Cone Fire
Blacks Mt. Exp. Forest:
Fuel Treatment Effectiveness

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• **Interior Mixed Conifer & Ponderosa Pine**

• **Fire Regime: Frequent Fires of Low Intensity**

• **Large interdisciplinary study of the ecological effects of creating alternate stand structures.**

• **Prototype for the National Fire Surrogates Study**
Large, low-moderate intensity fires were frequent in Blacks Mt Exp Forest

<table>
<thead>
<tr>
<th>Extent</th>
<th>Median Fire Intervals Yrs</th>
<th>Range of Intervals Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>100s ha(ac)</td>
<td>7-10.5</td>
<td>2-16.5</td>
</tr>
<tr>
<td>1,000 ha(ac)</td>
<td>11</td>
<td>7-17</td>
</tr>
<tr>
<td>10,000 ha(ac)</td>
<td>19</td>
<td>13-35.5</td>
</tr>
</tbody>
</table>
Stand Structure & Species Composition
Changes over 20th Century
A project designed to assess ecological responses to stand structure.

NOT a project designed to test fire hazard reduction treatments.
After a single prescribed burn.

Typical Pre-treatment Conditions & Condition of BMEF RNAs

- High Diversity – No RxBurn
- High Diversity – RxBurn
- Low Diversity – No RxBurn
- Low Diversity – RxBurn
Cone Fire Conditions
1300 hrs Weather

• Wind Speed – 9-G20
• Wind Dir - West
• RH – 6%
• FM 1hr – 1%
• FM 10hr – 2%
• FM 100hr – 2%
• FM 1000hr – 5%
Severity classification courtesy of Andrea Thode and the USFS Region 5 Fire Monitoring Team
Cone Fire – September 2002
Blacks Mountain Experimental Forest

Unthinned

Thinned 1998 + RxBurn 2000

Unthinned

Thinned Mid 1980s
No RxBurn
Edge Transects

LoDwF 5

LoDwF 5

LoDwF 5

HiDwF 5

LoD-T 5

LoDwF 5
Unit 43 Transect 8 – Low Diversity Thin 1996 – No Prescribed Fire

Treated

Untreated
Tree Density

High Diversity Structure
Thinning + Prescribed Fire
n = 5 transects

Low Diversity Structure
Thinning + Prescribed Fire
n = 15 transects

Low Diversity Structure
Thinning Alone
n = 5 transects
Basal Area
QMD
Percent Mortality
After Cone Fire

A. No Treatment
B. Thinned – No RxBurn
C. Thinned with RxBurn
For more information on the Blacks Mountain Study see:

W.W. Oliver
2000
PSW-GTR-179
Controversy!

Salvage?

Leave It?

Wildlife Habitat

Soil

Future Fire Hazard?
Variable Retention Salvage Plots

3 Replications
5 Levels of Retention
Max = Retain 100%
Min = Retain 0%

Objectives:
• Study the recovery of the fuel profile.
• Study the effects of post-fire salvage on soil compaction.
• Study the use of the variable retention plots by woodpeckers.
General Technical Report
RMRS-GTR-120

Will be available from the
Rocky Mountain
Research Station, Fort
Collins, CO