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A PROTECTED AREAS STRATEGY FOR BRITISH COLUMBIA'S FOREST RESOURCES

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Abstract: The proposal is to formally protect 40% of BC's resource areas while maintaining the current timber harvest of ~ 70 MMM3. Retaining a minimum of 40% of the world's resources is essential to ensuring healthy ecosystems and human survival. The proportion protected by a particular country or nation would be based on their global status relative to the nature and extent of their resource capital, economic status and population demographics. All forest harvesting would be under the auspices of an internationally recognized Certification scheme.

Key Words: Protected-Areas; Tree-Farms; Woodlots; Ecosystems; Biodiversity; International; Demographics; Economics; Wealth; Prosperity.

Introduction: Achieving formal Protected-Area Status for a significant portion (i.e. 40%) of BC's natural resources is not only a desirable goal but one that is, relatively speaking, easily achievable. Reaching this goal is also essential to human survival. BC's inherent natural wealth which includes approximately 95 million hectares endowed with abundant, diverse natural resources populated by a relatively small, urban-centered population provides an unprecedented opportunity for realizing this goal. This natural wealth is complemented by enviable economic wealth and prosperity.

The goal, in outline form, is:

1. **That ~40 million hectares of BC receive some form of formal Protected Area status**

2. **That the AAC from BC's forests remain at or near 70 million m3 with this AAC derived from the ~20 million hectares of forested land designated as the Timber Harvesting Land Base as per the Chief Forester's TSR processes.[1]**

3. **That the Provincial Government adopt and implement a policy to achieve 40% Protected Area status for BC.**

4. **That this proposal receive strong support from not only the scientific community but all sectors of BC's population and Canadian and international support for same.**

[1] On a 20 million ha land base with a very modest MAI of 3.5M3/ha/yr. an AAC of 70MMM3 could easily be sustained. Clark Binkley, former dean of the UBC Faculty of Forestry firmly believes we can grow 100 million M3 of wood per year on a dedicated land base of 17 million hectares by applying state of the art management.

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RATIONALE:

PROTECTED AREAS IN BC, HOW MUCH IS ENOUGH?

Principles:

The Philosophical Basis:

While <40% Protected Area may be appropriate for the world, on a national or provincial basis the perspective is different. For example, 95% of all the alpine areas in Canada are in BC. Inherently therefore, BC has a greater responsibility to preserve a much larger % of this ecotype than the overall minimum determined acceptable.

The areas (countries and communities etc.) of the world that have the types of resources (ecosystems, wildlife, biodiversity etc) that are unique and inherently valuable to the world have a greater responsibility to protect these resources than do those which do not. BC is by far the most biologically diverse province in Canada, is unique in the world, and hence has a greater responsibility to protect their resources.

To be meaningful relative to maintaining healthy, functioning ecosystems on a global basis, at least 40% of the world's areas must receive some form of formal Protected Area status. The IUCN definition of what type of protection an area requires to achieve Protected Area status is a good starting point. Protecting 12 % of any living thing and expecting this to help resolve the world's ecological problems is not a realistic premise. Protecting 40% is the bare minimum upon which success might be possible. The BC Ministry of Forests believes: *"When there is less than 30% of the natural forest remaining (the original forest is in remnants) consideration to retaining all the remaining may be appropriate as a conservation measure."*[2] Notwithstanding this however, the application of the "precautionary principle" is in order. At least 40% of our natural areas should therefore be formally protected; this will provide a buffer, hopefully enough of a buffer, to ensure our future survival.

Similarly, the countries and communities that are financially well off have a greater responsibility to protect their resources than do those areas that are poor. According to the World Bank, based on per capita wealth considering financial and natural resources, Canada is the second richest country in the world (Australia is first). BC is similarly at or near the top in all of Canada. BC therefore has in inherently higher moral and ethical obligations than most other countries to make significant contributions to the world's protected area network.

