

Pacific Institute for Climate Solutions



THE UNIVERSITY OF BRITISH COLUMBIA



British Columbia's Carbon Tax Shift: A Template For the World

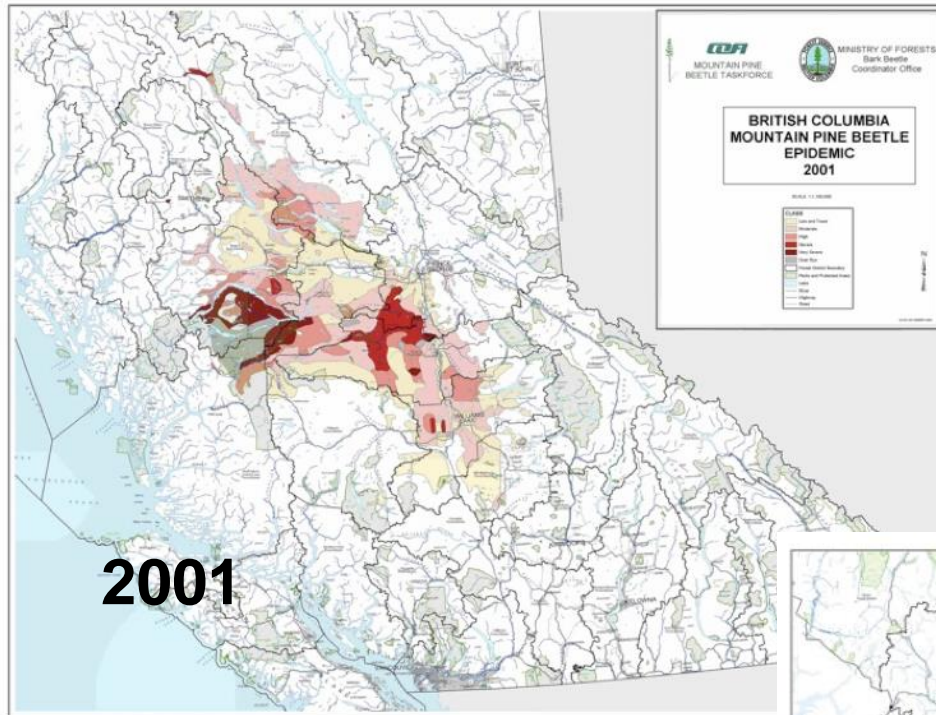
Tom Pedersen, University of Victoria
and
Stewart Elgie, University of Ottawa

15th Conference on Environmental Taxation, Copenhagen, September, 2014

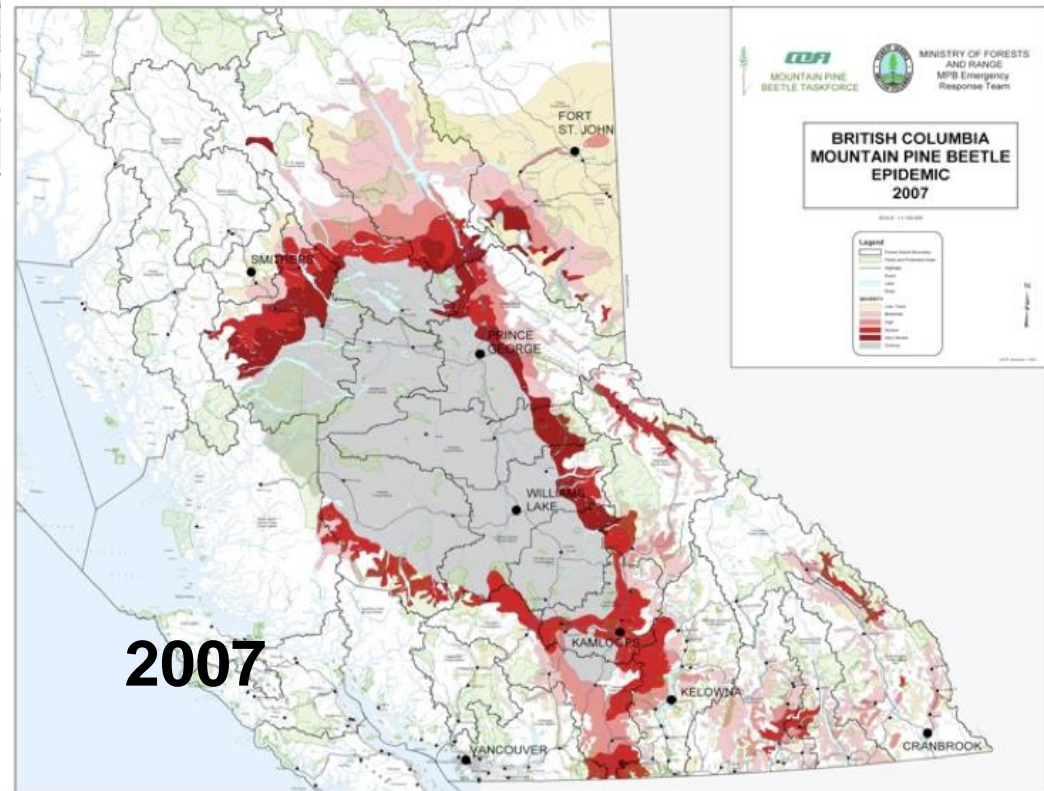
Mountain Pine Bark Beetle
(*Dendroctonus ponderosae*)

