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Paper mill wastewater can be recycled back to the land

A thesis done at the Center for Wetlands & Water Resources supports the return of the tree wastewaters from paper making back to the tree-growing landscape.*

Since a healthy, sustainable pattern of human economy and environment in the long run requires materials to be recycled, we have long considered the possibility of recycling the wastes of paper making back to the lands of pines and cypress ponds from which the wood came.

Presently the treated wastewaters from paper making go into rivers and estuaries, producing changes in the ecosystems that are sometimes incompatible with the desired uses of these waters.

In paper making, the one third of a tree that is the lignin comes out of the paper mill as the black organic matter in the wastewaters.

This matter is similar to the humic materials from normal tree decomposition. If the lignin-containing wastewaters can be pumped back out to the land with a diverging pipe system, they will irrigate the pines, recharge some ground waters, drain into the little cypress ponds, there mixing with the normal black waters, and contribute to the sustainability of the landscape.

With seed moneys from the National Council for Stream Improvement, Champion Paper Corporation, and CH2M Hill, Inc., University of Florida graduate Peter Keller did a master's thesis in 1992 that studied paper wastes passing through an artificial wetlands, a process that makes wastewater into more normal stream waters. He examined tree species diversity and tree growth rate in stream wetlands that had



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once received paper wastes near Palatka. This use of wetlands as a filter had apparently been compatible with the wetland ecosystem there for years. He also did an EMERGY-emdollar evaluation of paper wastes through a paper mill showing the high value of these byproducts, justifying efforts to recycle wastewater.

By growing as much wood as is harvested each year, forestry systems of the southeastern United States may be leading the world in showing how to operate forests in a sustainable manner. To be fully renewable and efficient, the wastewaters from paper making need to be recycled thus getting better use of the organic materials and the fresh waters while restoring streams and estuaries to more clarity and normal biota.

Because of the polarized nature of environmental politics these days it is hard to get our leaders to consider something new. Perhaps a governor's initiative with chief executive officers of paper companies in a public forum could get this started. The main cost will be the pipes. Recycling promises to help keep environments normal, paper industry renewable, water resources conserved, and a more prosperous economy in the long run.

*Keller, P.A. 1992. Perspectives on interfacing paper mill wastewaters and wetlands, M.S. Thesis, Environmental Engineering Sciences, Univ. of Fla., 133 pp.

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