TOP 10 FORESTRY FABLES

By Jim Pojar

Jim Pojar, forest ecologist and a director of the Northwest Institute, spoke to students at the Smithers Senior Secondary School

I am a real forest ecologist, and I've worked in the forests around here and elsewhere in B.C. for over 25 years. But I'm also just another middle-aged man who will be talking at you for an additional 45 minutes. Why are we here this morning? Is the issue the state or quality of forestry in B.C.? Well yes, but equally the issue is one of **critical thinking.** This is a good opportunity to bring the concept to the fore and to stress its importance.

> *"A critical thinker is someone who is able to think well and fairmindedly about his or her own beliefs and viewpoints as well as those which are opposed. The critical thinker does not just think hard about these beliefs and viewpoints, but explores and evaluates their adequacy, logic, cohesion, and reasonableness."*

The critical thinker also asks what is the evidence, what is the source, what are the implications, are there other opinions?

Critical thinking is expected of students but it is a skill that must be developed, it doesn't automatically and quickly develop of itself. Teachers or lecturers can help by incorporating critical questioning into their classes, but this group is too large and the time is too short to do that here. But at the very least I want you to try to pay close attention to the points and arguments, and to maintain a healthy skepticism---of everyone including me. And as a 'heads-up' I warn you that I too will be simplifying some of the issues.

10) "We don't do that anymore."

Oh yes we do---at least some undesirable things---but often on the other side of the mountain or the back end of the valley, where most people won't see it. It is true we don't do some things anymore, like clearcutting to the banks of salmon rivers or "progressively" clearcutting entire valleys (e.g., Kitimat Valley). And some desirable things (like partial cutting) we now do, but not enough.

9) Cut the trees to save the forest. *a.k.a.* Tough love: save the forest from itself.

Insect pests and fungal diseases will quickly destroy forests if not intensively controlled.

Some, such as Mountain Pine Beetle, definitely will quickly kill entire stands of mature trees, even vast forests, but they don't kill **all** the trees, and so-called control or management by extensive clearcutting in reality is **salvage** logging. Nothing wrong with

that, but it would be far more honest to call it salvage rather than control or management. Moreover, the forest will recover. Outbreaks of bark beetles and creeping root rots are natural processes in our forests. Insects and disease organisms are essential components of ecosystems. Many organisms (plants, fungi, insects, animals) depend on or benefit from patches of snags and dead wood. For example, bird diversity is higher in forests infested with dwarf mistletoe.

Sick or dead trees can be part of a healthy forest ecosystem; sick or dead forests can be part of a healthy forest landscape. The language of forest health (more accurately pest management) is rife with misleading and inappropriate terms.

8) Clearcuts imitate fires.

Clearcuts mimic natural disturbances such as bark beetle outbreaks, windthrow,wildfire. Clearcutting and other logging activities are substitutes for natural disturbances.

No they don't, no they aren't, not entirely. Even big wildfires have skips; trees (biomass, nutrients) are not removed from the site; fires have more biological legacies (live & dead trees, dead wood, stand structure); no roads; less soil disturbance; less siltation and impacts on aquatic systems.

Nevertheless, it is a reasonable model or strategy to use the type and intensity of historic natural disturbances to guide harvesting types and patterns.

7) As forests get old, they become unhealthy, decadent, and ultimately self-destruct.

Local mill manager, letter a couple of years ago to editor of *Interior News*:

> *"I agree that more pulp logs are showing up in our forests. However, it is not as you suggest that 'years of high-grading have left behind an overabundance of pulp wood' but rather the simple fact that our already old forests are getting older, resulting in naturally occurring mortality. Within a few years, these dead and dry trees turn into pulpwood."*

Not so. It **is** because they've been logging the best first, the pine-spruce stands, and are now more and more into stands dominated by subalpine fir. These subalpine fir stands were old (250+ years) 40 years ago when industrial-strength logging commenced in this region. Since then they have got older but they haven't incurred significantly more mortality. Mortality has been +/- offset by recruitment of young trees, and this dynamic, fluctuating equilibrium will persist for many more decades, barring stand-destroying disturbance.

