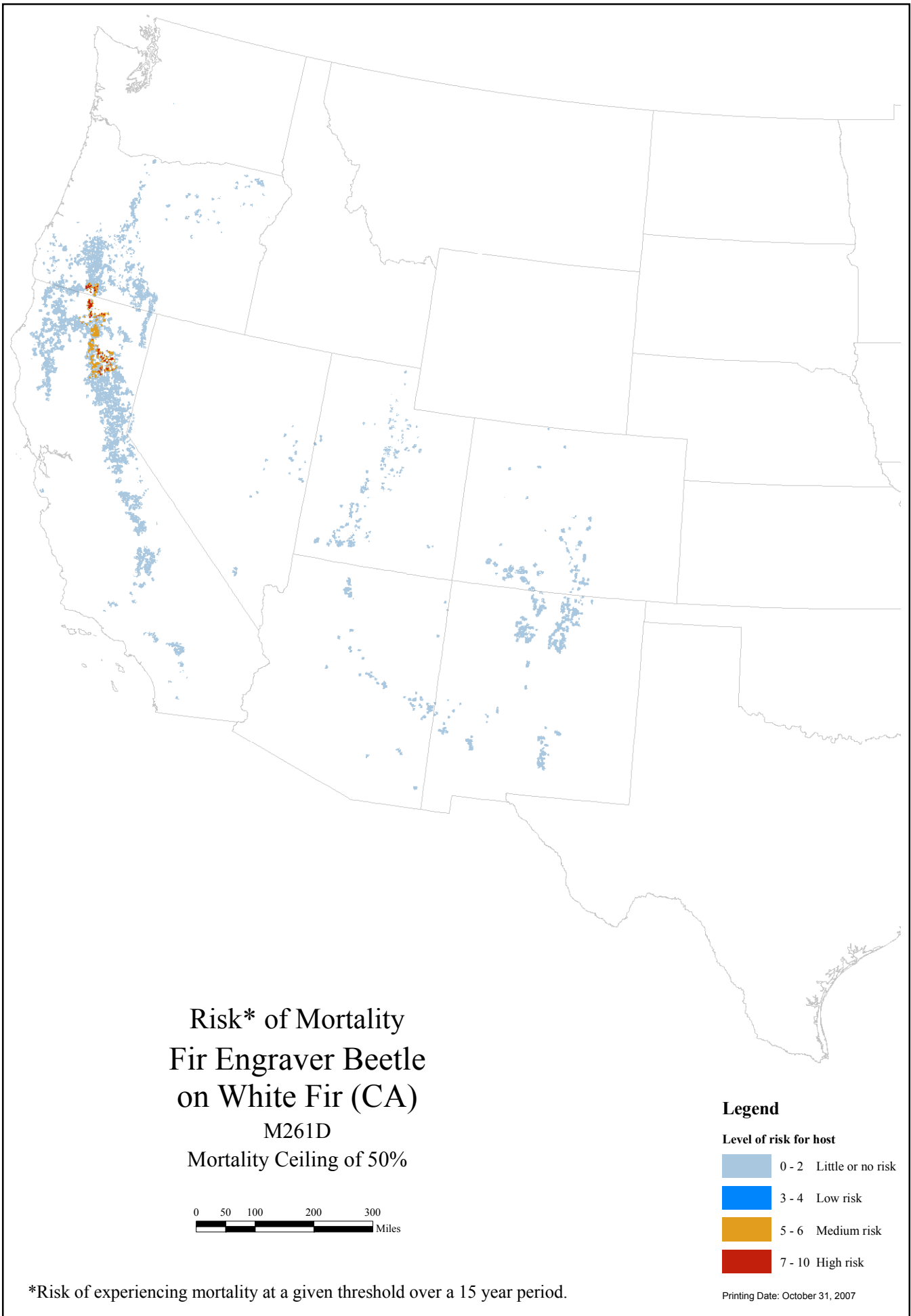
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	4	4	4	4	Linear	1	50%
Criteria 2		Precipitation (inches)	< 40	< 40	< 40	< 40			
Criteria 3		SDI	230	230	230	230	Linear	1	50%
Criteria 4		QMD (inches)	>= 4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 5		Precipitation (inches)	>= 40	>= 40	>= 40	>= 40			
Criteria 6		SDI	300	300	300	300	Linear	1	50%
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	Precipitation
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Comments	Criteria 1-3 are applied to Part 1 of the model; Criteria 4-6 are applied to Part 2 of the model.
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Citations	42, 44, 47, 48
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Model Certainty	3 - Informed Professional Judgement
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Percent Contribution*
Fir Engraver Beetle
on White Fir (CA)
M261D

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): **Fir Engraver Beetle**

Host(s): **White Fir (*Abies concolor*)**

Model Extent: **M261E**

Max Percent Mortality: **50%**

Susceptibility

Rank/Weight	Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0%								
Criteria 1								
Criteria 2								
Criteria 3								
Criteria 4								
Criteria 5								
Criteria 6								
Criteria 7								
Criteria 8								
Criteria 9								
Criteria 10								

Vulnerability

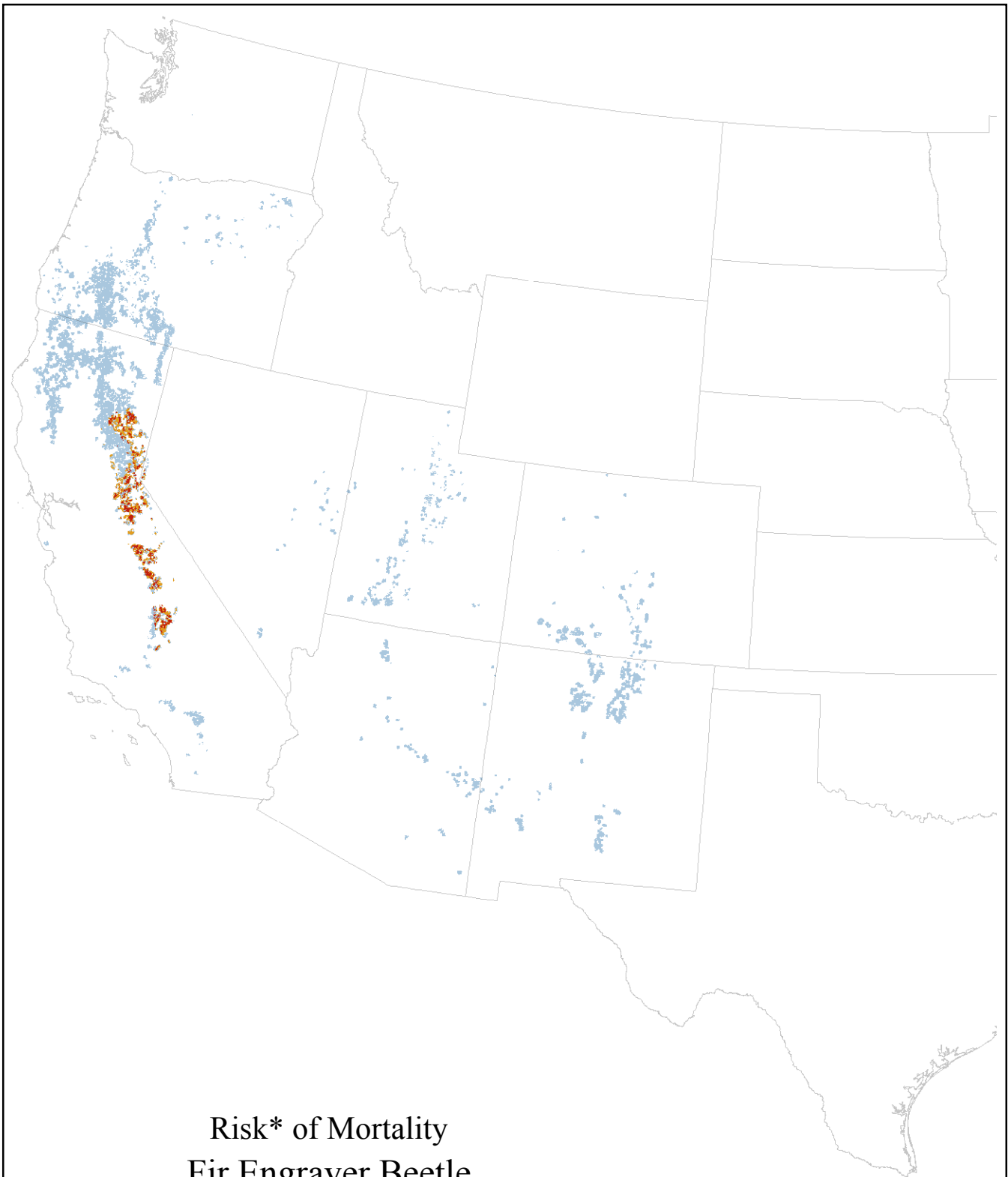
Rank/Weight	Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1 100%								
Criteria 1	QMD (inches)	>= 4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 2	Precipitation (inches)	< 40	< 40	< 40	< 40			
Criteria 3	SDI	230	230	230	230	Linear	1	50%
Criteria 4	QMD (inches)	>= 4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 5	Precipitation (inches)	>= 40	>= 40	>= 40	>= 40			
Criteria 6	SDI	300	300	300	300	Linear	1	50%
Criteria 7	QMD (inches)	>= 4	>= 4	>= 4	>= 4	Linear	1	50%
Criteria 8	Precipitation (inches)	>= 60	>= 60	>= 60	>= 60			
Criteria 9	SDI	400	400	400	400	Linear	1	50%
Criteria 10								

Constraints	Precipitation used as a constraint.
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Comments	Criteria 1-3 are applied to Part 1 of the model; Criteria 4-6 are applied to Part 2 of the model; Criteria 7-9 are applied to Part 3 of the model.
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Citations	42, 44, 47, 48
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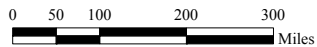
Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Fir Engraver Beetle
 on White Fir (CA)

