

**Oregon Roundtable on Sustainable Forests
Preliminary Evaluation of Indicator of Sustainable Forest
Management D.a.: *Water quality in forest streams***



Current desired trend/target: Water quality index values in Oregon forested watersheds are stable or improving.

The current data report for this indicator can be accessed at:
<http://www.oregon.gov/ODF/indicators/indicatorDa.shtml>

Evaluation Summary: ¹

Key Roundtable findings

- Reliable and increased funding is needed for water quality monitoring. Good progress has been made in the past ten years. The achievements through the Oregon Plan for Salmon and Watersheds are examples. Continued statewide water quality index data collection is needed to fulfill the commitments made under the Oregon Plan.
- We should ask policy makers and funders to fund/support continued progress. We have ten-years of data but no guaranteed future funding for this monitoring work. Without continued adequate funding, we should expect the information quality for this indicator to be inadequate in the future. We need to look for other funding sources as well as partnerships with other agencies, municipalities, and volunteer organizations.
- Current monitoring intensity is uneven, with more data available on USDA Forest Service lands that also tend to represent higher elevations.
- Funding limitations have prevented a desired level of probabilistic sampling for this indicator. The indicator uses the best data available, but there are concerns about the adequacy of the number of sample sites and their distribution and the ability to assess trends due to funding losses for future data gathering.
- Pursue either routine targeted monitoring of Federal, State, industrial and family forestlands or use a probability design. Probabilistic sampling is preferred. There should be common data standards and methodologies across agencies and land uses for water quality monitoring.

¹ *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. The 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 May 12, 2010 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 seven-person Roundtable Leadership Group, with the assistance of Oregon Department of Forestry staff.*

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.

Additional Roundtable comments organized by indicator evaluation questions

1. Is the purpose and intent for the indicator clear?

No specific group comments at the meeting but survey respondents said yes.

2. Is the protocol for indicator data collection clear and technically sound?

This indicator is a good start to understanding water quality on forest lands. Together with the biological index it does what it is designed to do, provide a high level view of water quality on forestland.

As discussed by the DEQ laboratory staff, the Oregon Water Quality Index lacks some measures that are necessary to truly assess forestry impacts (e.g. wet season measurements of sediment movement). The indicator may not be technically sound for all forested streams in Oregon as it was developed for assessing water quality of larger streams.

There are no physical habitat metrics in Indicator D.a. However, it was noted they can be indirectly addressed by Indicator D.b.: *Biological integrity of forest streams*.

3. Are indicator data being reported at the appropriate spatial and temporal scales?

No specific group comments at the meeting.

Survey respondents said yes, but with the qualifications that a higher sample density would allow conclusion about smaller scales. Data from smaller scales would allow better assessment about differences between ownership types. Data were reported at the correct scale in the latest report by DEQ, but there are no long-term plans to consistently monitor for this indicator. More consistent collection of the information is needed. The use of longer-term sampling with in-stream collectors should supplement one-time grab samples for at least some of the metrics.

4. Has the Department appropriately assessed the quality of the indicator information?

Original indicator report conclusion
Information = Partial

Conclusion following Roundtable evaluation
Information = Partial



Funding limitations have prevented a desired level of probabilistic sampling for this indicator. The indicator uses the best data available, but there are concerns about the adequacy of the number of sample sites and their distribution and the ability to assess trends due to funding losses for future data gathering. The lack of funding for sufficient sites and future evaluations should be emphasized.

The summer sampling period is better for some water quality parameters than others. Statements about water quality can only be made with confidence for this time of year.

There are indications of sediment issues (Total Solids and Total Phosphorous).

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

Original indicator report conclusion

Condition = Good



Conclusion following Roundtable evaluation

Condition = Good



One-time sampling limits our capability to tell the story about a specific site. But 400 samples can tell the story about the landscape. However, another opinion is that single, point-in-time grab samples only give a very limited view of water quality conditions.

A probability based sampling design would be a more effective tool for communicating water quality conditions.

There are indications of sediment issues (Total Solids and Total Phosphorous).

