

Rural Loadings: An Ohio Perspective.

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Over the last 20 years, total phosphorus loadings have decreased by 30 to 40% in the Maumee and Sandusky watersheds, and soluble phosphorus loadings have decreased by approximately 75%, mostly due to increased conservation tillage and reduced fertilizer/manure applications. A by-product of increased conservation tillage has been a reduction in sediment loadings by about 20%. Nitrate concentrations have probably increased somewhat, but the trend is not statistically significant. The trajectory for the next few years is uncertain, and will remain so after the fact, due to the very large annual fluctuations imposed by variations in weather. Ex-Voinovich called for a 67% reduction in sediment loads to encourage the return of aquatic macrophytes in the lower reaches of the tributaries. The western half of the Ohio Lake Erie basin may be the site of a major Conservation Reserve Enhancement Program designed to reduce sediment losses to the tributary system. Reduced sediment implies reduced phosphorus. On the other hand, some farmers are becoming discouraged with conservation tillage and reductions in acreages in conservation tillage may result. Nitrate will remain relatively unmanaged, despite hypoxia in the Gulf of Mexico and elsewhere. Relationships between conservation tillage and nitrogen export are inconsistent. Conversion of ammonia to nitrate at sewage treatment plants implies increasing nitrate loads. Suburban sprawl is likely to continue shifting the land use distribution in the Lake Erie basin, but the implications for loadings are ambiguous. Three major factors hinder this forecast: weather-induced variability, lack of understanding of delivery of materials from the monitoring point to the open lake, and the inadequacy of current monitoring efforts in most of the Lake Erie basin.