



2014 Forest Management Stakeholder Workshop Summary Report

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In February 2014 the BioEarth project's communication and extension working group convened a stakeholder advisory workshop focused on forest management issues in order to build understanding among research team members of how the BioEarth integrated earth systems model might produce outputs that are relevant to the needs of decision-makers concerned with forestland in the Pacific Northwest. The workshop, held in Olympia, brought together a group of 15 stakeholders and 6 BioEarth researchers. This series of issue-based stakeholder workshops is a step toward greater information sharing and collaboration among university-based environmental modelers and stakeholders who can provide guidance and feedback to the modeling team and potentially use model results.

The workshop was designed to gain insight about 3 key questions:

1. What are stakeholders' most pressing concerns about current issues and future changes?
2. What information would aid in making better decisions?
3. How can the modeling approach be refined and scenarios be developed to produce outputs that are relevant to stakeholders' concerns?

I. Stakeholders represented at the workshops

95 individuals were identified and invited, 15 stakeholders were able to attend (4 industry representatives, 5 government agency representatives, 4 extension specialists/academics from other institutions, 2 NGO representatives)

Industry (4 individuals): Family forest landowners, Society of American Foresters

Government agencies (5 individuals): Washington State DNR and Department of Ecology, USDA Natural Resource Conservation Service, State Representative

Academic/science (3 individuals): Extension foresters, researchers

NGO (2 individuals): EcoTrust and Climate Solutions



Groups not represented at the stakeholder workshop, but recommended for future inclusion by attending stakeholders: Tribal forestland managers, Forest Service representatives, environmental organizations opposed to silvicultural activities (harvesting, thinning, planting) on federal lands.

II. Dominant regional issues of concern

Environmental issues:

- Length of summer drought, particularly east of the Cascades (more fragile forest systems in general)
- Possible increased frequency and intensity of ice and wind storms are a concern, particularly for forests west of the Cascades
- Wildfire frequency and severity (changes in fire intensity and damage caused to soils etc. as a result of management and climate)
- Pest and disease pressure; feedbacks between drought, fire, and insects and disease
- Genetic diversity of forests (susceptibility to pests and disease)
- Water supply and water quality for salmon and other aquatic species
- Potential positive impacts of warming and increased atmospheric carbon dioxide on Northwest forests

Management and decision-making:

- Impacts of land management of wildfire frequency and severity; implications of severe fires on inactively managed lands for adjacent managed forestlands
- Lack of agreement, clarity, on the question of whether old growth forests continue to sequester carbon, and how carbon stored in wood products is accounted for in assessments of carbon storage potential of forests
- Urban and rural residential development, conversion of forestland to other uses
- Transition of family owned forestlands to a new generation of owners; parcelization of landholdings and increased potential for conversion to other uses
- Impacts of current land management practices carried into a future with increased extreme weather events—will current practices still be appropriate?
- Potential impacts of regional agricultural and municipal water demand on forest management
- Impacts of thinning on fire severity and on snow catchment/ water storage
- Concerns over conflicting management approaches and policies at different levels of decision making and across jurisdictions

Policy:

- Threat of litigation impacts federal land management agencies' ability to implement silvicultural management strategies such as timber stand improvement, sanitation and regeneration harvests
- Potential impacts of ecosystem services markets or carbon markets in the future
- Concern about land management decisions being taken out of the hands of private landowners, who have a deep understanding of their local system
- Policies and initiatives for sourcing biofuels from forests
- Future listings of threatened and endangered species

Economic:

- Shortage of mills makes timber harvesting a less viably prospect for small forestland owners
- Price of other building materials (steel and aluminum, often imported) affects the demand for lumber and price of lumber. (How does the carbon footprint of these substitutes compare to wood produced in the Pacific Northwest?)

