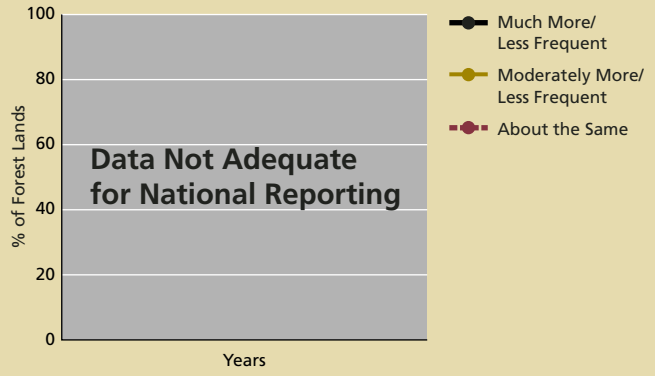
⊖ Fire Frequency

Fire Frequency, Compared to Presettlement



What Is This Indicator, and Why Is It Important? This indicator describes the frequency with which forests are burned by wildfire. It would report the fraction of forest lands that experience wildfire much more or less frequently, moderately more or less frequently, or with about the same frequency as in presettlement times. Thus, a forest that, historically, burned every 50 years on average will be considered moderately altered if it burns every 100 years, and significantly altered if it burns only every 150 years, and about the same if it burns once every 50 years.

Fire has always been an important influence on most forest types—indeed, it is necessary for the maintenance of some forest types—and it will continue to be important in the future. Periodic fires shape forest composition by allowing certain fire-adapted species to thrive while removing other, less tolerant, trees. For most of the past 10,000 years (since the last Ice Age), most forests in the lower 48 states burned regularly, with fires started by lightning or by American Indians, who used fire to manage forests and grasslands. There is increasing interest in forest management practices that incorporate fire and other disturbances in ways that mimic historic patterns.

Why Can't This Indicator Be Reported at This Time? This indicator requires information on both the historic and current fire frequency. While current fire frequency data are not difficult to collect, it is not simple to determine the historic fire frequency of an area or forest type. Researchers have estimated historic fire frequencies, but at this time, fire frequency data has been measured (from tree ring scars and similar evidence) at only a few sites.

Discussion Active suppression of forest fires dramatically changes forest composition, structure, and ecology. In suppressed areas, there are often more trees per acre and a higher frequency of certain species whose spread was formerly controlled by fire. In the East, for example, red maple has increased in eastern oak and pine forests, and in the West, white fir and incense cedar are now more common in ponderosa pine and giant sequoia forests. In some forests, like ponderosa pine, the denser forests produced by fire suppression are subject to hotter fires, which kill more trees. In other areas, such as eastern oak forests, fire suppression favors trees like maples, birches, and beech, with a corresponding decrease in both flammability and the number of oaks.

See page 171 for an indicator of fire frequency in grasslands and shrublands.

The technical note for this indicator is on page 243.