M261E

Mortality Ceiling of 50%



Legend

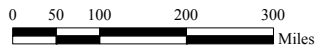
Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

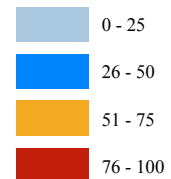


Percent Contribution*
Fir Engraver Beetle
on White Fir (CA)
M261E



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Ips Engraver Beetle (*Ips spp.*)

Host(s): Knobcone Pine (*Pinus attenuata*)

Model Extent: M261A, M261B, M261C, M261D, and M261E

Max Percent Mortality: 100%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

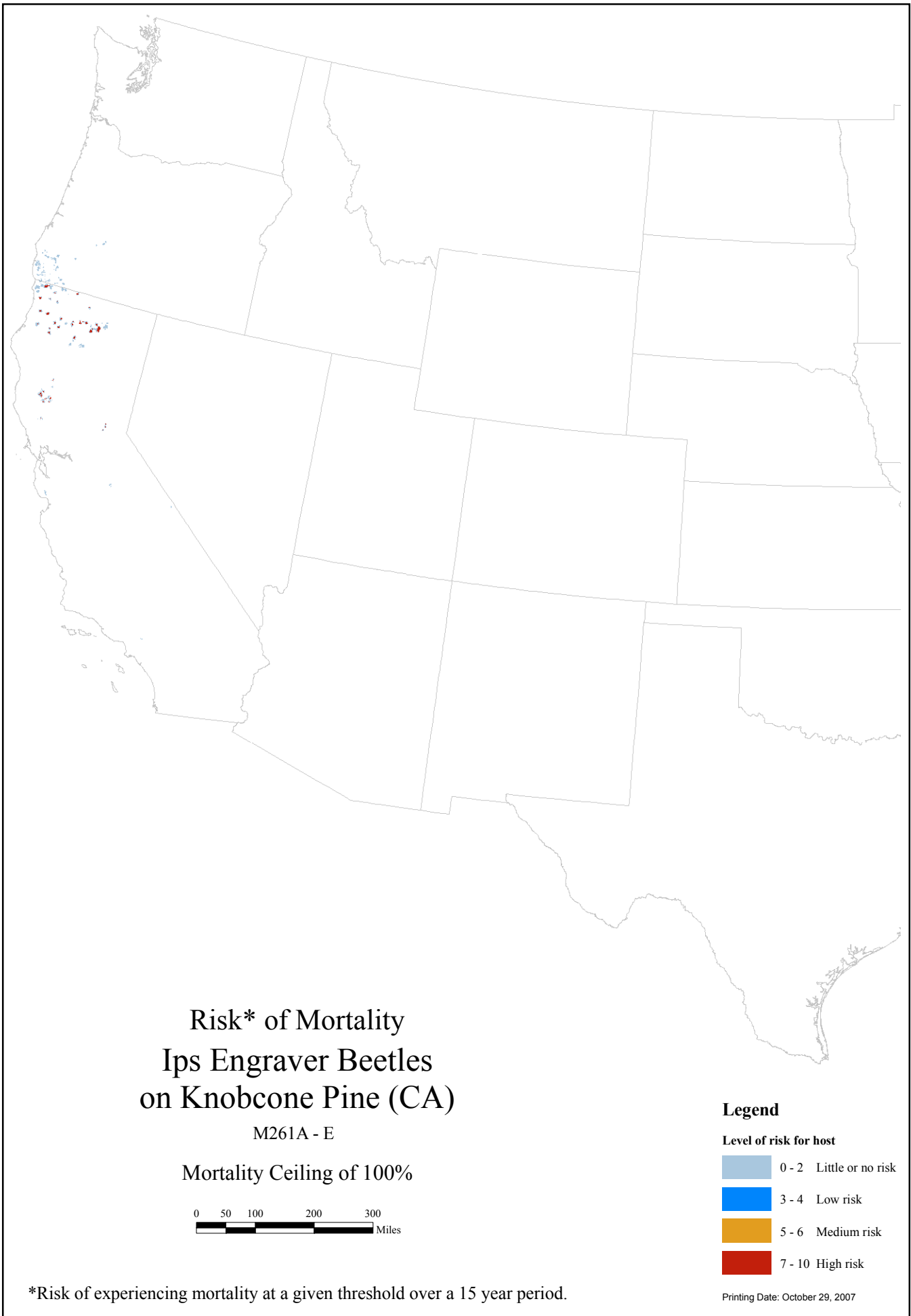
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	5.5	> 5.5	> 5.5	> 5.5	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 4

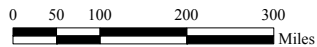
Model Certainty 3 - Informed Professional Judgement





Percent Contribution*
Ips Engraver Beetles
on Knobcone Pine (CA)

M261A - E



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Ips Engraver Beetle (*Ips spp.*)

Host(s): Knobcone Pine (*Pinus attenuata*)

Model Extent: M262B

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

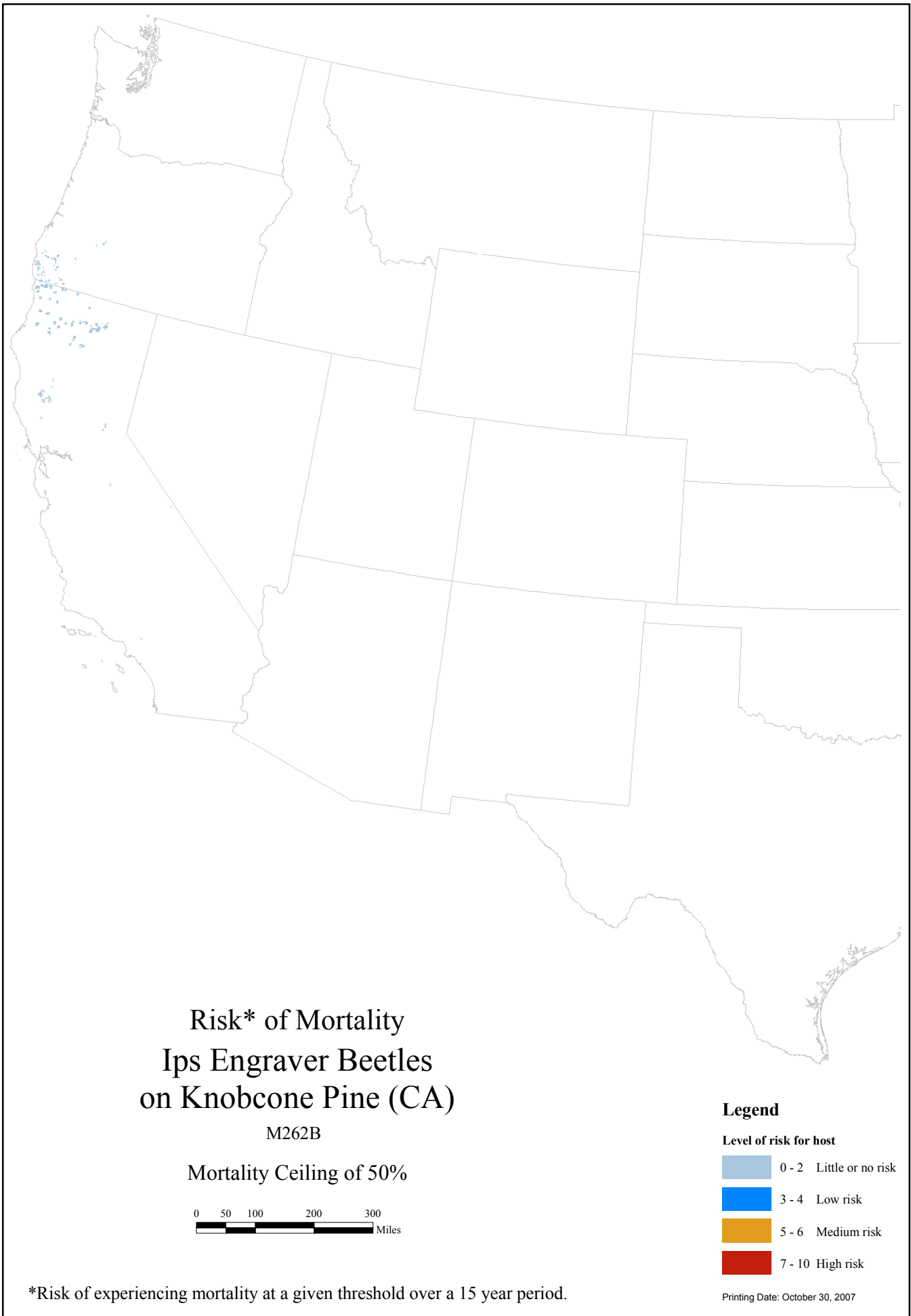
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		QMD (inches)	5.5	> 5.5	> 5.5	> 5.5	Linear	1	50%
Criteria 2		SDI	200	200	200	200	Linear	1	50%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	4
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Model Certainty	3 - Informed Professional Judgement
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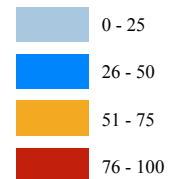
Percent Contribution*
Ips Engraver Beetles
on Knobcone Pine (CA)

M262B



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Ips Engraver Beetle (*Ips confusus*)

Host(s): Pinyon Pine (*P. monophylla*, *P. quadrifolia*)

