

Permafrost may nearly disappear by 2100

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The National Center for Atmospheric Research in Boulder, Colo., says global warming may destroy most permafrost across the Northern Hemisphere.

Researchers said warming may decimate the top 10 feet or more of perennially frozen soil, altering ecosystems as well as damaging buildings and roads across Canada, Alaska, and Russia.

New simulations from NCAR show more than half of the area covered by the topmost layer of permafrost could thaw by 2050 and as much as 90 percent by 2100. Scientists expect the thawing to increase runoff into the Arctic Ocean and release vast amounts of carbon into the atmosphere.

The study is the first to examine the state of permafrost in a global model that includes interactions among the atmosphere, ocean, land, and sea ice as well as a soil model that depicts freezing and thawing.

The research appears online in the Dec. 17 issue of *Geophysical Research Letters*.

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