Enrichment Forestry at Windhorse Farm

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INTRODUCTION

Although the name "Windhorse" was adopted in 1990, the forestry experiment commonly known by that name has been going on here since 1840, when Conrad Wentzell settled in this valley on what is now called Wentzell's Lake. After four generations of careful land management in the Wentzell family, this path of land stewardship was generously pointed out and handed on to Margaret and Jim Drescher in 1990.

Since that time, our understanding of the Acadian Forest has increased as our experience in this place has deepened. Some folks visit here and guess, "This must be 'sustainable' forestry?" Of course, it's far too soon to know about that. The experiment is less than 200 years old, just a blink of the eye in the life of a forest, even for the relatively young (less than 15,000 years) Acadian Forest.* All we can say is that the experiment is well under way. On the other hand, in terms of a human life-span, the duration is quite extensive; in fact, it is the longest-standing experiment in sustainable forestry in Canada. As one friend puts it, "Windhorse is on the leading edge of something very old."

FOREST DESCRIPTION

The Windhorse Forest, in the beautiful and peaceful LaHave River watershed, enchants even the most objective visitors as they wander in the brilliant green softness of the forest floor, which comprises several dozen species of mosses and liverworts. The tall mixed-species tree canopy filters the sun and interrupts the rain drops; the clear brooks tumble over rocks in harmony with the melody of bird songs. For many people, the tranquility and natural energy of this place is directly perceived in one's body even before the brain thinks about it. This "direct", or "non-conceptual" knowing is a first key to solving the riddle of Windhorse Forest. Before the conceptual mind kicks in and packages up one's experience of the forest, it's almost as if the feeling emerges that there is nothing missing at all in this wonderful interconnected system. Could it possibly be true that there is no problem to be fixed?

Although the forest includes 250 acres, only about 100 acres have been the subject of this project for the entire 168 years. Here are some facts about just that portion:

- In commercial terms, the annual growth increment is approximately 80,000 board feet.
- It has been logged 168 times, once a year since 1840.
- Approximately 7.5 million board feet of timber have been harvested.
- The standing merchantable timber volume is about two million board feet.
- If this 100-acre lot had been clear cut in 1840, and again in 1890, 1940, and 1990, the total harvest would have been, at most, 5.5 million feet, and the quality of the second, third and fourth harvests would have been much lower than the wood harvested by the annual selection methods. Of course there would be no standing merchantable timber today.

You can do the math.

GUIDING QUESTIONS

Unfortunately, in today's culture of short-term profits, few people have learned to care about how to maximize the yield from a forest over a period of a century and a half. Usually the question asked is, "How can we maximize the return on investment over the next decade or two or, better yet, how to can we get as much as possible in the next five weeks." If we took that attitude about the Windhorse Forest right now, what would we do? Faced with this pervasive short-term economic argument, what logic is powerful enough to maintain this Windhorse experiment? What logic might change the course of forestry in Canada? What effect would a truly beneficial long-term forest policy have on Canadian society altogether?

Perhaps we have to look beyond the financial and the quantifiable. Can we be more open-hearted and open-minded? If so, we can begin to experience the forest in its own terms and we begin to make some important discoveries: If this 100-acre lot had been clear cut every fifty years, it would be sadly deficient in diversity of flora and fauna; the long-lived, shade tolerant Acadian Forest species would be absent; there would be no heavy and dense trees so sought after by woodpeckers and woodworkers. If this 100-acre forest had been clear cut four times in the past 168 years there would no opportunity to see a 500 year-old hemlock, a pine board two feet wide, or bear witness to the harmony and interaction of countless life forms unable to reestablish their complex communities between 50 year "rotations". How could these realizations fit into the logic of a Canadian Forest Policy?

At least since 1990, and I suspect long before that, Windhorse Farm has been less about how to make money, or even how to do forestry, than it has been about exploring human nature and the nature of the forested world. We often reflect on the ethical frameworks that motivate our lives and our activities in this world, and we have discovered that this place in the forest is very provocative in that regard.

