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## **Nutrient Chemistry of streams improve with implementation of total farm planning in the Finger Lakes of New York**

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### **Abstract Text:**

Research in the Finger Lakes watersheds has demonstrated that loss of nutrients and soils from watersheds in agriculture are comparatively high to other areas with less agriculture in their watersheds. We tested the hypothesis that Management Practices, specifically targeted to reduce nutrient and soil loss, implemented in several experimental watersheds would lead to reductions in nutrient chemistry in downstream systems. Several general management practices were implemented beginning in 2003 and continue to date based on the total farm planning approach. Management practices included reduction of fertilizer (N and P), reduction of winter manuring practices, bunker storage and milk wastes were directed to grass filter strips, cover crops planted, etc. Impacts on stream chemistry were monitored by weekly baseline and event sampling using automated sampling equipment. There has been a steady downward trend in annual stream nutrient chemistry and flux from 2002 to 2007. Major reductions in concentrations of soluble reactive phosphorus, nitrate, total suspended solids and total Kjeldahl nitrogen were observed. In addition, major reductions in algae associated with the nearshore region of a lake downstream of the experimental watershed were observed.

### **Impact Statement:**

Major reductions in concentrations of soluble reactive phosphorus, nitrate, total suspended solids and total Kjeldahl nitrogen were observed. Downstream systems were also impacted by a reduction in algae and bacteria.