

Effect of the Restricted Use of Phosphate Detergent and Upgraded Wastewater-Treatment Facilities on Water Quality in the Chattahoochee River near Atlanta, Georgia

by David J. Wangsness, Betsy A. Frick, Gary R. Buell, and Joseph C. Devivo

ABSTRACT

Data compiled for the six largest wastewater-treatment facilities (WWTF) in Metropolitan Atlanta, Ga., indicate about an 83-percent reduction in the phosphorus load discharged to the Chattahoochee River from 1988 to 1993 because of restricted use of phosphate detergents and upgraded treatment of municipal wastewater. This reduction resulted in about a 54-percent decrease in the phosphorus load in the Chattahoochee River downstream of Atlanta during this time period. Phosphorus loads in animal manure and fertilizers applied to the land (nonpoint sources) are greater than loads discharged to the Chattahoochee River from WWTF (point sources). However, only a fraction of the phosphorus applied to the land enters the surface waters and is bioavailable. Even though nonpoint sources of land-applied phosphorus potentially are important sources to surface waters, point-source inputs from wastewater effluent are far greater. Phosphorus concentrations in wastewater effluent from three city of Atlanta WWTF need to be reduced by about an additional 31 percent by 1996 to comply with Georgia Department of Natural Resources, Environmental Protection Division regulations.