



West water woes tied to man's warming

Study says 60 percent of changes over 50 years were due to human factors

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WASHINGTON - People driving their cars, cranking on their air conditioners and switching on lights and dishwashers are responsible for most of the climate changes that are gradually drying up water supplies in arid and growing western states, a new study finds.

Those climate trends are likely to increase, threatening a water crisis in the western United States, says the study published Thursday in the journal *Science*.

The study is likely to add to urgent calls for action already coming from western states competing for the precious resource to irrigate farms and quench the thirst of growing populations. Devastating wildfires, avalanches and drought have also underscored the need.

Researchers led by climate expert Tim P. Barnett at the Scripps Institution of Oceanography at the University of California, San Diego, studied climate changes in the west between 1950-1999. They noted that winter precipitation falls increasingly as rain rather than snow and that snow melts faster. There are decreased river flows in summer months. The warming is aggravating dry summer conditions.

The researchers used statistical modeling to compare climate changes that would have happened with natural fluctuations over time, to climate changes with the addition of human-caused greenhouse gases and other emissions from vehicles, power plants and other sources.

60 percent tied to humans

They found that up to 60 percent of changes in river flow, temperature and snow pack between 1950 and 1999 can be attributed to human activities, such as driving, that release emissions including carbon dioxide and other greenhouse gases into the atmosphere.

The changes they observed differed significantly from trends that could be attributed to natural fluctuations between wet and dry periods over time, they said.

"The climate's changing in the West. We've known that. The question is why, and no one's really addressed that," Barnett said in an interview. According to his study, "The answer is it is us."

"The picture painted is quite grim so it's time to collectively sit down and get our act together," Barnett added, suggesting the need for conservation, more water storage, and a slowdown on development in the desert Southwest.

"The building is just going crazy, so it would be a pretty good idea to put a curb on that unless they can figure out how to get more water," he said.

The study also included researchers from Lawrence Livermore National Laboratory, the University of Washington, Seattle, and the National Institute for Environmental Studies in Japan.

"Our results are not good news for those living in the western United States," they conclude. The research "foretells of water shortages, lack of storage capability to meet seasonally changing river flow, transfers of water from agricultural to urban uses and other critical impacts."

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