6) We should cut down our old forests, as quickly as possible, and convert them to fast-growing plantations---because the old forests are full of dead and dying trees and losing value.

This argument is based on short-term and short-sighted economics. On the contrary, the old forests are perfectly good, healthy forests. They provide many ecological services (clean water, habitat for myriad organisms, recreational opportunities, and so forth). They also don't usually decline in value; more like money in the bank; mortality rates +/- constant, unless a stand-destroying disturbance occurs.

Also, the effects of logging on forest organisms are scale-dependent; the faster and more extensive the cutting, the greater the negative impacts.

5) Middle-aged plantations are biologically equivalent to wild oldgrowth forests.

No they aren't, at least not for all organisms. Maybe for many forest vertebrates (large animals), which tend to be generalists, but not for some lichens, fungi, canopy insects, flightless beetles and other specialist creatures that depend on or are closely associated with the oldgrowth stage of forest succession.

UBC's Dr. F. Bunnell and collaborators maintain: Communities and ecosystems are concepts not reality, so we shouldn't monitor them. *"Species are a surrogate for biological diversity. Vertebrates are useful indicators of species diversity. There are also compelling ecological reasons for selecting terrestrial vertebrates as a surrogate for biological diversity."*

On the contrary, the focus on species, indeed on only certain groups of species, is ill-advised and will inevitably result in negative consequences for some taxonomic groups. Making biodiversity synonymous with species diversity trivializes the broader meaning of biodiversity, and promotes misconceptions of conservation issues. Thorough sampling, inventory, and monitoring of species and populations require far too much time and effort to underpin a practical conservation strategy. Management for biodiversity must concentrate on the **ecosystem** and landscape levels of organization: coarse filter strategy, with tactical application of the fine filter.

The views of Simberloff and some other well-known academic ecologists: *communities/ecosystems don't exist and cannot be delineated, so a large degree of species loss and substitution of one species for another is perfectly acceptable. When an ecosystem collapses, due to disturbance or changing conditions, no great tragedy. The species simply reassemble a new, more appropriate ecosystem.* Some foresters and range managers readily warm to these views, which also provide a platform for demagoguery (Forest Alliance, Share B.C., Wise Use crowd in USA). The line goes something like: *it doesn't really matter what species make up a forest, or how old it is, as long as it functions like a forest. So quit whining about change.*

John Janovy has written: Our attitudes regarding vertebrates (birds, mammals, fish, snakes, amphibians) are conditioned by how we humans view the world. Humans are large, short-sighted (not near-sighted; as opposed to forward-looking), very intelligent animals. Being large, we see other large animals and large plants before we notice smaller ones, and typically we need to learn how to look for small organisms before we notice them at all. The smaller they are, the worse the non-recognition. But the vast majority of living things are tiny, microscopic. Thus we are predisposed to ignore most of the living creatures on Earth---"the little things that run the world."

Being short-sighted, most of us respond to immediate environmental changes (light, heat, noise, other people). And tend to ignore more distant factors. Most of us spend most of our time worrying about or being happy about and reacting to events that occur over a day or week. Language and culture give us the power to act over long distances and times, but our short-sightedness blinds us to consequences. We consume resources (water, fossil fuel, trees) without worrying too much about long-term supply.

Being intelligent animals, we can try to alter these perceptions and change this state of affairs.

4) Selective logging is the only acceptable and ecologically responsible way to harvest trees.

This follows from the illogical statement: *"Clearcutting looks bad, therefore it is bad."* Ha! Talk about uncritical thinking. And what would be the consequences? Among other things, hundreds of thousands of kilometres of roads.

3) Old growth forests can be re-created fairly quickly through management by humans.

