

of carbon stored in the forest biomass. Deforestation may occur as a consequence of commercial harvesting or as a consequence of “natural harvesting”, the destruction of trees by wildfire, insects or disease.

The extensive commercial harvesting of trees and the loss of trees from other causes in the developed countries, Canada included, has not always been followed by adequate replanting of stock. Reforestation of deforested areas has always been essential to maintain a healthy, productive forest for commercial, recreational and ecological reasons. In the context of global warming, reforestation gains an additional importance as a means to sequester more atmospheric carbon dioxide.

The forest is a dynamic, living entity and the carbon stored in wood will eventually be returned to the atmosphere. The most effective and efficient fixation of atmospheric carbon occurs in the early stages of a forest stand, when the trees are growing rapidly. As the stand ages, the rate of carbon release through respiration increases and, eventually, the balance will shift to a net loss of carbon to the atmosphere as the sum of carbon released through respiration and decay exceeds that sequestered by photosynthesis. Ultimately, when the stand reaches advanced age and the trees begin to die, the balance will shift predominantly to carbon release.

The best way, therefore, to maximize carbon sequestration by Canadian forests is through programs designed to develop and maintain vigorously growing forest stands. This can be done by ensuring prompt regeneration of harvested areas, either through planting or by natural means, and reducing the extensive losses of stands to wildfire, insects and disease.

Notwithstanding the importance of vigorously growing forest stands in carbon sequestration, the Committee recognizes that old-growth forests have a unique status in Canada, as elsewhere. Such forests have an enduring value as a locus of genetic diversity and must be protected for their intrinsic cultural and ecological qualities.

Forest land classed as “NSR” is “not satisfactorily (or sufficiently) restocked (or revegetated), productive forest land that has been denuded and has failed partially or completely to regenerate naturally or to be artificially regenerated.” Dr. J.S. Maini of Forestry Canada told the Committee that there are 244 million hectares of inventoried productive forest land in Canada, of which 7%, or 17 million hectares, is classified as NSR.

The principal type of agreement in Canada pertinent to reforestation is the Federal-Provincial Forest Resource Development Agreement (FRDA), jointly administered by the federal and provincial governments. Most of the FRDAs have now expired, including those with Ontario, Saskatchewan, Alberta, Newfoundland and British Columbia. Similar agreements with Quebec and Manitoba have also expired.