

# ENVIRONMENTAL FOOTPRINT COMPARISON TOOL

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



## EFFECTS OF DECREASED RELEASE OF BOD/COD & TSS ON DISCHARGE TO WATER

### Association between BOD and TSS and Impaired Water Quality

In the U.S., roughly 240 pulp and paper mills discharge treated wastewaters directly to receiving streams. There are nearly 90 such "direct discharge" mills in Canada. Their discharges tend to be large and are scrutinized by regulatory agencies as potentially significant where impact on receiving water quality has been in question. For that reason, mill discharges that have demonstrable impact on water quality in the U.S. have been largely addressed in site-specific discharge limits responsive to their contribution to water quality impairment. In Canada, the objective of the Environmental Effects Monitoring Program (EEM) is, in part, to identify and address site-specific receiving water quality issues.

Given the variety of industrial and non-industrial contributors to water quality impairment, identifying and equitably apportioning responsibility among potential contributors has been among the more daunting technical challenges in addressing water quality concerns.

Exhaustive site-specific technical analyses would be required to support an absolute statement about the extent to which mill BOD and TSS discharges adversely impact water quality, whether near or distant.

Lingering questions about the role of any possible mill impacts on water quality impairment in the U.S. might be gauged by examining mill locations relative to

- the 5,691 water body segments identified in the National Summary of State Information [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control#APRTMDLS](http://iaspub.epa.gov/waters10/attains_nation_cy.control#APRTMDLS) as impaired because of dissolved oxygen (DO) levels, and
- the 2,454 segments identified as impaired due to turbidity.

An informal NCASI staff examination of U.S. EPA data was carried out in October 2008. Results of that analysis are presented below in Table B6, which shows mill proximity to impairment situations.

**Table B6. Mill Proximity to U.S. Impaired Waterways**

	Immediate Mill Vicinity			Downstream of Mills		
	No. of Affected Mills	% of Direct Discharge Mills	% of Listed Segments	No. of Affected Mills	% of Direct Discharge Mills	% of Listed Segments
DO Related Impairments	19	7.0%	0.5%	73	26.9%	1.8%
Turbidity Related Impairments	9	3.3%	0.4%	26	9.6%	1.6%

It is unknown what portion of the mills noted in the above table is actually contributing to impairment. The values represent an upper bound on the number of mills whose BOD and TSS discharges might be associated with water quality impairment.