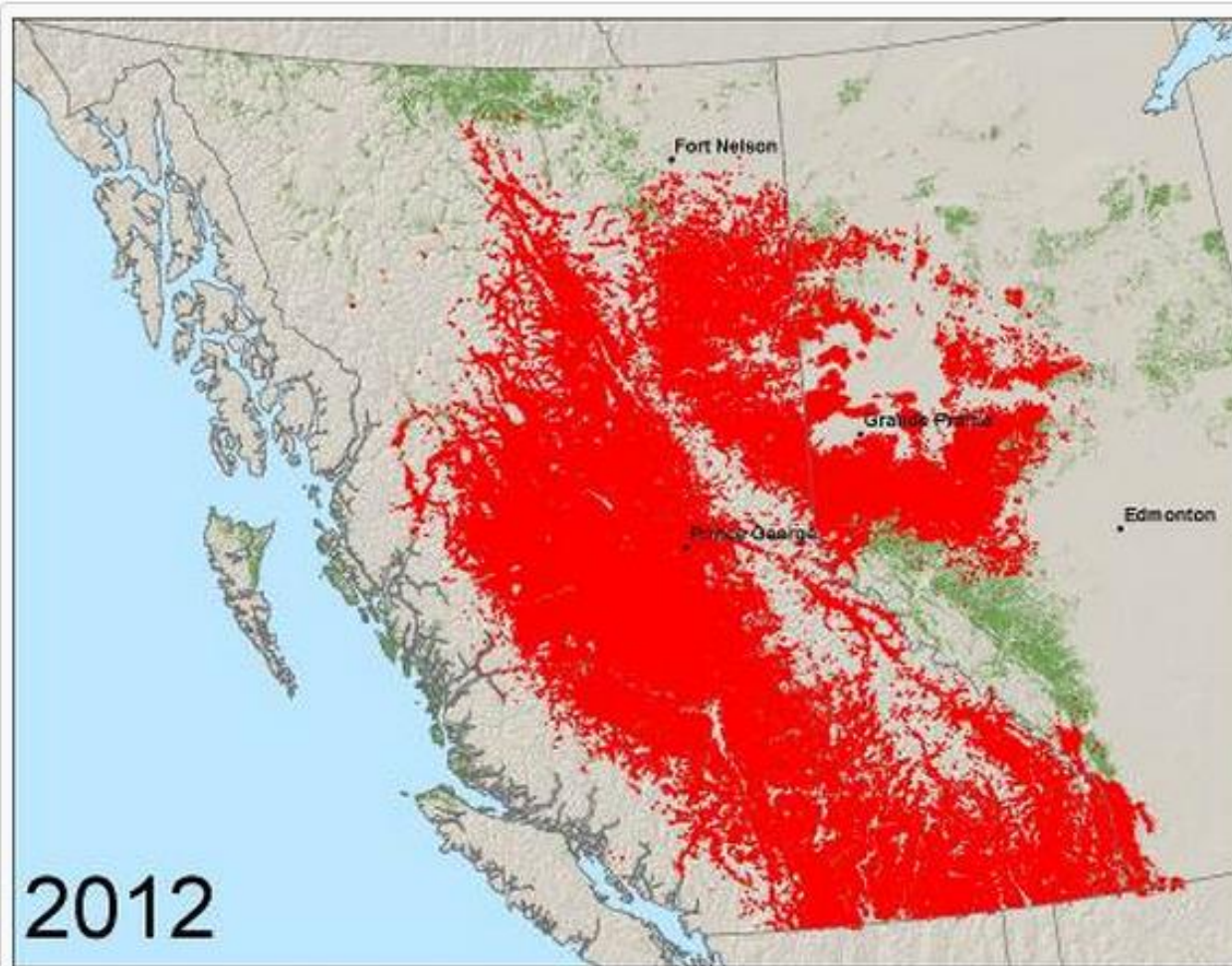






Mountain Pine-Bark Beetle Infestation, 2001-2007





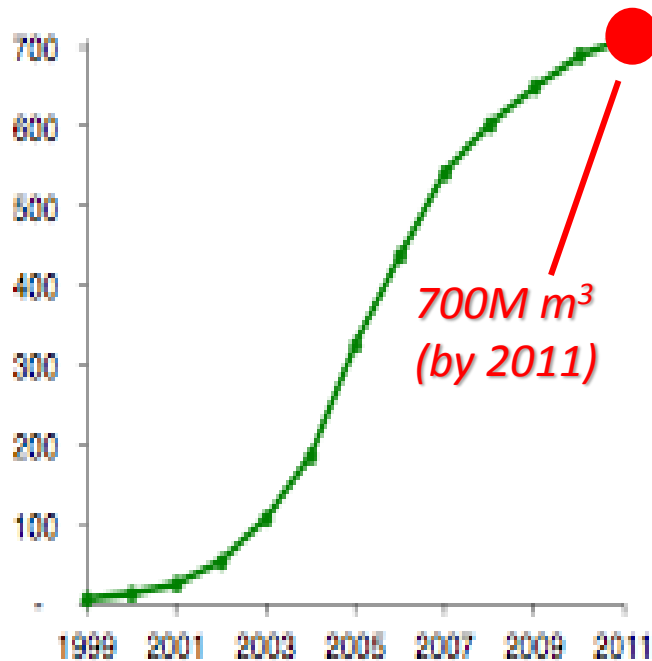
Observed presence of mountain pine beetle from 1999 to 2012. Map data: Forest Practices Branch, Ministry of Forests and Range, Government of British Columbia; Environment and Sustainable Resource Development, Government of Alberta; Forest Insects and Disease Survey, Pacific Forestry Centre, Canadian Forest Service, Natural Resources Canada.

*As of 2013, approximately 19 Mha afflicted
(>four times the size of Denmark)*

Near Bonaparte Lake, Central British Columbia



Photo: K. Buxton, BC Ministry of Forests, Lands and Natural Resource Operations



**Cumulative volume of
commercially valuable pine
killed since 1999
(millions of cubic metres)**

Anticipated cumulative loss by 2017:

752M m³ (about 60% of BC's commercial pine)

Estimated economic value (at \$100/m³)= \$75B, only some of which is recoverable, plus closure of sawmills, employment losses, lower tax base, increased wildfire risk...

So, why does British Columbia have a carbon tax?

- Strong, smart and wise political leadership
- Acceptance by the previous Premier that climate change driven by human activities was real and was (and is) affecting BC
- The obvious physical and economic insult to the BC landscape imposed by the the pine-bark beetle epidemic, late 1990's on.

The BC Carbon Tax Shift:

