

LTA The Land Of British



Trust Alliance Columbia

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June 18, 2007

Finance Minister Carole Taylor
Tax Policy Branch
PO 9470 STN PROV GOVT
Victoria BC V8W 9V8

Dear Honourable Minister Taylor,

The Land Trust Alliance of BC is a province-wide organization consisting of more than 85 land trusts, conservancies, affiliated organizations and professionals working in the field of conservation. We provide training, communications and research of relevance to the stewardship and conservation of BC's natural and cultural diversity.

We note that you are inviting comments on the Climate Action Initiative in BC. We agree that the Province's tax system is an important tool to help us reduce increasing threats from climate change. The current issue of *The Economist* reiterates the importance of governments imposing carbon taxes on all polluters, in addition to supporting the development and use of clean energy and transportation systems. The editor's final note states: "*The best news in the fight against climate change is that business is starting to invest in clean energy seriously. But these investments will flourish only if governments are prepared to put a price on carbon. The costs of doing that are not huge. The costs of not doing so might be.*"

There is much focus on reducing carbon and finding alternative energy sources for oil and gas. **However, conserving existing ecosystems is as important if not more important for carbon storage.** We have recently commissioned a scientific research project which will suggest relative values of BC's ecosystems in terms of their carbon storage values. Through her past and new research, one of our contractors who specializes in ecological valuation and has been appointed to the National Roundtable on the Environment and Economy Sara Wilson, states:

There is a lot of misinformation and confusion on the issue of carbon sequestration by new forests and old growth forests. My review of the literature shows that net carbon uptake by forest s has a more complex relationship with age. Review papers show that annual net carbon uptake is generally low or negative in forests less than 20 years old, peaks in intermediate-aged forests (e.g. 30-80 years), and uptake is intermediate (rather than negligible in forests older than 160 years old.¹ For example, old-growth Douglas fir at the Wind River Experimental Forest in Washington, Oregon provide an estimated annual carbon sink of 20 grams to 220 grams of carbon per square metre per year.²

¹ Suchanek, T.H., Mooney, H.A., Franklin, J.F., Gucinski, H., and Ustin, S.L. 2004. "Carbon Dynamics of an Old-growth Forest." *Ecosystems*. 7: 421-426; In the boreal region, net additional carbon absorbed on an annual basis peaks in forest ecosystems aged between 71-120 years and total ecosystem carbon storage increases with age, peaking in boreal forests aged 120-200 years (see: Pregitzer, K.S., and Euskirchen, E.S. 2004. "Carbon cycling and storage in world forests: biome patterns related to forest age." *Global Change Biology*. 10:2052-2077).

² Harmon, M.E., Bible, K., Ryan, M.G., Shaw, D.C., Chen, H., Klopatek, J. and Li, X. 2004. "Production, Respiration, and Overall Carbon Balance in an Old-growth Pseudotsuga-Tsuga Forest Ecosystem." *Ecosystems*. 7: 498-512; Paw, U., Falk, K.T., Suchanek, T.H., Ustin, S.L., Chen, J. Park, Y-S., Winner, W.E., Thomas, S.C., Hsiao, T.C., and Shaw, R.H. 2004. "Carbon dioxide exchange between an old-growth forest and the atmosphere." *Ecosystems*. 7: 513-24.

Older forests may be somewhat less productive, but they store enormous amounts of carbon and more carbon than younger systems.³ The Carbon Budget for Canada's Forests (1999) estimates carbon stored in BC's Pacific Maritime and Montane Cordillera ecozones to average 349 tonnes of carbon per hectare.⁴ Similarly, a BC study found that old growth interior spruce forests in central BC store between 324 and 423 tonnes of carbon per hectare. Regional studies have also found that the conversion of old-growth forests to young second-growth forests results in a significant reduction in total carbon stocks.⁵

It is important to note that carbon cycling especially by soils is still not fully understood. A few studies have suggested that in fact while older forest trees become less productive (i.e. are not growing as fast and therefore are not taking up as much carbon on an annual basis), their annual net carbon uptake may be higher than we think as they are accumulating large amounts of carbon in their soils.

In terms of the importance of the carbon stored in ecosystems and the mitigation of climate change, I would stress that it is the immense stores of carbon in existing ecosystems that is of utmost importance. Firstly, carbon storage in young forests takes a long time especially in terms of replacing lost carbon [from logging of the original forest]. Secondly, because we have such a short amount of time to slow global warming, the priority should be on preventing carbon losses, and conserving the carbon stores that exist. Thirdly, the protection of intact existing ecosystems will provide a greater range of habitat that will hopefully provide connecting corridors for plant and animal migration as the climate warms.

Finding alternatives for oil, coal, gas and other carbon emitting substances is essential to reduce our current impacts on climate. However, as noted above, it is essential the government of BC put aside significant funds and promote to the public the conservation of nature, particularly intact ecosystems. The stewardship and conservation of intact ecosystems is important for their ability to sequester carbon, to provide homes for the plants and animals that are part of the essential biodiversity that supports us, for our own resource base, and to provide the clean air, water and land that we all need.

In addition to protecting and conserving intact ecosystems, it is also important to include protection of land for sustainable, local farming. As the transportation of food from international or distant markets takes an immense amount of oil and gas, financial support to local farmers, for the conservation of local farmlands, grasslands and ranchlands, and support to land trusts who work with farmers (through labeling programs, purchase and leaseback for migrating birds, or through conservation covenants) should be an important element in the Climate Adaptation Tool kit.

Thank you for asking for public input to the Climate Action Team and the Climate Action Initiative. We look forward to providing further commentary and input, especially once our research is complete in the early fall.

Yours truly,



Bill Wagner, Co-Chair Katherine Dunster, Co-Chair Sheila Harrington, Executive Director
CC: Honourable Minister Barry Penner; Assistant Deputy Minister Nancy Wilkin;
Honourable Minister Pat Bell; Mr Erik Karlsen, Chair, ALC;

⁴ Kurz, and Apps 1999. "A 70-Year Retrospective of Carbon Fluxes in the Canadian Forest Sector." *Ecological Applications*. 9: 526-547.

⁵ Results for BC interior spruce forests found that harvesting of the old-growth forests in sub-boreal BC lowers the total carbon stocks by 41-54%. Harmon et al. (1990) similarly reported on the conversion of old-growth forests to young forests. They estimated that the conversion of a typical Pacific Northwest old-growth forest (Douglas fir and hemlock) to younger forests reduces carbon storage by 305 tonnes of carbon per hectare in one 60-year rotation, even when the off-site storage in buildings is included. Further, their results found that the harvest of old-growth forests reduced C storage for at least 250 years.