ECOFORESTRY, A RESOURCE MANAGEMENT ETHIC

Upon arriving here, we plunged into the project, guided by a resource management ethic strongly influenced by Aldo Leopold, a childhood hero from my home-ground of Wisconsin, who articulated a land ethic, proclaiming, "*A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community and wrong when it tends to do otherwise.*" The question that rose to the top for us was, "How can we make a living in this place while respecting, and not harming, the other life forms that are also trying to make a living here?" In these early days of our tenure, we called our forestry style "ecoforestry", short for "ecosystem-centred economic forestry". In addition to working in the forest here and setting up a small-scale, labour-intensive sawmilling and wood products manufacturing business, I got involved in FSC Canada, serving on its initial Board of Directors as well as on the Acadian Forest regional standards writing committee. The motivation for all this early activity was a love affair with ecoforestry and a desire to demonstrate its forestry solutions. It was a time of intense learning about views different from my own, and about the virtues and frustrations of consensus decision making. In spite of recent disappointment with the direction of the FSC, Windhorse maintains its FSC certification, both for its woodlands (forest

certification) and its manufacturing operation (chain-of-custody certification). In addition, we hold the much stricter regional certification with Nagaya Forest Restoration.

THE ECONOMICS OF ECOFORESTRY: WEALTH

One of the most important results of our engagement with ecoforestry in this experiment has been how we understand forest wealth. This has come out of much reflection on the "economic" part of ecoforestry. What is wealth from the forest's point of view? How is wealth created? How is it lost? How is it conserved? Early in the analytical process, we realized that wealth, from the forest's point of view, is biological material. The creation of this wealth is both a cause and a result of a healthy forest, rich in biodiversity and heavy with stored carbon (more about this in a moment). The key to long-term forest health is the retention of wealth after it has been created. Retention depends on the efficient and flexible functioning of the entire interdependent web of life, which is the forest itself.

Of course, forest wealth is only created at one point, the point of photosynthesis, where sunlight is incident on chlorophyll. After that, it can be redistributed, made more complex and diverse, or lost, but it cannot be created. In other words, the forest's creation of wealth is a self-existing, natural process which we can encourage, but we cannot initiate. That encouragement to maximize the growth in forest wealth requires maintaining a forest structure that optimizes the total surface area of chlorophyll. Interestingly, or perhaps obvious to keen and insightful observers, the natural structure of the Acadian Forest does, in fact, do just that. The species-diverse, tall and multilayered canopy, along with a great variety of ground vegetation, offers tremendous opportunity for the transformation of solar energy to biomass. This is what ecologists call primary productivity and what carbon accountants call sequestration. In turn, conserving that wealth is dependent on the very slow decomposition of huge volumes of dead wood. These observations seem to lead us toward seeing good forestry as a natural outgrowth of understanding and experiencing time-tested forest processes. Maybe there really is no problem to fix.

From the point of view of prudent long-term forestry economics, one wants to lose as little biomass as possible. Since forestry business usually involves selling biological material (e.g. stumpage, logs, lumber, or other wood products), it actually is in the business of trading real wealth - forest wealth - for money. As long as one needs cash to buy what one doesn't make, or can't do without (e.g. beer or gasoline), one must give up some wealth to get the cash. Ordinary logic dictates that one should give up as little wealth as possible to get the desired money. That requires maximizing "dollar-to-biomass" ratios for all wood products removed from the woodlands. One of the slogans at Windhorse Farm is "Never sell cheap biomass" and this means we don't sell pulpwood, sawdust, firewood, logs or low-quality lumber. One might object to this, saying, "Don't you think making paper is important?" Actually we wouldn't have any reticence to sell pulpwood if the price were about 10 times higher than it is now, but at current prices we would have to give up a tremendous amount of forest wealth to get a little money, which is clearly not a good deal, either for us or for the forest. We are continually working to add dollar value to, and subtract wood volume from, all products sold from Windhorse Farm. Needless to say, from this point of view, practices such as burning brush or otherwise "cleaning up" the woodlot are like taking hundred dollar bills out of your bank account and burning them in your fireplace to heat your house.

THE ECONOMICS OF ECOFORESTRY: CARBON BUDGETS

Another critically important aspect of the economic side of ecoforestry, which is now talked about even in the mainstream press, is the carbon cycle. Carbon sequestration is moving carbon from a gaseous state (CO2) into a solid state (complex organic carbon compounds) by means of photosynthesis in green plants. Remember that from the forest's point of view, this is the point at which wealth is created. Similarly, from the point of view of carbon budgets, this is "income". After being sequestered, the carbon tied up in biomass could be thought of as "in the bank" or in the so-called "carbon sink". In turn, as biomass is burned or slowly decomposes, the solid carbon compounds are transformed back into CO2. This loss of wealth is the "expense" side of the carbon accounting statement.

