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Total phosphorus (TP) loads to the Great Lakes have been of interest to researchers since the 1960s. The International Joint Commission (IJC) was the primary source of Great Lakes TP loading data during the 1970's and 1980's when the IJC released annual reports detailing Great Lakes phosphorus loadings. We compiled data from many sources to stitch together a 36-year (1972-2008) loading history for Lake Michigan. The load compilation revealed several interesting observations, with the most striking being that atmospheric TP loads increased 75%, followed by a 90% decrease over the 1978-1981 time period. This decrease in atmospheric TP loads and subsequent total TP loads was of interest because Lake Michigan went from non-compliance in 1980 to compliance with the Great Lakes Water Quality Agreement in 1981. This raises the question whether the decline in TP loading was due to remedial programs or change/improvement of analytical methods to estimate the atmospheric TP loads, or a combination of both. Using the literature, an investigation into the methods used to estimate atmospheric TP loads was conducted. We will present a TP loading history compiled from available data sources, give possible explanations of observed variations, and construct a reasonable TP loading history. This abstract does not necessarily reflect EPA policy.

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