Climate Change, Drought and Global Aridification: Understanding Confidence

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Many current assessments of future climate and hydrologic change suggest that current drylands around the globe could become drier with continued anthropogenic climate change. In some regions, there is an observed trend in this direction. This is particularly true for the Colorado River and other rivers of the West, where the nature of drought is shifting to a more temperature-dominated climate extreme. At the same time, however, some recent and influential scientific assessments suggest that temperature-driven drying could be compensated by precipitation increases with little net increase to water supply or ecosystem risks. However, a new approach integrating the examination of temperature, precipitation and drought risk indicate that many rivers, water supplies, and ecosystems in the West are already being seriously affected by warming, and that continued warming could result in much larger water supply crisis than widely thought, even if mean precipitation increases. The implications of these results have serious implications for water supplies and terrestrial systems in many parts of the globe.

This talk will focus on one of the sharpest edges of the growing global climate crisis: hydrologic extremes and water security. Special attention will be focused on understanding how to assess and assign confidence estimates to projections of future change.