Model Extent: 341D, E, M261E, F, 342B, 341F

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

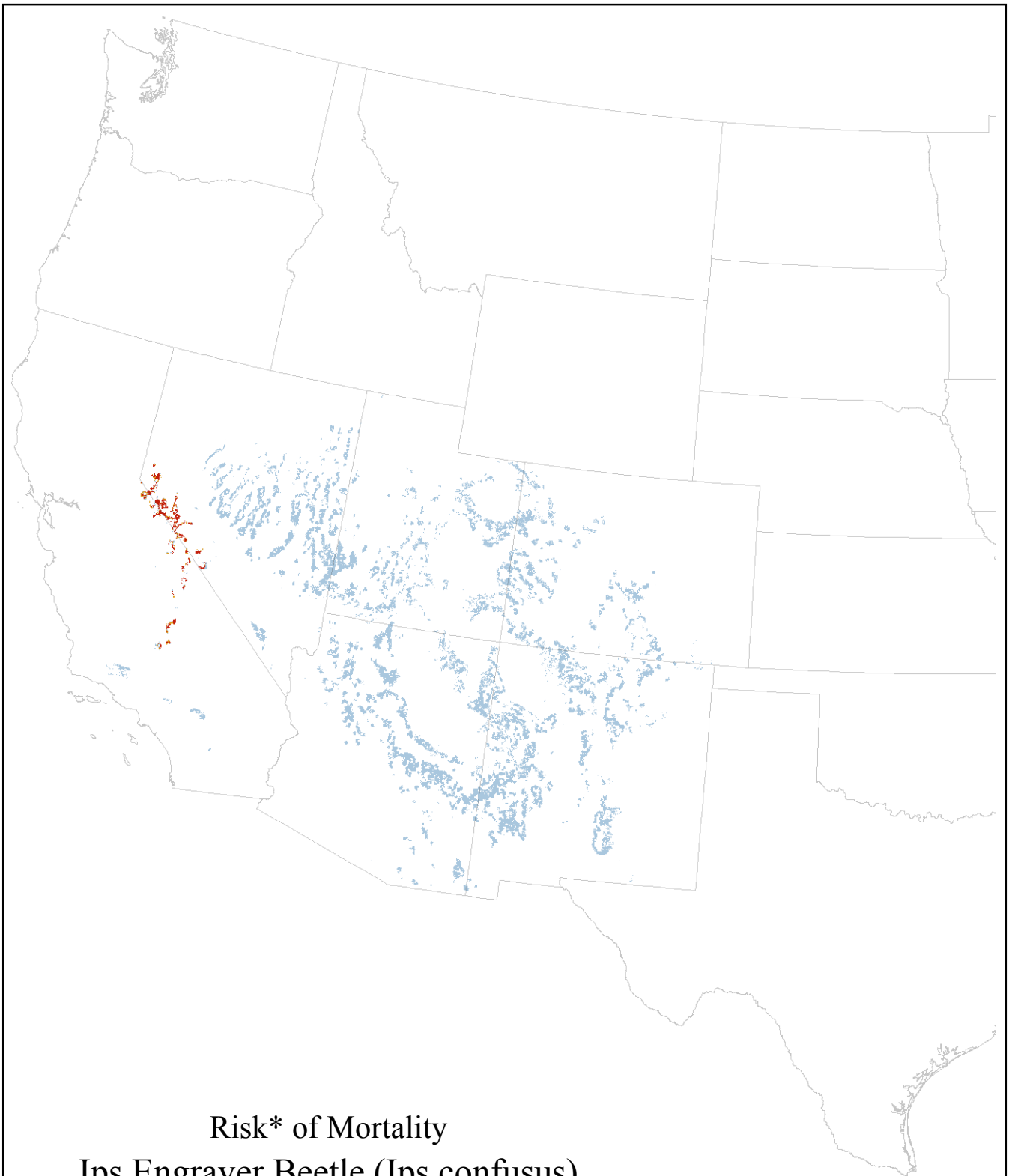
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		BA	5	5	5	5	Linear	1	50%
Criteria 2		QMD (inches)	>= 3	>= 3	>= 3	>= 3	Linear	1	50%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 27, 60

Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality
 Ips Engraver Beetle (*Ips confusus*)
 on Pinyon Pine (CA)





341D, E, M261E, F 342B, 341F

Mortality Ceiling of 50%

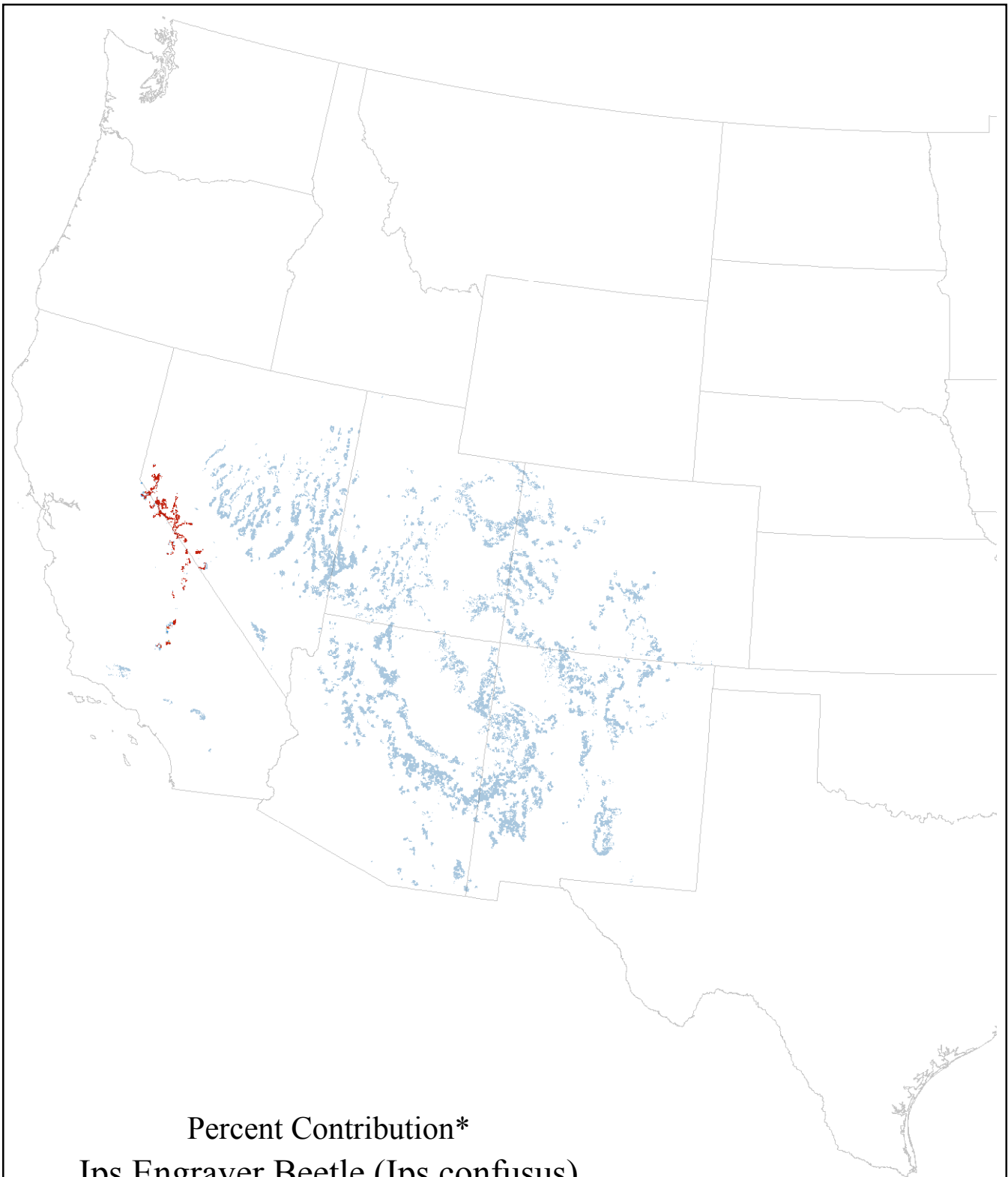


Legend

Level of risk for host

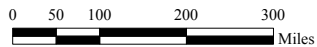
-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Ips Engraver Beetle (*Ips confusus*)
on Pinyon Pine (CA)

341D, E, M261E, F 342B, 341F



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Ips Engraver Beetle (*Ips confusus*)

Host(s): Pinyon Pine (*Pinus monophylla*, *P. quadrifolia*)

Model Extent: M262B

Max Percent Mortality: 25%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Blackstain	present	present	present	present	Linear	1	50%
Criteria 2		Mistletoe Hawksworth Rating	1	6	6	6	Linear	1/2	25%
Criteria 3		BA (ft ² / acre)	10	10	10	10	Linear	1/2	25%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	27, 60
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Ips Engraver Beetle (*Ips confusus*)
 on Pinyon Pine (CA)





M262B

Mortality Ceiling of 25%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



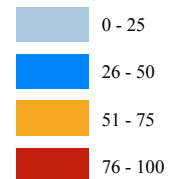
Percent Contribution*
 Ips Engraver Beetle (*Ips confusus*)
 on Pinyon Pine (CA)

M262B



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Jeffrey Pine Beetle

Host(s): Jeffrey Pine (*Pinus jeffreyi*)

