



Illinois Forestry Development Council

Critical Issues Facing Illinois Forests and Forestry

Critical Issue: The Need to Develop Additional Markets, New Disposal and Recycling Systems, and Innovative Uses for Urban and Wood-Industry Waste Wood

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What Kind of Wood is Waste Wood? Waste wood is a byproduct or residue of the wood product manufacturing process as well as urban woody debris. Primary wood waste is sawdust and bark generated by primary wood-using mills during the processing of timber into products like lumber, veneer, and wood pulp. Secondary wood waste is residue generated by secondary wood-using industries that manufacture products from lumber, engineered wood products, or wood particles. Secondary wood waste also includes sawdust plus excess parts, trim, and planer shavings. Urban wood waste includes woody yard trimmings, dead and fallen trees and limbs, construction and demolition debris, and even discarded wood containers and pallets.

What is the Extent of Waste Wood Generation? The USDA Forest Service (FS) compiles detailed statistics on logging and primary wood-using industry waste. A 1998 USDA FS assessment of the Illinois timber industry reports that 93% of primary mill residue was recycled as industrial boiler fuel, mulch, or fiber products such as pulp-wood. Other types of wood waste offer similar potential as sources of fuel and lumber. Although state-specific data are unavailable, a 1999 study conducted by the Northeast Regional Biomass Program (NRBP) for the U.S. Department of Energy concludes that tremendous amounts of secondary and urban waste wood is underutilized. The NRBP study reports that 15.6 tons of secondary mill waste, 6.5 million tons of discarded pallets, 6.3 million tons of woody yard waste, and 51.5 million tons of urban tree waste are generated annually nationwide. Varied estimates of urban wood waste and yard trimmings in the municipal solid waste stream range from 10 to 18%; only about 30% of the urban wood contribution is recovered for recycling.

The Illinois EPA reports that Illinois landfills accepted over 17 million net tons of solid waste during 2003 and have approximately twelve years of capacity remaining. Illinois law requires that yard waste be separated from ordinary household refuse and processed for compost. Grass clippings, raked leaves, dead weeds, brush, and

City of Carbondale,
Illinois,
produces compost
from community
yard waste

-Photo credit:
J. Mangun



“Additional markets could include bridges made of hardwood timbers on gravel roads. Waste wood markets could include chips for landscape mulch and soil amenities or fuel for electric generating plants.”

- Illinois citizen comment

“Trees from city streets and parks should never be land-filled, they’re too valuable.”

- Illinois citizen comment



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tree limbs are all considered yard waste. Downed street trees should also be recycled before reaching Illinois landfills. Ice storms, blow downs, construction removals, utility maintenance, ageing and natural mortality, insect and disease damage, all take a huge toll on urban and community trees. As the USDA FS estimates that up to 50% of a municipality’s tree management budget can be spent on tree removal, converting street tree removals to sawlogs could generate much-needed income.

What Environmental Benefits Does Recycling Waste Wood Offer? The Wood Recovery Alliance of the American Forest & Paper Association identifies environmental benefits that include:

- Expanding and extending the life of the wood fiber supply;
- Contributing to carbon storage, thereby reducing greenhouse gases;
- Reducing the amount of recoverable wood going to landfills; and
- Stimulating new technologies to utilize recoverable wood fibers.

What Models Can Illinois Follow? To add value to material once regarded as waste, Illinois will need to investigate new technologies and new markets for waste wood. An innovative California initiative partnering public agencies, private enterprises, and university researchers is demonstrating the potential of portable band sawmills and dehumidification dry kilns to produce high grade lumber from trees removed from urban forests across the state. The Wisconsin Division of Energy is evaluating alternative programs for estimating the potential of urban wood waste as commercial/institutional heating fuel. Wisconsin recommends state-level incentives to attract potential demonstration projects and targeted marketing to specific types of businesses within range of available resources.

Public-private partnerships and state or regional integrated waste management programs will be needed to increase the rate of waste wood recovery and bring it to market in Illinois. As interest in managing urban and community forests grows in Illinois, it will be important to view urban trees as versatile assets.

Additional Reading

Bratkovich, S.M. (2001). *Utilizing Municipal Trees: Ideas from Across the Country, NA-TP-06-01*. Newton Square, PA: USDA Forest Service, Northeastern Area State & Private Forestry.

Cesa, E.T., Lempicki, E.A. & Knotts, J.H. (2003, Revised). *Recycling Municipal Trees: A Guide for Marketing Sawlogs from Street Tree Removals in Municipalities, NA-TP-02-94*. Morgantown, WV: USDA Forest Service, Northeastern Area State & Private Forestry.

‘Urban forest’ offers opportunities for raw material, niche business. (2005, March). *Pallet Enterprise*, pp. 58, 60-61.