Life-threatening climate change is largely a consequence of the accumulated deficit in the global carbon accounts, in other words more CO2 being lost into the atmosphere than CO2 being tied up in green plants. So, for both forest health and climate stability, it is advantageous to increase carbon sequestration and slow the flow of carbon through the carbon sink, thus reducing the loss of CO2 into the air. The locking up of vegetation (later turned into coal, oil and gas) in the Carboniferous Period, roughly 300 million years ago, was a terrific way to reduce "expenses". That provokes the question, "What forestry practices are most likely to do this today?" This is a critical question, just as important as the more common query about how to maximize carbon sequestration. At Windhorse Farm, we are actively investigating both these questions. What have we found?

First, maximizing carbon sequestration, over the long-term, involves determining what forest composition and structure which will maintain the greatest surface area of chlorophyll over the long term. It just so happens that the natural Acadian Forest came up with the optimum solution, on its own, over its 15,000 year evolution. Good forest management will maintain that "natural" composition and structure.

Second, the best method for reducing the loss of carbon as CO2 is to maintain the forest that holds the greatest amount of carbon in the "sink" at any one time. It should be no surprise that this is the same composition and structure that maximizes sequestration and is the same thing that maximizes biodiversity. Another way to slow the flow through the sink is to turn harvested wood into products that have a long lifespan, e.g. fine furniture or musical instruments. The possibility having perhaps the greatest promise is the small-scale, low-temperature production of charcoal for agricultural fertilizer. In addition to tying up carbon, this could greatly reduce the use of petroleum based fertilizers, further reducing the carbon "losses" by reducing the use of oil.

What I am trying to point out in this brief discussion is that a clear understanding of the economics of ecoforestry is essential if one is to engage effectively in the public discussion of forest policy.

RESTORATION FORESTRY, AN ENVIRONMENTALIST ETHIC

While our "economic ecoforestry" enquiry at Windhorse Farm was quite fruitful in terms of the insights it inspired, we found the term "ecoforestry" gradually lost its usefulness in the same way "sustainability", "stakeholder" and "model forest" lost much of their meanings when they came to be used widely as promotional rather than technical terms. When this erosion became apparent to us, we started focusing on one aspect of ecoforestry which we always considered primary - "forest restoration".

An historical aside, not unrelated to the Windhorse Forestry experiment, is that one of the two fundamental themes of the Acadian Forest Regional FSC Standard, as endorsed by FSC Canada and the International FSC Board, was restoration of the "pre-contact" (before the European invasion a few hundred years ago) Acadian Forest. Along with the other dominant theme, "full cost accounting", in the originally-endorsed regional standard, forest restoration has recently been expunged. This is unfortunate from the point of view of climate change as well as forest health and community well-being. This is part of a long and fascinating story about the development of regional FSC standards, which has been recounted in detail elsewhere. It is mentioned briefly here because of the mutually beneficial exchange of insights and experience between Windhorse and the regional FSC standards-writing committee.

The next phase of thinking in the Windhorse experiment was "Forest Restoration and Restoration Forestry". In other words, our question became, "How can forestry practices be used to accelerate the natural processes of restoration of indigenous ecological diversity?" In certain respects, this represented an ethical shift from "How can I make money without doing too much damage?" (resource management ethical framework) to "How can I use forestry methods to restore the natural Acadian Forest?" (forest environmentalist ethical framework).

Interestingly, what we actually did in the forest didn't change much as our view shifted, however, what we removed from the forest became more clearly a by-product of our restoration work, and the purpose of our work came into clear focus: to restore the fully functioning mature Acadian Forest that existed here before European contact. We examined the few remaining vestiges of old growth on sites similar to ours and tried to hone our understanding of the forest parameters that best embodied total ecological diversity.

This brief chapter cannot accommodate a complete description of this restoration forestry philosophy, but here is its essence:
"*The forest, itself, is the primary product*. The forest is an infinitely complex interdependent web of life, which is well described in terms of its ecological diversity. The practice is to restore and protect the total indigenous ecological diversity, which has four components: species diversity, genetic diversity, structural diversity, and age/size diversity of trees."

