

Indicator 8. Number of Forest-Dependent Species That Occupy a Small Portion of Their Former Range

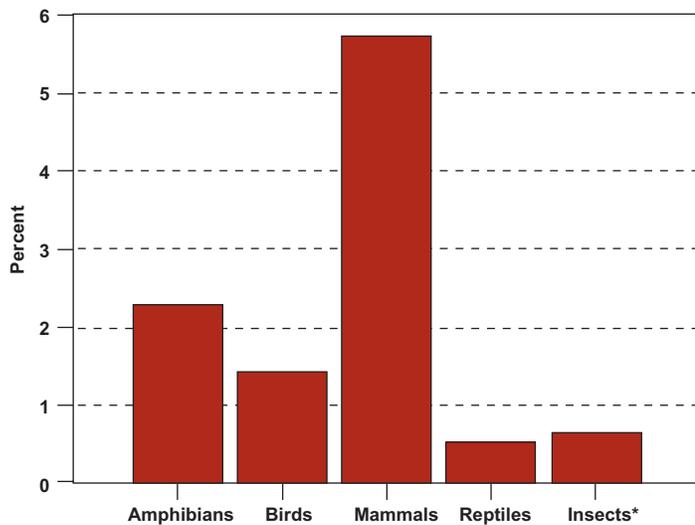


Figure 8-1. The percentage of terrestrial animal species associated with forests that now occupy ≤ 80 percent of their former geographic range (based on State-level occurrence data). * Insects includes butterflies and grasshoppers only.

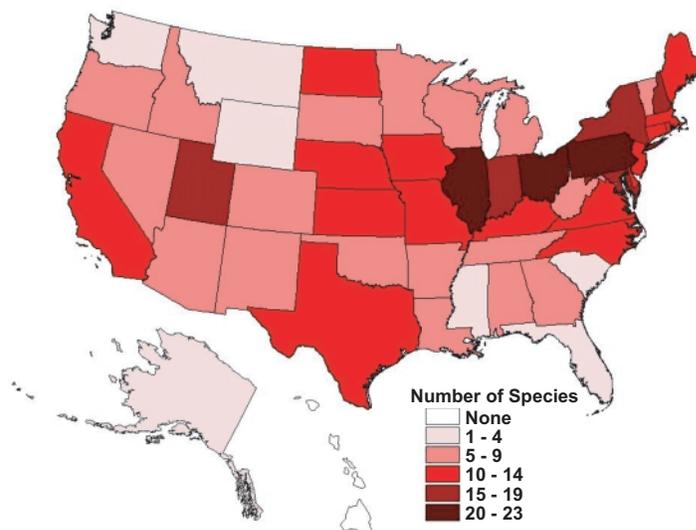


Figure 8-2. The number of terrestrial animal species associated with forests that have been extirpated within each State. (Data provided by NatureServe.)

What Is the Indicator and Why Is It Important?

This indicator compares a species' current geographic distribution with its historic distribution as a means of identifying those species whose ranges have contracted significantly. Through land-use conversions and resource management, human activity is accelerating changes in species' ranges through the alteration of native habitats, the introduction of exotic species, and direct exploitation. The size of a species' range is often related to the number of genetically distinct populations that exist. Consequently, genetic diversity is expected to decrease as species populations are lost through reductions in range size.

What Does the Indicator Show?

The geographic ranges of most species have not been appreciably reduced. Geographic range data for 1,642 terrestrial animals associated with forests show that 88 percent of species fully occupy their former range as estimated by State-level occurrence. Of the 193 species that have been extirpated from at least one State, 72 percent still occupy ≥ 90 percent of their former range. The number of species that now occupy

≤ 80 percent of their range varies by taxonomic group (figure 8-1). Range contraction of this magnitude is most commonly observed among mammals (5.7 percent), followed by amphibians (2.3 percent) and birds (1.4 percent). Geographically, States that have lost the greatest number of terrestrial animal species associated with forests are concentrated in the Northeast (figure 8-2).

Why Can't the Entire Indicator Be Reported at This Time?

Estimates of species' geographic ranges are basic to conservation planning. Unfortunately, for most species, data from which to quantify changes in range occupancy is lacking. In particular, reconstruction of former ranges is hampered by the absence of historic records. Although efforts are under way to comprehensively document species distributions, these compilations are often based on expert opinion that provides an estimate of the current range only. Because a species' geographic range is dynamic, a statistically designed inventory that permits an objective and temporally systematic assessment of range occupancy is needed.