

Study shows plants moved downhill, not up, in warming world

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Data collected during the Wieslander vegetation survey in the 1920s and 1930s were used in the new climate study. (Marian Koshland Library, UC Berkeley archival photo)

(PhysOrg.com) -- In a paper published today in the journal *Science*, a University of California, Davis, researcher and his co-authors challenge a widely held assumption that plants will move uphill in response to warmer temperatures.

Between 1930 and 2000, instead of colonizing [higher elevations](#) to maintain a constant temperature, many California [plant species](#) instead moved downhill an average of 260 feet, said Jonathan Greenberg, an assistant project scientist at the UC Davis Center for Spatial Technologies and Remote Sensing.

"While the climate warmed significantly in this period, there was also more precipitation. These wetter conditions are allowing plants to exist in warmer locations than they were previously capable of," Greenberg said.

Many forecasts say climate change will cause a number of [plants](#) and animals to migrate to new ranges or become extinct. That research has largely been based on the assumption that temperature is the dominant driver of species distributions. However, Greenberg said the new study reveals that other factors, such as precipitation, may be more important than temperature in defining the habitable range of these species.

The findings could have global relevance, because many locations north of 45 degrees latitude (which includes the northernmost United States, virtually all of Canada and Russia, and most of Europe) have had increased precipitation in the past century, and global climate models generally predict that trend will continue, the authors said.

"As we continue to improve our understanding of [climate-change](#) impacts on species, we will help land managers and policy makers to make more informed decisions on, for instance, conservation efforts for threatened and endangered species," Greenberg said.

He added that the study underlines the importance of an investment in basic science, as the results are based on historical data collected by the U.S. Forest Service in the 1930s, a program that was supported by New Deal spending after the [Great Depression](#).

Provided by UC Davis

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