

# Scenarios of Extreme Low Colorado River Flow

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## Description

This is an R Markdown document. This document compiles and compares scenarios of extreme low Colorado River flows used in 6 different prior studies. The purpose is to compare the inflow scenarios across the studies that used river flow as an operations criteria.

The data for this comparison are located in the Excel file **ColoradoRiverExtremeLowFlowFlowScenarios.xlsx**.

The primary output is Figure 1. A line segment plot shows the range of extreme low flows used in each study.

The studies are:

1. Myers, A. (2025). “Immersive Modeling for Lake Mead”. <https://github.com/Anabelle374/ImmersiveModelLakeMead>
2. Wang, J., and Rosenberg, D. E. (2023). “Adapting Colorado River Basin Depletions to Available Water to Live within Our Means.” Journal of Water Resources Planning and Management, 149(7), 04023026. <https://doi.org/10.1061/JWRMD5.WRENG-5555>.
3. Rosenberg, D. E. (2024a). “Lessons from immersive online collaborative modeling to discuss more adaptive reservoir operations.” Journal of Water Resources Planning and Management, 150(7). <https://doi.org/10.1061/JWRMD5.WRENG-5893>.
4. Abualqumboz, M., Chamberlain, B., and Rosenberg, D. (2024). “Adaptively Managing Lake Powell Releases to Respond to Reservoir Inflow and Evaporation.” Utah State University Digital Commons. [https://digitalcommons.usu.edu/cee\\_stures/12/](https://digitalcommons.usu.edu/cee_stures/12/).
5. Rosenberg, D. E. (2024b). “Reclamation Web Tool - Minimum Glen Canyon Dam Annual Release to protect Lake Powell Minimum Power Pool.” Github, <https://github.com/dzeke/ColoradoRiverCollaborate/tree/main/Post2026WebTool> [Accessed on: July 3, 2025].
6. Rosenberg, D. E. (2022). “Adapt Lake Mead Releases to Inflow to Give Managers More Flexibility to Slow Reservoir Drawdown.” Journal of Water Resources Planning and Management, 148(10), 02522006. [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0001592](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001592).

## Requested Citation

David E. Rosenberg (2023), “How Low a Colorado River Flow to Go?” Utah State University. Logan, Utah. Github, <https://github.com/dzeke/ColoradoRiverCollaborate/tree/main/ColoradoRiverExtremeLowFlowScenariosAll>.

##	tidyverse	readxl	RColorBrewer	dplyr	expss	reshape2
##	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
##	pracma	lubridate	directlabels	plyr	stringr	ggplot2
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**Figure 1. Extreme low Colorado River flows used in our work. Flows from 2000 to 2020 averaged 12 million acre-feet per year.**