Model Extent: M261D, M261E and M261G

Max Percent Mortality: 40%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

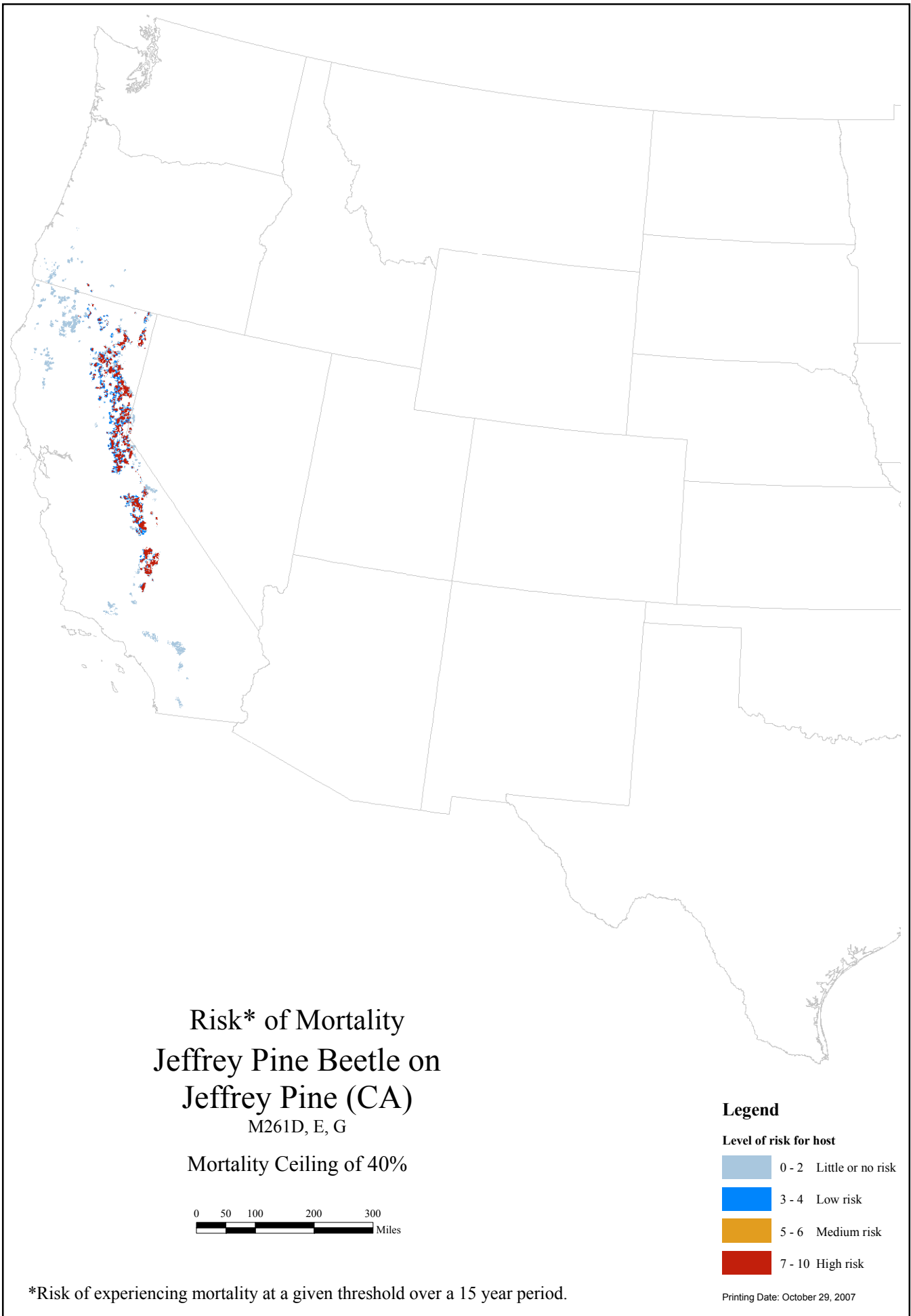
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	230	230	230	Linear	1/2	33%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 28, 29

Model Certainty 3 - Informed Professional Judgement





Percent Contribution*
Jeffrey Pine Beetle on
Jeffrey Pine (CA)

M261D, E, G

Legend

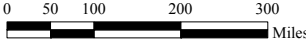
Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Risk Model Worksheet - California

Risk Agent(s):

Host(s):

Model Extent:

Max Percent Mortality:

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Crown Closure (%)	40	50	50	50	Linear	1/2	33%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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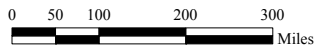
Citations	28, 29
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Jeffrey Pine Beetle on
 Jeffrey Pine (CA)
 M262B

Mortality Ceiling of 25%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

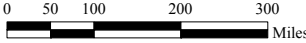


Percent Contribution*
Jeffrey Pine Beetle on
Jeffrey Pine (CA)
M262B

Legend

Percent contribution

0 - 25
26 - 50
51 - 75
76 - 100



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Coulter Pine (*Pinus coulteri*)

Model Extent: M262A, M262B and 261B

Max Percent Mortality: 45%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Host %	10%	10%	10%	10%	Linear	1	67%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1/2	33%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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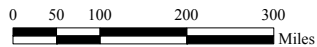
Comments	
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Citations	9
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Mountain Pine Beetle
 on Coulter Pine (CA)
 Mortality Ceiling of 45%



Legend

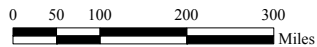
Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

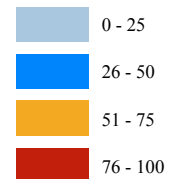


Percent Contribution* Mountain Pine Beetle on Coulter Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Lodgepole pine (*Pinus contorta*)

Model Extent: M261A and 341D

Max Percent Mortality: 85%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

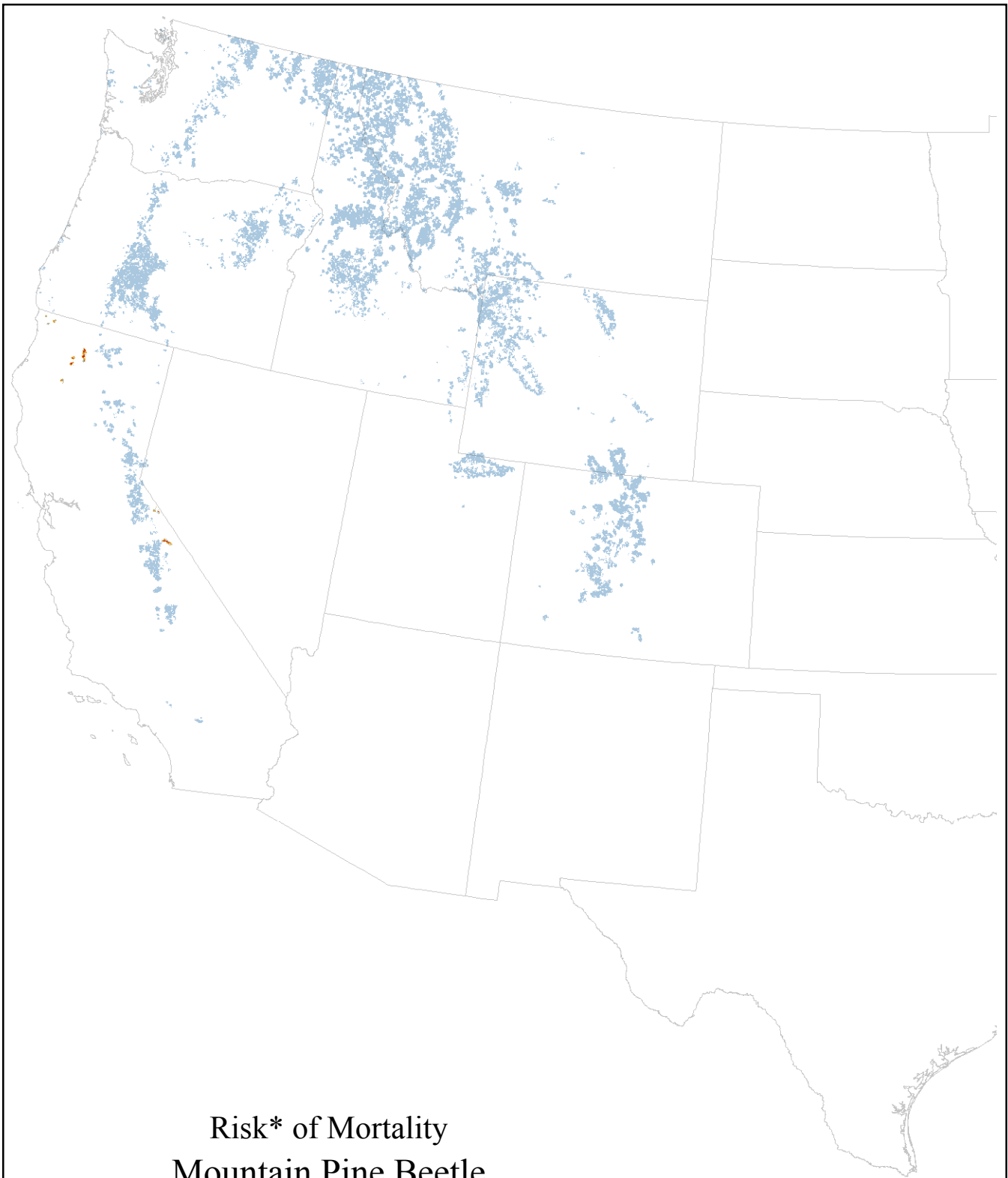
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	196	228	228	228	Linear	1	50%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	50%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	1, 34, 45, 51
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Mountain Pine Beetle
 on Lodgepole Pine (CA)

