



[USGS Home](#)
[Contact USGS](#)
[Search USGS](#)

National Research Program

[◆ NRP Home](#)
[◆ Project Index](#)
[◆ Publications/Patents](#)
[◆ Hydrologic Models](#)
[◆ Highlights](#)
[◆ News](#)

Search the NRP site:

[About the
National Research Program](#)

[Postdoctoral
Opportunities](#)

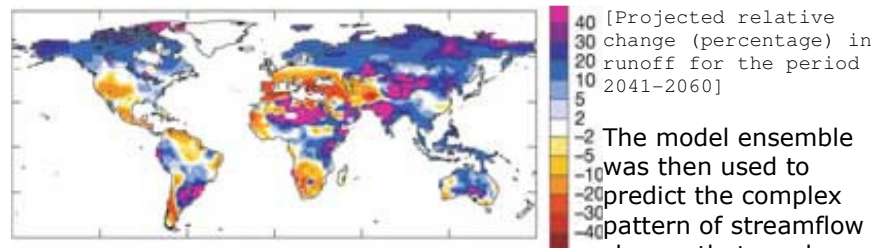
[Water Resources
Research Institutes](#)

[USGS Water
Resources Information](#)

Climate Models

Understanding global shifts in water availability

In an article published in the journal, *Nature*, USGS scientists examined water-availability projections of climate models. Water availability is directly related to climate. However, there is no simple relationship between future temperatures and future water resources that would cover all regions of the world. Some regions may experience increases in precipitation and run-off while other regions may experience decreases. In the USGS study, the scientists compared simulations from an ensemble of 12 global climate models with a century of streamflow measurements from 165 locations around the world. They determined that the model ensemble is useful for simulating regional historical long-term trends in streamflow around the world.



The model ensemble was then used to predict the complex pattern of streamflow change that can be

anticipated in the twenty-first century. Results from the models predict 10 to 40 percent increases in runoff in eastern equatorial Africa, the La Plata basin and high latitude North America and Eurasia by the year 2050. They also predict 10 to 30 percent decreases in runoff in southern Africa, southern Europe, the Middle East and mid-latitude western North America by the year 2050.

Reference:

[Milly, P.C.D., Dunne, K.A., and Vecchia, A.V., 2005, Global pattern of trends in streamflow and water availability in a changing climate: *Nature*, v. 438, no. 7066, p. 347-350.](#)

[For articles in Adobe® (.PDF) format, please note that you can [download a free copy of Adobe® Acrobat® Reader® here](#). Also see Adobe® accessibility information, [Information for users with disabilities](#), if applicable.]

For additional information, see the project, [Continental Water, Climate and Earth-System Dynamics](#), or contact Chris Milly, cmilly@usgs.gov

[Accessibility](#) [FOIA](#) [Privacy](#) [Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

URL: <http://water.usgs.gov/nrp/highlights/streamflow.climate.html>



Page Contact Information: [Linda Friedman](#)
Page Last Modified: Wednesday, 17-Feb-2010 09:10:42 EST

