

Old Growth Representation Workshop Summary report

February 27-28, 2007

Disclaimer

This report was commissioned by the Ecosystem-Based Management Working Group (EBM WG) to provide information to support full implementation of EBM. The conclusions and recommendations in this report are exclusively the authors', and may not reflect the values and opinions of EBM WG members.

Old Growth Representation Workshop

Summary report

Attendance

The old growth representation workshop held on February 27-28th, 2007, in Richmond, BC, was convened to refine, through science, the old growth representation thresholds as they are outlined in the EBM Planning Handbook, and to make recommendations about how best to implement old forest representation on the North and Central Coast. The workshop was structured with expert panel members and participants. The expert panel members were:

- Del Meidinger, Research Ecologist with the Ministry of Forests and Range in Victoria.
- Pam Dykstra, Biome Ecological Consultants in Nelson.
- Carmen Wong, Senlin Ecological Consulting and PhD student at University of British Columbia in Vancouver
- Ken Lertzman, Professor at the School of Resource and Environmental Management, Simon Fraser University.
- Andy MacKinnon—Research ecologist with the Ministry of Forests and Range in the Coast Forest region.
- Glen Dunsworth—Glen Dunsworth Ecological Consulting, Lanzville, B.C.
- Allan Banner-- Ecologist with Ministry of Forests and Range in Smithers.
- Glenn Sutherland—Cortex consultants, Vancouver
- Diane Srivastava- Professor of Zoology at University of British Columbia, Vancouver.
- Paul Alaback- Professor at University of Montana.
- Karen Price- Consultant
- Laurie Kremsater—UBC applied Conservation Biology Centre and Consultant.
- Rachel Holt- Veridian Ecological Consulting, Nelson.

Participants attending on behalf of EBMWG members were:

- Michael Folkema, BCTS
- Warren Warttig, Interfor
- Marty Locker, Turning Point First Nations
- Sari Saunders, Ministry of Forests and Range
- Melissa Todd, Ministry of Forest and Range

- Ken Dunsworth, Ministry of Environment
- Steven Gordon, Ministry of Environment
- Wally Eamer, KNT First Nations

Other participants and conference organizers were

- Carolyn Whittaker, FORREX
- Shawn Morford, Benchmark Consulting
- Shannon Janzen, Western Forest Products
- Jody Holmes, Rainforest Solutions Project
- Audrey Roburn, Rainforest Solutions Project
- Chuck Rumsey, Round River Canada
- Bill Beese, Western Forest Products

Threshold refinement recommendations

The following wording was agreed-to by the group on Day 2.

“The available evidence does not support moving away from 70% of natural old (RONV) by ecosystem unit¹ measured at the subregional scale. We conclude that it is likely² that ecological integrity can be maintained with 70% of natural representation for each ecosystem unit at the subregional scale.

Notwithstanding the value of the existing evidence and our consensus regarding the 70% of natural old target hypothesis, there is a significant need for a program of research and monitoring to provide more, better quality, and local information³.

While we acknowledge that representation of each ecosystem type at 30% of natural old is very likely to pose high risk to ecological integrity, it is an acceptable minimum target at the watershed scale, provided that it is applied within the context of the EBM subregional representation target of 70% of natural old by ecosystem unit.

We endorse the concept of representing more than 70% of natural old for truly rare ecosystems. This requires expert refinement of the term truly rare for application to the Coast; it may include red and blue listed ecosystems and others.”

¹ And, this means site series if the data is available, and SSS if it is not. We should encourage more ecosystem mapping (such as TEM) so that we can work with site series more in the future. A further workshop is needed to address the question of grouping these units for application of old forest representation.

² Note that as used above, the term **“likely” means >66% confidence, and “very likely” means >90% confidence**. These terms are used in the same way as in the recent IPCC report.

³ See below for list of adaptive management questions.

Accounting recommendations

The following wording was agreed-to by the group on Day 2.

“We need stand-level retention for stand-level objectives, and landscape-level reserves for landscape-level objectives.

Stand-level retention could be counted towards landscape-level targets when it addresses landscape-level objectives of ecosystem representation.