Bunnell and others: *"…other than abundant arboreal lichens, features of late-successional stands can be created at much younger ages through modified silviculture."*

No they can't, not entirely. Silvicultural interventions (gimmicks) alone cannot re-create oldgrowth. Humans cannot restore oldgrowth ecosystems simply by letting clearcuts and plantations grow back and by managing for oldgrowth structure (large trees and snags). Some characteristics of fully functional oldgrowth forest can only be re-established if 1) there is an adjacent block of undisturbed forest that can act as a source area for species and unaltered interactions; and 2) if the forests are given enough time to fully recover from disturbance (especially in wet regions with long intervals between stand-destroying disturbance).

Forest ecologist Andrew Carey: *"Old growth is a unique, irreplaceable, perishable resource."* Perhaps; time will tell.

But if you do partial cutting (or clearcuts with reserves = variable retention) recovery time can be much shorter.

2) Intensive forestry can greatly increase wood production in second-growth forests, and therefore we should increase the amount we log----now.

No it can't, at least not everywhere. Claims for turbocharged productivity in second-growth forests tend to be extravagant. The investment economics are also not favourable. However, there is evidence for faster growth in some second-growth forests, on some sites. And intensive forestry can generate jobs. But it makes little sense to increase the cut **now** in the belief that 50 years from now there will be more wood available than we originally thought.

I once gave a non-conforming talk at a conference whose goal was to *"create a blueprint for doubling the productivity of Canada's working forests by the year 2040, while enhancing other forest values."* Can't be done, not both things, they tend to be mutually exclusive.

"Intensive forestry" typically refers to spacing, brush control, thinning, pruning, and fertilization; sometimes also to genetically improved stock. Reducing density cannot increase volume; what you get is a certain 'piece size' sooner. Fertilization and genetic improvements can increase volume, but usually not much more than 5% or so; they work well only on some sites; they usually don't pay; makes more sense usually to allow stands to thin themselves and develop naturally.

Commercial thinning can be much more productive (captures mortality) and cost-effective---and has great promise.

And why do foresters tend to automatically translate projections of more wood in 2d-growth stands, to more wood to cut? Why not view it as a many-faceted bonus, providing resource managers with more flexibility? For example, more flexibility to designate wider riparian corridors, to pull back from high elevations, to use longer rotations.

1) The Forest Practices Code ensures that forestry is practiced sustainably in British Columbia.

The World Commission on Environment and Development (1987) considers **sustainable forestry** to be the balancing of ecology and economics to meet current human needs while protecting the ability of future generations to meet their needs. This is the goal embodied in the preamble to the Forest Practices Code of British Columbia Act (Bill 40 - 1994).

> *Whereas British Columbians desire sustainable use of the forests they hold in trust for future generations; and whereas sustainable use includes*
>
> *(a) managing forests to meet present needs without compromising the needs of future generations,*
>
> *(b) providing stewardship of forests based on an ethic of respect for the land,*
>
> *(c) balancing productive, spiritual, ecological and recreational values of forests to meet the economic and cultural needs of peoples and communities, including First Nations,*
>
> *(d) conserving biological diversity, soil, water, fish, wildlife, scenic diversity and other forest resources, and*
>
> *(e) restoring damaged ecologies (sic);*

But how can such definitions be measured and evaluated, and at what scale (stand, watershed, landscape)? What is meant by human needs, and are current levels of human wants and needs realistic and sustainable? The preamble is a worthy beginning, but after that the B.C. Forest Practices Code (FPC) provides little clarity, specificity, or meaningful elaboration about sustainable forestry, and a pile of stuff about regulations, guidelines, procedures, compliance, plans, prescriptions, permits, approvals, appeals---the command-and-control approach to resource management. Perhaps we shouldn't expect FPC to define sustainability. Fundamentally the Code provides standards (often minimum standards) for forest management practices (many of them status quo), rather than a vision of or guide to sustainable or exemplary forestry. At least that's my opinion, others would disagree. Internationally acceptable? We'll see.