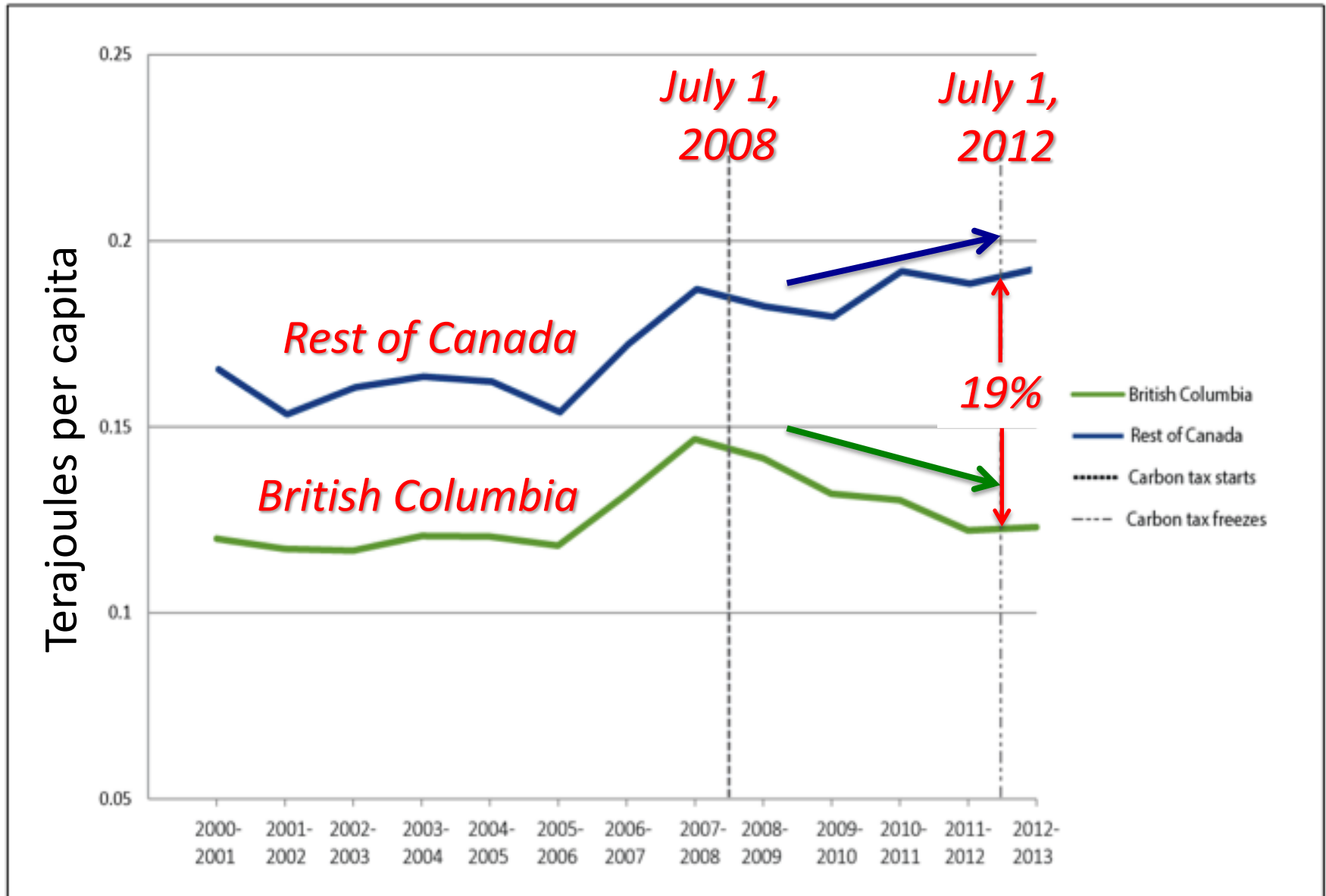
Unique, Comprehensive, Simple, Effective

- July 1, 2008: ***\$10 per tonne of CO₂ equivalent*** emitted (=2.25 ¢/L of regular gasoline).
- ***Rate depends on the carbon content*** of fuels (e.g. diesel is taxed slightly higher than gasoline).
- ***Rose \$5/tonne/yr to \$30/t*** on July 1, 2012 (6.67 ¢/L on regular gasoline).
- ***Minimal bureaucracy***: the tax is applied at wholesale distribution points (six such points in BC).
- ***Frozen as of June 30, 2013*** at \$30/tonne CO₂, until 2018.
Announced issue: maintaining competitiveness.