An accounting system is required to determine when and where stand-level retention could be counted towards landscape-level targets. This system should consider size of retention (i.e. large enough to have forest interior) and whether retention is mappable and permanent. Stands meeting these criteria could contribute immediately to landscape targets. Dispersed retention or small patches not meeting the above criteria could contribute later if they enhance ecosystem recovery.

The maximum to which stand-level retention can contribute towards landscape-level targets for an ecosystem would vary with the risk level of the ecosystems in the watershed.

This requires further expert discussion.”

Recommended further work

The following follow-up work was recommended by the group on Day 2:

- 1) We should have another workshop focused on old-growth representation implementation ASAP to address the following issues:
 - a) What site series surrogates should we use? Refinement of the site series surrogates (e.g. particularly with improved Big BEC; eliminating GIS slivers)
 - b) How should we address deciduous site series surrogates? Could be a product of conversion of a conifer-leading SSS, and currently have no RONV target associated with them.
 - c) What are the appropriate groupings (if any) of ecosystem types?
 - d) Can you crosswalk from site series (TEM) to SSS? (bring forward spatial example, e.g. overlaying SSS maps on TEM) and examine success of previous crosswalk attempts.)⁴
- 2) We recommend that there be a workshop to examine the immediate and practical barriers and solutions created by the interim targets towards achieving our goals for full

⁴ One source of information is the detailed vegetation information from old SPs for areas that have since been logged.

EBM implementation. We need to connect the policy and science around this question. Bring examples to illustrate the problems.

- 3) We recommend that this workshop group have discussion on the two missed agenda items as webconference:
 - i) Decision support tools, including Bayesian approaches
 - ii) Achieving RONV while natural disturbance continues.

Recommendations on spatial deployment

The following recommendations were agreed to by the group on Day 2:

- Conservation principles are the guides that we use for achieving these targets. (Action item: Karen Price, Chuck Rumsey, Rachel Holt, Ken Dunsworth and Laurie Kremsater to craft outline of conservation planning principles specific to the coastal context and drawing on the information presented at the workshop)
- Need a centralized approach for the information to meet the targets operationally (Action item: Ken Dunsworth will forward information on location of data)
- Need training sessions for GIS people and for planning foresters
- Need a tracking system for aspatial reserves (multi-licensees in a landscape) to identify when we are approaching thresholds.
- Draft ungulate winter range and focal species information should be used to guide spatial identification of reserves.
- As much as possible spatialize reserves.

Adaptive management recommendations

The following adaptive management questions and approaches were developed by the group on Day II, to be forwarded to the EBMWG:

- 1) Establish some experimental watersheds (include more complex ecosystems)- set up variations on the themes of ecosystem representation and test them. Set up comparisons to answer key questions:
 - a) Ecosystem representation- how does it influence goals?
 - b) What is the influence of pattern?
 - c) Stand level retention-how does it influence recovery? (chronosequence)
 - d) Global climate change
- 2) How does stand-level retention contribute to recovery over time at the watershed scale, compared to clearcuts and watershed-level reserves?

- 3) Consider vertebrate species response curves to retention for local (i.e. Coastal) species?
- 4) What are the drivers of processes and functions at different scales? Integrators of these processes and functions that might function as early warnings of change in the system?
- 5) Consider paired retrospective studies of the thresholds presented. We could use the Phillips landscape unit to get indicators of ecosystem integrity to look at the watersheds that have had extensive harvesting.
- 6) Re variable retention:
 - a) What is variable retention providing as habitat?
 - b) Are there major edge effects within aggregated variable retention?
 - c) What is the best way of implementing variable retention (e.g. types and amounts of retention)?
- 7) Is stand restoration effective at creating desired structures and ultimately restoring species distributions or numbers where old growth is rare?
- 8) Are Low Risk landscapes established in the most appropriate locations?
- 9) Is biological richness maintained over the sub-region?
- 10) Vulnerable species-what kind of species do we think that these are?
- 11) Recommendation to do adaptive management in concert with research that could help us to link between scales. (e.g. use systems where you can look at multi-generational responses)
- 12) In a retrospective study, how would you assess the maintenance of ecological integrity (Bruce Marcot's work)? Look at time lag effects (do we see them, can we quantify them?). Are there really thresholds, or are they time lag effects? Do comparisons with current stands and harvested stands.
- 13) What are old growth benchmarks and to what extent have the ecosystem recovered? CWD, epiphytes, soil fauna; consider existing "ecosystem recovery" research project.

