

Distributions of nitrogen and phosphorus concentrations in streams of the Trinity River Basin during 1993–95 reflect agricultural and urban land-use practices.

***The largest nutrient concentrations were downstream from wastewater point sources, and the smallest nutrient concentrations were immediately downstream from reservoirs.***

Total nitrogen and total phosphorus concentrations show noticeable seasonal patterns (Land and Shipp, 1996). Median total nitrogen concentrations increase from midwinter to midspring, decline in the summer, and increase again in the fall; median total phosphorus concentrations follow a generally similar pattern. Because much greater amounts of fertilizer are applied in the spring than in other seasons, the timing

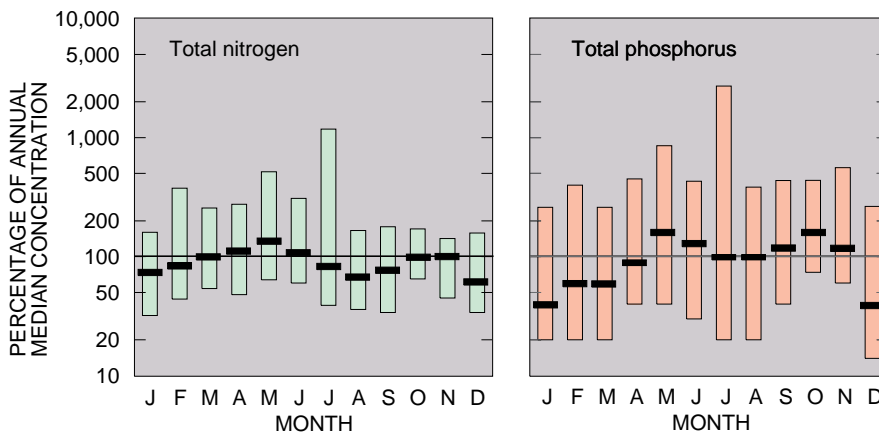
of the applications would seem to be the major reason for increases in concentrations in the spring. However, total nitrogen and (especially) total phosphorus concentrations were found to relate more closely to streamflow than to fertilizer applications. Monthly mean streamflow usually peaks in the spring, declines in the summer, and rises to a lesser peak in the fall.

***Nutrient concentrations at most sampling sites did not change appreciably from 1974 to 1991.***

Nutrient concentrations at most sampling sites did not change appreciably from 1974 to 1991 (Van Metre



An algal bloom in Richland Creek is indicative of excess nutrients.



Seasonality of nitrogen and phosphorus concentrations in streams of the Trinity River Basin during 1993–95. Each bar shows the range between the 10th and 90th percentiles. The black line in each bar shows the monthly median concentration as a percentage of the annual median.

and Reutter, 1995). The exceptions are five sites downstream from major wastewater-treatment plants in the Dallas area. As a result of upgrades to the treatment plants, ammonia plus organic nitrogen at the sampling sites decreased about 95 percent; concurrently, nitrate increased by a similar magnitude. The decrease in ammonia has led to an increase in dissolved oxygen, which reduces the threat of fishkills downstream from the wastewater-treatment plants.