

Branching out

from the Canadian Forest Service ■ Laurentian Forestry Centre

Number 42
2008

Climate change: how much carbon is stored in trees?

Climate change discussions often include references to the contribution that trees and forests make by acting as a carbon sink. Trees capture carbon dioxide (CO₂) through photosynthesis and they store it in their biomass: stem, branches, leaves, bark and roots.

Researchers with the Canadian Forest Service of Natural Resources Canada have developed some low cost, easy-to-use equations that merely require the diameter at breast height of trees (1.3 m) in order to estimate their above-ground biomass (all tree parts except the roots).

These equations can be used at the tree level for all 41 indigenous tree species of Canada, for all deciduous trees or all coniferous trees separately, or for all coniferous and deciduous trees combined.

The biomass equations provide estimates of the dry mass of the bark, stem, branches and foliage as a function of



either tree diameter at 1.3 m above ground or tree diameter at 1.3 m plus tree height. The sum of these components yields the tree's total above-ground biomass.

The equations have been adjusted based on sampling of thousands of trees across Canada that was carried out under a forest biomass measurement program in the early 1980s. Now widely available, the equations are used to determine the carbon budget for Canada as a whole, as well as for individual provinces or regions.

Biomass calculation

www.cfl.scf.nrcan.gc.ca/calculateurs-calculators/biomasse-eng.asp

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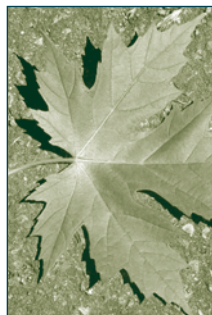
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Catalog Number Fo113-1/42-2008
ISBN 978-0-662-05825-0 • ISSN 1705-5784

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