

ENVIRONMENTAL FOOTPRINT COMPARISON TOOL

A tool for understanding environmental decisions related to the pulp and paper industry



EFFECTS OF DECREASED GREENHOUSE GAS EMISSIONS ON WATER USE

Carbon Storage in the Forest and in Products

Carbon stored in forests that supply wood to the forest products industry can be increased by changing management methods or by extending rotation times. Care is needed when assessing the effects of these practices on life cycle greenhouse gas emissions because some of these practices may increase carbon stored in the forest while increasing emissions elsewhere in the life cycle.

Forests, including working forests, are sources of much of the freshwater available in the U.S. and Canada (Wiegand et al. 2011). Almost two-thirds of freshwater runoff in the United States originates from forested watersheds (Stein and Butler 2004), even though forests cover only one-third of the nation. The quality of the water from forested land is higher than any other land use.

In general, increasing carbon storage in sustainably managed working forests will have relatively little effect on the amounts of water available from that forest.

The carbon stored in forest products can be important to their life cycle greenhouse gas profile. Wood products can be in use for over a hundred years. For paper products, however, the time that the product is in use provides relatively little carbon storage benefit. For wood products and some types of paper and paperboard, the amounts of carbon stored in landfills can be important, in some cases even matching the methane emissions from the fraction of the material that decomposes. Due to a number of other environmental and resource issues, however, increased landfilling is not likely to be seen as an option for reducing greenhouse gas emissions, even for wood products and those paper grades where landfilling results in a net sink of greenhouse gases.

This means there are few options for significantly increasing the carbon stored in forest products so the potential effects on water use are not relevant.

References

Stein, S. and Butler, B. 2004. On the frontline: private forests and water resources. *Wildland Waters*. Summer. FS 790. Washington, DC: U.S. Department of Agriculture, Forest Service. <http://www.fs.fed.us/wildlandwaters/>.

Wiegand, P., C.A. Flinders, G.G. Ice, D.J.H. Sleep, B.J. Malmberg, I. Lama. 2011. Water profiles in the forest products industry and their utility in sustainability assessment. *TAPPI Journal*, July 2011: 19-27. <http://www.tappi.org/Downloads/Journal-Articles/TAPPI-JOURNAL/2011/July/11JUL19.aspx>