[2] Wildlife Trees in BC: BC Ministry of Forests, 2006

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The Pragmatic Basis:

The THLB (Timber Harvesting Land Base) in BC comprises-- ~ 20 million hectares

Private, Native and Federal lands comprise---------- ~ 6 million hectares

Protected Areas status can & should comprise---------- ~ 40 million hectares

Other areas of BC---------- ~29 million hectares

Total area of BC---------- ~95 million hectares

Obviously there is enough land to go around to meet all demands. The old axiom: **We can have our cake and eat it too** is applicable-----

The cake is the Protected Area of BC of 40 million hectares;

The consumptive part is a very acceptable and sustainable AAC of 70 MMM3.

A THLB of 20 million ha. with an average growth rate or Mean Annual Increment of 3.5M3/ha/year will support, ad infinitum with appropriate management, an Annual Allowable Cut of 70MMM3

A THLB of 20 mill. ha. X an MAI of 3.5M3/ha/yr = an AAC of 70 million M3!

The Scientific Basis

- **Climate change** is and will continue to have increasing affects on the earth's ecosystems. Scientific recommendations to mitigate these changes include the following:[3]
  - Perhaps the most important single piece of advice to natural resource and biodiversity managers is to implement, to the extent possible, good conservations practices (Gitay *et al*. 2001).
  - In particular, the concept of ecological resilience (Hansen and Biringer 2003) has relevance for managing in a climate-altered future. In this context, ecological resilience is defined as the capacity of an ecosystem to absorb disturbance or stress and to recover to a similar stability domain (Hauessler *et al*. 2006).
  - Central to the concept is managing, within the historic range of natural variability, for structure, function, and disturbance patterns. Ecosystems that are within their range of natural variability are assumed to be more

[3] Statements taken from "Impacts of Climate Change on British Columbia's Biodiversity, A Literature Review" Forrex Series 23 2008. by: Don Gayton

resilient---better able to absorb external stresses (such as climate change)---and less likely to shift to an entirely different state.

- Parks, protected areas, ecological reserves and biodiversity corridors take on great significance in maintaining native biodiversity in a climate-altered future, so these areas should receive additional management attention (Hannah *et al*. 2005).
- Effective dispersal corridors should be established now, as species range adjustments to climate change are occurring already (Hebda 1999).
- A good network of protected areas that are free of other stresses provides one of nature's best opportunities to adapt to climate change (Welch 2005).
- Unless there is some threshold level of conservation principles applied in the matrix, even the most conscientious management of parks and protected areas may not be sufficient to allow range changes for many native species (Huntley 2005). This will be particularly true of north-south and upslope corridors, the most likely routes for range change in British Columbia.
- Maintaining and restoring migration corridors, particularly those that allow migration upslope and polewards is another strategy. The Yellowstone to Yukon (Y2Y) initiative seeks to ensure that the wilderness, wildlife, native plants, and natural processes of the Rocky Mountains continue to function as interconnected web of life. Y2Y has identified 17 critical cores and corridors that will not only facilitate survival of key wildlife species, but also facilitate northward migration *(url:http://www.y2y.net/overview/default.asp).*

❖ The Value of Forests in Mitigating Climate Change

The 2008 April/May issue of the Journal of Forestry (Vol 106 # 3) was dedicated to this topic. The Executive Summary (Pg 121) included the following conclusions derived from the information presented in this publication:

1. The world's forests are critically important in carbon cycling and balancing the atmosphere's carbon dioxide and oxygen stocks.

2. Forests can be net sinks or net sources of carbon, depending on age, health, and occurrence of wildfires and how they are managed.

3. Forest management and use of wood products add substantially to the capacity of forests to mitigate the effects of climate change.

4. Greenhouse gas emissions can be reduced through the substitution of biomass for fossil fuels to produce heat, electricity, and transportation fuels.

5. Avoiding forest conversion prevents the release of GHG emissions, and adding to the forestland base through afforestation and urban forests sequesters carbon.

6. Existing knowledge of forest ecology and sustainable forest management is adequate to enable forest landowners to enhance carbon sequestration if there are incentives to do so and if carbon and carbon management have value that exceeds costs.

7. How global voluntary and mandatory markets develop will play a significant role in establishing the price of carbon dioxides and thus creating incentives to ensure that forests play a significant role in climate change mitigation.

