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The State of Industrial Wood Ash as a Forest Soil Amendment

Industrial wood ash could be a useful forest soil amendment but it is currently classified as a potentially hazardous waste, not a fertilizer. This needs to change.

In her paper, *The State of Industrial Wood Ash as a Forest Soil Amendment*, K.A. Corcoran summarizes what is needed: a more nimble regulatory infrastructure with streamlined approval system; a standardized sampling and testing procedure for soil and ash assessment; an assessment of current and anticipated ash volume to determine feasibility and develop supply chains; economic incentives to ensure quality of wood ash; and a more effective ash application and distribution system. But that's not all. The development of educational materials as well as broader promotion and collaboration are recommended to resolve the existing challenges and hurdles impeding the use of wood ash as a forest soil amendment at scale.

Industrial Wood ash has been a by-product of the forestry and pulp and paper mill process but in recent decades, government has been looking for renewable energy sources, including biomass – in this case – the branches, bark and leaves left in the forest after trees were harvested. It used to remain in the forest, but now it's considered a source of energy, so some is taken to energy plants and burned. Wood ash derived from the combustion of forest harvest residues is high in calcium. In recent years, governments and industry have been engaging in activities to promote the notion of a circular economy whereby waste outputs are minimized. Returning wood ash by-products to the forest would uphold the principles of a circular economy. Where soils are nutrient-poor due to historic acid rain, it would help forests and related eco-systems recover from damage caused by human activity.

Wood ash is used as a fertilizer in other parts of the world but in Ontario, it is considered a waste and is disposed of at landfill sites. Despite the beneficial potential of using wood ash as a forest soil amendment (or fertilizer), the practice is unusual in North America. Governments in Finland and Sweden have promoted the recycling of biomass ashes to forest soils since the 1990s. In the United States the use of wood ash as a fertilizer for agricultural crops occurs in Maine and New Hampshire. Ash generators in New Brunswick, Nova Scotia and Ontario have obtained a federal fertilizer label from the Canadian Food Inspection Agency for their ash residuals. Quebec has recognized the agricultural land application of wood ash as a recycling activity since the 1990s.

Corcoran says the potential for industrial wood ash to contain chemicals is the reason for its classification as a waste material, but the same regulations apply to those using ash from clean, uncontaminated wood.

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There are significant benefits to diverting wood ash from landfills to the forests including a reduction in landfill costs, potential accelerated tree growth and potential revenue from ash. In addition, stronger healthier forests could result in greater carbon sequestration and the potential for increased water absorption by trees thereby mitigating flood risks in some areas.

While promoting and developing biomass energy is a means for governments and industry to reduce reliance upon fossil fuels thereby reducing greenhouse gas emissions, addressing the beneficial use of ash by-products from biomass energy generation should not be overlooked.