

2017 COASTAL SILVICULTURE COMMITTEE
WINTER WORKSHOP
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UNCERTAINTY RELATIVE TO THE TSR PROCESS

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Good morning!

When I was approached to speak at your workshop, I understood that members of the board were interested to learn more about the work Martin and I have been doing on uncertainty as it relates to the Timber Supply Review (TSR) process.

So I have structured this presentation to tell our TSR story, to put forth some assertions about uncertainty, and to stimulate questions from you. So we plan to present for half the time allotted and to answer questions for the other half.

By way of an outline, I will first provide some historical context to uncertainty in the TSR process.

Secondly, I will explain what is meant by uncertainty and why it needs to be accounted for.

Thirdly, I will tell you about some of the work Martin and I have undertaken since the beginning of 2014.

Fourthly, I will relate uncertainty in the TSR process to coastal silviculture. And,

Lastly, before opening the floor to questions, I will make some assertions about the TSR process that we hope will stimulate questions and will provoke discussion.

So I thought I would start by briefly sharing with you my journey since retirement and what led to my interest in uncertainty in the TSR process.

I had a wonderful 40-year career with the B.C. Forest Service. During my last ten years I experienced radical budget cuts and changes in policy that I saw as being detrimental to the forests and to the life within them.

So, when I retired in early 2010, in gratitude for my career, I committed to a year during which I would tell British Columbians what has gone wrong in forestry and what I thought they needed to know. That year has turned into five and my mission is unfinished.

I remain unaligned with any NGO or provincial political party. I am associated with CommonsBC. I have written opinion editorials and letters as a resident, sometimes as a forester.

Questions are powerful. As the old Chinese proverb says, “the power is in the question”.

So, I have also written the estimates questions for the Loyal Opposition for five years, regularly reminding the opposition forestry critic that I would do the same for the forests minister if he were in opposition.

Independence has allowed me to develop a broad network of contacts. After about three years, I realized that NGOs worked in a way similar to the legislation that drives the Forest Service. The approach is Cartesian with little understanding of the relatedness and inter-connectedness of all life . . . The web of life.

Each NGO fundraises and lobbies for change in its area of interest: some for grizzlies, some for salmon, some for water, others for old growth, etc.

I thought about what was the one common thread that acted as an impediment to the concerns and aims of most environmental NGOs as well as to the government’s overtures on “sustainable forest management”.

So what is that thread?

Before I left the ministry’s Inventory Branch in 1995, I was the supervisor for database management and reporting, responsible for the quality assurance of attribute data supplied to the planning staff that produced timber supply scenarios for Allowable Annual Cut (AAC) determinations.

My experience in inventory taught me much about silos within the Forest Service. Ironically the greatest silos existed among four areas of forest management that one would think had more to gain from working together than from working in competition with, and in isolation of, each other.

Those areas were inventory data management, timber supply analysis, silviculture, and growth modelling -- all related functions within different branches at that time.

That acrimonious history is part of the context to uncertainty in the TSR process.

Of course uncertainty stems from other factors as well, such as budget cutbacks in 2002, staff attrition and loss of corporate memory.

In particular, no one factor has contributed more to uncertainty than the absence of independent, third-party auditing of the timber supply review process, which relies on inventory data and growth models.

So I concluded that the common thread that relates these functions and acts as an impediment to the work of environmental NGOs, of forest planners and of forest managers is the timber supply review process that derives its legal legitimacy from the *Forest Act*.

For Martin, the path to enlightenment was through his consulting work involving the analysis of silvicultural data and the quantification, validation and verification of forest carbon offset projects.

Investors want uncertainty accounted for. Independent, third-party auditors ask penetrating questions to identify uncertainty and material errors.

For these forest carbon projects, auditors question the uncertainty and material error related to growth modelling, site productivity and biomass conversion. Martin found the forests ministry unable to answer their questions.

So Martin and I approached each other, literally, and at the same time. He called me just as I was about to call him. From then on we have had a meeting of the minds.

Many of you will remember the Pedersen-Errico provincial review of timber supply. In 1999, Darryl Errico published an internal report requested by the chief forester and titled, *Review of the Application of Forest Inventory Audit Information in Timber Supply Review Timber Supply Analyses*.

Ironically, as we will point out at the end of the presentation, many of Errico's observations in 1999 are still true today and contribute to uncertainty in the TSR process.

For example, take this observation: *statistical concepts (such as "statistical significance") relating to the interpretation of inventory audits are either poorly understood or mis-applied by many users of the inventory data.*

So before I get into specific assertions about uncertainty, let me first give meaning to the word.

