



Regional climate outlooks in the U.S.: Explaining and exploiting ENSO-related forecast skill on seasonal to annual time scales

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Since 1995, the U.S. Climate Prediction Center (CPC) has disseminated seasonal temperature and precipitation forecasts out to 15 months based on the status and expected evolution of ENSO as well as long-term climate trends. In the interior Western U.S., CPC precipitation prediction skill has been marginal at best, due to a variety of complicating factors. To name just three, ENSO has a seasonally and regionally varying footprint that can even switch sign from one season (or region) to another; mountain ranges can introduce steep topographic gradients at spatial scales poorly sampled in models and observations; and the North American monsoon system is poorly modeled, but contributes significant amounts of moisture during the growing season.

In the context of collaborative efforts such as the Western Water Assessment (WWA) and, more recently, the National Integrated Drought Information System (NIDIS), the author has engaged in more than a decade of regional climate forecast and outreach efforts to public resource managers from California to Florida. Compared to CPC, more intimate knowledge of regional climate factors helped to get this effort underway and sustain it, while feeding back to CPC to help them improve their forecasts. In order to remain credible, an honest appraisal of forecast skill had to be undertaken, both in a postmortem mode (“Why did this particular forecast ‘fail’?”), as well as in the quasi-operational setting of monthly to seasonal briefings. While ENSO remains the backbone of seasonal climate forecasting in much of the U.S., other factors, such as the role of multi-decadal climate drivers, are also being explored. This presentation will try to summarize lessons learned from more than a decade of producing and disseminating climate outlooks.