

ENVIRONMENTAL FOOTPRINT COMPARISON TOOL

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



WOOD USE

EFFECTS OF RECYCLED FIBER USE ON LAND AND WOOD USE

Demand for Virgin Wood Fiber

By providing an alternative source of fiber, paper recovery can reduce the demand for virgin wood fiber. There are limits, however, on how much recovered fiber can displace virgin fiber. First, virgin and recovered fibers sometimes have different properties making them more or less suitable for use in specific applications. Second, there are limits to how much fiber can be economically or practically recovered. Third, there is a need for new fiber to enter the system to offset losses that occur at many points along the fiber value chain (Metafore 2006).

Developing quantitative estimates of impacts on forests when recycling is increased (i.e., how many trees are “saved”) is complicated and uncertain because the estimates depend on assumptions about the effects of changes in virgin fiber demand on forest ownership and management decisions. For instance, lacking a market for pulpwood, some private forest owners may sell their land for development while other forest owners may choose to allow the trees to grow until they are suitable for use as saw timber, delaying but not eliminating the harvest.

In addition, the effect of recycling on wood demand varies among different types of products because of differences in yields (i.e., the amount of final product obtained from the raw material). For instance, all else being equal, recycling newsprint will have less of an effect on harvesting than recycling containerboard because a greater fraction of the tree is incorporated into newsprint compared to containerboard.

Some studies are based on the simple assumption that trees not needed for fiber will remain in the forest and never be harvested. In actuality, some of this forestland will be lost because, in the absence of a market for pulpwood, some forest owners will sell their land or convert it to other uses, often resulting in the removal of some or all of the tree cover. The significance of this loss, sometimes called “leakage”, is debated but is likely dependent on number of factors, including the type of wood and the region involved. In a study of the factors influencing land use change in the southeastern U.S., Hardie and Parks (1997) found that “the region’s land base is not greatly affected by marginal changes in farm and forest net revenues or by small differences in land quality across counties,” a finding that suggests that recycling may not result in significant leakage due to land use change in the Southeast U.S.. This study also suggests that leakage is less affected by the pulpwood market than by the saw timber market. Until leakage effects are studied in more situations, however, it is not possible to know the extent to recycling impacts forests.

When considering the impacts of recycling on forests, it is also important to understand that the area of U.S. and Canadian forests is not declining. Forested area is larger now than in the 1800s and has been stable at about 750 million acres since the 1950s. To the extent that forest land may be threatened in the future, it is not the use of wood for paper and wood products that represents the threat. The U.S. Forest Service predicts that “reduction in forest land will mainly result from conversion to other land uses such as reservoirs, urban expansion, highway and airport construction and surface mining” (Haynes 2003).

Thus, while recycling will reduce demand for pulpwood, it is not accurate to assume that reduced harvesting for forest products will help maintain forests. Indeed, the opposite driving force is in play, at least for privately-owned forest land—the markets for forest products help keep land in forest, reducing the chances that it will be converted to non-forest uses.

Effects of Recycled Fiber Use on Land and Wood Use
Demand for Virgin Wood Fiber

References

- Metafore. 2006. *The fiber cycle technical document. Metafore summary report.*
http://www.metafore.org/index.php?p=Metafore_Paper_Fiber_Life_Cycle&s=570.
- Hardie, I.W. and P.J. Parks. 1997. Land use with heterogeneous land quality: An application of an area base model. *American Journal of Agricultural Economics* 79(2):299-310.
- Haynes, R.W., tech. coord. 2003. *An analysis of the timber situation in the United States: 1952 to 2050.* General Technical Report PNW-GTR-560. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.