We are using the term uncertainty from the standpoint of auditors in the world of financial investment in natural resources including timber and carbon.

Carbon is the best analogy because there is little difference between estimating for carbon and timber; the only difference being carbon is measured in tonnes and timber in cubic metres.

Yet the process for estimation of carbon sequestration for carbon offset projects is subject to independent, third party audits whereas the timber supply analysis process that informs AAC decisions is not.

The same inventory data and the same growth models are used for timber and carbon estimation. Therefore, the auditing questions around accounting for uncertainty and material error that apply to carbon estimation also apply to timber estimation.

The web site of the U.S. Securities and Exchange Commission is informative about uncertainty. In its briefing the commission defines financial uncertainty as *a state of limited knowledge where it is impossible or impracticable to describe exactly an existing state or a future outcome*.

The Commission goes on to say: *uncertainty exists where measurements “to a large extent . . . Are based on estimates, judgements, and models rather than on exact depictions”*.

The chief points to understand about uncertainty and material error from the auditor’s point of view are transparency, disclosure, and accountability. The TSR process fails on all counts.

Take for example, managed stands, the management of which the government abandons after a declaration of free-growing status. Is this uncertainty accounted for?

Look at the disparity between the provincial timber harvest (regulated by AAC) and the actual provincial AAC determined by the chief forester. The actual provincial AAC is consistently higher. This difference is economic fiction. Is it a result of material error and uncertainty in the TSR process?

One can take any TSR and find uncertainty that is not accounted for. For a really simple example, let’s take the recent AAC determination for the Bulkley TSA.

The TSR for the Bulkley TSA was completed in 2012.

One year later, in 2013, the forest inventory for the Bulkley TSA failed quality assurance to ministry standards.

The chief forester’s AAC determination and rationale were completed in 2014, one year after the quality assurance report.

The quality assurance failure of the inventory is not mentioned in the TSR data package, which makes sense given the date of the quality assurance report.

However, the quality assurance failure of the inventory is also not mentioned in the chief forester’s AAC determination and rationale, which makes absolutely no sense given the date of the quality assurance report.

Given professional reliance at work, we can assume ministry staff made the chief forester aware of the quality assurance failure of the inventory.

Therefore, the uncertainty associated with an inventory that does not meet the ministry's own standards of quality goes unmentioned and unaccounted for in an AAC which will be in effect for ten years.

This could not happen under the scrutiny of an independent, third-party audit of the TSR process and AAC rationale.

Martin and I are not the only persons in B.C. to be questioning uncertainty in the TSR process.

The municipality of Grand Forks passed an AAC resolution dealing with uncertainty.

The Association of Kootenay Boundary Local Governments passed a similar resolution.

Recently mayors from across the province at the Union of BC Municipalities' annual convention passed a resolution calling on the provincial government to re-evaluate how logging rates are calculated "so that stable long-term employment can be assured and watershed and wildlife spaces protected".

While local governments were pondering what uncertainty means for their communities, the forest critic for Her Majesty's Loyal Opposition put to the forests minister 42 questions relating to uncertainty in the TSR process.

The government answered these questions . . . Eventually, possibly reluctantly. Martin and I are reviewing these answers and will produce a rebuttal, question by question, that we will circulate to the provincial government, to local governments, to the Forest Practices Board and to B.C.'s Auditor General.

Other work underway includes working with lawyers to craft a complaint for submission to the Forest Practices Board on how uncertainty and material error in the TSR process also affect resource management and planning decisions that fall under the jurisdiction of the *Forest and Range Practices Act* (FRPA), such as silviculture.

We are actively engaged with the Office of the Auditor General to which we recently made a presentation that we understand to have been very well received.

So how will all this affect coastal silviculturalists? I suspect that if uncertainty and material error were to be properly accounted for in the TSR process under the scrutiny of independent, third-party auditors, we might see adjustments to coastal AACs, which are declining, as is the coastal timber harvesting land base.

So my question to you is this: As coastal silviculturalists what are you managing and on what land base?

Surely you are not managing for timber alone? Timber is an output. General Motors does not manage vehicles; it manages the inputs to the production of vehicles.

- decisions should not be based solely on the results of a single null hypothesis significance test;
3. Fails to account for the uncertainty associated with not incorporating the effects of climate change into the growth models, particularly in the area of forest health; and,
 4. Has never been subjected to an independent, third-party audit. Given the above, it would not likely pass such an audit.

Martin and I thank the board for the opportunity to present and you the audience for your forbearance. Now, let's have your questions.