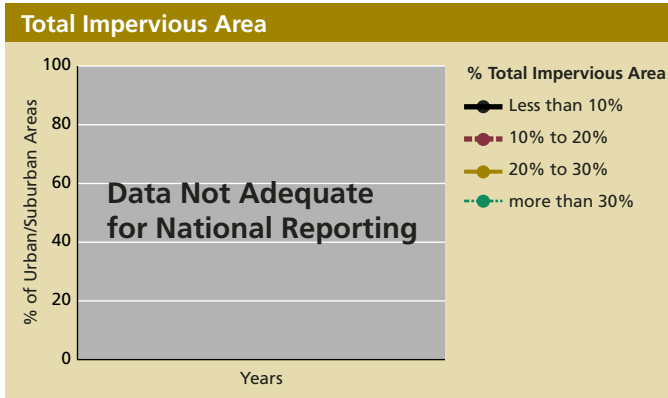




SYSTEM DIMENSIONS	CHEMICAL AND PHYSICAL	BIOLOGICAL COMPONENTS	HUMAN USES
Extent Pattern	Nutrients, Carbon, Oxygen Contaminants Physical	Plants and Animals Communities Ecological Productivity	Food, Fiber, and Water Recreation and Other Services

## ⊖ Total Impervious Area



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

This indicator classifies urban and suburban areas according to the percentage of impervious surface—roads, parking lots, driveways, sidewalks, rooftops, and the like—they contain. The indicator uses several thresholds: less than 10% impervious surface in the region, at least 10%, at least 20%, and at least 30%.

The amount of impervious surface is a direct measure of the degree of urbanization, and it strongly affects both water quality in urban and suburban areas and replenishment of groundwater. Areas with more impervious, or nonporous, surfaces generate more runoff,

which not only can contaminate and warm stream waters but also can degrade stream channels and banks. These changes have major impacts on the fish and wildlife that inhabit streams. In general, the impact on streams increases as the percentage of impervious surface in a watershed increases.

**Why Can't This Indicator Be Reported at This Time?** Total impervious area is difficult to measure. Measurements must be made on a fine scale to account for small areas such as sidewalks and driveways, but the finest-scale satellite information generally available cannot distinguish features of this size. Many local planning and environmental management programs collect this information, but the data have not been compiled regionally or nationally, nor are there standard methods for estimating the amount of impervious surface.

The technical note for this indicator is on page 266.