

 Arizona Daily Star

## How low can Lake Mead go?

**Tony Davis Arizona Daily Star | Posted: Wednesday, November 17, 2010 12:00 am**

With Lake Mead at its lowest level since 1937, the odds of near-term Central Arizona Project water shortages affecting Tucson and other Arizona cities are on the rise, officials in charge of the project say.

In January, CAP officials said that it's unlikely that urban users will face shortages until the mid-2020s at the earliest. But now, they and Bureau of Reclamation officials say in the worst-case drought scenario, municipal shortages could come as soon as six or seven years, if authorities take no steps to obtain more or use less water and the dry weather continues.

More probable scenarios show a 20 to 25 percent chance of the lake dropping low enough to cause municipal shortages by 2019 or 2020 at the earliest, according to Bureau of Reclamation forecasts.

Officials are expected to take some short-term steps in the next few years to try to keep lake levels high in the meantime. But those efforts would only stave off future shortages for a few more years. Today, the CAP staff will meet in Phoenix to look at other ideas, including desalinization of salty groundwater and buying water rights from Colorado River farmers, aimed at getting more water to help it cope with CAP shortages.

It's possible the outlook this decade for the lake levels and the water project could be worse than the bureau predicts, if climate change is a factor underlying the current drought, a question for which there is no scientific agreement today. But if the drought that's now lasted 11 years in the Colorado River basin turns around, the outlook for CAP and the river in general will get better.

Here are some questions and answers on Lake Mead and the prospects for CAP shortages.

**Q: Why is Lake Mead so low?**

**A. Drought.** On Oct 17, the lake dropped below 1,083.19 feet, its record low since the lake was filling in 1937. It is currently at 1,082.21 feet above sea level. It has dropped 132 feet since January 2000. That's due to an extended drought in which only about 8.25 million acre-feet of water flows into Mead from Lake Powell annually while more than 10 million acre-feet goes to Arizona, Nevada, California and Mexico on the average each year. An acre-foot is enough water for about three homes for a year.

**Q. At that rate, how long before the city of Tucson's main water supply, the Central Arizona Project, has a shortage?**

**A. The earliest shortage, in which Arizona loses about 288,000 acre-feet, could come as early as 2012 when the lake reaches 1,075 feet. That's the level triggering a shortage affecting what's called "excess" CAP users, including some farms, mines and others who are buying CAP water that other entities have contracts for but currently aren't using. A shortage wouldn't affect municipal water users at least until the lake hits about 1,025 feet.**

**Q. Can this shortage be forestalled?**

**A. Yes, say bureau and CAP officials. Next year, for instance, the bureau is likely to release extra water from Lake Powell into Lake Mead to hold off a shortage until 2013. Arizona and other river basin states have other plans to try to keep Mead higher a little longer, led by a proposal for Mexico to keep 200,000 acre-feet in Mead for a few years because an earthquake has damaged some of Mexico's water-supply equipment.**

**Q. How soon might the lake hit 1,025 feet?**

**A. If the lake keeps dropping at 11 feet a year as it has in recent years, 1,025 could arrive in as few as six years. But at that level, municipal shortages aren't a sure thing. The only certainty is that officials of the seven river basin states would have to meet to reconsider the 2007 shortage-sharing agreement under which they set the current ground rules for how shortages in the river affect the three lower basin states of Arizona, Nevada and California.**

CAP general manager David Modeer said he hopes those states can also push the 1,025 water level time frame back another three to four years with the short-term measures.

**Q. What are the odds of the drought continuing and of the lake hitting 1,025 soon?**

A. The upcoming winter is predicted to be influenced by a La Niña weather pattern in which the Southwest and lower Rocky Mountains are usually dry and the Pacific Northwest is usually wet. That pattern could remain through the 2011-2012 winter.

Q. What is the official forecast for the river and lake's potential to hit troublesome or crisis levels in the future?

A. The Bureau of Reclamation recently issued predictions that differ because they are based on two sets of data. One is historical river-flow data dating back 102 years. The other is tree-ring data developed by the University of Arizona, dating back 1,200 years. Generally, the predictions based on historical data are more pessimistic than those based on tree-ring data. By 2015, the historic data-based forecast is for a 25 percent chance that Mead hits 1,075 feet, an 8 or 9 percent chance that it hits 1,025 feet and a less than 5 percent chance of dropping below 1,025 feet.

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