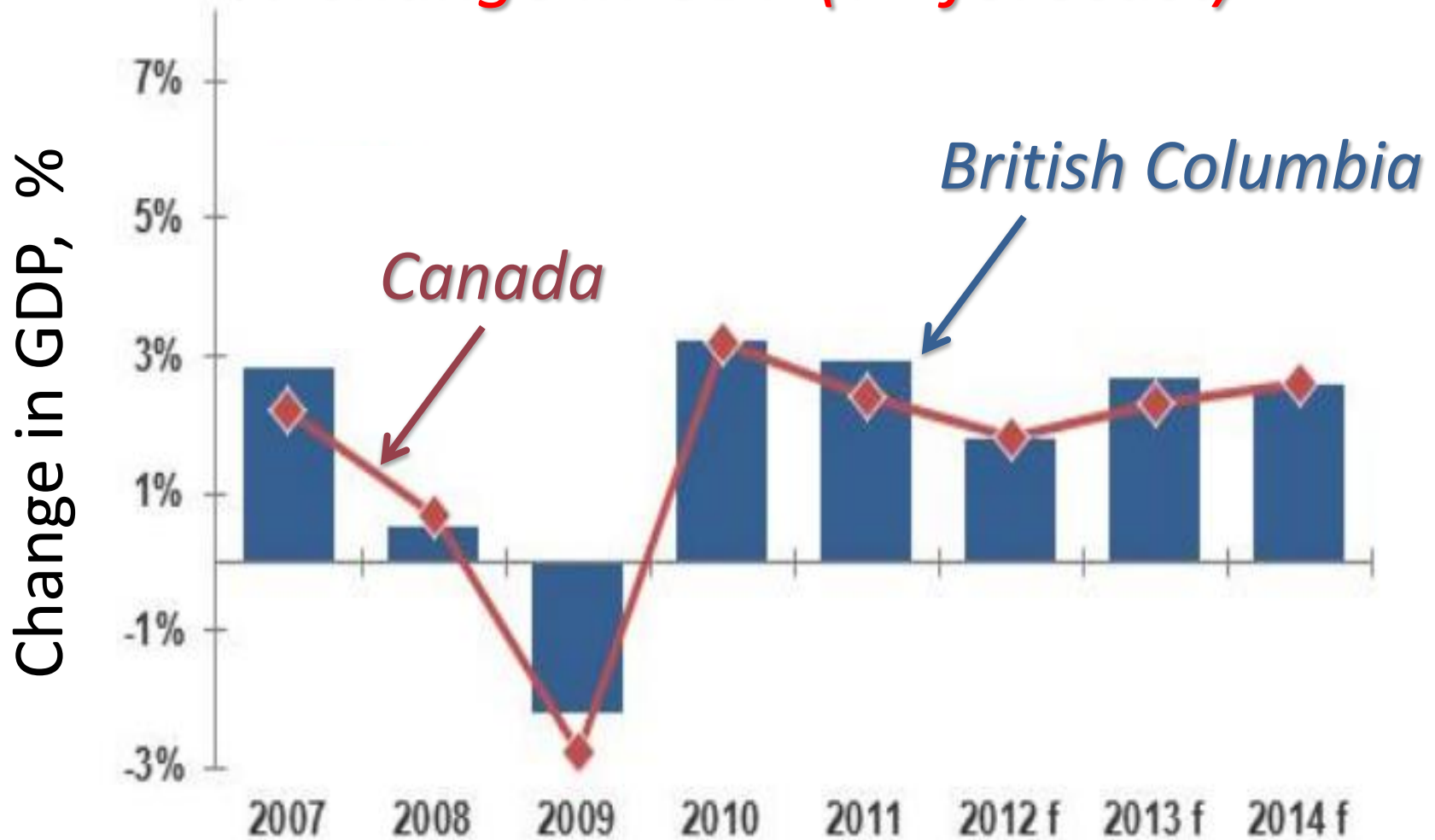
The BC Carbon Tax, continued

- ***Revenue neutral***; by law, every penny must be used to reduce other taxes.
- BC now has the ***lowest personal income tax*** in Canada (up to \$122,000 taxable income) and amongst the ***lowest corporate income taxes*** in the OECD and G7 countries.
- ***Socioeconomically fair***: Northern and Rural Homeowner benefit: up to \$200/yr/homeowner.
- ***Low Income Climate Action Tax Credit*** for families (\$231/yr plus \$34.50/child/year); income dependent, paid quarterly.

Per capita fossil fuel consumption, 2000-2013



British Columbia's Economic Performance: % Change in GDP (f = forecast)



Summary: Key Design Points

- **Accelerating:**

- July 1, 2008: \$10 per tonne of CO₂ emitted rising \$5/yr to \$30/t in 2012 (now frozen)
- *this provision appears to have changed behaviour in BC*

- **Revenue neutral:**

- every penny goes to reductions in other taxes

- **Fair:**

- tax reductions focused on lower income strata
- supports put in place for very low income earners and northerners

- **Simple:**

- the tax is applied at wholesale distribution points (six such points in BC). Thus, no additional bureaucrats needed.

Implementation Issues, Positive and Negative

- ***Revenue neutrality – tax shifting, not imposing:***
 - no opportunity to claim “just another government tax grab”.
- ***Competitive disadvantage:***
 - remains an issue since most trading jurisdictions have not followed BC’s lead (unexpectedly, as of thinking in 2008).
- ***Politics:***
 - centre-right “BC Liberal Party” was re-elected in 2009. Captured environmental vote when the left-centre party campaigned with, “Ax the tax!”. Re-elected again in 2014.
- ***Economic stimulation:***
 - cleantech is fastest growing economic sector in BC (as of 2012).
- ***Communication with broader society is a must:***
 - tax ***shifting*** remains poorly understood in BC.



