

White Paper 3: Strategies For Managing The Colorado River In An Uncertain Future | Colorado River Studies

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Using defined levels of uncertainty can guide stakeholders to appropriate management and modeling tools and lead to more precise and effective conversation and negotiation.

Understanding What We Don't Know

Colorado River stakeholders face many uncertainties—issues like climate change, future water demand, and evolving ecological priorities—and are looking for new tools to help cope. Managers and stakeholders need ways to help classify uncertain conditions, manage for them, and create models in the face of a slew of oncoming unknowns.

To help Colorado River stakeholders think about, talk about, and better manage the future river, the Center for Colorado River Studies offers a new white paper that distinguishes four levels of decision-making uncertainty. We illustrate each level of uncertainty with examples and show that there is greater uncertainty associated with planning for long time horizons, such as in developing policies that anticipate the increasing possibility of drought, extreme climate events, and unknown patterns of future human use of water. We argue that better public policies

will emerge if stakeholders recognize the different levels of uncertainty for future events.

From the paper: Suggested Practices for an Uncertain Future

1. Classify uncertainties by level.
2. Include and track more information as it becomes available.
3. Define more signposts to signal when future water supply and river ecosystem outcomes deteriorate and trigger an alternative policy.
4. Identify more alternative policies for when circumstances trigger a signpost.
5. Construct potential pathways that connect signposts and alternative policies over time.
6. Match the planning horizon to the uncertainty level.
7. Retain more reservoir storage at the end of the model planning horizon to save water for future managers and generations to use.
8. Seek better policies that improve water supply and river ecosystem outcomes across more future scenarios, rather than best policies.
9. Allow users more flexibility to respond to changing conditions.
10. Visualize adaptive policies to show system adaptations over time, identify gaps in policies, and adapt policies to include more information and signposts.