The article further states*: "It is beyond argument that forests play a decisive role in stabilizing the Earth's climate and that prudent management will enhance that role. Forest management can mitigate climate change effects and, in so doing, buy time to resolve the broader question of reducing the nation's dependence on imported fossil fuels.*

History has repeatedly demonstrated that the health and welfare of human society are fundamentally dependent on the health and welfare of a nation's forests. Society at large,….legislators, federal and state levels must not only appreciate this fact but also recognize that the sustainable management of forest can, to a substantial degree, mitigate the dire effects of atmospheric pollution and global climate change. The time to act is now."

- An economic study[4] by Simon Fraser University researchers concludes that Fraser Valley forests have greater value if more old-growth is left standing instead of being logged. "We see clear evidence that conserving these forests is economically worthwhile." The report says that in 72 of 81 different scenarios, increased forest conservation yields better economic returns than does status-quo logging. An example from the mid-range places the current value of the Fraser forests at $1.64 billion. Under maximum conservation, it jumps to $1.76 billion.

- A Florida study identified ecologically significant areas by combining a wide range of data layers of ecological values, including maps of natural communities, existing protected areas, roadless areas, aquatic ecosystems and single species data. The final network consisted of a set of hubs and associated corridors and in total identified approximately 9.3 million ha (57.5%) of the State of Florida.[5]

- **Community thresholds:** community thresholds identify the place where the community as a whole demonstrates a change in rate of species loss, and are particularly important to consider because they examine potential community disassembly as the rate of extinction increases.

[4] Vancouver Sun; Sept. 20, 2008. Article by Gordon Hamilton

[5] "Conservation Planning and Targets for the Coastal Douglas Fir Ecosystem. A Science Review and Preliminary Approach" Final Document Feb, 2007 Rachel F. Holt.

The three studies that detected community thresholds found a wide range of thresholds (10%, 35% and 53% of total habitat). The conclusion made from this review is that setting a representation target of more than 60% of total habitat would equate to low risk – i.e. a high chance that ecological integrity would be maintained, and that in composite most species would not cross thresholds at this level of habitat.

Because 2/3rds of species crossed thresholds around 30% of total habitat, this level was suggested to equate to 'high risk' – i.e. a high chance that ecological integrity would NOT be maintained at this level of total habitat. (Ibid).

- **Conservation Targets:** In a review of conservation targets identified using recommendations from comprehensive planning such as those outlined for Florida (57%), for the Southern Rockies (62%) and for the Greater Yellow Ecosystem (70%) Svancara et al. (2005) note that **"these high percentages, while still considered unrealistic by many are increasingly seen as credible estimates of what it takes to meet a broad suite of conservation goals".** (Ibid).

- **REPORT:** ***A New Climate for Conservation***
  Nature, Carbon and Climate Change in British Columbia by: Dr. Jim Pojar; Commissioned by the Working Group on Biodiversity, Forests and Climate, an alliance of ENGOs including ForestEthics Jan. 8, 2010
  Humanity faces two urgent and related challenges: the rapidly escalating loss of biodiversity and the predicted impacts of climate change. This report identifies a comprehensive solution to both of these threats: a biodiversity and climate action strategy to help prevent the release of greenhouse gases, to ensure sufficient intact habitats to support healthy numbers of wild species, and to help plant and animals adapt to climate change impacts. **This strategy should be anchored by a policy of maintaining intact forest ecosystems such that approximately 50% of B.C.'s land base is managed with conservation as the priority goal.**

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Supporting Information

- VANCOUVER, 2003 - A team of scientists examining British Columbia's coastal rainforest, an 11 million hectare swath of green stretching from northern Vancouver Island to Alaska, say at least 44 to 50 per cent of the land needs to be protected to maintain healthy eco-systems.[6]

- In 2006 Greenpeace formally requested that governments set aside 40% of the world's oceans in which exploitation of all living resources is prevented, together with the exploitation of non-living resources including sand, gravel and other minerals.[7]

- In 2006 Canada adopted a proposal to formally protect 50% of the Canadian Boreal Forest. [8]

- In Canada, "more than half of the different forest types still do not have adequate protection."[9]

- One of the best opportunities for protecting The Boreal Forest is the "Establishment of a protected areas network that is representative and sustainable over time in face of natural and human disturbances and potential shifts in regional climates and ecosystems".[10]

- The goal of 40% Protected Area is minimal for the survival of the world. If 88% of the world is, or were, to be "developed" to any degree, all systems would inevitably end in collapse. Protection of only 12 % is woefully inadequate to protect or support any biological entity in a meaningful manner.

