

Massachusetts State Hazard Mitigation and Climate Adaptation Plan

State Agency Vulnerability Assessment Reference Materials:

Landslides

Data Source: 2018 State Hazard Mitigation and Climate Adaptation Plan - DRAFT

The map below depicts the present-day slope stability and risk of landslide throughout the Commonwealth. Emerging research from Cardiff University suggests that the frequency of landslides is not likely to increase substantially as a result of future climate change. Researchers found that, while an increase in the frequency of storms weakens soil stability, landslides are more directly linked to the accumulation of soil on hillsides over hundreds to thousands of years¹. However, slope saturation by water is already a primary cause of landslides in the Commonwealth. Regional climate change models suggest that New England will likely experience warmer, wetter winters in the future, as well as more frequent and intense storms throughout the year. This could result in more frequent soil saturation conditions, which are conducive to an increased frequency of landslides. Additionally, an overall warming trend is likely to increase the frequency and duration of droughts and wildfire, both of which could reduce the extent of vegetation throughout the Commonwealth. Thus, although maps depicting future landslide risks are not currently available, it is likely that current geographic trends will continue while the overall risk of landslide will increase statewide. Therefore, the present-day map is a useful reference when considering future conditions for this hazard.

¹ Robert N. Parker et al. Colluvium supply in humid regions limits the frequency of storm-triggered landslides, *Scientific Reports* (2016). DOI: 10.1038/srep34438

Present-Day Conditions

