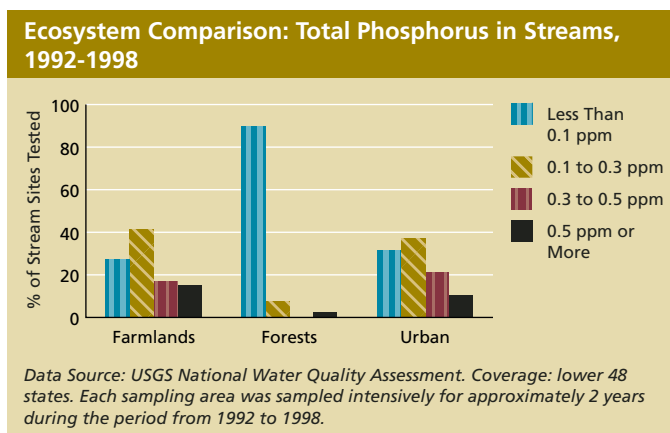
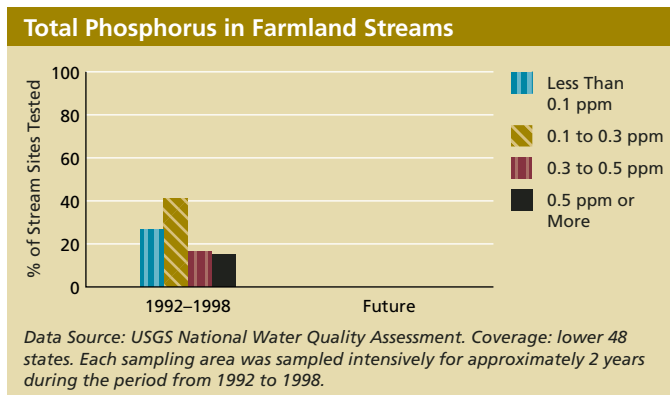


SYSTEM DIMENSIONS	CHEMICAL AND PHYSICAL	BIOLOGICAL COMPONENTS	HUMAN USES
Extent Pattern	Nutrients, Carbon, Oxygen Contaminants Physical	Plants and Animals Communities Ecological Productivity	Food, Fiber, and Water Recreation and Other Services

● Phosphorus in Farmland Streams



What Is This Indicator, and Why Is It Important?

This indicator reports on the concentration of phosphorus in representative farmland streams. Specifically, the indicator reports the percentage of streams with average annual concentrations in one of four ranges, for streams draining watersheds that are primarily farmland.

Phosphorus is an essential nutrient for all life forms and occurs naturally in soils and aquatic systems; phosphate is the most biologically active form of phosphorus. At high concentrations in freshwater systems, however, phosphorus can lead to algal blooms, which can decrease recreational and aesthetic values and help deplete oxygen needed by fish and other animals.

Sources of phosphorus in farmlands streams include chemical fertilizers and runoff from manure associated with animal-raising operations. If more fertilizer is applied than can be used by plants or stored in the soil, phosphorus will drain into adjacent streams.

What Do the Data Show? About three-fourths of farmland stream sites had concentrations of phosphorus that were at least 0.1 part per million (ppm), and about 15% of farmland stream sites had phosphorus concentrations of at least 0.5 ppm.

Average phosphorus concentrations in farmland streams are similar to concentrations in streams draining urban watersheds (p. 187) and much lower than streams draining forested watersheds.

Discussion The U.S. Environmental Protection Agency (EPA) has recommended 0.1 ppm as a goal for preventing excess algae growth in streams. In 2000, EPA took steps to facilitate development of regional criteria, but these regional criteria have not yet been adopted. There is no federal drinking water standard for phosphorus.

The technical note for this indicator is on page 232.