Perceptions Matter: Understanding the social context for managing forest landscapes in the Blue Mountains

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Understand the interconnectedness of communities, working lands, forests, and fire in the Blue Mountains

Began in 2008 in Wallowa County and then expanded to include 7 counties in eastern OR
Building strong partnerships to understand local context and part of our mission to give back.
Share results to support more resilient forests, adaptive management, and robust community response through stakeholder engagement.
What Are Conditions On The Ground?

Stand Density
Vertical and Horizontal Structure
Standing Dead Trees
Dead and Downed Wood
Fine Fuels

Link to Remotely Sensed Data for Mapping Large Areas
RD between 0.5-0.75 corresponds to conventional timber objectives for most stand types, while RD>0.75 indicates likely stress, self-thinning mortality, and susceptibility to pests.
Dead Downed Wood
(a.k.a. 1000-hour fuels)
How much area is spectrally similar (above 90th percentile) to the densest, most stocked forest conditions present in Wallowa County?

Percentages of total area by land owner group (without Wilderness/NRA, clouds, water) with similar spectral signature to “densest” forest:

<table>
<thead>
<tr>
<th>Year</th>
<th>Private/State (280,009 ha)</th>
<th>Industrial (60,520 ha)</th>
<th>Federal/USFS, Non-Wilderness (280,619 ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>4.7%</td>
<td>21.2%</td>
<td>23.5%</td>
</tr>
<tr>
<td>1995</td>
<td>2.8%</td>
<td>17.1%</td>
<td>18.8%</td>
</tr>
<tr>
<td>2005</td>
<td>2.9%</td>
<td>14.5%</td>
<td>19.1%</td>
</tr>
<tr>
<td>2013</td>
<td>3.4%</td>
<td>10.2%</td>
<td>19.8%</td>
</tr>
</tbody>
</table>
Take aways:

1. These types of assessment provide a broad landscape perspective over time.

2. Highest density in Umatilla and near wilderness.

3. Patchwork density: there are dense stands across all ownership classes and in different locales.

4. Adaptive management needs to be at landscape level *with* an all lands perspective. That mentality needs to be front-loaded.
Canyon Creek 1 Of Worst Fires On Record In Oregon

by Amanda Peacher  OPB | Sept. 9, 2015 10:41 a.m. | Updated: Sept. 9, 2015 7:11 p.m.
How high do you consider the risk of a dangerous fire occurring on your and your neighbors’ lands?

2012 Mail Survey (n=454 forest landowners)
Telephone interviews were conducted in 2014 with 1,752 residents of Baker, Crook, Grant, Umatilla, Union, Wallowa & Wheeler counties — including 235 who own 10 or more acres of forest land.

Weighting adjusts percentages to reflect population
Do you think that the forests in your area are less healthy or more healthy than 20 years ago, or is forest health about the same?
Are forests less/more healthy, by understanding of forest issues?

2014: seven CAFOR counties

- Great deal: 68 (Less), 18 (Same), 14 (More)
- Moderate: 58 (Less), 27 (Same), 15 (More)
- Little: 53 (Less), 31 (Same), 16 (More)
- DK/nothing: 50 (Less), 30 (Same), 20 (More)

Forest health compared w/ 20 years ago:
- Less
- Same
- More
Two questions about temperature

Which of the following statements about past climate in this region do you believe is most accurate? NE Oregon summer temperatures over the past 20 years ...
Have been warmer, on average, than summers 30 or 40 years ago.
Have been about the same, on average, as summers 30 or 40 years ago.
Have been cooler, on average, than summers 30 or 40 years ago.
Don’t know/no answer

Which of the following statements best describes your belief about future climate in this region? NE Oregon summer temperatures over the next 20 years are likely to be ...
Warmer, on average, than summers of the past 20 years.
About the same, on average, as summers of the past 20 years.
Cooler, on average, than summers of the past 20 years.
Don’t know/no answer.
Past and future summer temperatures

(A) Past summer temperatures: Past 20 compared with 30–40 years ago?

- Cooler: 11
- Same: 39
- Warmer: 40
- DK/NA: 10

(C) Future summer temperatures: Next 20 compared with past 20 years?

- Cooler: 6
- Same: 44
- Warmer: 43
- DK/NA: 7
(A) Past summer temperatures: Past 20 compared with 30–40 years ago?

- Cooler: 11
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(C) Future summer temperatures: Next 20 compared with past 20 years?

- Cooler: 6
- Same: 44
- Warmer: 43
- DK/NA: 7

(B) JJAS temp anomaly

- 1975-1994: [Box plot data]
- 1995-2014: [Box plot data]
Eastern Oregon summer temperatures warmed an average of 0.66 °F/decade 1975–2014, faster than global warming (0.30 °F)
Drought in eastern OR

![Palmer drought severity -- eastern Oregon mean by month, 1970–2014](chart.png)
Frequency of wildfires in eastern Oregon unevenly increasing, 1970–2014

(A) Fires > 100 acres

\[ p = .01 \]
Fire-season temperatures trending up, precipitation down

(A) Fires > 100 acres

(B) Temperature

(C) Precipitation

(D) Observed and predicted fires > 100 acres

\[ p = 0.01 \]

\[ p = 0.001 \]

\[ p = 0.06 \]

\[ p < 0.001 \]
Statistical model predicting fire frequency from temperature, dryness, lightning and trend.
Basis for concern

We tested individual and location factors

“Rules”, “Conserve”, “Climate”, “Wolves”, “Wind”, “Land” are strongly predicted by political affiliation

Social bases for NE OR residents’ concern about issues doesn’t resemble those for more conventionally environmentalist issues

“Jobs”, “Insects”, “Wildfire” are important threats to the community
## Landowner perceptions

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>How important is active management (e.g. timber thinning, harvesting, controlled burns) to maintaining or improving the conditions of forested lands?</td>
<td>80%</td>
</tr>
<tr>
<td>How important is passive management (i.e. letting nature take its course) to maintaining or improving the conditions of forested lands?</td>
<td>16%</td>
</tr>
<tr>
<td>In general, how important are healthy forests to the vitality of communities in your region?</td>
<td>92%</td>
</tr>
<tr>
<td>Active management (e.g. including activities such as timber harvesting, thinning, controlled burning) will protect forests for future generations</td>
<td>89%</td>
</tr>
<tr>
<td>Conserving natural resources means restricting their use and limiting access to them</td>
<td>14%</td>
</tr>
<tr>
<td>Near my property, public lands are managed well, thereby improving or maintaining forest conditions</td>
<td>25%</td>
</tr>
<tr>
<td>As a whole, public lands are managed well, thereby improving or maintaining forest conditions</td>
<td>12%</td>
</tr>
</tbody>
</table>
Concluding Remarks

• Public concern of wildfire, particularly on public lands.

• General perceptions about environmental issues and how those perceptions are predicted largely by politics.

• The issues of forests and how they should be managed is a locally salient issues, and politics and other typical predictors aren’t appropriate.

• High support for active management, even when accounting for political party
  • -> concern about forest conditions and knowledge about changing forest conditions is driving support for increasing active management activities on public and private lands.

• 2014 survey found only 44% trust “scientists” as a source of information about forest management issues.
Thank you!

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