RESTORATION FORESTRY: 5 MANAGEMENT PRINCIPLES

In order to make forest restoration simple enough to be manageable, we had to find a few diagnostic parameters. Structural diversity, the distribution of biomass above and below the ground, turns out to be more directly correlated than the other three components with total ecological diversity. Within structural diversity the three most important parameters are canopy height, canopy closure and dead wood. If we add in species diversity and connectivity (unobstructed pathways for travel of animals and spread of plants and other organisms) we have only five things to think about and manage for. These five have become the Windhorse management principles.

1. Maximize canopy height. The thicker the forest layer, from the tops of the tallest trees to the depth of the deepest roots, the more opportunity there is for abundance and diversity of life. Reducing the height of the canopy, for example by cutting the tallest trees, reduces the existing ecological niches.

2. Keep canopy closure, a measure of how much sunlight is intercepted before it can reach the ground, to the natural range in the mature Acadian Forest. The natural canopy closure, 65% – 80% closed, has evolved in synchronization with the existing biodiversity. Abruptly changing it will automatically reduce the diversity.

3. Maintain volumes and distribution of dead wood very close to those found in the old-growth reference points. Our slogan is "Dead wood is the life of the forest." Almost half the animals in the Acadian Forest live in or on or from dead wood. Reducing the volumes or changing the natural distribution of dead wood degrades the habitat for much of forest life.

4. Don't do anything to reduce species diversity. For example, don't harvest or disturb relatively rare species, even within very small areas.

5. Maintain connectivity, or enhance it where it has been diminished. Corridors of connectivity are the pathways along which animals and plants travel and disperse. Allowing ecosystems to become fragmented (the opposite of connected), at any scale, is the beginning of ecological collapse.

Forestry methods, based on these restoration principles, are very doable and very effective. We teach the many details of how to implement these management principles at Windhorse Farm. The "restoration" hypothesis is that on all land where these methods are practiced carefully and effectively, there will be a steady movement toward a more naturally diverse, structurally mature, fully functioning Acadian Forest.

ENRICHMENT FORESTRY: A BUDDHIST ETHIC

A few years ago, I was in the midst of writing a book on Forest Restoration and Restoration Forestry with Tegan Wong, a land stewardship colleague from New Brunswick. We were putting all the chapters together when both of us, independently, recognized our discomfort with something we couldn't really put our minds on. After a period of reflection, we came to similar realizations: the whole restoration thesis was based on the dynamic of guilt and pride - guilt that we humans had messed things up in the first place, and pride that we thought we could fix the problems we had created. This is a classic environmentalist syndrome: "We are guilty of having created a problem and now we are obligated to fix it." Tegan and I reflected on whether we really wanted to base our thesis on these principles rather than on the more fundamental truth of "no problem". In other words, were there other principles more appropriate to our understanding and our intent? From that point on we started thinking and talking less about restoration. I also began to reflect on the moralism in Aldo Leopold's land management ethic as a root of this environmentalist syndrome.

What? Is someone finding fault with Leopold's Land Ethic? That's blasphemous! How could this sensible moral approach inhibit us as environmentalists in our aspiration to benefit this world? Well, it encourages the divide between camps of right and wrong

and perpetuates the battle between the forces of good and the forces of evil. By finding an enemy in "other", it tends to obscure the unaligned basic goodness of each human being and the underlying sacredness of the phenomenal world. In other words, moralism does little to dissolve the aggression that lies at the heart of all the suffering which is the root cause of environmental degradation itself. In fact, dividing the world into the good and bad can even become a further cause of painful ecosystem unraveling by solidifying conflicting opinions and oppositional behaviour.

Friends poked a bit at this change of view, asking, "Now what are you going to call this forestry you do here?" Of course, before knowing what to call it, we had to reexamine the philosophy, or "view". I felt a bit like a serial divorcee, first becoming separated from "ecoforestry", then undergoing the split-up with "restoration". What is the alternative to seeing a problem in the situation, and setting out to fix it? Is it seeing clearly that there is no problem - that is, no *fundamental* problem? This is the principle of "Nothing Missing". If one's perception is not ambushed by seeing a problem, then it can experience the fundamental richness that underlies it.