- In 1996, the Western Canada Wilderness Committee formally adopted 40% as a Protected Area Goal for BC.

- The highest value and best use of BC's forest resources are presently for its non-timber forest products especially its natural amenity values including but not limited to: clean air and water, a carbon sink, aesthetics, a gene pool, biodiversity, a wildlife refuge, recreational pursuits, flood control, climate stabilization, pollination, nutrient cycling and extensive protected areas and others.

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[6] CanWest News Service, Wed 19 Nov 2003, Byline: Gordon Hamilton,Source: CanWest News Service; Vancouver Sun

[7] Greenpeace Magazine, Volume 10, Number 7, Winter/Spring 2006, Pg. 9.

[8] Viewpoint, Natural Resources Canada; Spring/Summer 2006 Issue.

[9] Steven Price, Director of Conservation Science, WWF-Canada; The State of Canada's Forests; Annual Report 2008

[10] "Canada's boreal forest economy: economic and socio-economic issues and research opportunities"; Natural Resources Canada, CFS; by Bryan E.C. Gogdanski 2008

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- "Sustaining open space has long been seen as a critical economic issue and is now also seen as integral for sustaining our psychological health and ethical relationship with the nonhuman world." [11]

- In 2014 Canada signed onto an international agreement reached at the Climate Summit gathering in New York and agreed to achieve Zero Net Deforestation by 2030 as per the following quote: "….. world leaders endorse a global timeline to **cut natural forest loss in half by 2020, and strive to end it by 2030**.[12] An expanded Protected Areas Network is an essential ingredient to enable the attainment of this commitment.

- The BC Ministry of Forests has developed a Future Forest Strategies program with such development due in part because:[13]

    - The global climate is warming with expected significant changes to species and ecosystem distribution, and the range and impact of many forest pests and diseases.

    - Forests figure prominently in the well-being or British Columbia's environment, economy and communities and in a forest-based province with a growing population, sustainability means managing the public forests in ways that meets the needs of future generations, while allowing access today to that resource.

    - Without a vision for the future forests of the province, ensuring sustainability and global competitiveness, given the current and future forest sector challenges, is arduous.

[11] Public Demand for Preserving Local Open Space" by Jeffrey D. Kline Society and Natural Resources; an International Journal August, 2006 Vol 19 # 7.
[12] Climate summit 2014, UN Headquarters, New York, Sept 23, 2014
[13] BC's Future Forest Strategies 2008

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WORLD SUPPLY AND DEMAND[14] –PROGNOSIS FOR THE FUTURE

Basic Information: Relative to world wood supply:
"The long-term outlook is for steadily increasing demand for wood and the many other values and services of forests, and a declining area for their production" but, relative to supply----"there is no evidence of a crisis at the world scale". (Science Findings, 8)

Economic Principles: The marketplace will continue to be increasingly competitive and only those who can and do meet that competition will survive.[15]

Competitive Advantage: Relative to timber, BC has four significant advantages: Proximity to the US, superb quality, old-growth timber, an excellent transportation infrastructure and several state-of –the-art sawmills that are among the best in the world.

Other countries have competitive advantages which include: warm climates with rapid forest growth rates (MAI's of ~ 24 to 100M3/ha+), low wage rates and access to cheap ocean transport.

Other Pertinent Information:
The FAO has calculated that given their high rates of growth, plantations could theoretically provide the total world demand for timber from only 5% of the current world forest land base. Projections predict that the global wood demand will be met by ever increasing wood produced "from plantations and less from old-growth natural forests (except in Russia, where an increase is expected" [16]

Indonesia plans to build or significantly expand 56 pulp and paper mills by the end of 2010 and convert 10% of the country's lands to forest plantations.