M261A, 341D

Mortality Ceiling of 85%

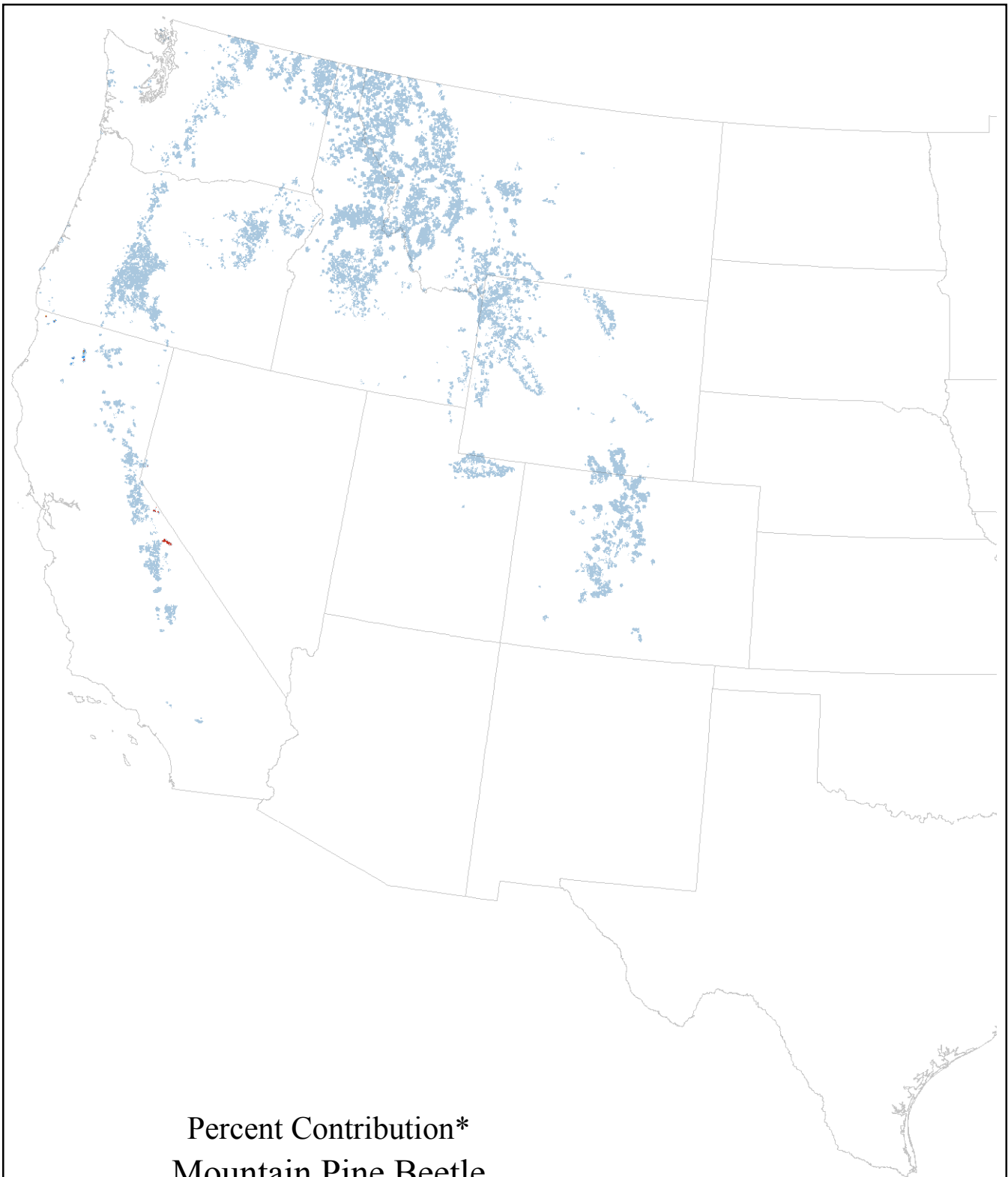


Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

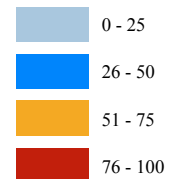
*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Mountain Pine Beetle
on Lodgepole Pine (CA)
M261A, 341D

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Lodgepole pine (*Pinus contorta*)

Model Extent: M261D, E, G, M262A and B

Max Percent Mortality: 85%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

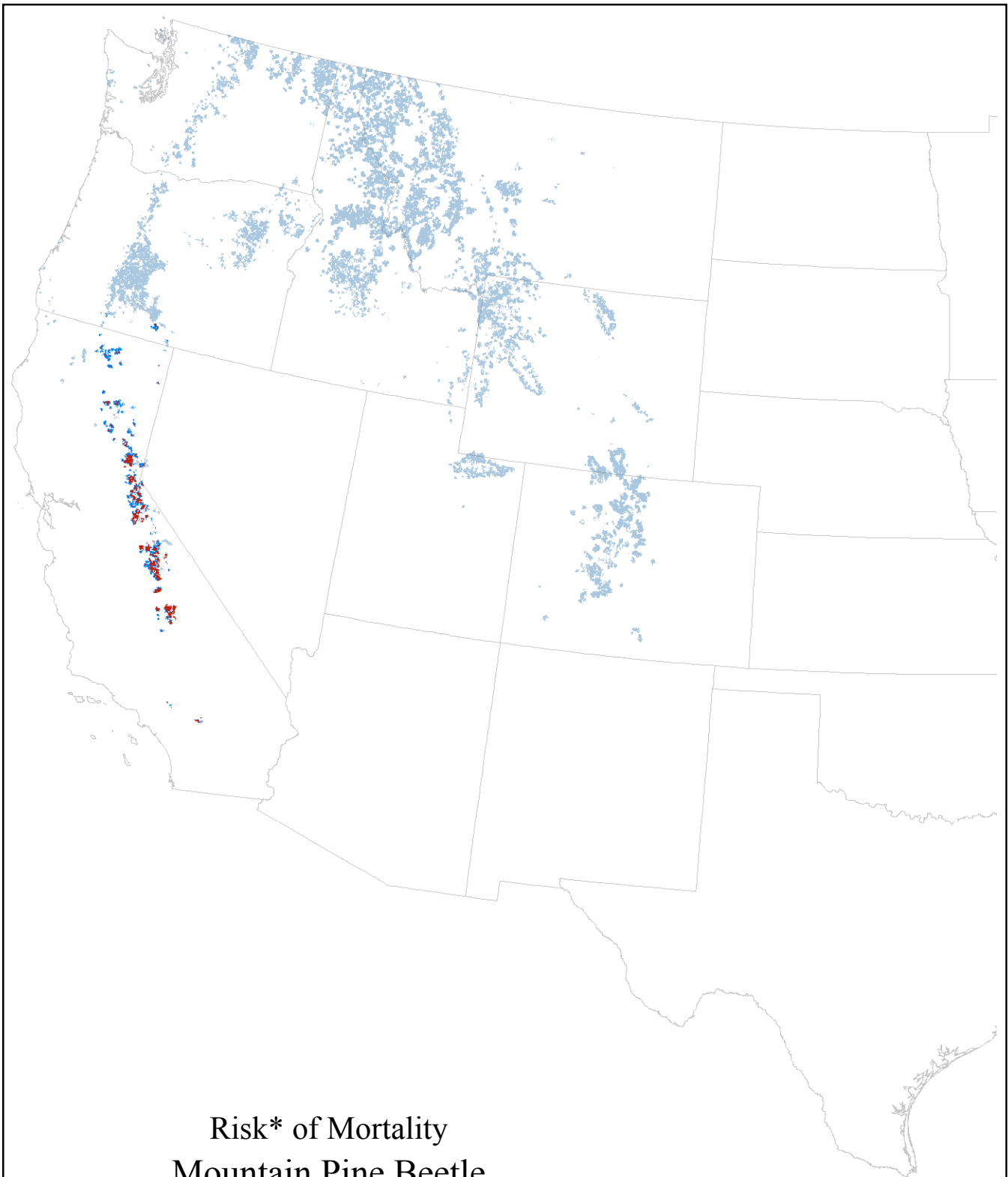
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	196	196	196	196	Linear	1/2	33%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	1, 34, 45, 51
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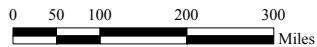
Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Mountain Pine Beetle
 on Lodgepole Pine (CA)