What is required, then, of our forestry practices is to reveal, or uncover, that underlying health, beauty and wealth *within our own minds* and within the forest itself. In other words, what appeared as a problem was, in fact, mere confusion about the fundamental reality. Rather than fixing a problem, the challenge became one of unwrapping our direct experience of the undeniable "isness" or inherent "sacredness" of the forest. The forest is as it is, and our feelings or opinions about it exist only within our own habitual ways of seeing. Therefore, the primary forest practices at Windhorse Farm have become ones that tend to connect us with the fundamental reality, which is experienced before we resort to judging and conceptualizing. This is the view of what we have come to call "Enrichment Forestry". Its basis is non-aggression, which is why we say it is a Buddhist view. It recognizes the inherent goodness in the forester as well as the fundamental richness of the forest. Enrichment forestry, then, is concerned with revealing what is already there, what has always been there, rather than correcting any perceived deficiency.

WINDHORSE FOREST PRACTICES

So the view continues to evolve, but it is interesting to note what, in addition to the fundamental richness of the forest, hasn't changed. Our actual forestry practices, on the ground, have remained pretty consistent even while their articulated logic, in terms of the view, has evolved somewhat. The following are examples of practices consistent with all three of the aforementioned views:

- Select trees for harvest based on which tree in a crowd is the slowest growing (maximize wealth creation);
- Never cut the tallest trees (increase canopy height);
- Don't open things up too much (maintain natural canopy closure);
- Don't cut trees of species underrepresented in that particular stand (conserve species diversity);
- Don't cut dead trees or trees that have fallen naturally (respect dead wood as the life of the forest);

- Don't harvest trees that have a relatively low dollar-to-biomass ratio, and move to the log brow only the most commercially valuable parts of the trees that are cut (conserve the wealth);
- Girdle many low dollar-to-biomass trees each year (increase the standing dead volume);
- Build and maintain slabwood/sawdust roads and slab walls. (avoid fragmentation and enhance connectivity);

In fact, at a quick glance it seems that little has changed**. Care and restraint still appear to be dominant themes, as they have been since the days of Conrad Wentzell. At the same time, real benefits, including rewarding jobs, still flow to the local community, and the financial bottom line remains positive. So was all this thinking about the view just useless philosophizing?

Perhaps it was; on the other hand, maybe it brought some useful clarification, a look beyond our conceptual blinders. Has this clarification led us to believe that the Windhorse forestry practices should be modified? At this point it seems that they don't have to change very much; not on the ground, at least. The important changes are in how we understand and experience mind and nature. That will require diligent study, keen observation, insightful analysis, resourceful generosity, and deep stillness practice. This stillness practice allows the body, breath and mind to rest peacefully within the depth of natural forest energy. These additional practices that attend this view of "nothing missing" involve foresters, woodlot owners and other landscape lovers hanging out in the forest a lot more: studying, observing, reflecting, working, and investing lots of time doing as close to nothing as possible. Should these be called forestry practices or forest practices? Or are they simply the practices of being fully human in the forest?

What is the result of this path of stillness practice? Since much of the experience is non-conceptual (before we think about it and before we speak about it), it is impossible to express precisely what it is, but it is how ordinary people can rediscover an intimate heart connection with the self-existing energies of "forest mind". When we make ourselves available, simultaneously wakeful and relaxed, we begin to live in that place of nothing missing, where there is no fundamental problem. The process of uncovering the underlying richness of a situation is much more delightful than working to make a living or working to fix a problem, even if the forestry techniques and tangible benefits may look the same from the outside.

We learned the view of "nothing missing" and the practice of stillness from the Shambhala Buddhist tradition. So in this Windhorse forestry experiment we have moved from a resource management ethic to an environmentalist ethic to a Buddhist ethic. Of course, these ethical frameworks are not mutually exclusive. In fact, there is some of the other two in each of the others, and although our journey through these different views has been presented here as linear, that is an over-simplification. Sometimes it is circular, and increased awareness is one result of thinking in circles, not coming to a conclusion. Although this may sound unscientific, inefficient or even wishy-washy, this patient curiosity is what allows surprising insights to arise. Our experience at Windhorse Farm has been a journey of increasing relaxation and delight, although certainly not without its gritty challenges occasioned by the habitual unwillingness to let go of preconceptions and self-importance.

EVALUATION OF THE EXPERIMENT: THE FIVE FILTERS ANALYSIS

This forestry experiment has evolved over the years and has served to clarify some forestry principles. We think it has more to offer in the future, but how can we really know whether we are learning anything, getting anywhere, or if this makes any sense at all? Any experiment needs to be periodically evaluated to ascertain its ongoing usefulness and benefit. Recognizing this, we have developed an evaluation method we call the "Five Filters Analytical Process", a fancy name for a common sense technique. In working through this process, we ask questions relevant to each of five filters (ecological, social, economic, spiritual, and magical). Although this can be a subtle and complex enquiry, a few basic questions can be asked quite simply. The following are examples drawn from a much more extensive list.

