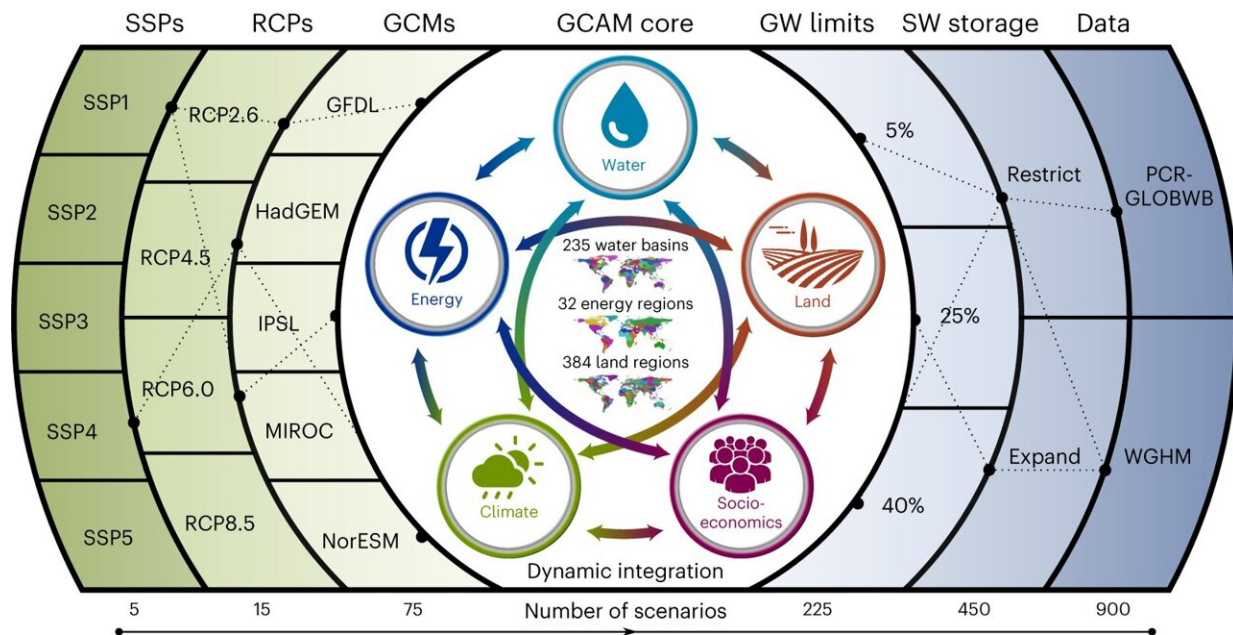


New research predicts peak groundwater extraction for key basins around the globe

April 25 2024, by Stephanie Seay



Experimental design showing combinatorial variations of 6 parameter categories used to design 900 GCAM scenarios. Credit: *Nature Sustainability* (2024). DOI: 10.1038/s41893-024-01306-w

Groundwater withdrawals are expected to peak in about one-third of the world's basins by 2050, potentially triggering significant trade and agriculture shifts, a new analysis finds.

Scientists at Pacific Northwest and Oak Ridge national laboratories

examined water, energy and [food systems](#) for 235 basins under 900 scenarios to analyze patterns in nonrenewable groundwater usage over the 21st century, as detailed in an [article](#) published in *Nature Sustainability*.

"The world's not running out of water, but how and where we source it looks likely to shift in the coming decades as major groundwater sources become unviable," said Sean Turner, a water resources analyst at ORNL.

Regions with the greatest current rates of depletion, including some in the United States, are more likely to face higher groundwater and food production costs by mid-century. The model can inform decision-making as regions shift to surface water and rainfall, different growing regions, imported food or other adaptative measures.

More information: Hassan Niazi et al, Global peak water limit of future groundwater withdrawals, *Nature Sustainability* (2024). [DOI: 10.1038/s41893-024-01306-w](#)

Provided by Oak Ridge National Laboratory

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