M261D, E, G, M262A, B

Mortality Ceiling of 85%

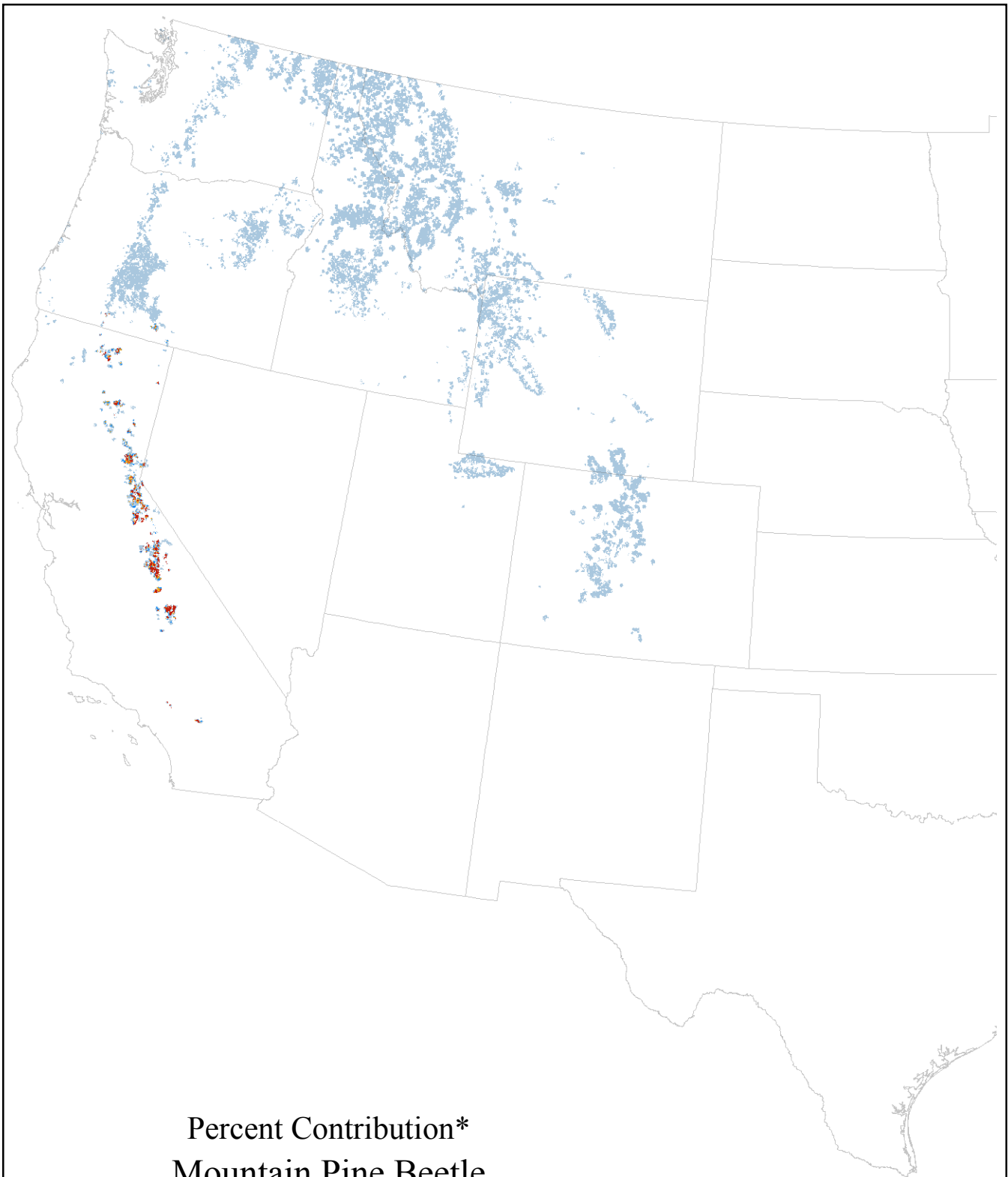


Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



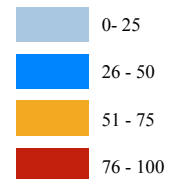
Percent Contribution*
Mountain Pine Beetle
on Lodgepole Pine (CA)

M261D, E, G, M262A, B



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Pondersosa Pine (*Pinus ponderosa*)

Model Extent: M261A, M261B, and M261C

Max Percent Mortality: 25%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 26, 29, 41

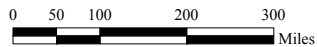
Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality
 Mountain Pine Beetle
 on Ponderosa Pine (CA)

M261A, B, C

Mortality Ceiling of 25%



Legend

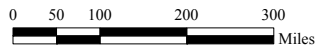
Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

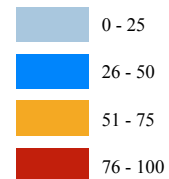


Percent Contribution*
Mountain Pine Beetle
on Ponderosa Pine (CA)
M261A, B, C



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Pondersosa Pine (*Pinus ponderosa*)

Model Extent: M261D, M261E, and M261G

Max Percent Mortality: 20%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

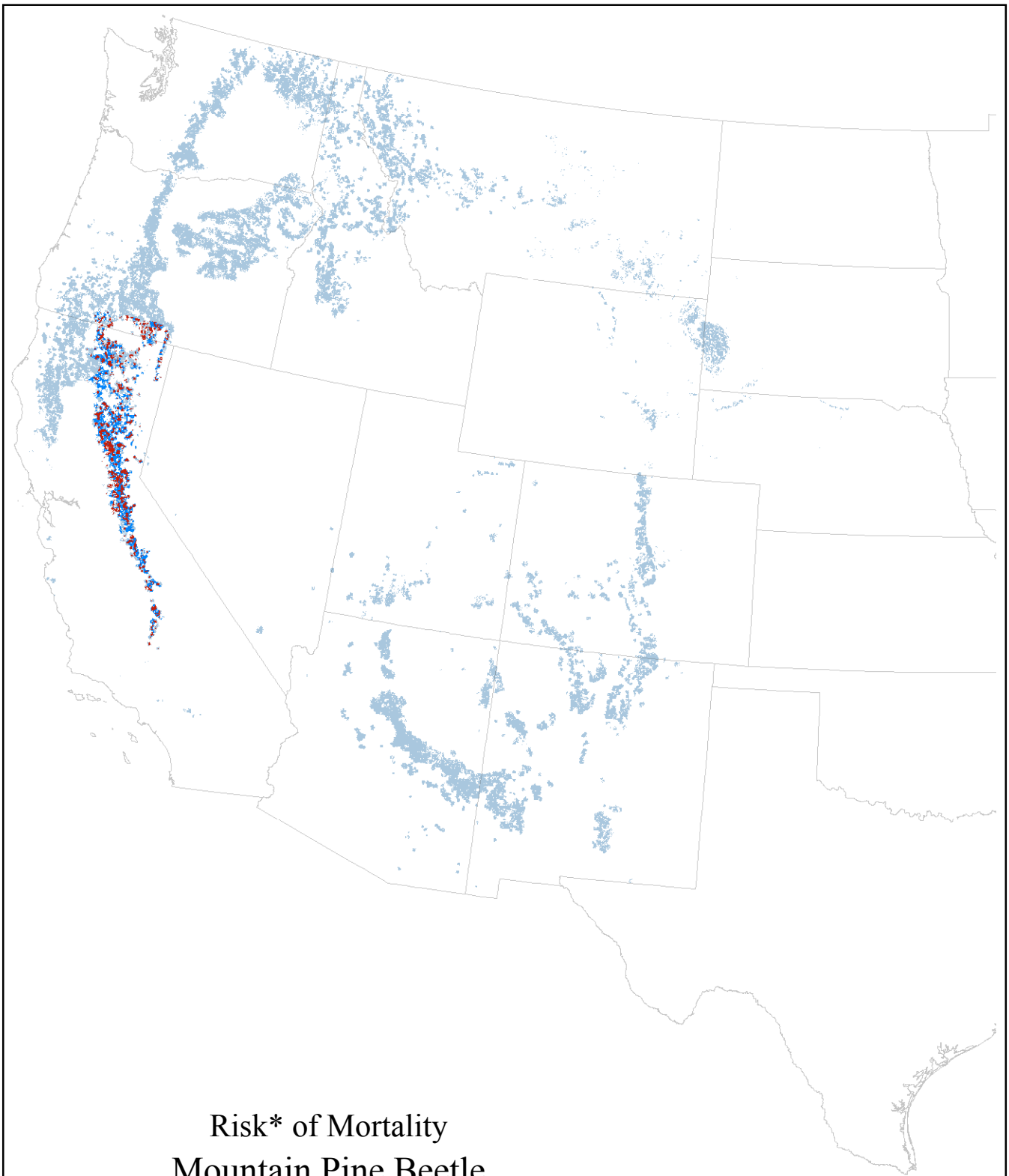
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1/2	33%
Criteria 2		QMD (inches)	8	8	8	8	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 26, 29, 41

Model Certainty 2 - Literature/Research Based



Risk* of Mortality
 Mountain Pine Beetle
 on Ponderosa Pine (CA)

M261D, E, G

Mortality Ceiling of 20%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

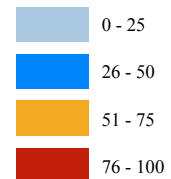


Percent Contribution*
Mountain Pine Beetle
on Ponderosa Pine (CA)
M261D, E, G



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Pondersosa Pine (*Pinus ponderosa*)

Model Extent: M262A and M262B

Max Percent Mortality: 20%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1/2	33%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	26, 29, 41
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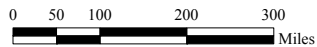
Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Mountain Pine Beetle
 on Ponderosa Pine (CA)

M262A, B

Mortality Ceiling of 20%



Legend

Level of risk for host

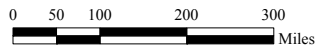
- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Mountain Pine Beetle
on Ponderosa Pine (CA)

M262A, B



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Sugar Pine (*Pinus lambertiana*)

Model Extent: M261A, M261B, M261C, M262A & M262B

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	200	200	200	200	Linear	1/2	33%
Criteria 2		DBH (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	15, 41, 51, 52
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality Mountain Pine Beetle on Sugar Pine (CA)

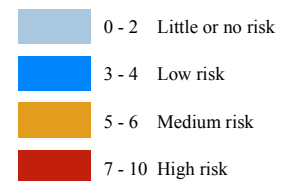
M261A, B, C, M262A, B

Mortality Ceiling of 50%



Legend

Level of risk for host



*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 31, 2007



Percent Contribution*
Mountain Pine Beetle
on Sugar Pine (CA)

M261A, B, C, M262A, B



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Sugar Pine (*Pinus lambertiana*)

Model Extent: M261D, M261E and M261G

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	200	200	200	200	Linear	1/2	33%
Criteria 2		DBH (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	15, 41, 51, 52
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
 Mountain Pine Beetle
 on Sugar Pine (CA)

M261D, E, G

Mortality Ceiling of 50%



Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Mountain Pine Beetle
on Sugar Pine (CA)

M261D, E, G



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Mountain Pine Beetle

Host(s): Western White Pine (*Pinus monticola*)

Model Extent: M261A, M261D, M261G, M261E, 341D

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0									
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