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

Original indicator report conclusion

Trend = Uncertain



Conclusion following Roundtable evaluation

Trend = Uncertain



At this point the indicator only describes status. Trends were not assessed. The DEQ study only looked back to the previous ten years of data.

The lack of funding for sufficient sites and future evaluations should be emphasized.

The Oregon Progress Board target of 45 percent of monitored stream sites with water quality in GOOD OR EXCELLENT condition encompasses all land uses – the indicator report should more clearly describe this fact. If applied solely to forestland – the target would seem too low. This raises the question—should water quality expectations for forestlands be higher than for other land uses? Alternatively, are forestlands unfairly held to a higher standard? All Oregon landowners should be required to meet land-use specific and land-use appropriate water quality standards.

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?

Interpreting index information by combining land use information and other knowledge about specific watersheds would help us understand possible causal relationships and identify remedies. Suggestions - Look at the:

Oregon Roundtable on Sustainable Forests
Preliminary Evaluation of Indicator of Sustainable Forest Management D.a.:
Water quality in forest streams
July 27, 2010 Draft – Subject to further Roundtable discussion and revision

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- Oregon Watershed Research Cooperative (<http://watershedsresearch.org/>)
- Willamette Basin Rivers and Streams Assessment Study (<http://www.deq.state.or.us/lab/wqm/assessment.htm>)
- Department of Forestry's Riparian Function and Stream Temperature (RipStream) Project ([http://www.oregon.gov/ODF/BOARD/docs/September_2009/5 Att 1.pdf](http://www.oregon.gov/ODF/BOARD/docs/September_2009/5_Att_1.pdf))

to relate indicator results to current forest practices.

There is interest in also looking at toxic chemicals and water quality, with pesticides being reported on a high level, perhaps through passive integrated samplers. However, others noted that tracking sediment movement in water can be a surrogate for tracking toxics and that toxics are likely better addressed through specific monitoring work tailored to measure them rather than through the existing water quality index approach. DEQ has other approaches that specifically look at toxics. It was also noted that forest pesticides are applied on a very small proportion of the forest landscape and are a very small proportion of the total amount of pesticides applied in Oregon.

8. Is there is an adequate level of institutional commitment and resources allocated for continued full implementation and reporting of this indicator into the future?

Reliable and increased funding is needed for water quality monitoring. Good progress has been made in the past ten years. The achievements through the Oregon Plan for Salmon and Watersheds are examples. Continued statewide water quality index data collection is needed to fulfill the commitments made under the Oregon Plan.

We should ask policy makers and funders to fund/support continued progress. We have ten-years of data but no guaranteed future funding for this monitoring work. Without continued adequate funding, we should expect the information quality for this indicator to be inadequate in the future. We need to look for other funding sources as well as partnerships with other agencies, municipalities, and volunteer organizations.

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

Pursue either routine targeted monitoring of Federal, State, industrial and family forestlands or use a probability design. Probabilistic sampling is preferred. There should be common data standards and methodologies across agencies and land uses for water quality monitoring.

Indicator data reporting should include clearly defined targets with a desired level of precision. For example, "90 percent of forested streams should be in Good or Excellent condition" (+/- five percent; with 95 percent confidence). Despite the expectation that funding will be hard to find, we should ask for what is needed to provide information at desired levels of precision.

Random sampling across seasons is needed with in-situ monitoring for some metrics.

Measures that evaluate riparian zones are very important.

Encouraging good management practices helps alleviate problems – even if the funding to do monitoring is not available.

If separate standards for forestlands are contemplated, also consider varying standards by region and elevation.

The data should distinguish between legacy and current forest practices. Some toxics like DDT residues are legacy effects and background toxics like mercury appear in the soil from air pollution from outside Oregon. The best control for these is keeping soil out of streams.

Consider further tailoring the indicator for forestlands—develop a “forestlands water quality index”. Strategize on what is sufficient to track trends.

Consider a modified index that more accurately reflects natural conditions based on regionally appropriate reference sites.

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, Uncertain, 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