



Researchers Examine “Low-to-No Snow” Trends & Water Implications in Western States

As policymakers grapple with water challenges across the West, access to informational tools, modelling, and technology has grown increasingly critical. A recently published study examined the possibility of a low-to-no snow future in Western states. The authors, who are from academia, government and key stakeholders, noted several key takeaways, including:

- Mountain snowpacks in the western United States (WUS) have historically acted as large, natural reservoirs of water, yet they are now harbingers of a changing climate through their signaling of a low-to-no snow future.
- Low-to-no snow will impose a series of cascading hydrologic changes to the water-energy balance, including vegetation processes, surface and subsurface water storage, and, ultimately, streamflow that directly impacts water management.
- A re-evaluation of long-standing hydroclimatic stationarity assumptions in WUS water management is urgently needed, given the impending trickle-down impacts of a low-to-no snow future.
- Models projecting the time horizon of low-to-no snow in the WUS lack spatiotemporal consensus due to differences in definitions, metrics, methods, and regionally specific analyses.

- Observational and modelling advances are needed to better understand the implications of a low-to-no snow future on water resources and to evaluate the trade-offs among a wide array of potential adaptation strategies that can address both water supply availability and water demands.
- Co-production of knowledge between scientists and water managers can help to ensure that scientific advances provide actionable insight and support adaptation decision-making processes that unfold in the context of significant uncertainties about future conditions.

The complete journal findings from Nature Reviews Earth & Environment can be accessed [here](#).