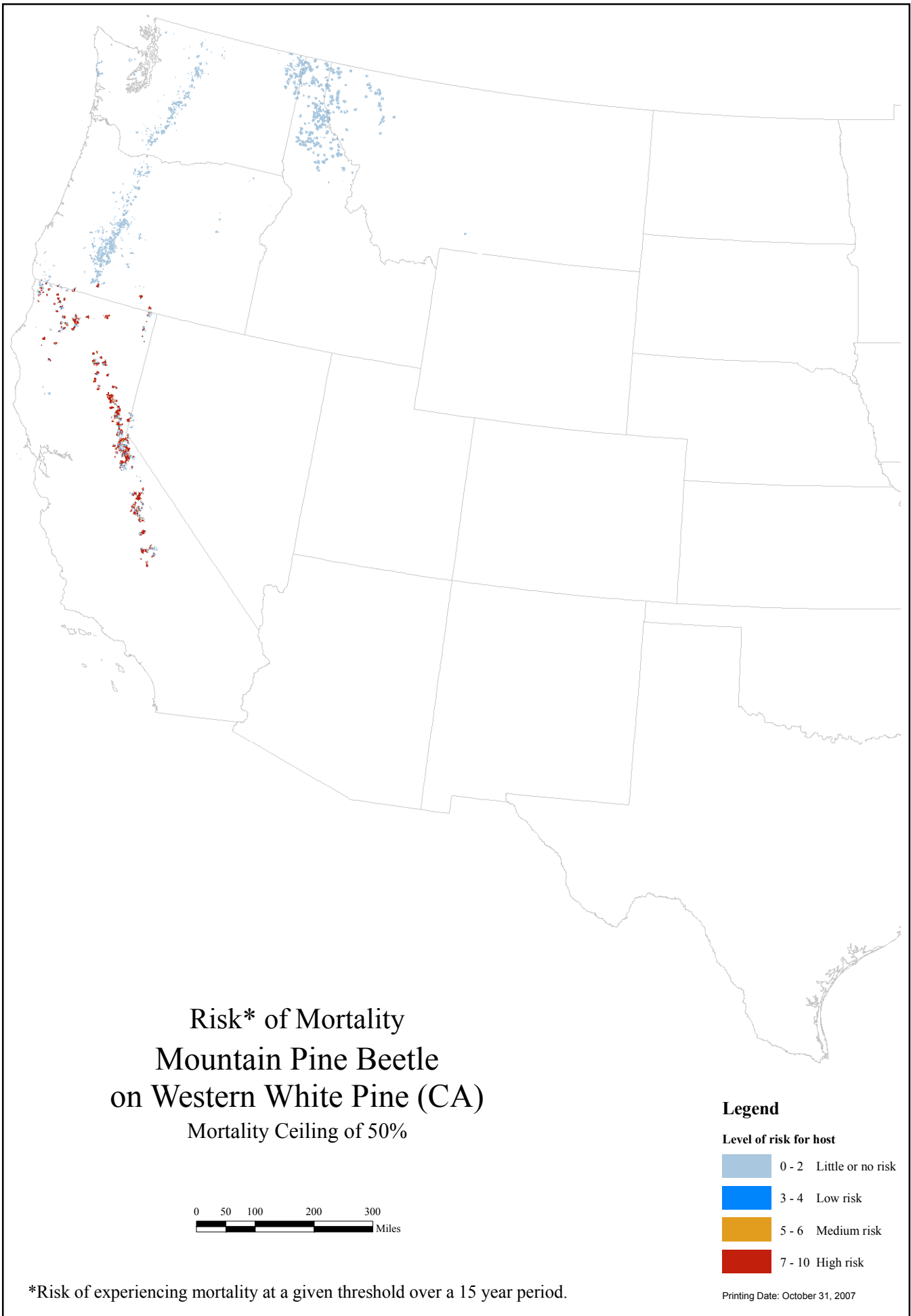
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0									
Criteria 1		SDI	200	365	365	365	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	15
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Model Certainty	3 - Informed Professional Judgement
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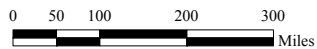


Percent Contribution*
 Mountain Pine Beetle
 on Western White Pine (CA)

Legend

Percent contribution

- 0 - 25
- 26 - 50
- 51 - 75
- 76 - 100



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Sudden Oak Death (*Phytophthora ramorum*)

Host(s): CA Black Oak (*Quercus kelloggii*)

Model Extent: 263A, 261A, 261B, M262A, M261B, M261A

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
0	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

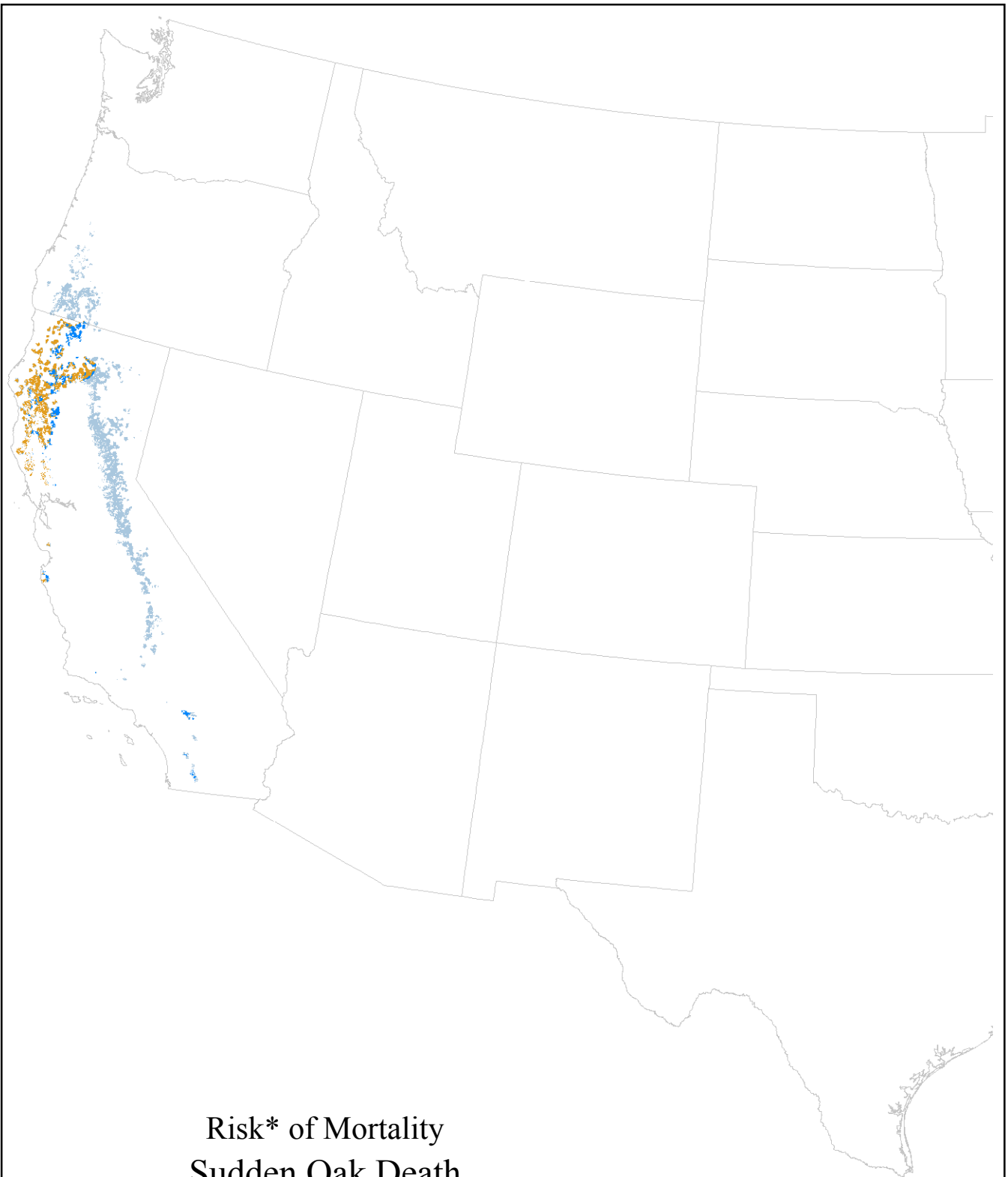
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Precipitation (mm)	25	125	125	125	Linear	1	33%
Criteria 2		Temperature (Celsius)	14	18	22	>26	J-4	1	33%
Criteria 3		Relative Humidity (%)	60	80	80	80	Linear	1	33%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments Adapted from Meentemeyer, et al. 2004.

Citations 22

Model Certainty 2 - Literature/Research Based

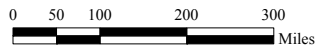


Risk* of Mortality
Sudden Oak Death
on California Black Oak (CA)
 Mortality Ceiling of 50%

Legend

Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk



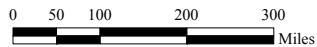
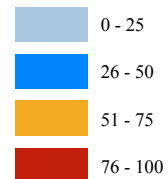
*Risk of experiencing mortality at a given threshold over a 15 year period.



Percent Contribution*
Sudden Oak Death
on California Black Oak (CA)

Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Sudden Oak Death (*Phytophthora ramorum*)

Host(s): Canyon Live Oak (*Quercus chrysolepis*)

Model Extent: 263A, 261A, 261B, M262A, M261B, M261A

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Precipitation (mm)	25	125	125	125	Linear	1	33%
Criteria 2		Temperature (Celsius)	14	18	22	>26	J-4	1	33%
Criteria 3		Relative Humidity (%)	60	80	80	80	Linear	1	33%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

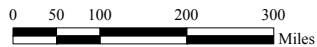
Comments Adapted from Meentemeyer, et al. 2004.