The following questions were discussed the first day:

- 1) What did studies that didn't find thresholds tell us about functional group responses to habitat loss, which we can't see from looking only at the studies that considered thresholds?
- 2) Using Bayesian statistics for formal assistance in making decisions in the EBM implementation context; needs formal decision support.
- 3) Need to test the 70% RONV hypothesis using not just habitat for species, but ecological function. For example, consider some of Carr's work on indices, Sybille Haeussler's work on soil nitrogen and change in stable state.

The following questions and comments were noted by participants on cue cards forwarded to the conference organizers, but were not discussed by the group.

One author made four points:

- 1) **Truly rare ecosystems:** What makes “truly rare” ecosystems as opposed to just rare? This presumes that some of the rare set are “falsely” rare, what constitutes the falseness? One approach at a landscape Unit level is to tally all TEM site series up to a total of 2% (choice) and deem them rare and requiring 100% protection (no ecological rationale - just an apparently good thing to do).
- 2) **Site Series Groupings:** There is little evidence that organisms are completely restricted to individual site series, particularly among various “erram-mesic” site series. A practical approach is to base groupings on relative abundance of indicator species, see Huggard Weyco Ecol. Rep. Analysis.
- 3) **Stand Level Retention Counting:** In counting stand level retention and the requirement for adequate inventory and assurance of representativeness – Inventory should include elements we don’t currently inventory (deadwood) and should focus on key structural attributes and these are ecol. more important than accurate match of spp. Sph, size class distribution of live trees. Should work to “over-capture” elements with high ecological values and low economic value.
- 4) **Retention Counting:** To stimulate a variety of retention let all retention (above 15% min) count towards landscape targets proportional to the retention. Perhaps consider only group retention counting below 40%.

Other participant comments:

- 5) **Re: topic relating organisms to ecological integrity:** One body of work that may help tease out the equivalence between abundance or presence of organisms to function is the “ecological function” database of Bruce Marcot (USDA Forest Service)
- 6) **Bayesian approach to applying EBM to make decisions:** I agree with this idea and think that it may be more usefully applied by the EBM Working Group sooner rather than later. You could recast the paper in a BBN (Bayesian Belief Network) and combine it with utility function (integrity), economic or social value. You could link this to a database of operational targets or outcomes, and use the combination to test: What scales could highlight problems in achieving the targets? What management actions would be incongruent with EBM goals?
- 7) **Stand Level targets:** Given that most stand-level reserves are small, fragmented and subject to disturbance (e.g. windthrow), is it appropriate to include these areas in ecosystem level targets? Rationale seems weak for doing so. What do the targets mean “on-the-ground”? Has anyone taken a sample LU and analyzed this considering overlapping constraints, PAs, operability, etc.? If not why?

Next steps

Agreed-to next steps include:

- Completion of workshop proceedings, which will include a separate summary of recommendations up-front.
- Revisions to the draft paper, producing two versions: one in the paper in its current format with comments from workshop incorporated, and one including only the landscape-level information as a JEM publication⁵.
- A Forrex LINK extension note summarizing key recommendations from the workshop to be published in the next issue of LINK⁶.
- Web-conference follow-up by the group on the Bayesian approaches and achieving RONV while natural disturbance continues.
- Karen Price, Chuck Rumsey, Rachel Holt, Ken Dunsworth and Laurie Kremsater to craft outline of conservation planning principles specific to the Coastal context and drawing on the information presented at the workshop
- Ken Dunsworth to forward information on location of data

⁵ The reason for this approach is that the landscape-level discussion is the new information brought forward by the paper, Dave Huggard's work is already published elsewhere.

⁶ There has subsequently been discussion of publishing the summary as a JEM article, with the full paper published in a non-Forrex journal.