*Prof. Paul Ekins,
Chair of the UK's Green Fiscal Commission:*

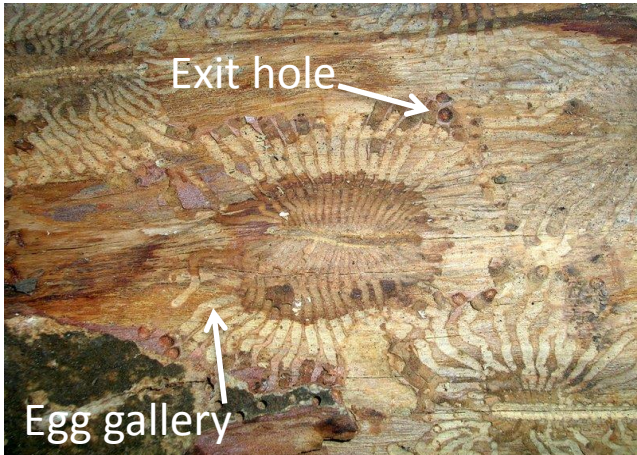
*BC's carbon tax ... " is among the best
designed measures of its kind in the world ."*

www.pics.uvic.ca

Mountain Pine Bark Beetle (*Dendroctonus ponderosae*)

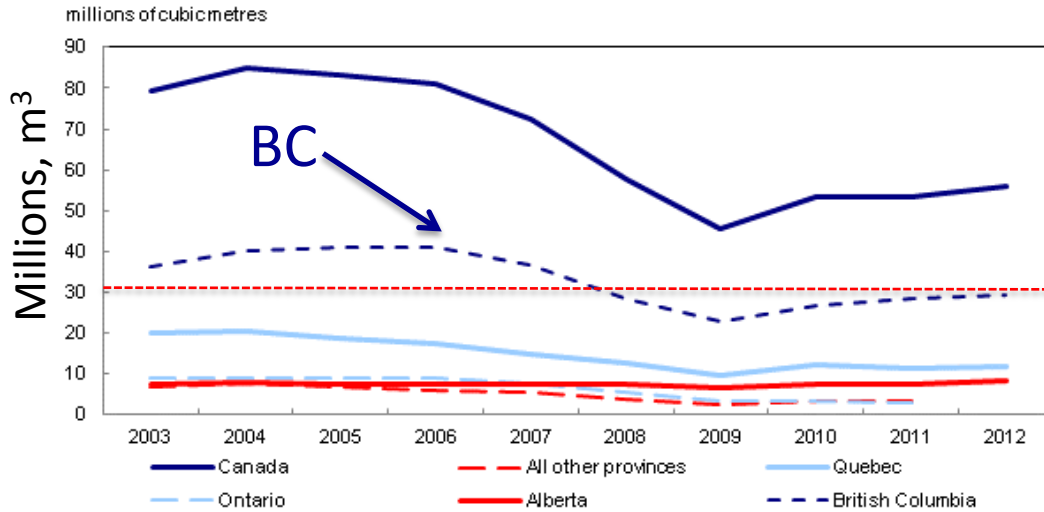


<http://biologybiozine.com/>



- Life cycle (one to two years) begins when a female burrows into the bark and builds an “egg gallery.”
- During the summer/early autumn, the female lays eggs along the sides of the gallery. After 10 to 14 days, the eggs hatch.
- The newly-hatched beetles remain as larvae within the tree bark for about 10 months, feeding on the tree’s phloem (inner bark). *The larvae synthesize “anti-freeze” (a protein) in November/December and can then survive the rest of cold winters. But, late autumn cold snaps can kill the beetle larvae. WE ARE NOT GETTING THOSE NOW LIKE WE USED TO IN BC’S INTERIOR.*
- Following development from pupa to adult, the beetles bore an exit hole, fly to other trees, and the cycle begins again.
- The beetles themselves do not usually kill the tree. Rather, a blue-stain fungus carried on their bodies spreads throughout the phloem, and interrupts the flow of nutrients within the tree.
- Healthy trees can survive a beetle attack by throwing out large amounts of pitch, which drowns the beetles.

Chart 1
Total lumber production for sawmills, 2003 to 2012



Notes: The category "all other provinces" refers to Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan combined. While there was lumber production in 2012 for Ontario and "all other provinces", the data are not publishable because of confidentiality.

Economic implications:

BC lumber sales to China, 2011:
 \$163/m³

30M m³ = \$4.9B

But, market is volatile.

Proportion of sawmills sales to all manufacturing sales by province, 2012