The forests of **New Zealand, Australia and Chile** are expanding and maturing and expect to double their AACs in the next 15 years. Other countries with warm climates are also increasing their forested areas.

New Brunswick is presently considering plans to double the provincial wood supply by 2050. [17]

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[14] Majority of the statistical information taken from from: "State of Canada's Forests '99-2000 & 2000-01" and "Science Findings" PNW Research Station, October, 1998 "Supply and Demand for Wood: A Worldwide Perspective".

[15] Sawmills in BC and the US (especially the PNW) are closing almost weekly and this trend will likely continue.

[16] IBID Natural Resources Canada, 2008

[17] Canadian Silviculture Magazine, Fall, 2002. Pg 19.

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Non-Canadian imports into the US are expected to increase in the future, led by shipments from Germany, Austria and Sweden, which will together send ~ 1 billion board feet/year into the US.[18]

SOUTHERN U.S.[19]

The Southern US region is the primary timber production area in the country and produced 41% of the country's wood fiber in 1952 and 58% in 1997. Over the same period the South's share of the world's industrial wood production rose from 6.3 to 15.8%. Today fully 18% of the world's industrial timber products comes from southern states. Recent modeling scenarios project that softwood harvests from private lands in the Southern US will increase by 56% between 1995 and 2040.[20] Pressure from the southern US to thwart unrestricted lumber imports from Canada to the US will likely increase.

BC supplies ~ 5% of the world's industrial roundwood[21] but only about 2% of total fiber.

Conclusions and Recommendations

- BC could stop producing wood products tomorrow and, figuratively speaking, the gap created in the marketplace by this move----**would be filled in a heartbeat.**

- Each country in the world should do what they can do best. If that is growing oranges or grapefruit, producing cars or timber or providing some form of Protected Areas etc. then so be it. Artificial restrictions (ie. trade barriers or subsidies) only provoke the parties involved and prolong unacceptable situations related to economic, social, environmental and ethical concerns. BC has both the resources and the wherewithal to formally protect at least 40% of its area to Protected Area status.

Summary Statements

There is a strong and growing agreement about the relatively poor and ever worsening state of the world**'s** environmental health. Many believe that it may already be impossible to reverse this trend. However, the global society at large must have hope that all is not lost, that the trend can be reversed and that the health of the world's (Gaia's) ecosystem can be saved from ultimate demise and, yea, even restored to a healthy, functioning condition and maintained that way, ad infinitum, with diligent stewardship.

Several solutions have been offered as to how these goals (hopes and aspirations for the survival of the world) can be attained…..and, several solutions are necessary to achieve

[18] The Register Guard, Jan. 29, 2003. www.registerguard.com/news/2003/01/26/4h.ss.bz.lumber.0126.html
[19] Excerpts from the Journal of Forestry, Oct.-Nov. 2002. Pgs. 16-22.

[20] This would indicate that the pressure from the southern US, already the point force in the US/Canada SLA dispute, will only increase!
[21] No reliable estimates of fuelwood consumption in Canada are available.

success. The process is too big and too complex to lend itself to meaningful resolution via one or even a few solutions. Many are required and they must be developed and implemented in a very short time with involvement by all. Hesitation or delay will result in the ultimate demise of life on earth as we know and experience it today.

Based on the premise that everyone in the world is responsible for the future survival of the world and, further, that those that are the richest (both economically and environmentally) have the greater responsibility to contribute and participate to ensure such survival, then the premise outlined above relative to BC has both validity and applicability and deserves strong support.

BC is among the richest and most biologically diverse provinces in Canada which is the second wealthiest country in the world. BC therefore needs to do its part, it likely will have several parts, and must proceed with due diligence to see realization of the above proposal as soon as possible. Support via adoption and promotion of same from the scientific community will help ensure the "political solution" is activated. The Government is in charge of the political solution and hence are and must be an essential part of the overall solution.