

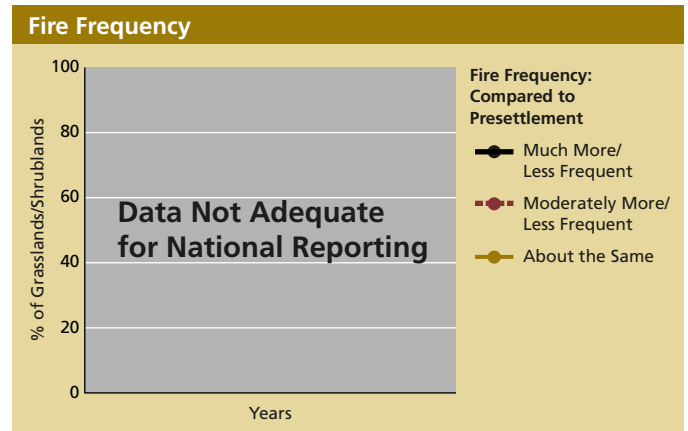


SYSTEM DIMENSIONS	CHEMICAL AND PHYSICAL	BIOLOGICAL COMPONENTS	HUMAN USES
Extent Pattern	Nutrients, Carbon, Oxygen Contaminants Physical	Plants and Animals <b>Communities</b> Ecological Productivity	Food, Fiber, and Water Recreation and Other Services

## ⊖ Fire Frequency

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

This indicator will describe how often grassland and shrublands are burned by wildfire. Specifically, it will report the fraction of grassland and shrubland areas that burn much more or less often, moderately more or less often, or about as often as before European settlement. So, for example, an area that, historically, burned every 5 years on average might be considered moderately altered if it burns every 10 years and significantly altered if it burns only every 25 years. An area that, historically, burned every 80 years might be considered moderately altered if it burns every 40 years and significantly altered if it burns every 20 years. (Presettlement conditions are used here as a reference against which to compare current conditions, not as an implied management goal.)



Periodic fire helps determine the makeup of grasslands and shrublands, by allowing certain “fire-adapted” species to thrive, while removing other, less fire-tolerant, plants. Since the last Ice Age (about 10,000 years ago), most grasslands and shrublands in the lower 48 states have burned regularly, with fires started by lightning or by American Indians for agricultural and other reasons. Different areas burned at different intervals, ranging from 2 years in eastern grasslands to about every 80 years in intermountain shrub areas.

Active fire suppression or suppression due to the reduction in available fuel resulting from heavy grazing can increase tree and shrub density, decrease the extent of certain “soil-forming” grasses, and enhance the spread of species formerly controlled by fire. For example, a decrease in fire frequency in some sites in the Great Basin is resulting in conversion from mountain big sagebrush and Idaho fescue to western juniper and pinyon-juniper. In addition, some non-native species, such as cheatgrass, increase the frequency and intensity of fires. Since native plants and animals did not evolve under these conditions, these new fire regimes can give non-native species an additional advantage.

See also the fire frequency in forests indicator (p. 128).

**Why Can’t This Indicator Be Reported at This Time?** This indicator requires information on both current and historic fire frequency. Satellite data can be used to measure current fire frequencies. Field-based measurements of historic fire frequency, upon which this indicator depends, are difficult and may not be possible to obtain for many grasslands and shrublands. Fire frequency data have been measured (from tree ring scars and similar evidence) at only a few sites.

The technical note for this indicator is on page 243.