Indicator F.a.: *Tree mortality from insects, diseases, and other damaging agents*

Current desired trend/target: Stable or decreasing long-term levels of Oregon forest tree mortality.

This is a summary of the Oregon Roundtable on Sustainable Forests discussion and conclusions regarding the staff report on an Oregon Indicator of Sustainable Forests Management. This evaluation summary is organized around nine questions identified by the Roundtable as being central to evaluations of all 19 indicators. It reflects the input from Roundtable participants who attended the January 10, 2011 meeting where the indicator was discussed and from an electronic survey of those participants following the meeting. The summary is based on interpretation of the Roundtable discussions by the six-person Roundtable Leadership Group, with the assistance of Oregon Department of Forestry staff. For context, readers are encouraged to first become familiar with the full set of Oregon indicators and particularly the report for Indicator F.a. on which this evaluation is based. This evaluation and a follow-up staff response will be posted on both the Roundtable and Indicator F.a. web pages. The current data report for this indicator can be accessed at: [http://www.oregon.gov/ODF/indicators/indicatorFa.shtml](http://www.oregon.gov/ODF/indicators/indicatorFa.shtml)

**Evaluation Summary:** ¹

**Key Roundtable findings**

- The January 10 meeting presentation provided greater detail than the online report. Revise the report to include that information.
- Clarify whether the indicator is measuring tree “mortality” or tree “mortality and damage.” Both terms are used.
- What information is lost by not tracking fires between 100 and 1000 acres in size? Can that gap be filled?
- There is interest in reporting at regional sub-state scales (NW, SW, E). We already have a good spatial display but could break down tabular data by region.
- Recommend quality rating be changed to “adequate.”

¹ Conclusions may not have been reached by the Roundtable for every evaluation question. The summary should not be considered as expressing a consensus of the meeting participants or the Roundtable in general. However, this information will be immediately useful to the technical staff working to implement and improve future indicator data collection and reporting and to the Board of Forestry and other Oregonians desiring to use the indicator as one tool in assessing Oregon’s progress towards sustainable forest management.

It is anticipated that the Roundtable will proceed with discussions on all the indicators and will then discuss the body of indicators as a whole – looking for common themes and synthesizing conclusions about the indicators project. Therefore, Roundtable conclusions for this indicator may be revisited and revised at a later date.
Need to provide criteria on what numbers would have to be to be considered in “good” or “poor” condition — hard to do with multiple variables.

Need to provide criteria on what numbers would have to be to be considered an “improving” or “deteriorating” trend but data appears to lead to a conclusion that there is an improving trend.

There is concern about the ability to continue the same level of data collection beyond 2011.

Additional Roundtable comments organized by indicator evaluation questions

1. **Is the purpose and intent for the indicator clear?**
   - Consider adding “fire” specifically in the indicator title.
   - Without management some forest stands will either burn or be killed by insects. The indicator needs to reflect that.

2. **Is the protocol for indicator data collection clear and technically sound?**
   - Generally, the protocol is clear.
   - There will be a natural level of mortality. Do we know what that is from all sources? *Staff response was that four percent mortality per year is normal barring any large fires or insect epidemics taking place.*
   - Statement that “four percent mortality per year is normal” needs to be clarified by staff in its response. Seems illogical as it could be interpreted that there would be 100 percent mortality is 25 years.
   - *Staff reported a higher confidence in the mortality acreage figures than volume.*
   - Report small fire data separately rather than mixed into the aerial insect and disease survey data.
   - Provide narrative of major events to go with the bar chart time series to explain the big spikes.
   - Recognize limitations of only going back 30 years. Different historical comparisons could lead to different conclusions.
   - The evaluation states protocol is limited to 30 years of data but USFS has 60 years of data. This topic needs to be further clarified.
   - Are we remapping the same mortality year to year?
   - Landowners frequently harvest dead or dying trees – it appears this could be missed by the protocol.

3. **Are indicator data being reported at the appropriate spatial and temporal scales?**
   - Be clearer about where mortality is occurring. The meeting presentation provided greater detail than the online report. Revise the report to include that information.
   - Different conclusions could be drawn at sub-regional scales.
   - In ecological terms, forest disturbance cycles can span multiple human generations. But there are obvious economic and social downsides when a forest experiences significant natural mortality followed by slow recovery that could take decades.
4. Has the Department appropriately assessed the quality of the indicator information?

Original indicator report conclusion
\textit{Information} = Partial

Conclusion following Roundtable evaluation
\textit{Information} = Adequate

- Information quality is better than for most of the other indicators.

5. Has the Department appropriately assessed the conditions measured by the indicator?

Original indicator report conclusion
\textit{Condition} = Fair

Conclusion following Roundtable evaluation
\textit{Condition} = Fair

- What are the mortality goals and how are those goals justified? What would be a normal ecological occurrence?
- Some believe there is no evidence that insect and disease damage is outside the ecological norm, so it should be considered "Good". Exceptions may be Swiss needle cast and fire danger from fuel build-ups due fire suppression.
- Insect populations may be within ecological range but still can cause economic and social problems.

6. Has the Department appropriately assessed the current trend measured by the indicator, when compared to the Desired Trend Statement?

Original indicator report conclusion
\textit{Trend} = Uncertain

Conclusion following Roundtable evaluation
\textit{Trend} = Uncertain

- Report future outlook separately.
- Some believe the trend appears to be that bugs are currently in balance. Close watch should be kept to see if climate change is resulting in more bug damage/mortality.
- Some see western Oregon in balance but eastern Oregon on the verge of increasing tree mortality.
- Have natural processes been perturbed by human actions?

7. Can a case be made that other technical information should be considered as a supplement or an alternative to the information already provided for the indicator?

- Look at the same GNN vegetation data used for Indicator E.a. Perhaps more useful than FIA-only data.
8. Do you believe there is an adequate level of institutional commitment and resources allocated for continued full implementation and reporting of this indicator into the future?

- No additional comments.

9. What improvements would you like to see in future reporting for the indicator?

- Need more information about what each of the fire severity classes used really means -- perhaps pictures of severity examples.
- Look at a rolling 10-year average to smooth out data trends
- Provide more discussion on the relationship between weak/dead trees and fire occurrence. This relationship is often assumed but not born out by available research.
- Reporting should be based on whether or not the ecological system is behaving as expected, as this is an ecological indicator.
Oregon indicators of sustainable forest management ratings explanations

**Indicator Condition:**

- **Good**: Desired trend or target is being achieved
- **Mixed or Fair**: Conflicting factors are affecting the status in both positive and negative ways
- **Poor**: Desired trend or target is not being achieved

**Indicator Trend:**

- **Improving**: Current status is an improvement compared to previous data
- **Mixed, Uncertaint, or No Change**: There are either conflicting (mixed) trends, trend direction is uncertain, or there is no significant change compared to previous data
- **Deteriorating**: Current status is a deterioration compared to previous data

**Quality of Indicator Information:**

- **Adequate**: Data coverage, frequency, currency, sources, and reliability are sufficient to draw conclusions with high confidence
- **Partial**: Data coverage, frequency, currency, sources, and reliability are of mixed quality which affects the ability to draw conclusions
- **Inadequate**: Data coverage, frequency, currency, sources, and reliability are of insufficient quality to draw conclusions