1. Ecological Filter: Are we causing harm to the non-human beings in this place or elsewhere? Is there tangible enrichment of the lives of other beings?
2. Social Filter: Does this experiment contribute to community harmony or to its opposites --- divisiveness, animosity, and territoriality?
3. Economic Filter: Does the forestry practiced here tend to build economic stability for this community (human and non-human) or does it pose undue hardships or financial risks that are likely to destabilize the local economy? Does it reflect ecological economics rather than market economics?***
4. Spiritual Filter: Can we notice an increase in kindness, compassion, and awareness among the humans involved in this experiment? Alternatively, do we see an increase in covetousness, aggression, and ignorance?
5. Magical Filter: Do the human beings here seem to be more connected to the peacefulness, as well as the hair-on-end zing, of forest energy, experiencing each tree and rock as alive and distinct, or do they tend to be isolated, dulled out and cut off from that "direct knowing" or "non-conceptual" experience of forest mind?

CONCLUSION

While our evaluation is incomplete and our questions still alive, today we wonder where this investigation and journey may take us. We really don't know, but it does seem possible that more will be revealed regarding how this experiment might bring benefit to human and non-human beings. The question we first posed when we came here remains unanswered. "Can the forestry view and practices in Canada be transformed in ways that result in less harm and more benefit?" As a result of our work at Windhorse, our question is now more focused, "What do the contemplative and meditative practices of this Windhorse experiment have to offer to individuals, communities, and our Canadian forestry culture?" and "How can Enrichment Forestry, and recognition of the reality of Nothing Missing, contribute to the creation of a healthy and peaceful society altogether?"

One thing can be said for sure: each day's walk in the forest is a fresh and enriching experience. Never have I taken the same route, returned to the same place, or perceived the same light, smells or orchestration of sounds as I did the day before. Somehow the depth of this forest mind keeps beckoning, enticing and inviting deeper into the experience of nothing missing.

So, for all of us engaged in this journey, the old adage holds true: the more we learn, the less we know. As foresters and land stewards, this is our constant reminder to

be very cautious in our harvesting practices and other activities on the land. While we have no final conclusions to offer to other land stewardship practitioners, our aspiration is that this Windhorse forestry experiment, begun by Conrad Wentzell 168 years ago, may continue to offer insights and inspiration for many generations to come. May many beings benefit and may the natural richness and energy of forest communities provide support for a healthy and harmonious society.

* The Acadian Forest is the very rich and diverse forest which lies between the Northern Hardwood Forest of New England and the Northern Boreal Forest. It is geographically coincident with the Canadian Maritime Provinces of Nova Scotia, New Brunswick and Prince Edward Island. It has been designated as one of six forests in North America that are considered endangered according to the World Wildlife Fund.

** Tegan Wong, one of the reviewers of this chapter, took exception to my claim that the practices have not really changed much. She comments, "What has changed in your forestry practices over the years is this respect for nature's timeframe and your experience and deepening relationship with the land. The Windhorse practices may not seem to have changed to an outsider, but I would say they have changed. Everyday, each decision is based on the evolving relationship between you and the forest. Even though the timeframe of your stewardship is short, you can feel if something is working or not and it informs the decisions you make down the road… The practices may change over time, but what seems to be consistent, and what informs the practices, is that each of you valued the relationship with the forest, and this relationship and deepening mutual understanding has allowed you to tap into the generosity of the forest. Indeed it has given more wood than it would have given through successive clear cuts because you respect and love it for much more than its wood!"

*** Linda Pannozza, author of the GPI Forest Accounts, comments, "I do have one suggestion having to do with the "economic filter". It seems to me that our current economic system is the reason behind the unfettered destruction of the world's forests, and that this is only possible because there is no logical link between the economic theory currently in use and the reality of the earth's ecological systems. So, it is this disconnect that allows us to destroy the earth, for the economy. David Suzuki once commented on this saying that our economic system should reflect the reality of our natural world. So, when we use GPI, or ecological economics, whatever you want to call it, there is a logical connection. I think the economic filter should include mention of this somehow."