

Recent Winters in the Western United States and Relationship to ENSO Patterns

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Abstract

In the mountainous western United States, winter weather has consequences for the entire year, especially with respect to the use of water. For most of the past 6-8 years, drought has been a persistent feature of the climate. This has in turn had substantial impacts on a wide variety of human and natural systems, including the arrangements by which water is allocated and the salmon population in the Pacific Northwest. The past four winters, years have seen more or less constant El Niño conditions; the corresponding winter snowpack patterns show differences and similarities with each other consistent with behavior over the past 60 years. The past decade will be examined with a new tool, the Standardized Precipitation Index developed by Tom McKee at Colorado State University, designed to supplement or replace the Palmer Drought Index. This index is capable of portraying the simultaneous behavior of climate elements on different time scales. (For example, it is possible to be in short-term deficit, mid-term excess, and long-term deficit, all at the same time.)