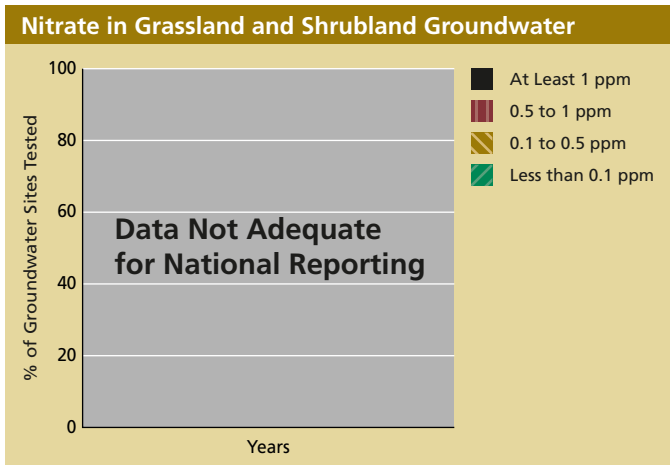




SYSTEM DIMENSIONS	CHEMICAL AND PHYSICAL	BIOLOGICAL COMPONENTS	HUMAN USES
Extent Pattern	<b>Nutrients, Carbon, Oxygen</b> Contaminants Physical	Plants and Animals Communities Ecological Productivity	Food, Fiber, and Water Recreation and Other Services

## ⊖ Nitrate in Grassland and Shrubland Groundwater



### What Is This Indicator, and Why Is It Important?

This indicator reports on the concentration of nitrate in groundwater in grassland and shrubland areas. Specifically, the indicator reports the percentage of groundwater sites with average nitrate concentrations in one of four ranges, in areas that are primarily grassland or shrubland.

Nitrate is a naturally occurring form of nitrogen and an important plant nutrient; it is often the most abundant of the forms of nitrogen that are usable by plants. Elevated nitrate in drinking water is a health threat to young children and is of particular concern for people using household groundwater wells; municipal water supply systems typically take steps to remove nitrate.

Elevated amounts of nitrate in the groundwater are a sign that inputs from human sources have increased or that plants in the system are under stress. Nitrogen is a critical plant nutrient, and most nitrogen is used and reused by plants within an ecosystem. Thus, in less-disturbed grassland or shrubland ecosystems, there is very little “leakage” into either surface runoff or groundwater, and concentrations are very low. Elevated amounts might come from fertilizer use or disposal of animal waste, from rain and snowfall (acid rain), or from changes in vegetation associated with fire suppression or overgrazing.

**Why Can't This Indicator Be Reported at This Time?** Data on nitrate concentrations in groundwater are available in fragmentary form, collected by many different agencies and institutions using different methods, but they have not been aggregated to enable national reporting. The U.S. Geological Survey's National Water Quality Assessment program, which provides consistent water quality data, is expected to provide sufficient data in the future to allow reporting at a national level.

See also the national nitrogen indicator (p. 46) and the farmlands, forests, and urban and suburban nitrate indicators (pp. 95, 122, and 186).

The technical note for this indicator is on page 258.