III. Information that could improve decision-making

Model Scope:

- The model should capture differences in how forests are managed depending on ownership/ jurisdiction, and the ways in which land management decisions on federal lands impact other forest landowners
- Having a deeper understanding of nutrient cycling is key (nitrogen is most critical, potassium is also important, phosphorous is important for water quality)
- Model needs to take into account different age classes and sizes of trees, fire and pests have different impacts depending on age class, size, and species diversity in the forest
- Habitat type series classification is an important measure to look at. Decision-makers would like to see results presented in terms of species mix, even if the model cannot project stand-level impacts. Seeing the distribution of different species regionally is relevant. It could be useful to compare the same climate change scenario while varying tree species.
- Look at social, economic and political impacts of regional population growth (connect to USFS Forests on the Edge Report)

Model Time Frame:

- Projections on a 10-20 year time scale and 20-50 year time scale are most relevant for thinking about policy making and many industry decisions.
- There are big questions about climate in 100 or 500 years; while this information may not directly shape what a landowner or agency does now, its needed to form a picture of the regional environmental future.
- Monthly or seasonal-scale information about water and weather are essential for forest managers too; forests are analogous to agricultural systems in terms of when planting decisions need to be made.

Model Spatial Scale:

- For many researchers and decision-makers, the ideal model outputs would be provided at the stand-level (such as an estimate of productivity at a stand level).
- Look at boundaries of management jurisdictions in order to assess implications of different decision making about timber harvesting, thinning for biofuels or wildfire risk abatement, etc.
- Understanding snow catchment and soil moisture projections on a watershed-scale is relevant.

IV. Future scenarios to explore:

- Would investments in stand management now (e.g. thinning) pay off over the long run? How would these actions impact future stand-level resilience to stress given global change?
- Implications of current Forest Service land management strategies for economics and wildlife habitat.
- Model impacts of combinations of stressors (e.g. drought, insects, etc.) on tree species. What species/species combinations will respond robustly in the future?
- Project where fire is most likely to occur and assess the impact of wildfires on C sequestration.
- Assess environmental benefits of managed forestlands in comparison to land that has been converted to other uses.
- Consider whether current management approaches (e.g. for water quality, water in streams for salmon) be sufficient in the future?
- Look at scenarios to manage for specific outputs (e.g. C storage and water availability). Assess implications and efficacy of managing forests for biofuels production.
- Model sustained yield potential by county, or for a specific timber class by habitat type/ site class.
- Explore regeneration of forests after wildfire. Will there be changes in suitability for different species? Identify locations where particular species will be less likely to occur in the future.
- Assess unintended consequences of lengthening harvest rotations.
- Model the impacts on water quality and riparian habitat from replacing hardwood trees with coniferous species.
- Consider the contribution of forests to larger regional issues (e.g. water and air quality, temperature) for which multiple sectors are important sources

V. Reflections on communication:

- Quantifying and communicating uncertainty is vitally important to management. An absolute factual answer is not what managers need; the best possible model output is something that can be interpreted with explanation of where there are uncertainties. Emphasize the role of modeling in managing risk.
- There is a need for model intercomparison systems and collaborative work to support analyses at larger spatial scales. Related to this, researchers should continue to do what is possible to create consistency in database structures, data formats, and data collection methods.
- Need to be careful about using accessible language and avoiding jargon.
- Several stakeholders noted that outputs packaged as decision support tools would be of potential use to organizations and agencies considering implications of a particular management approach on specific site conditions. Ideally, a model could project the consequences of those decisions in both decadal and stand rotation-length time frames.
- Follow up engagement with stakeholders is needed to present initial model scenarios and outputs and give people something to respond to; it's more difficult for stakeholders to formulate specific scenarios when modeling is at an early stage and the capabilities/ possibilities are still undefined.

Additional findings from the forest management workshop session are available from the BioEarth Communication team, including a spreadsheet of actionable recommendations prepared for the research team. We greatly appreciate the time and energy that BioEarth researchers and stakeholders have invested in the workshop process, and feel that the questions raised and perspectives shared at the stakeholder advisory workshops have been extremely valuable in guiding the research team's approach to model development.