Citations 22

Model Certainty 2 - Literature/Research Based







Risk* of Mortality
Sudden Oak Death
on Canyon Live Oak (CA)
Mortality Ceiling of 50%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 29, 2007

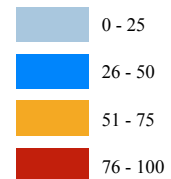


Percent Contribution*
Sudden Oak Death
on Canyon Live Oak (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Sudden Oak Death (*Phytophthora ramorum*)

Host(s): Coast Live Oak (*Quercus agrifolia*)

Model Extent: 263A, 261A, 261B, M262A, M261B, M261A

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Precipitation (mm)	25	125	125	125	Linear	1	33%
Criteria 2		Temperature (Celsius)	14	18	26	>26	J-4	1	33%
Criteria 3		Relative Humidity	60	80	80	80	Linear	1	33%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	Adapted from Meentemeyer, et al. 2004.
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Citations	22
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Model Certainty	2 - Literature/Research Based
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





**Risk* of Mortality
Sudden Oak Death
on Coast Live Oak (CA)**
Mortality Ceiling of 50%



Legend

Level of risk for host

-  0 - 2 Little or no risk
-  3 - 4 Low risk
-  5 - 6 Medium risk
-  7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 29, 2007



Percent Contribution*
Sudden Oak Death
on Coast Live Oak (CA)

Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Sudden Oak Death (*Phytophthora ramorum*)

Host(s): Tanoak (*Lithocarpus densiflorus*)

Model Extent: 263A, 261A, 261B, M262A, M261B, M261A

Max Percent Mortality: 50%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Precipitation (mm)	25	125	125	125	Linear	1	33%
Criteria 2		Temperature (Celsius)	14	18	22	>26	J-4	1	33%
Criteria 3		Relative Humidity (%)	60	80	80	80	Linear	1	33%
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	Adapted from Meentemeyer, et al. 2004.
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Citations	22
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Model Certainty	2 - Literature/Research Based
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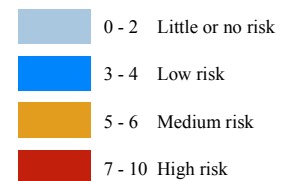
Risk* of Mortality Sudden Oak Death on Tanoak (CA)

Mortality Ceiling of 50%



Legend

Level of risk for host



*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 31, 2007



Percent Contribution* Sudden Oak Death on Tanoak (CA)

Legend

Percent contribution

0 - 25
26 - 50
51 - 75
76 - 100

0 50 100 200 300
Miles

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 31, 2007

Risk Model Worksheet - California

Risk Agent(s): Western Pine Beetle

Host(s): Coulter Pine (*Pinus coulteri*)

Model Extent: M262A, M262B and 261B

Max Percent Mortality: 45%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		Host %	10%	10%	10%	10%	Linear	1	67%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1/2	33%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	9
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Model Certainty	3 - Informed Professional Judgement
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**Risk* of Mortality
Western Pine Beetle
on Coulter Pine (CA)**
Mortality Ceiling of 45%



Legend

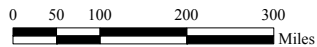
Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

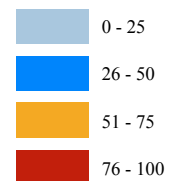


Percent Contribution* Western Pine Beetle on Coulter Pine (CA)



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 29, 2007

Risk Model Worksheet - California

Risk Agent(s): Western Pine Beetle

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: M261A, M261B, and M261C

Max Percent Mortality: 25%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1	100%
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints

Comments

Citations 26, 29, 41

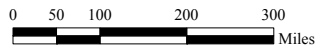
Model Certainty 3 - Informed Professional Judgement



Risk* of Mortality
 Western Pine Beetle
 on Ponderosa Pine (CA)

M261A, B, C

Mortality Ceiling of 25%



Legend

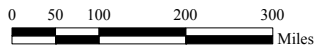
Level of risk for host

- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.

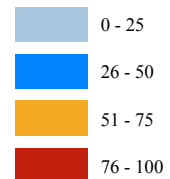


Percent Contribution*
 Western Pine Beetle
 on Ponderosa Pine (CA)
 M261A, B, C



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Western Pine Beetle

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: M261D, M261E, and M261G

Max Percent Mortality: 20%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

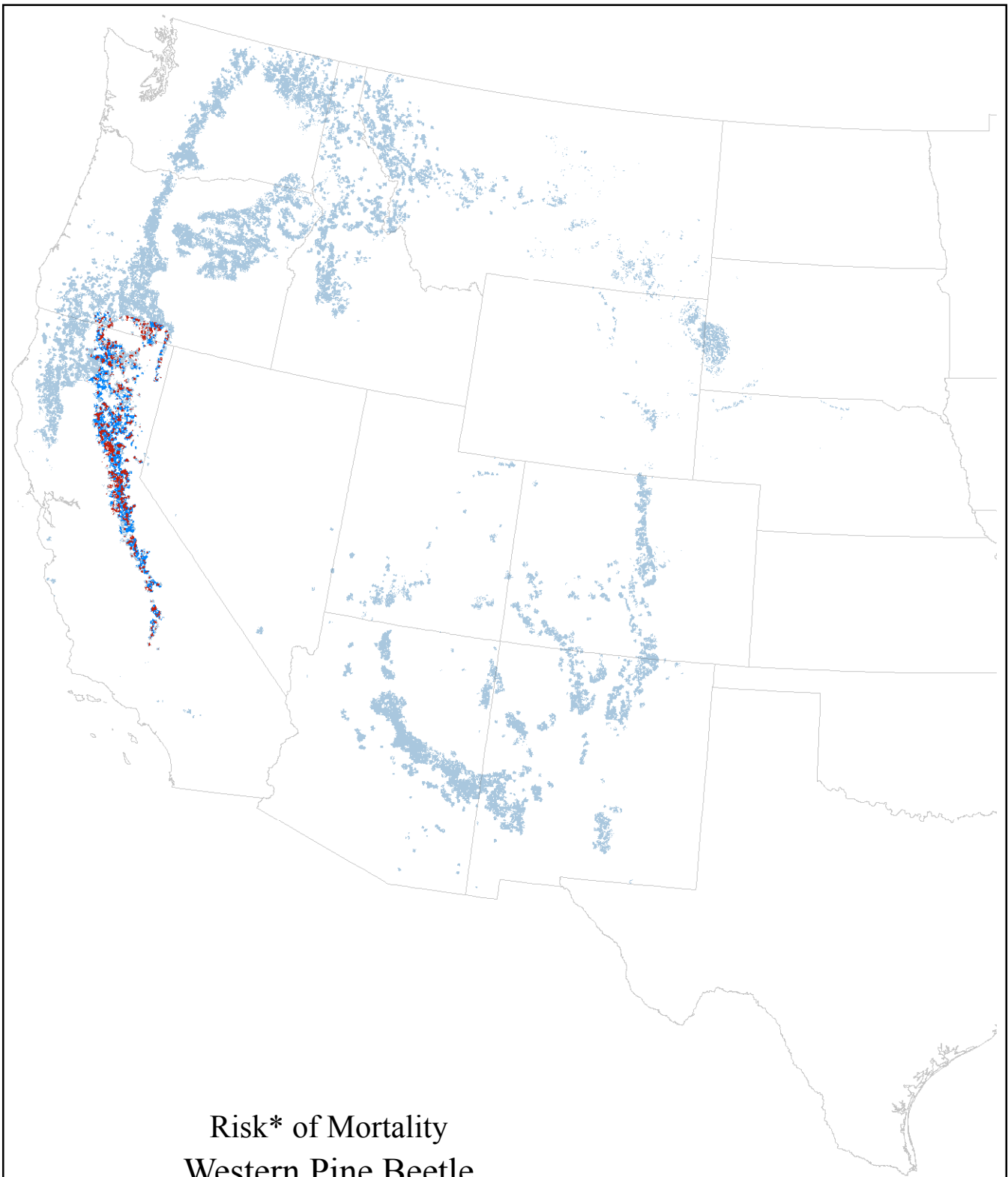
Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1/2	33%
Criteria 2		QMD (inches)	8	8	8	8	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	26, 29, 41
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Model Certainty	2 - Literature/Research Based
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Risk* of Mortality
 Western Pine Beetle
 on Ponderosa Pine (CA)

M261D, E, G

Mortality Ceiling of 20%



Legend

Level of risk for host

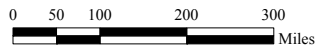
- 0 - 2 Little or no risk
- 3 - 4 Low risk
- 5 - 6 Medium risk
- 7 - 10 High risk

*Risk of experiencing mortality at a given threshold over a 15 year period.



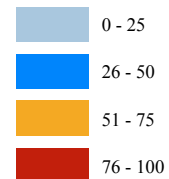
Percent Contribution*
 Western Pine Beetle
 on Ponderosa Pine (CA)

M261D, E, G



Legend

Percent contribution



*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007

Risk Model Worksheet - California

Risk Agent(s): Western Pine Beetle

Host(s): Ponderosa Pine (*Pinus ponderosa*)

Model Extent: M262A and M262B

Max Percent Mortality: 20%

Susceptibility

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
	0%								
Criteria 1									
Criteria 2									
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Vulnerability

Rank/Weight		Criterion	Risk Begins (a)	Risk Peaks (b)	Risk Decreases (c)	Risk Ends (d)	Curve	Rank	Weight
1	100%								
Criteria 1		SDI	230	250	250	250	Linear	1/2	33%
Criteria 2		QMD (inches)	6	6	6	6	Linear	1	67%
Criteria 3									
Criteria 4									
Criteria 5									
Criteria 6									
Criteria 7									
Criteria 8									
Criteria 9									
Criteria 10									

Constraints	
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Comments	
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Citations	26, 29, 41
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Model Certainty	3 - Informed Professional Judgement
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Risk* of Mortality
Western Pine Beetle
on Ponderosa Pine (CA)

M262A, B

Mortality Ceiling of 20%



Legend

Level of risk for host

- | | | |
|-------------|--------|-------------------|
| Light blue | 0 - 2 | Little or no risk |
| Medium blue | 3 - 4 | Low risk |
| Orange | 5 - 6 | Medium risk |
| Red | 7 - 10 | High risk |

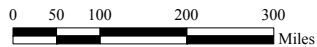
*Risk of experiencing mortality at a given threshold over a 15 year period.

Printing Date: October 30, 2007



Percent Contribution*
Western Pine Beetle
on Ponderosa Pine (CA)

M262A, B



Legend

Percent contribution

0 - 25

26 - 50

51 - 75

76 - 100

*Percent contribution to composite basal area loss attributed to the individual risk agent.

Printing Date: October 30, 2007